

ISSUE 1: Need for Project

REF: Exhibit A, Tab 2, Schedule 1, pg. 2

Preamble: The St. Laurent Pipeline is a critical part of the natural gas distribution system in the City of Ottawa. The St. Laurent Pipeline directly and indirectly supplies approximately 165,000 customers in the City of Ottawa and in Gatineau.

We would like to understand more about the feeds into the City of Ottawa and Gatineau in order to understand the need for the proposed replacement.

- 1) Please provide a colour map showing and overview of all third-party pipeline line feeds and station locations for HP feeds into Ottawa and Gatineau.
 - a) On a second colour map, please show all of the existing pipelines operating at 1900 kPa or greater in the Ottawa/Gatineau system. For this map, please provide:
 - i) The size of the pipeline
 - ii) Maximum Operating Pressure
 - iii) Current Winter Maximum Operating pressure (e.g., winter of 2020/21)
 - b) On a third colour map, please show all of the proposed pipelines along with the existing pipelines operating at 1900 kPa or greater in the Ottawa/Gatineau system. For this map, please provide:
 - i) The size of the pipeline
 - ii) Maximum Operating Pressure
 - iii) Proposed Winter Maximum Operating pressure (e.g., winter of 2023/24)
- 2) Please provide the network analysis simulation results for the Ottawa/Gatineau high pressure system for the winter of 2021/22 that provides:
 - a) the recommended set pressures of the feeder stations
 - b) the minimum required inlet pressures required at the various High Pressure to Intermediate Pressure stations
 - c) the simulated inlet pressures required at the various High Pressure to Intermediate Pressure stations for a peak day scenario

REF: Exhibit B, Tab 1, Schedule 1, pg. 8-12, Figures 2 and 3

Preamble: Figure 2 shows the area impacted if the St. Laurent Pipeline is isolated due to damage in a situation where temperature in the day is -29°C (which is equivalent to 47 heating degree days). This scenario corresponds to design day conditions for Ottawa. The pipes coloured cyan will lose their primary feed for the duration of the incident. The St. Laurent Pipeline is highlighted in green. Depending on the nature of the incident the duration of gas supply interruption could be weeks to months.....

The Company estimates that it would cost approximately \$54 million to repair the St. Laurent Pipeline, make safe and re-light affected customers in the Enbridge Gas franchise area,⁵

We are interested in understanding more about EGI's analysis, risk and assessment regarding customer loss.

- 3) Please file the study that determined the number of customers lost on a 47 HDD and the cost to repair, make safe and relight.
 - a) Please ensure the study contains the following or provide a direct response:
 - i) The location of the break assumed.
 - ii) Steps to mitigate customer loss e.g., increase other feeder stations set pressure, interrupting interruptible customers, shedding Emergency Control Areas, etc.
 - iii) Assumptions regarding the type of repair and the determination of that cost
 - iv) The determination of customers lost in Gazifere territory.
 - v) The cost of make safe and relight.
 - vi) Actual costs from the most costly break and loss of customers on the St. Laurent system.
- 4) Figure 2 shows a significant number of customers in the Gazifere territory that maintain service. Please demonstrate and explain how those customers' service is maintained and, if not answered in the previous question, any additional steps of loss mitigation taken to produce this result.
- 5) Please answer the previous 2 questions for the section scenario of 1 HDD depicted in Figure 3.

REF: Exhibit B, Tab 1, Schedule 1, pg. 13-37

Preamble: In the above referenced pages, EGI provides information on a number of different inspection and repair initiatives. We would like to understand more about these initiatives and their cost.

- 6) For each of the respective initiative, please provide the cost of the investigation and the subsequent remediation.
 - a) For the 2016 Bridge Inspection, what is inhibiting EGI from repairing and protecting the pipe and anchors for effectively.
 - b) What if any action was taken on pipe segments with less than 60 cm of cover in Table 4.
 - i) What is the estimated cost to lower those segments?
 - c) For each identified segment in Table 5, please indicate if that segment meets the Code z662 for existing pipeline depth.

REF: Exhibit B, Tab 1, Schedule 1, pg. 32

Preamble: The population of vintage steel mains installed in the 1970s and prior, including the St Laurent Pipeline, have been found to have varying degrees of corrosion associated with declining/lack of cathodic protection and poor coating. This drives the steady increase of expected leak rates. Additionally, vintage steel mains were installed when protection programs, including cathodic protection procedures were different from current practices. In urban areas, challenges exist in ensuring adequate cathodic protection due to interference from light-rail transit systems.

We would like to understand the qualitative statements more quantitatively.

- 7) Please provide the actual leak rate (leaks/yr/km) of the respective segments by pipeline vintage captured in Table 3.
 - a) Please compare to both the Windsor Line and London Lines and provide the years of installation of these respective systems.

REF: Exhibit B, Tab 1, Schedule 1, pg. 32

Preamble: Some vintage gas mains (such as the St. Laurent Pipeline) do not have sufficient records identifying the existence and location of these fittings. There have been 10 compression couplings found on the St. Laurent Pipeline to date, all of which have been properly restrained or removed. Enbridge Gas expects that there are more compression couplings on the St. Laurent Pipeline.

- 8) Of the ten compression couplings found:
 - a) How many were found as a result of pull-out?
 - i) What was the cost of repair of each?
 - b) How many were already restrained when found initially?
 - i) What was the cost investigate and restrain?
 - c) How many were found as result of leaks?
 - i) What was the cost to repair?
- 9) If the compression couplings were restrained, why is EGI putting these couplings on the list replacements in Table 8?

REF: Exhibit B, Tab 1, Schedule 1, pg. 36

Preamble: Enbridge Gas analyzed the St. Laurent Pipeline to determine what retrofits would be required to make the pipeline in-line inspectable. This analysis determined that 28 retrofits were required in addition to 10 in-line filters. The estimated cost to complete the retrofits is approximately \$24.1 million. Table 8 sets out the required retrofits, the location of the retrofit and the estimated cost of each retrofit that would be required to allow in-line inspections of the St. Laurent Pipeline.

10) What factor(s) initiated the review that resulted in an increase in retrofits and the resulting 25% decrease in total cost estimate from the application filed in the spring?

REF: Exhibit B, Tab 1, Schedule 1, pg. 38

Preamble: Regulation stations are extremely sensitive to dirt and debris, and in most instances if dirt enters the regulators or pilots (which operate the regulators), it will cause the equipment to fail. This can result in severe safety concerns, such as over-pressure situations on the downstream networks (lower pressure side of the stations), or under pressure situations resulting in outages. The purpose of in-line filter systems is to stop debris (which is stirred up from the in-line inspection & cleaning tool) from entering and damaging the downstream regulation equipment. Table 9 outlines the cost associated with installing the filters that would be required

11) What are the vintages of the filters?

- a) Would filters not have to be replaced even if pipe is replaced?
 - i) If yes, why are they included? Please explain.
 - ii) If not, why not? Please explain.

REF: Exhibit B, Tab 1, Schedule 1, pg. 39, Figure 16

12) Is the section between Ogilvie and Montreal Roads being replaced?

- a) If so, please describe the reasons specifically.

REF: Exhibit B, Tab 1, Schedule 1, pg. 42, Table 11 and Figure 17

Preamble: We would like to understand the Asset Health by comparison for context.

13) Please present tables and figures showing the same information for the Windsor Line and London Lines before their respective replacements.

REF: Exhibit B, Tab 1, Schedule 1, pg. 44-45 and Table 13

Preamble: These estimates are conservative as they do not take into account specific locations for where the excavation required to complete a cut-out may have to occur. For comparison, Enbridge Gas repaired a leak in 2019 at the intersection of Industrial Avenue and St. Laurent Boulevard that cost \$3,182,217 due to challenges associated with the specific location.

We would like to understand the broader estimates in context of the decision to proceed with replacement.

- 14) From EGI's Distribution Integrity Management Program, please provide EGI's practice for the handling of leaks categorized by A, B and C.
- a) For each of the last 10 years, please provide the number of leaks found on the proposed pipe to be replaced classified by each type, the number of leaks repaired and the total cost of repair for that year. Please distinguish upgraded leaks (e.g., C to B) from new leaks found.
- 15) Please file the internal study approved by EGI management that concluded that replacement was prudent.
- a) Please file all internal EGI written communication including reports, emails and memos that relate to the topic of this decision to replace and the timing of the replacement.

REF: Exhibit B, Tab 1, Schedule 1, pg. 47, Table 14

- 16) Please provide the Maximum Operating Pressure (MOP) of the Steel pipe shown in the Table.
- a) For each identified segment of steel pipe, please provide the size and MOP of the pipe the segment replaces.

REF: Exhibit B, Tab 1, Schedule 1, Attachment 1

- 17) What length of pipe was investigated in this study?
- a) How many distinct locations of corrosion were found in the study?

ISSUE 2: Project Alternatives

REF: Exhibit B, Tab 1, Schedule 1, pg. 13

Preamble: Hydraulically, were the entire replacement to remain an NPS 12 XHP ST pipeline, the required minimum pressures at the Rockcliffe Control Station could not be maintained. As a result, a segment of the replacement pipeline has been upsized to NPS 16 XHP ST pipeline. This upsizing, which occurs on the outlet side of the St. Laurent Control Station, ensures that minimum pressures at the Rockcliffe Control Station are maintained. Importantly, no additional capacity will be added as a result of this increase in pipeline diameter.

We would like to understand more about the analysis undertaken to propose this pipe sizing and alternatives considered to reduce the cost including the service to Gazifere.

- 18) Please file the study that was done to look at pipe sizing and alternatives including feeds to Gazifere.
- a) Please ensure the study contains the following or provide a direct response:
 - i) Please ensure there is a map which assists the reader in viewing the results of the assessment.
 - ii) How were HP feeder station pressures adjusted to consider minimizing the extent and cost of replacement?
 - iii) What were the minimum pressure constraints imposed by location?
 - iv) Was Gazifere including in assisting with risk mitigation steps?
 - (1) If so, how?
 - (2) If not, why not?
 - v) How many pipelines feed gas to Gazifere?
 - vi) Is there a separate contract demand for each pipeline?
 - vii) Please provide the contracted minimum inlet pressure and contracted demand for each of the Gazifere stations that service from the Ottawa-Gatineau system.
 - viii) What are actual operating pressures for each station and minimum actual inlet pressure to Gazifere over the last 3 years
 - (1) What was the daily flow on those days
 - (2) What is the highest historical maximum flow and HDD on that day?
 - ix) What is the forecasted demand for the Gazifere system over the next 20 years?
 - x) Does Gazifere have any other gas feed to their system that does not cross the Ottawa river from the Ottawa system?
 - (1) If so, please describe how it was examined for the purpose of evaluating alternatives.

ISSUE 3 Project Cost and Economics

REF: Exhibit D, Tab 1, Schedule 1, pg.10, Table 9

Preamble: We would like to understand more about the estimate and the process for securing a qualified contractor and the impact on the cost and economics of the project.

- 19) Did the company engage any contractor(s) in the process of determining the estimate provided?
- a) If yes, please specify the process undertaken and the number of contractors included.
- 20) Please confirm that the construction work will be awarded through RFP?
- a) If not, why not?
 - b) If so, how many pre-qualified contractors are likely to bid on this work?
 - c) From recent replacement projects (e.g., Windsor Line, London Lines) what is the range of bids relative to the applied for estimates for labour?
 - i) Please provide the specific range for each.
 - ii) Please provide the estimated actual labour that is known or projected at this time.
 - (1) Please clarify changes to scope (e.g., Windsor Line running line revisions).
- 21) Using Generic alphabetized designation (e.g., Contractor A, Contractor B), please provide the amount of labour paid to each large contractor over each of the last 5 years by legacy rate zone (Union North, South and EGD) for replacement, integrity or expansion work.
- a) Please describe steps taken to reduce pipeline contractor costs and documented results or improvements over the last 10 years
- 22) Is Gazifere contributing any funds to the replacement project?
- a) If so, how was the contribution calculated?
 - b) If not, please explain why not including precedents that support the lack of contribution.