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August 1, 2019

Sent by Electronic Mail, RESS Electronic Filing and Courier

Ms. Kirsten Walli
Board Secretary
Ontario Energy Board
27-2300 Yonge Street
Toronto, ON M4P 1E4

Dear Ms. Walli:

Re: EPCOR Natural Gas Limited Partnership (“ENGLP”) EB-2018-0336 - Application for 2020 to 2024 Rates – Phase 2 Evidence

At page 3 of its Decision and Rate Order the Board stated that:

With respect to the deferred issue dealing with capital costs incurred by NRG to address system integrity within its franchise area, OEB staff proposed that the issue be addressed as phase 2 of this proceeding.

Please find attached additional evidence of ENGLP with respect to the Board ordered phase 2 of this proceeding.

Please feel free to contact me if you have any questions regarding this matter.

Sincerely,

[Original signed by]

Vince Cooney, P.Eng, MBA
Senior Manager, Regulatory Affairs, Ontario
EPCOR Utilities Inc.
VCooney@epcor.com

cc. All intervenors in EB-2018-0336

IN THE MATTER OF the *Ontario Energy Board Act, 1998*, S.O. 1998, c. 15, (Schedule B);

AND IN THE MATTER OF an application by EPCOR Natural Gas Limited Partnership for approval to change gas distribution rates and other charges effective January 1, 2020 to December 31, 2024.

PHASE 2 EVIDENCE

EPCOR Natural Gas Partnership LP (“ENGLP”)

EB-2018-0336

August 1, 2019

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OVERVIEW

1. On January 31, 2019, EPCOR Natural Gas Limited Partnership (“ENGLP”) filed its cost of service rate application in proceeding EB-2018-0336 for approval of a rate plan to set natural gas distribution rates for the period January 1, 2020 to December 31, 2024. This was the first rate case filed by ENGLP since acquiring the utility from its predecessor, Natural Resource Gas Limited (“NRG”).
2. In its Decision and Interim Rate Order dated July 4, 2019 (“Decision”), the Board accepted the settlement proposal filed by ENGLP on June 10, 2019. The settlement proposal deferred the issue dealing with capital costs incurred by NRG to address system integrity issues.
3. For settlement purposes, the parties to the settlement agreed that there was insufficient evidence provided to date to support the four system integrity projects completed by NRG in 2016 and 2017. Accordingly, the Board scheduled a Phase 2 of this proceeding to review the prudence of these projects, which were included in rate base pending completion of the review. This submission will hereinafter refer to the projects as the “Four System Integrity Projects”.
4. The Four System Integrity Projects are shown together on a map of ENGLP’s service area and their associated 2020 net book (rate base) values are:
 - i. \$402,639 for the Enbridge Gas (formerly Union Gas) Bradley Station Project (the “Bradley Station” project);
 - ii. \$748,383 for the pipeline from the Bradley Station to the Wilson Line project (the “Bradley x Wilson Line” pipeline);
 - iii. \$498,922 for the pipeline from the existing Putnam Station to Culloden Line project (the “Putnam x Culloden” pipeline); and
 - iv. \$265,015 for the extension of the Springwater Road pipeline from south of Orwell to John Wise Line project (the “Springwater” pipeline).
5. ENGLP notes that parties to the settlement proposal agreed that, with the exception of the Four System Integrity Projects, the amounts closed (or proposed to be closed) to rate base since the utility’s last rate proceeding in EB-2010-0018 were (or will be) prudently incurred¹ and therefore the scope of this Phase 2 proceeding is limited to a review of the utility’s prudence in implementing the Four System Integrity Projects.
6. ENGLP provides this additional evidence in accordance with the written process established in the Decision to review the prudence of the projects. This additional evidence will highlight the following:
 - a) NRG’s (and now ENGLP’s) distribution system has a number of system constraints including:
 - o gas supplies enter the system at 80 psig or lower²,
 - o the majority of the gas supplies are located in the north, and

¹ EB-2018-0336, Settlement Proposal filed June 10, 2019, page 6

² For clarity, this reference refers to the system state prior to the implementation of the 135 psig Bradley Station and Bradley x Wilson Line pipeline.

- a number of undersized piping, valves and connections, all of which impact the flow of gas throughout the system resulting in system integrity issues in various parts of the system;
- b) NRG's system integrity concerns trace as far back as 2000, when NRG staff advised Union Gas Limited ("Union") of system pressures, and Union proposed a high-pressure tie-in at Tillsonburg in the north-east of NRG's service territory³;
- c) NRG had experienced system integrity issues related to low pressures in the northeast area of its system near Brownsville and in the southwest near and in the Town of Aylmer for a number of years leading up to the implementation of the Four System Integrity Projects;
- d) The system integrity issues near Brownsville and near and in the Town of Aylmer became critical in November of 2014 when NRG's grain drying customer load and winter heating load coincided and unacceptably low system pressures presented a significant risk that NRG's residential customers would lose heating for their homes. NRG experienced pressure drops to as low as 5 psi⁴;
- e) The low pressure problems were the result of both insufficient gas supplies entering the system and the system having insufficient capacity to deliver the gas to the required parts of the system to meet system demands;
- f) The unacceptably low pressure issues as experienced by NRG in these areas were substantiated by the modeling completed by SNC-Lavalin (SNC) for the System Integrity Study completed for NRG and documented in SNC's draft report dated March 2016;
- g) In November 2015, NRG escalated its challenges in obtaining additional gas supply into the northeast from Union (now Enbridge Gas) and filed a failure to serve application with the Board, citing significant risk to its customers posed by these system integrity issues;
- h) In March 2016, Union agreed to provide NRG with additional gas supply at Union's Bradley Station. This new supply was also at a higher receipt pressure. NRG notified the Board of the agreed upon solution, including the resulting capital projects that NRG would be implementing;
- i) Two of the Four System Integrity Projects (the Bradley Station project and the Bradley x Wilson Line pipeline) were directly related to obtaining this new higher pressure gas supply from Union Gas at the Bradley Station. This allowed for the gas to be delivered into the centre of NRG's service area at higher pressure to support the system integrity issues noted in the southwest area;
- j) Since the additional gas supply from Union was to be supplied at the Bradley Station and not in close proximity to the northeast region of NRG's system, where system pressure was at greatest risk to customers, NRG implemented the third of the Four System Integrity Projects, the Putnam x Culloden pipeline, to divert natural gas obtained from Union at the existing Putnam station to the area near Brownsville;

³ EB-2015-0308, Lippold Affidavit, pg3, para 8.

⁴ EB-2015-0308, Lippold Affidavit, pg5.

- k) The SNC study, with the draft report issued March 2016, recommended projects to address pressure issues exhibited in the northeast and southwest of the system. However, these recommendations arose before it was known that Union would provide additional gas supply at the Bradley station and therefore the report (a) recommended projects to address these pressure issues outside of the context of this new higher pressure gas supply, and (b) made different conclusions with respect to the value of certain projects it evaluated and highlighted than may have been reached in the context of this new gas supply;
 - l) With the additional gas supply from Union coming in at the Bradley Station, the above noted three of the Four System Integrity Projects provided better solutions to the low pressure issues and offered additional system benefits when compared to the projects recommended by SNC;
 - m) The last of the Four System Integrity Projects, the Springwater pipeline, was examined by SNC and found to be of limited benefit as a standalone solution to the pressure issues in the southwest near and in the Town of Aylmer;
 - n) In the context of the additional gas supply from Union into the Springwater pipeline, in order to gain greater system benefit from this new higher pressure supply, NRG opted to proceed with the Springwater pipeline to facilitate getting the gas more directly into the area south of Aylmer to address the pressure issues in that area as opposed to simply connecting the new supply into the existing system near Aylmer which was already operating at or near its operating capacity limit;
 - o) While it has no bearing on NRG's decision to undertake the Four System Integrity Projects, in May 2018 ENGLP retained Cornerstone Energy Services (Cornerstone) to complete a system integrity analysis of the distribution system in its 2018 state, post implementation of the Four System Integrity Projects. ENGLP notes that the modeling completed by Cornerstone no longer showed severe pressure issues in the northeast area near Brownsville and in the southwest near and in the Town of Aylmer where NRG had experienced low pressure issues prior to the implementation of the Four System Integrity Projects;
 - p) In more recent peak demand events including during January of 2018 and January 2019, ENGLP's experience is consistent with what was modeled by Cornerstone and the severe low pressure issues at those times were not in the areas the Four System Integrity Projects had focused on addressing.
7. In addition to the evidence discussed herein, ENGLP will rely on the record of the proceeding in EB-2010-0018, EB-2015-0308, EB-2016-0236, and EB-2018-0336 for the purpose of its submissions and argument in Phase 2 of this proceeding.
 8. The evidence in this submission is grouped and organized into the following sections:
 - a) Part I – The System: A description of NRG/ENGLP's distribution system, its constraints and factors that contribute to system integrity issues.
 - b) Part II - The Specific System Integrity Issues: A description and chronology of the specific system integrity issues faced by NRG which precipitated the implementation of the Four System Integrity Projects.

- c) Part III – Solution Reached with Union and the Four System Integrity Projects: Details on NRG’s escalation of the system integrity issues described in Part II to the Board, the resulting agreement with Union and its association to the Four System Integrity Projects.
 - d) Part IV – The SNC Report and the Four System Integrity Projects: Recommendations from SNC to address the system integrity issues in the northeast and southwest and how they relate to the Four System Integrity Projects.
9. In addition to the evidence listed above that outlines the purpose of the Four System Integrity Projects and system conditions and information available to NRG leading up to the implementation of the Four System Integrity Projects, in the summary ENGLP provides some post-implementation insight on these projects.

PART I – THE SYSTEM

1. ENGLP’s current system developed over more than 30 years from what was essentially a gathering system for local production (which also served a very small number of customers) to the gas distribution system it is today.⁵
2. ENGLP’s distribution system distributes natural gas in Southern Ontario to approximately nine thousand customers (approximately eight thousand customers in 2015) in the Town of Aylmer and the surrounding region.
3. The service territory extends south from Highway 401 to the shores of Lake Erie. In addition to the Town of Aylmer, the ENGLP system also serves the towns of Brownsville, Straffordville, Vienna, Port Burwell, Port Bruce, Springfield, Belmont, and Nilestown.
4. The ENGLP Aylmer system consists of approximately 800 kilometers of distribution mains which are fed by seven ENGLP/Union Gas gate stations in the north of the system (Putnam, Harrietsville, Belmont, Brownsville, Bayham, Eden, and North Walsingham) and 38 natural gas wells owned by Tribute Resources Inc./On-Energy Corp., formerly owned by NRG Corp., in the southeastern part of the system. There are no points of supply to the west, and no points of supply to the south (Lake Erie).
5. The majority of the gas supply coming from the north necessitates the gas to be effectively transferred to other areas in the system through the distribution system. The NRG/ENGLP distribution system generally operates at a maximum allowable operating pressure (MAOP) of 80 psig.⁶ This means that the pressure is immediately regulated down to 80 psig at the Union supply points, and the volumes and pressures which are available elsewhere in the system can be appreciably lower, as the pressures are mostly a function of the distance from the point of supply and pipeline diameter, owing to frictional losses in the pipeline.

⁵ EB-2010-0018, NRG’s Argument-in-Chief (Phase 2), December 23, 2011, pg1.

⁶ With the noted exception of the Bradley x Wilson Line pipeline which has been designed to receive a Firm Hourly Quantity of 1,500 m³/hour at a minimum pressure of 135 psig. This line operates at 135 psig at its end nearest Bradley station in the north of ENGLP’s service territory, and is regulated down to 80 psig at the south end of this line.

6. The system is also designed such that the operating pressure is regulated down to 30 psig entering the urban centres (including Aylmer). This means that gas does not flow through these centres north to south or east to west and must be piped around the urban centres in order to adequately distribute gas where it is required elsewhere in the system.
7. As a result of the supply and system limitations, the utility's challenges are not only associated with obtaining adequate supply but also with getting the supply to where it is needed in the system.
8. As a result, the system has experienced system integrity issues in the form of low pressures in various parts of the system for a number of years. The areas in which the specific pressure issues are experienced are associated with a number of factors including distance from the supply and distribution system attributes (pipe, valve, and connection sizes, etc.), combined with the demands for gas in the area which may be influenced by customer growth, weather and agricultural/commercial needs.

PART II – THE SPECIFIC SYSTEM INTEGRITY ISSUES

1. As a result of the supply and system constraints outlined above in Part I, NRG had historically experienced system integrity issues in the areas identified in this evidence. While system integrity as it relates to the pricing of the gas purchased from NRG Corp. has been the focus of much of the regulatory record in NRG's cost of service applications, NRG also experienced low pressure issues in other areas of the system, particularly in the northeast area, since at least 2010. Inadequate supply was causing the pressure in NRG's distribution system to drop, sometimes to extremely low levels and as a result NRG had begun corresponding with Union regarding NRG's need for additional volumes of gas to address the issues.⁷
2. These low pressure issues presented a significant risk to NRG's customers in both late fall (when NRG's industrial-commercial customers' drying season overlaps with a period of cold weather) and during prolonged periods of cold weather outside of the grain drying season. A late harvest and early cold weather period (which triggers increased demand for gas from NRG's residential customers), could have resulted in a peak gas demand scenario causing NRG's system pressure to drop (particularly in the northeast of NRG's franchise area). When the pressure dropped below 10 psi, there was a serious risk of system outages.⁸
3. NRG's correspondence with Union Gas, captured in detail in its EB-2015-0308 application including the Lippold Affidavit, did not result in additional gas supply being made available⁹, and in November 2014, due to an early coincidence between its grain drying customer load and its winter heating load due to a cold snap, NRG experienced historic low pressures in areas of its distribution network.
4. NRG managed these low pressure issues by interrupting the supply to its industrial-commercial customers in order to maintain sufficient system pressure to continue supplying its residential

⁷ EB-2015-0308 – Application and Evidence, Affidavit of Brian Lippold, pg3

⁸ EB-2015-0308 – Application and Evidence, Affidavit of Brian Lippold, pg4,5

⁹ EB-2015-0308 – Application and Evidence, Affidavit of Brian Lippold, para 9-13.

customers.¹⁰ This approach was permissible only because many of these industrial-commercial customers contract for interruptible service.

5. Despite these measures, NRG remained deeply concerned about possible outages to residential customers and other firm customers. These possible outages put NRG and its customers in a serious position of risk. For NRG's agricultural customers, the risk is loss of crop and livestock (including poultry) and in the fall of 2014, NRG faced the very real risk of having to interrupt its residential customers who rely on NRG's service for home heating and these other firm service industrial-commercial customers.¹¹
6. Throughout the winter of 2014 and 2015 and in the spring of 2015, NRG continued to correspond with Union regarding additional supply. While a number of other options for additional gas supply from Union were presented or explored through the communications between Union and NRG, NRG highlighted for Union the areas where it was experiencing pressure issues and presented to Union that the Putnam station would be a logical location for the additional capacity as this would resolve issues that NRG was experiencing in the immediate vicinity of the station and seasonal pressure issues in the northeast and in the southwest near and in the Town of Aylmer.¹²
7. At the same time that NRG was corresponding with Union to address the low pressure issues in the northeast and in the southwest near and in the Town of Aylmer, SNC was conducting modeling of the system and its pressures in association with the system integrity study NRG had been ordered by the Board to complete in the Decision and Order dated May 17, 2012 for proceeding EB-2010-0018. Through their modeling, SNC benchmarked the system to NRG's pressure data from November 12, 2014 and was able to match system pressures on this high demand day demonstrating the low system pressure issues that NRG had experienced in the southwest and in the northeast.¹³

PART III – SOLUTION REACHED WITH UNION AND THE FOUR SYSTEM INTEGRITY PROJECTS

1. NRG and Union, as noted in Part II, were initially unable to resolve the issue of providing NRG with incremental gas supplies in order to resolve the system integrity issues. As a result, NRG, looking to resolve these low pressure issues prior to the 2016 fall/winter season and to mitigate the significant risks these low pressures posed to its customers, filed an application (EB-2015-0308) with the Board on November 6, 2015 under section 42(3) of the *Ontario Energy Board Act*, alleging a failure to serve by Union Gas. This application outlines the significant risk posed to NRG's customers by the system pressure issues in the northeast and in the southwest areas near and in the Town of Aylmer and the need for additional supply from Union to address these issues.
2. After the filing of the failure to serve application, further discussions between NRG and Union ultimately led to Union agreeing to provide NRG with an additional 3,700 m³ /hour supply from existing and additional facilities to be constructed and in service by November 1, 2016 at Union's Bradley station.

¹⁰ These interruptions do not apply to IGPC, which has a dedicated 6" line and supply to its facility.

¹¹ EB-2015-0308 – Application and Evidence, Affidavit of Brian Lippold, pg5

¹² EB-2015-0308 – Application and Evidence, Affidavit of Brian Lippold, pg7,8, Exhibit E, Exhibit F

¹³ EB-2018-0336 – Application and Evidence, Exhibit 1, Tab 4, Schedule 2, pg17-18, Appendix C

3. On March 3, 2016, NRG and Union each informed the Board of their agreement and NRG requested to withdraw its failure to serve application.¹⁴ NRG cited in its letter that this commitment by Union would address the system integrity issues underpinning NRG's initial application.
4. The Board indicated that it would defer its consideration of NRG's withdrawal request until such time as executed copies of the agreements between Union and NRG for gas supply had been filed with the Board, along with an explanation as to how these agreements would resolve the system integrity issues that prompted the failure to serve application¹⁵.
5. On May 31, 2016 NRG filed a letter with the Board describing in detail the agreement reached between NRG and Union Gas to resolve and confirm additional supply in the northeast of its service territory. This letter is re-attached as Appendix A to this evidence. As well as providing other details, this letter outlines the resulting capital projects NRG would implement in association with this additional supply in order to address the system pressure issues as follows:

“NRG agreed to pay certain costs associated with the construction of a new station at Union's Bradley Station, which would provide NRG with up to 3,700 m³/hour at 150 psi of natural gas service.”

“NRG's system pressure was at greatest risk in the northeast region of NRG's service area. As a result of the Bradley Station's distance from the northeast region, NRG is currently constructing two pipelines aimed at re-distributing gas within NRG's service area: (a) the first pipeline will divert natural gas from the existing Putnam Station to the northeast region; and (b) the second pipeline will transport additional natural gas from the Bradley Station to a point located in the centre of NRG's service area. The first project will be completed by mid-summer 2016 and will create conditions of higher pressure for this heating season. The second project will assist with reinforcing NRG's system in the central region, as well as support the anticipated needs of new commercial customers in the Aylmer area.”¹⁶

6. The Board granted NRG's request to withdraw its failure to serve application and based its decision on NRG's assurances that the supply agreement and the facilities proposed to be constructed would resolve the system integrity and volume issues raised in the application.
7. The projects described in the letter NRG filed with the Board on May 31, 2016 and as quoted above are in direct reference to three of the Four System Integrity Projects:
 - i. The Bradley Station project –involved the installation of a new regulating and metering station at Union's Bradley Station, north of Highway 401 at Bradley Avenue, as described in paragraph 3 of its letter. For more details on this project see Appendix B attached to this evidence.
 - ii. The Bradley x Wilson Line pipeline – designed specifically to operate at higher pressure to bring gas into areas in the southwest at relatively higher pressures than in the past, was

¹⁴ EB-2015-0308, Correspondence from Union Gas dated March 3, 2016 and Correspondence from NRG dated March 3, 2016

¹⁵ EB-2015-0308, Correspondence from the Board dated March 14, 2016

¹⁶ EB-2015-0308, Correspondence from NRG dated May 31, 2016

implemented to transport the additional natural gas to be supplied by Union from the Bradley Station to a point located in the centre of NRG's service area as described as item (b) in paragraph 4 of NRG's letter. For more details on this project see Appendix B attached to this evidence.

iii. The Putnam x Culloden pipeline – since the additional supply that Union was making available to NRG was at the Bradley Station which was much further from the pressures issues in the northeast than the Putnam Station where NRG was originally looking for additional supply, this pipeline was implemented to divert natural gas from the existing Putnam Station and redistribute gas to the northeast where the indicated pressure issues were being experienced. For more details on this project see Appendix C attached to this evidence.

8. The last of the Four System Integrity Projects, the Springwater pipeline, was an extension of the existing pipeline along Springwater Road, which also connects through a section of pipeline along Dorchester Road to the Bradley x Wilson pipeline, to facilitate getting the additional gas supplied by Union at the Bradley Station more directly into the area south of Aylmer to address the pressure issues in that area. For more details on this project see Appendix D attached to this evidence.

PART IV – THE SNC REPORT AND THE FOUR SYSTEM INTEGRITY PROJECTS

1. As noted above, in 2015 SNC modelled the distribution system and its pressures at the same time that NRG was in discussions with Union for additional gas supply in the north of the system. SNC's study demonstrated the low system pressure issues that NRG had experienced in the southwest and in the northeast. In conclusion, SNC stated that NRG's system integrity problem was that gas could not move freely from the inlet locations, in the north and east, into the southwest quadrant and into the Brownsville area.¹⁷
2. SNC had completed the majority of their study and associated modeling work in 2015, prior to when Union and NRG reached agreement on a solution for additional gas supply. Accordingly, the SNC study focused on moving existing gas supplies around the system more freely rather than focusing on net new gas supplies from Union. As a result, SNC's draft report dated March 2016 identifies the same pressure issues but the recommendations included in the report differ from what NRG implemented with the Four System Integrity Projects.
3. SNC had modeled incremental supplies at the Eden and Brownsville stations, which ultimately was unavailable, however, the incremental new supply that was available at the Bradley station was critical to supplying the system demands. This new supply required further system reinforcement to transport these volumes through the distribution system to alleviate the low pressure issues elsewhere in the system, and as further described below.

While the solutions implemented by NRG differ from what was contemplated by SNC's study, the SNC study clearly identified that system integrity could be greatly improved by increasing gas flow rates from the Union Eden and Brownsville stations into the south and around Brownsville, and that solely increasing supply from Union Limited had a small impact on the system¹⁸ (i.e. increased

¹⁷ EB-2018-0336 – Application and Evidence, Exhibit 1, Tab 4, Schedule 2, pg22

¹⁸ EB-2018-0336, Exhibit 1, Tab 4, Schedule 2, pg21

supply must be coupled with additional pipelines to deliver gas at higher pressure to areas in the south and around Brownsville). These conclusions support the approach that NRG took to address these issues with the implementation of the Four System Integrity Projects.

RECOMMENDATIONS TO ADDRESS PRESSURES IN THE SOUTHWEST PART OF THE SYSTEM

4. The SNC Study noted that system integrity could be provided in the southwest by significantly increasing (by 4 to 7 times the flow rates at the time) the gas flows from the NRG Corp wells (specifically the Scotia Line group of wells)¹⁹, however, the study failed to consider or comment on the effect of declining production of these wells.
5. To resolve the issues in the southwest part of the system, the SNC study recommended extending the Glencolin Line pipeline, a combination of 2” and 4”, creating another tie between the Springfield Road and Springwater Road 4” pipelines. This option would generally move gas from existing supply points from east to west.
6. Considering that the option for additional supply that Union made available to NRG was at the Bradley Station (as compared to the Eden or Brownsville Stations, or incremental local production), NRG opted instead to address the pressure issues in the southwest with the Bradley Station project and the Bradley x Wilson Line pipeline which connected the new supply at the Bradley Station to the Dorchester/Springwater Road 4” pipeline whereby bringing natural gas more directly into a problem area around Aylmer to address the low pressure issues and support anticipated. For more details on these projects see Appendix B.
7. In addition to a number of other loops and extensions, SNC evaluated the project that NRG implemented as the Springwater pipeline as a standalone option to addressing the pressure issues in the southwest and concluded it had limited benefit to the model as a standalone option²⁰.
8. Given the timing, the SNC study was unable to consider the Springwater pipeline option in conjunction with the significantly increased gas supply available into the area provided by the Bradley Station project and the Bradley x Wilson Line pipeline.
9. The Bradley Station project and the Bradley x Wilson Line pipeline allowed NRG to bring this new gas around Aylmer and into the south of the system at 80 psi, via the via the Springwater pipeline, to areas where pressure issues have been noted.

RECOMMENDATIONS TO ADDRESS PRESSURES IN THE NORTHEAST PART OF THE SYSTEM

10. To address the system pressure issues in the northeast near Brownsville, the SNC study recommended extending the Wilson Line and looping the Ostrander Road Line. This recommendation involved extending the Wilson Line pipeline from Putnam Road to Whitaker Road. This option would tie the Lewis/Whitaker Road 4” pipeline to the Culloden Line 3” pipeline with a 2” pipeline, generally allowing gas from the Putnam Station supply to flow from

¹⁹ EB-2018-0336 – Application and Evidence, Exhibit 1, Tab 4, Schedule 2, pg22

²⁰ EB-2018-0336 – Application and Evidence, Exhibit 1, Tab 4, Schedule 2, pg19 “Springwater Road extension to John Wise Line”

west to east and into the Brownsville area. However, this alternative still did not significantly raise the pressures as noted by SNC’s modeling results.²¹

11. When NRG’s attempts to get additional gas supply from Union at the Putnam station failed, the most effective option was to implement the Putnam x Culloden pipeline to run a new 4” pipeline from Putnam Station to the Culloden Line pipeline which was not examined by SNC in their study.
12. The Putnam x Culloden pipeline achieved SNC’s objective of increasing system pressure in the northeast; however it also addressed the future bottleneck that the 2” pipeline in SNC’s recommendation would likely have created.
13. The Putnam x Culloden pipeline also looped the pipeline along Culloden Line, thereby improving operational flexibility and reliability. If a break or leak were to occur along this stretch of main, the flow of gas can be isolated locally at the leak and customers can be back-fed from the other direction, minimizing the number of customers impacted. This benefit would not have been achieved with SNC’s recommendation.
14. Accordingly, the solution implemented by NRG reflected more foresight and avoided a suboptimal investment for rate payers since by implementing the Putnam x Culloden pipeline NRG was able to address the existing issues at Brownsville, ensure access to gas for new connections in the northeast area and increase reliability in the area.

SUMMARY AND POST-IMPLEMENTATION INFORMATION

1. Outside of the well documented system integrity issues related to the pricing for the gas purchased from NRG Corp, in 2014 and 2015 NRG had experienced extremely low pressures in periods of peak demands in both the northeast and the southwest of the distribution system.
2. After the historic low pressures experienced in these areas in November 2014, NRG worked to immediately obtain additional gas supply from Union in the north to address these issues and to mitigate the risks of a similar or worse issue to its customers for current and future fall/winter seasons.²² In addition to the new supplies additional pipeline reinforcement was also required to be able to transport the increased supplies throughout the system to address the low pressure problems.
3. The system pressure issues that NRG experienced in the northeast and southwest are substantiated by the modeling results of the SNC study which contemplated options to address these issues in the absence of an additional gas supply from Union.
4. The solution to these system integrity issues that NRG implemented in the Four System Integrity Projects were directly related and a result of the additional gas supply—and only new gas supply, that Union ultimately agreed to provide NRG—at the Bradley Station.
5. After ENGLP acquired NRG’s system assets in November, 2017, ENGLP conducted a review of the draft SNC system integrity study and concluded that, it did not sufficiently explore potential

²¹ EB-2018-0336 – Application and Evidence, Exhibit 1, Tab 4, Schedule 2, pg20 Section 6.1.3

²² EB-2018-0336 – Application and Evidence, Exhibit 1, Tab 4, Schedule 2, pg24, Section 9.1

solutions that would allow ENGLP to plan and effectively address the separate and distinct system integrity issues recently experienced in other areas of the system. In particular, ENGLP was aware that, as noted above, some circumstances had changed since the time the SNC study had been completed and as a result the study was not reflective of the state of the system at the time. In particular, the system integrity issues that ENGLP experienced since its acquisition of the assets were in different areas from what the SNC report showed. Further, in 2018, Lagasco, an independent local producer expressed interest in tying in incremental lake gas and delivering ENGLP this gas in the south of the system which provided ENGLP with additional supply and a way to potentially navigate reliance on NRG Corp. gas.

6. ENGLP's acquisition of the distribution system assets from NRG happened a number of years after the SNC study had been completed and a number of circumstances had since changed, including population growth, a decline in the NRG Corp well production, and changes to pressure and flow rates on the system with the implementation of the Four System Integrity Projects. Accordingly, ENGLP engaged Cornerstone Energy Services (Cornerstone) to complete a system integrity study reflective of the current (2018) state of the system in support of its Utility System Plan for ENGLP's application to set rates for 2020-2024 (EB-2018-0336). This study reviewed the system post the implementation of the Four System Integrity Projects by modeling to system conditions in January 2018. The results of the modeling completed by Cornerstone no longer showed the severe pressure issues in the northeast area near Brownsville and in the southwest near and in the Town of Aylmer where NRG had experienced low pressure issues prior to the implementation of the Four System Integrity Projects²³.
7. Based on ENGLP's recent operating experience, it believes that these projects were successful in alleviating the low system pressure issues in the Brownsville area and in the southwest near and in the Town of Aylmer²⁴. In recent peak demand events (January of 2018 and January 2019) ENGLP's experience is consistent with what was modeled by Cornerstone and the severe low pressure issues at those times were in the southern and southeastern area not in the areas the Four System Integrity Projects were undertaken.
8. In light of the foregoing, ENGLP believes that the evidence of NRG, ENGLP, and its consultants demonstrates that these Four System Integrity Projects were necessary and the costs were prudently incurred.

ALL OF WHICH IS RESPECTFULLY SUBMITTED

August 1, 2019

²³ EB-2018-0336 Application and Evidence, Exhibit 2, Tab 3, Schedule 2, pg20 and Appendix A

²⁴ EB-2018-0336, ENGLP IRR, 1-Staff-11(c), as amended May 6, 2019.

APPENDICES

APPENDIX A - MAY 31, 2016 LETTER FROM NRG TO THE BOARD

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Toronto
 Montréal
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 Vancouver
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May 31, 2016

Richard King
 Direct Dial: 416.862.6626
 rking@osler.com
 Our Matter Number: 1168788

SENT BY ELECTRONIC MAIL

BoardSec@ontarioenergyboard.ca

Ms. Kirsten Walli
 Board Secretary
 Ontario Energy Board
 27-2300 Yonge Street
 Toronto, ON M4P 1E4

Dear Ms. Walli:

**EB-2015-0308 – Natural Resource Gas Limited (“NRG”)
 Application to require Union Gas to Provide Additional Gas Distribution Service**

This letter is further to the Board’s letter of March 14, 2016 to Natural Resource Gas Limited (“NRG”) and Union Gas Limited (“Union”) in the above-noted matter.

In its letter, the Board advised that it was deferring its consideration of NRG’s application withdrawal request “until executed copies of the agreements referenced in the recent correspondence have been filed with the Board, along with any further elaboration that NRG then provides to explain how these agreements resolve the system integrity issues that prompted the application”.

Attached is a letter agreement dated April 7, 2016 between NRG and Union whereby NRG agreed to pay certain costs associated with the construction of a new station at Union’s Bradley Station, which would provide NRG with up to 3,700 m³/hour at 150 psi of natural gas service. We are advised that Union expects the new station and additional supply to be ready by November 1, 2016. In advance of that date, NRG and Union will enter into Union’s standard customer contracts for the additional distribution services.

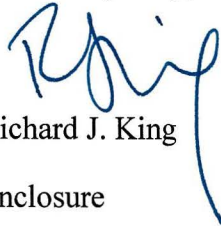
As noted in NRG’s original application (see Lippold affidavit, paragraph 9), NRG’s system pressure was at greatest risk in the northeast region of NRG’s service area. As a result of the Bradley Station’s distance from the northeast region, NRG is currently constructing two pipelines aimed at re-distributing gas within NRG’s service area: (a) the first pipeline will divert natural gas from the existing Putnam Station to the northeast region; and (b) the second pipeline will transport additional natural gas from the Bradley Station to a point located in the centre of NRG’s service area. The first project will be completed by mid-summer 2016 and will create conditions of higher pressure for this heating season. The second project will assist with reinforcing NRG’s system in the central region, as well as support the anticipated needs of new commercial customers in the Aylmer area.

OSLER

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We trust this is satisfactory.

Yours very truly,



Richard J. King

Enclosure

c: Laurie O'Meara, NRG
Brian Lippold, NRG
Khalil Viraney, OEB Case Manager (khalil.viraney@ontarioenergyboard.ca)
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Patrick Boyer (pboyer@uniongas.com)
Crawford Smith, Torys (csmith@torys.com)



April 7, 2016

Mr. Brian Lippold
General Manager
Natural Resource Gas Limited
39 Beech St.
Aylmer, ON
N5H 3J6

Dear Brian:

Following our meeting on February 25, 2016 in Chatham, Union Gas Limited ("Union") and Natural Resource Gas Limited agreed that Union would build and install a new natural gas distribution station. The station will provide NRG with 3,700 m³/hour at 150 psi of natural gas service at the current site of the existing Bradley Station.

Attached is a covenant letter for the project costs associated with the new distribution station. The pre-budget costs for the station is \$386,586 (excluding applicable taxes), and Union requires payments as indicated in the letter.

Upon receipt of the first payment, Union will order the long lead items associated with the new station. Until such time as the payment is received, Union will not place these orders. Any delay in receiving payment will delay the project completion date.

Union has executed this letter in advance in order to expedite the processing of this agreement. It is our expectation that Natural Resource Gas Limited will sign and return this letter on or before April 13, 2016.

Yours truly,

Patrick Boyer
Manager, Greenhouse, REM & Wholesale Markets



April 7, 2016

Natural Resource Gas Limited
39 Beech St.
Aylmer, ON
N5H 3J6

Attention: Mr. Brian Lippold

Dear Brian:

Re: New Union Gas Facilities at the Bradley Station (the "Facilities")

Union Gas Limited ("**Union**") and Natural Resource Gas Limited ("**Customer**") have held discussions related to the construction of a new distribution station near the existing Bradley Station, at 2789 Bradley Ave, London, Ontario. The new station will provide 3,700 m³/hour at a pressure of 150 psi. Union requires a written covenant from Customer to indemnify and save harmless Union for all of the Project Costs related to the development and construction for the Facilities.

In consideration of Union undertaking certain development and construction activities related to the Facilities, and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, Customer hereby irrevocably and unconditionally indemnifies and holds harmless Union, and all of Union's affiliates, employees, officers, and directors (collectively, the "**Indemnitees**") from all Project Costs which the Indemnitees or any of them may incur or suffer in respect of, or in connection with, or in any manner arising out of the development and construction of the Facilities. "**Project Costs**" means any and all costs, (including litigation costs, cancellation costs, carrying costs, and third party claims) expenses, losses, demands, damages, obligations, or other liabilities (whether of a capital or operating nature, and whether incurred or suffered before or after the date of this Letter) by any of the Indemnitees (including amounts paid to affiliates for services rendered in accordance with the Affiliate Relationships Code as established by the Ontario Energy Board), in connection with or in respect of development and construction of the Facilities (including without limitation the construction and placing into service of the Facilities, the obtaining of all governmental, regulatory and other third party approvals, and the obtaining of rights of way,) whether resulting from any of the Indemnitees' negligence or not, except for any costs that have arisen from the fraud or wilful misconduct of any of the Indemnitees.

Except to the extent of any Project Costs arising out of the Customer's breach of contract, negligence, fraud, or wilful misconduct, Customer's liability under this Letter will not exceed \$386,576 CAD (excluding taxes) according to the attached appendix.

Customer shall pay to Union for all Project Costs in two payments as follows:

- \$193,500, excluding taxes, due April 30, 2016
- \$193,076, excluding taxes, due June 15, 2016

Interest on any amounts due hereunder will accrue at an effective monthly interest rate of 1.5%, compounded monthly, for a nominal annual interest rate of 18%.

If Customer agrees to be bound by the foregoing, please execute and return a copy to my attention on or before April 13, 2016.



Appendix – New Union Gas Facilities at the Bradley Station – Project Costs

A pre-budget estimate has been completed for the solution selected to provide the 3,700 m³/hour at 150 psi from a new station installed by Union Gas.

The pre-budget estimate is \$386,576 (excluding HST). This estimate includes the following:

Station Material/Plant Items	\$ 88,987
Labour	\$189,633
CWT Heater	\$ 57,500
Land	\$ 43,160
De-Energizing station	<u>\$ 7,296</u>
	\$386,576



This Indemnity Letter supersedes any prior agreements, understandings, negotiations, or discussions whether oral or written, between the Parties with respect to the subject matter hereof.

Yours very truly,
Union Gas Limited

Jackie Gaille
Director, Residential, Commercial and Industrial Sales

NRG agrees to be bound by the foregoing:

Authorized Signatory

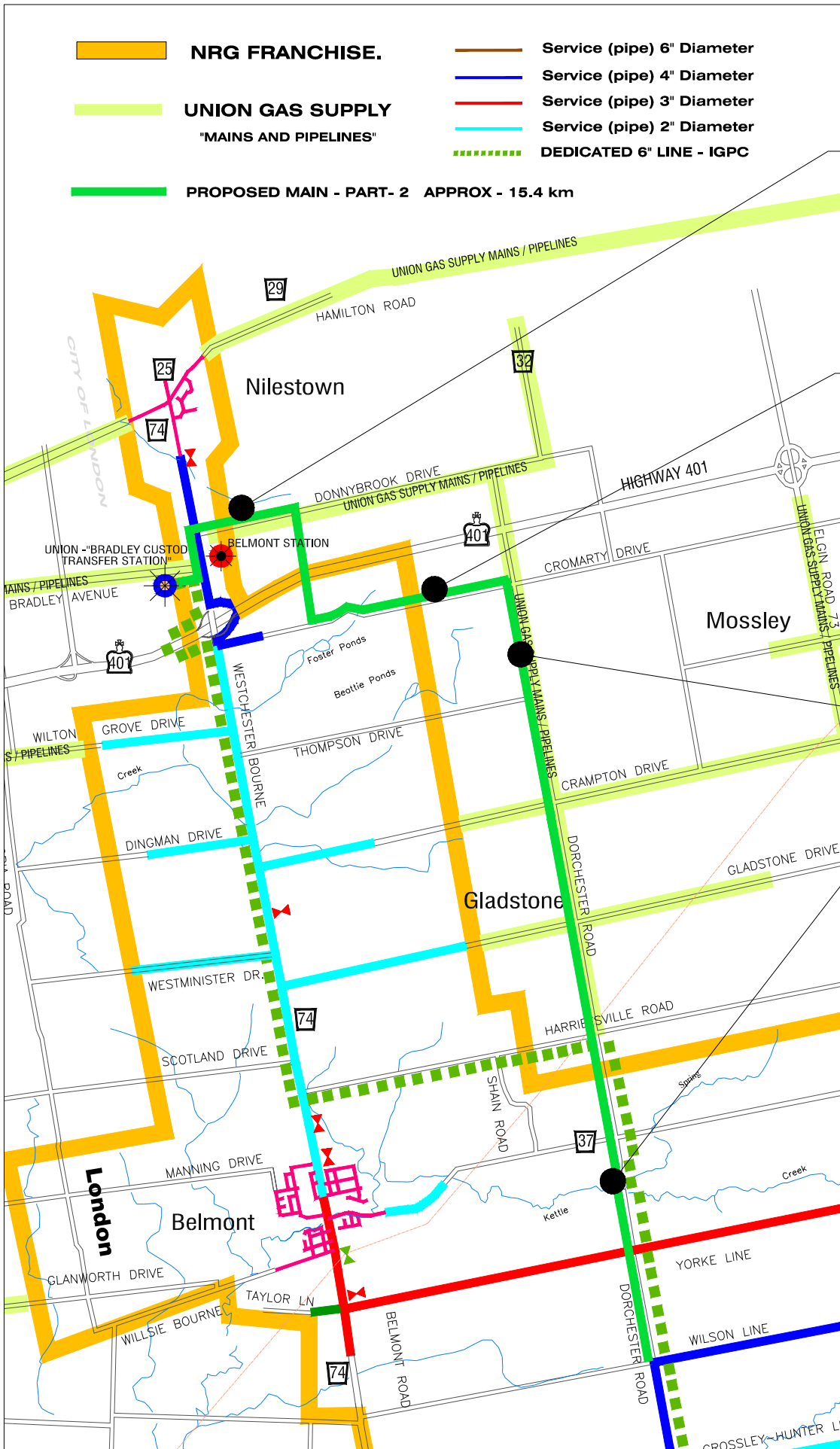
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APPENDIX B - BRADLEY STATION PROJECT AND THE BRADLEY X WILSON LINE PIPELINE

Bradley Station project (project cost of \$460,000 and 2020 rate base amount of \$402,639) and the Bradley x Wilson Line Pipeline (project cost of \$850,000 and 2020 rate base amount of \$748,383)

1. Taken together, the Union Gas Bradley Station Project, and Bradley Station to the Wilson Line project are shown in the figure below in dark green, running due west from the Bradley Station and then south on Dorchester Road in Figure B-1. The purpose of these project was to secure a new gas supply to Union and bring the gas into the system to address areas where low pressures were being experienced.
2. The project involved the installation of a new regulating and metering station north of Highway 401 at Bradley Avenue and a 4" from there to Dorchester Road and then south along Dorchester Road to Wilson Line. This new 4" mainline tied to existing mains running east/west along Wilson Line and north/south along Dorchester Road.
3. The new 4" pipeline, approximately 15.4 km in length, was designed to operate at a higher MAOP as in paragraph 3 above, with the pressure regulated down to 80 psi at the southern end of the section, making this new volume of gas available at a higher pressure much further south in the system than other supply points. To make the electricity distribution analogy, the line notionally operates as an express point to point feeder.

**Figure B-1 (see next page)
Northwest area of NRG's System, indicating Bradley and Belmont stations and
the Bradley x Wilson Line pipeline.**



PROPOSED 4" MAIN LINE TO BE INSTALLED FROM NRG/UNION GAS COMPOUND ON THE SW CORNER OF BRADLEY AVE. AND WESTCHESTER BOURNE.

THE PROPOSAL MAIN WILL GO ON WEST SIDE OF WESTCHESTER BOURNE NORTH TO DONNYBROOK DRIVE THEN EAST ON NORTH SIDE OF DONNYBROOK DRIVE

THEN WILL GO CROSS COUNTRY SOUTH TO CROMARTY DRIVE EAST NO LESS THEN 3m OFF THE EDGE OF THE ROAD

PROPOSED 4" MAIN LINE TO CONTINUE EAST ON CROMARTY DR. ON THE NORTH SIDE OF THE ROAD. NO LESS THEN 3m OFF THE EDGE OF THE ROAD. CONTINUE ALL THE WAY TO DORCHESTER ROAD.

PROPOSED 4" MAIN LINE TO CONTINUE SOUTH ON DORCHESTER ROAD ALL THE WAY TO AVON DRIVE ON THE WEST SIDE OF THE ROAD NO LESS 3.0 OFF THE EDGE OF THE ROAD

PROPOSED 4" MAIN LINE TO CONTINUE SOUTH ON DORCHESTER ROAD ALL THE WAY TO WILSON LINE ON THE WEST SIDE OFF THE ROAD 1m OFF THE PROPERTY LINE

No.	REVISIONS	DATE	BY



Natural Resource Gas Limited

DESIGNED BY:	CHECKED BY:
DRAWN BY:	APPROVED BY:
PROJECT NAME:	SW OXFORD 4" SUPPLY

PIPELINE PROJECT
PHASE 2

PROPOSED START DATE:	17/FEBRUARY/ 2016
NODE No.	XXX
DRAWING No.	1 of 1

APPENDIX C - PUTNAM X CULLODEN PIPELINE

Putnam x Culloden Pipeline (project cost of \$570,000 and 2020 rate base amount of \$498,922)

1. The project involved approximately 13.5 km of new pipeline, 4" along Cromarty Road and Salford Road east from Lewis Road to Culloden Line, and 3" along Culloden Line south to Ebenezer Road as illustrated in Figure C-1 below.

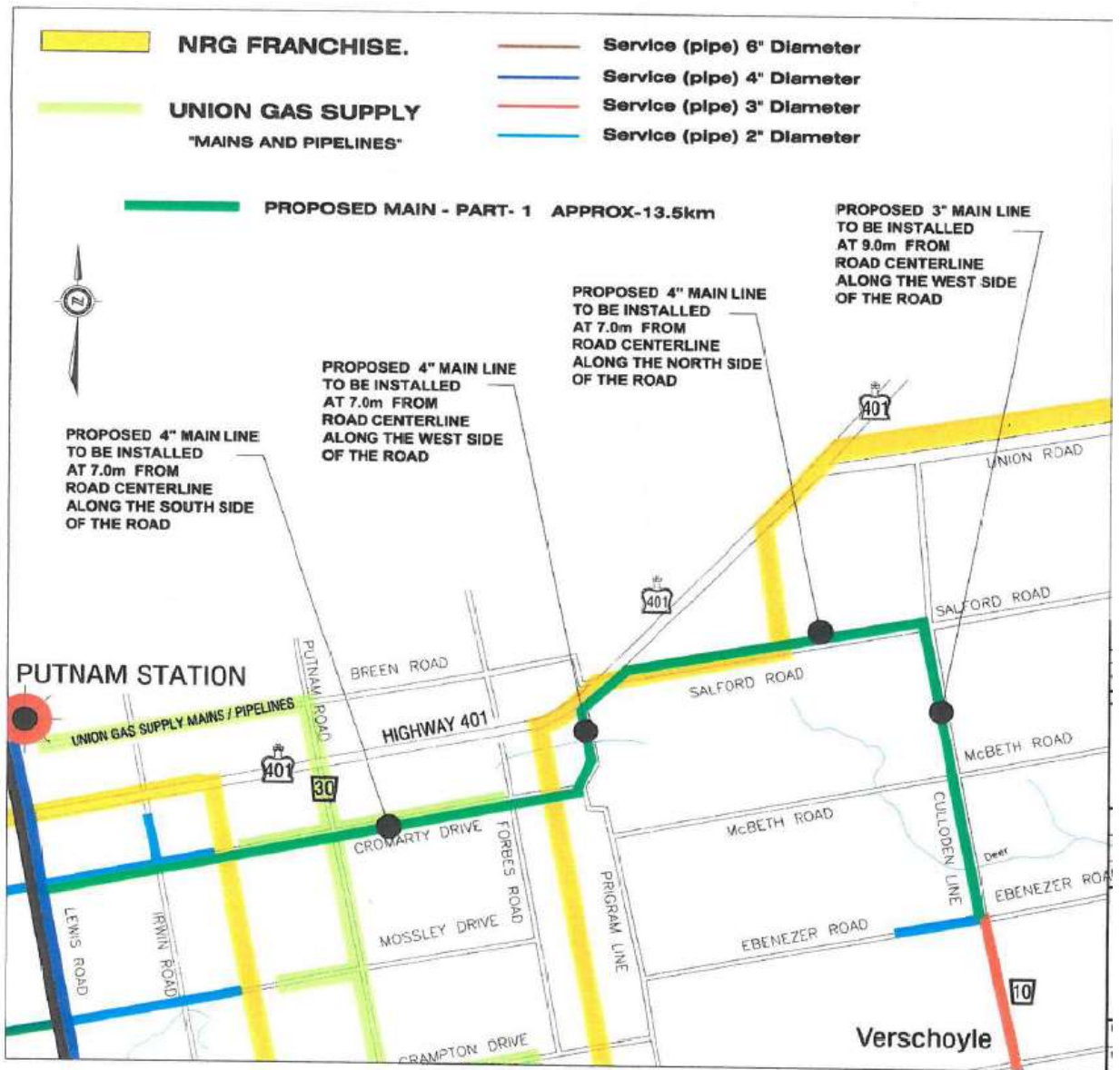


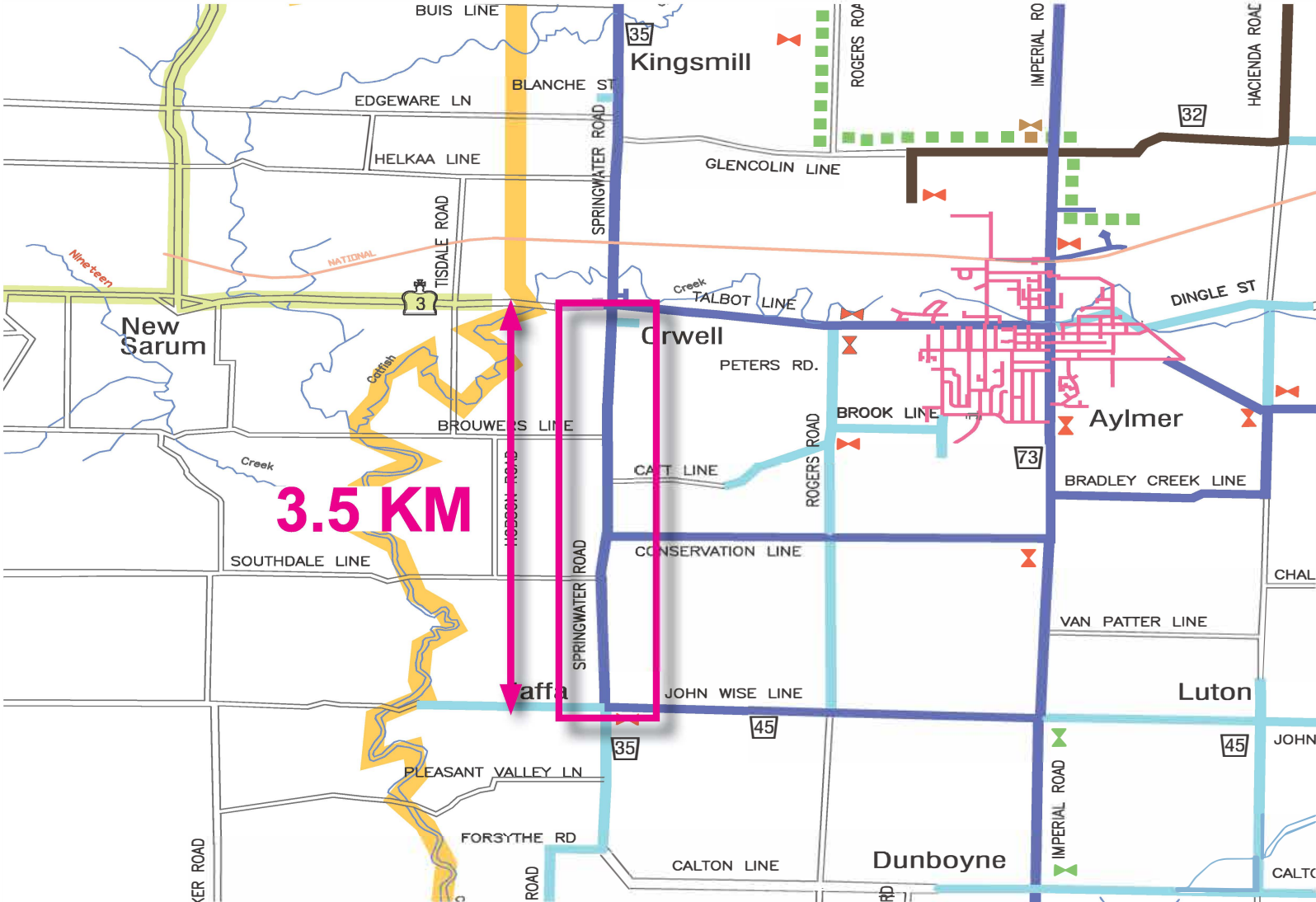
Figure C-1
Northeast area of NRG's system, with the Putnam x Culloden Line shown

APPENDIX D - SPRINGWATER PIPELINE

Springwater Pipeline (project cost of \$292,000 and 2020 rate base amount of \$265,015)

1. Extended the 4” pipeline along Springwater Road approximately 3.5 km from south of Orwell to the John Wise Line as illustrated in Figure D-1 below:

Figure D-1 (see next page)
Springwater Road Pipeline in the Southwest of NRG’s system



APPENDIX E - THE FOUR SYSTEM INTEGRITY PROJECTS

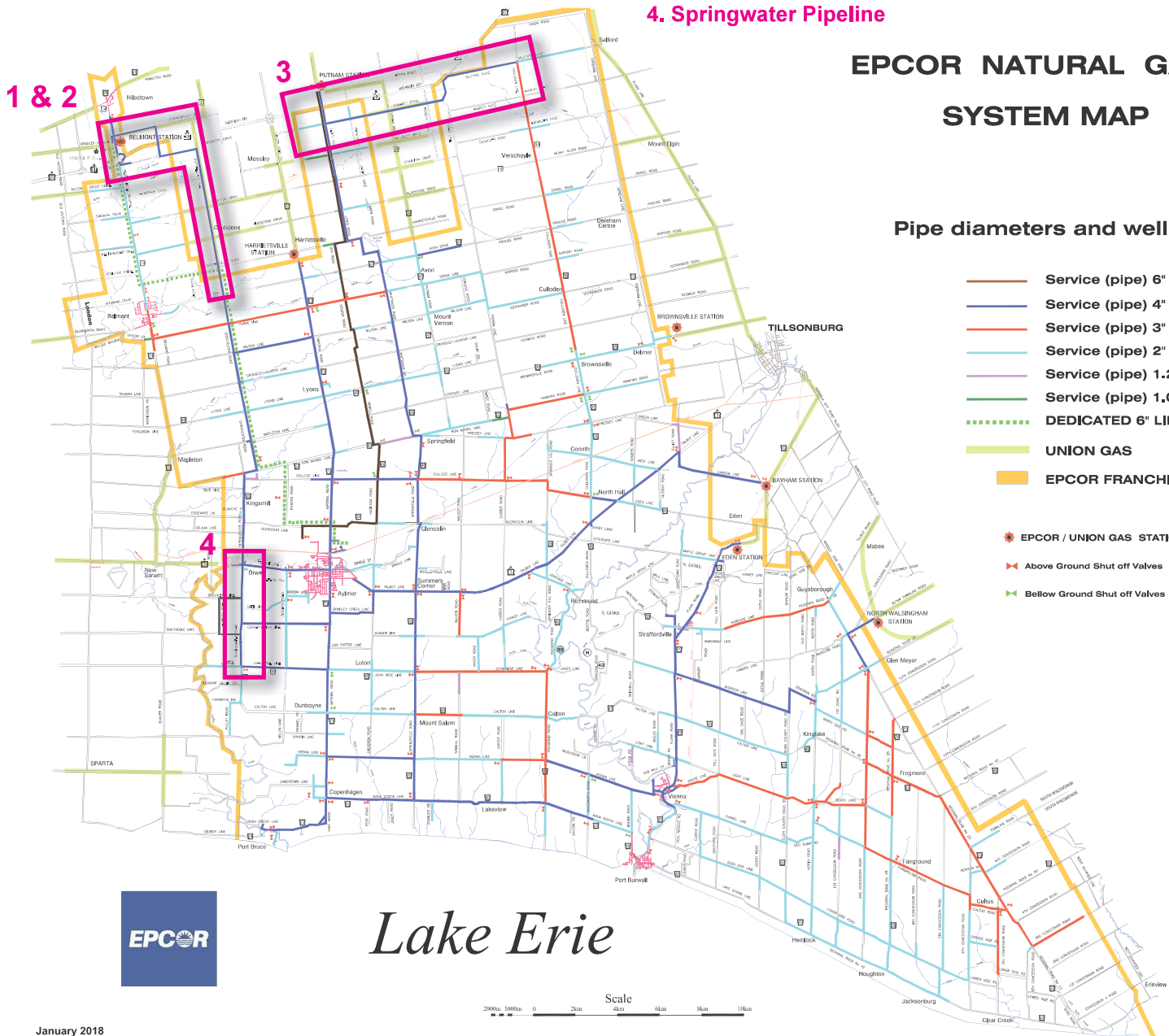
- The Four System Integrity Projects:**
1. Bradley Station Project
 2. Bradley x Wilson Line Pipeline
 3. Putnam x Culloden Pipeline
 4. Springwater Pipeline

**EPCOR NATURAL GAS
SYSTEM MAP**

Pipe diameters and wells locations

- Service (pipe) 6" Diameter
- Service (pipe) 4" Diameter
- Service (pipe) 3" Diameter
- Service (pipe) 2" Diameter
- Service (pipe) 1.25" Diameter
- Service (pipe) 1.00" Diameter
- - - - DEDICATED 6" LINE - IGPC
- UNION GAS
- EPCOR FRANCHISE.

- EPCOR / UNION GAS STATIONS
- ▶ Above Ground Shut off Valves
- ▶ Below Ground Shut off Valves



Lake Erie

