

January 25, 2018

BY COURIER & RESS

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

Dear Ms. Walli:

RE: EB-2018-0013 – Union Gas Limited (“Union”) - Kingsville Transmission Reinforcement Project

Enclosed please find two copies of Union’s Application and pre-filed evidence in relation to the above-noted project.

The Application and pre-filed evidence have been filed through the Ontario Energy Board’s (“the Board”) RESS and will be available on Union’s website at: www.uniongas.com.

The Kingsville Transmission Reinforcement Project (“the Project”) involves the construction of approximately 19 km of NPS 20 pipeline extending from an interconnect at the existing NPS 20 Panhandle Line in the Town of Lakeshore to a new station in the Town of Kingsville.

As proposed, the Project is designed to meet increasing natural gas demand growth in the Kingsville-Leamington market area as well as increasing demand on the overall Panhandle Pipeline System (“Panhandle System”). The Panhandle System represents the primary transmission pipeline asset to transport natural gas from Union’s Dawn Compressor Station and the Ojibway Valve Site in Windsor to distribution systems serving residential, commercial and industrial in-franchise markets in Chatham-Kent, Windsor, Lakeshore, Leamington, Kingsville, Essex, Amherstburg, LaSalle, and Tecumseh (“the Panhandle System Market”).

The Project will help ensure the continued reliable and secure delivery of natural gas as well as serve increasing demand throughout the Panhandle System Market. The total estimated cost to construct the Project is \$105.7 million with an in-service date of November 1, 2019.

Union is requesting Section 90 leave to construct approval for the new NPS 20 pipeline as well as Section 36 approval related to the recovery of the net revenue requirement for the period 2019 through 2028 of all facilities associated with the development of the Project from ratepayers in accordance with the Board’s Incremental Capital Module (“ICM”) Mechanism. The ICM is fully described in Union and Enbridge Gas Distribution’s Rate Setting Mechanism (EB-2017-0307)

that was filed with the Board on November 23, 2017. Union is also requesting Section 36 approval for an accounting order to establish the Kingsville Transmission Reinforcement Project Costs Deferral Account.

Please note, the Environmental Report prepared for the Project is not included in this electronic filing. Rather, hard copies of the Environmental Report will be sent by courier to the Board. The Environmental Report will be separately filed on the RESS and will also be available on Union's website.

Should you have any questions on the above or would like to discuss in more detail, please contact me at 519-436-5473.

Yours truly,

[original signed by]

Karen Hockin
Manager, Regulatory Initiatives

Encl.

cc: EB-2017-0087 (Union's 2018 Rates) Intervenors
Charles Keizer, Torys

KINGSVILLE TRANSMISSION REINFORCEMENT PROJECT

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ONTARIO ENERGY BOARD

IN THE MATTER OF The Ontario Energy Board Act, 1998, S.O. 1998, c.15, Schedule B, and in particular, S.90 (1) thereof;

AND IN THE MATTER OF The Ontario Energy Board Act, 1998, S.O. 1998, c.15, Schedule B, and in particular, S. 36 thereof;

AND IN THE MATTER OF an Application by Union Gas Limited for an Order or Orders granting leave to construct natural gas pipelines and ancillary facilities in the Town of Lakeshore and the Town of Kingsville in the County of Essex;

AND IN THE MATTER OF an Application by Union Gas Limited for an Order or Orders for approval of recovery of the cost consequences of all facilities associated with the development of the proposed Kingsville Transmission Reinforcement Pipeline Project.

UNION GAS LIMITED

1. Union Gas Limited (the “Applicant” or “Union”) hereby applies to the Ontario Energy Board (the “Board”), pursuant to Section 90 (1) of the Act, for an Order or Orders granting leave to construct approximately 19 kilometres of NPS 20 pipeline from an interconnect at Union’s existing Panhandle NPS 20 pipeline in the Town of Lakeshore to a new station in the Town of Kingsville located in the County of Essex (“the Proposed Pipeline” or “the Project”).
2. The Applicant also hereby applies to the Board, pursuant to Section 36 of the Act, for an Order or Orders granting:
 - a) approval of recovery of the cost consequences of the net revenue requirement for the period 2019 through 2028 of all facilities associated with the development of the Project from ratepayers in accordance with the Board’s Incremental Capital Module mechanism as

described in Union and Enbridge Gas Distribution's Rate Setting Mechanism (EB-2017-0307)
; and

- b) approval of an accounting order to establish the Kingsville Transmission Reinforcement Project Costs Deferral Account.
3. A map showing the general location of the Proposed Pipeline, and associated facilities and the municipalities, and highways through, under, over, upon or across which the pipeline will pass is presented at Schedule A.
4. The parties affected by this Application are the owners of lands, government agencies and municipalities over which the pipeline will be constructed, and Union's distribution customers with respect to quality of service and security of supply. The persons affected by this Application are the customers resident or located in the Municipalities, the First Nation Reserves and Métis organizations served by Union, together with those to whom Union sells gas, or on whose behalf Union distributes, transmits or stores gas. It is impractical to set out in this Application the names and addresses of such persons because they are too numerous.
5. The Applicant now therefore applies to the Board for an Order or Orders for approval of recovery of the cost consequences and granting leave to construct the Proposed Pipeline as described above.
6. The address for service for Union is:
- Union Gas Limited
P.O. Box 2001
50 Keil Drive North
Chatham, Ontario N7M 5M1

Attention: Karen Hockin
Manager, Regulatory Initiatives

Telephone: 519-436-5473
Fax: 519-436-4641
Email: khockin@uniongas.com
-and-

Torys LLP
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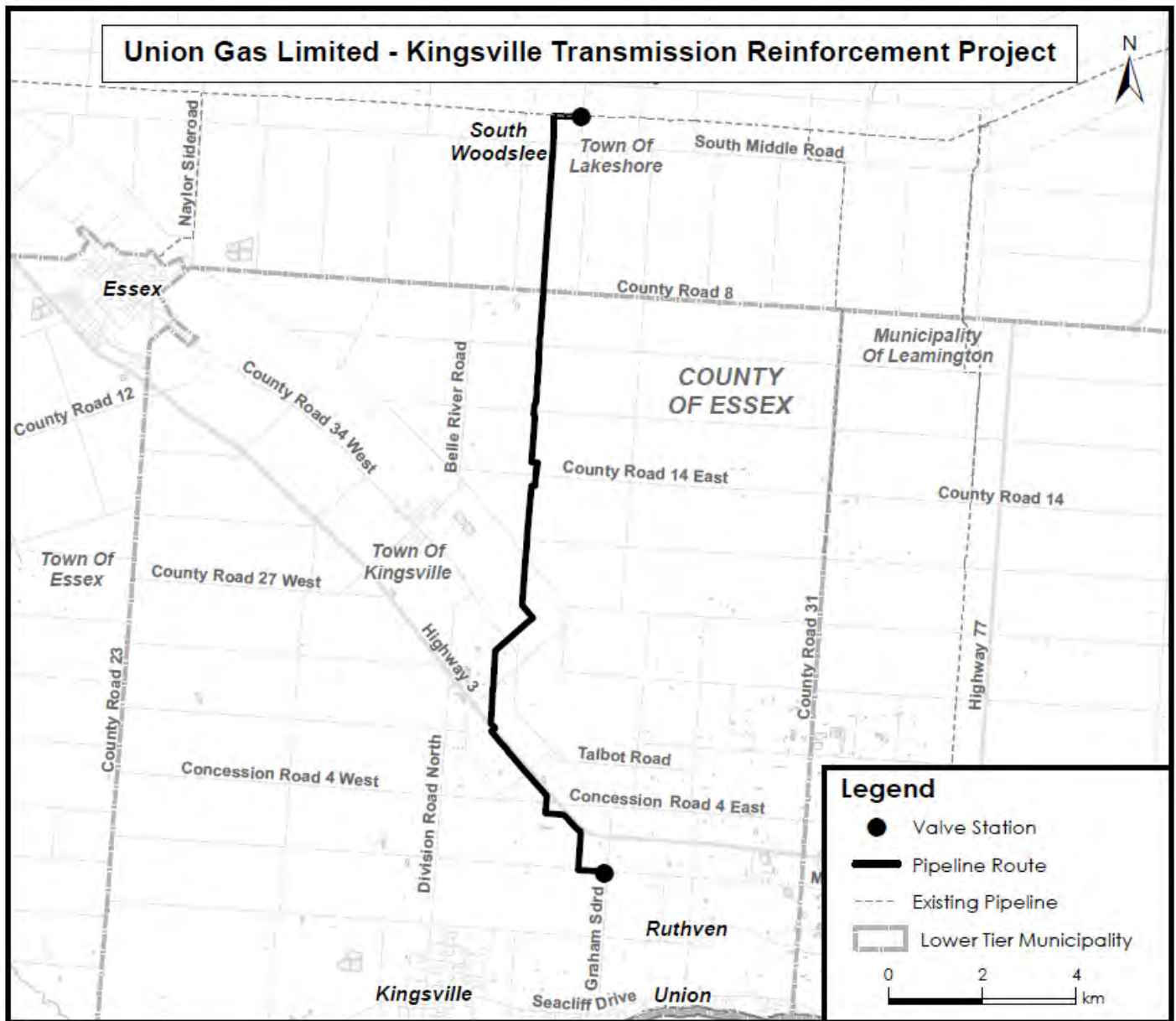
Attention: Charles Keizer
Telephone: 416-865-7512
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Email: ckeizer@torys.com

Dated: January 25, 2018

UNION GAS LIMITED

[original signed by]

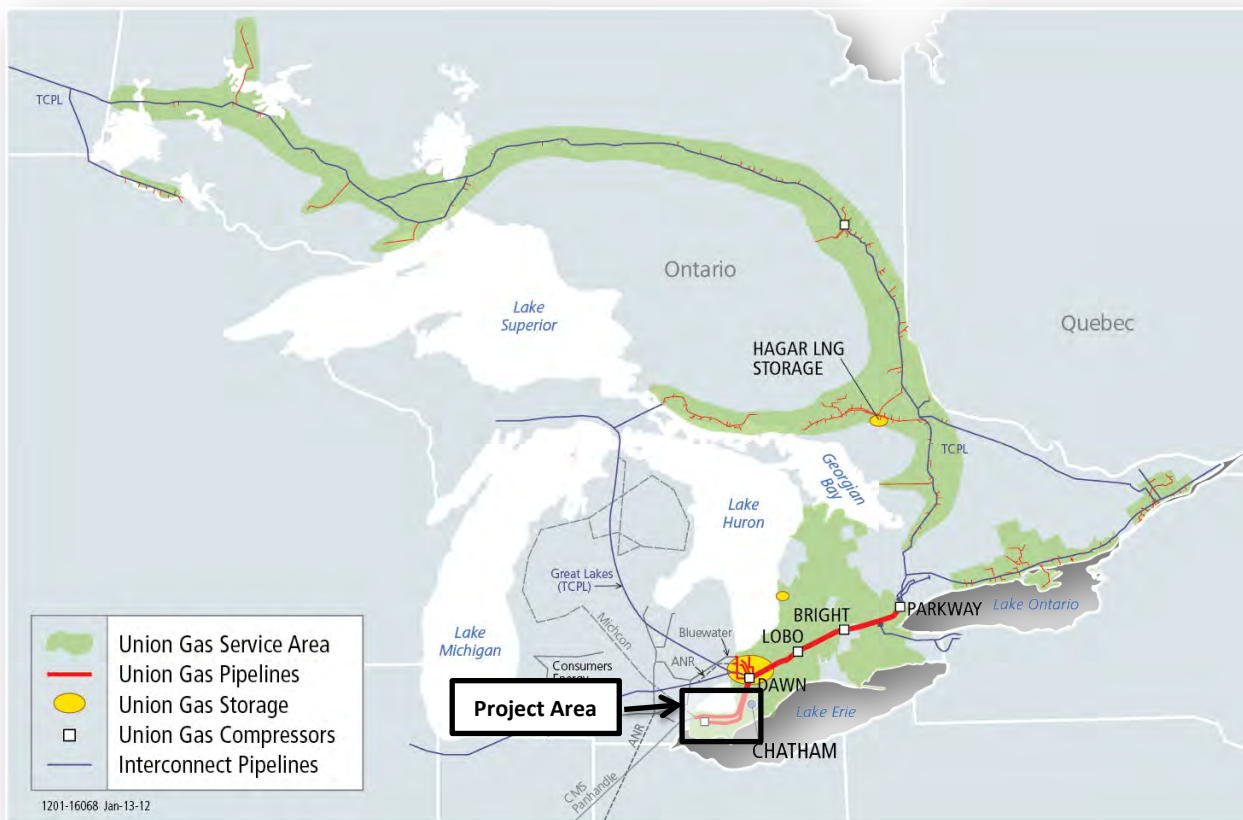
Karen Hockin, Manager, Regulatory Initiatives



SUMMARY OF APPLICATION

In response to increasing natural gas demand growth in the Kingsville-Leamington market area as well as increasing demand on the overall Panhandle Pipeline System (“Panhandle System”), Union is proposing to construct approximately 19 km of NPS 20 pipeline from an interconnect at the existing NPS 20 Panhandle Line in the Town of Lakeshore to a new station in the Town of Kingsville – the Kingsville Transmission Reinforcement Project (“the Project”). The proposed in-service for the Project is November 1, 2019. Figure 3-1 illustrates the Project area.

Figure 3-1



1 The Panhandle System represents the primary transmission pipeline asset to transport natural gas
2 from Union's Dawn Compressor Station ("Dawn") and the Ojibway Valve Site ("Ojibway") in
3 Windsor to distribution systems serving residential, commercial and industrial in-franchise
4 markets in the municipalities of Chatham-Kent, Windsor, Lakeshore, Leamington, Kingsville,
5 Essex, Amherstburg, LaSalle, and Tecumseh ("Panhandle System Market" or "the Market").
6

7 Prior to November, 2017, the Panhandle System was comprised of two pipelines, an NPS 16 and
8 NPS 20 pipeline. These pipelines moved natural gas to distribution systems which supplied
9 natural gas to in-franchise customers. For decades Union served the Panhandle System Market
10 with these two pipelines with limited pipeline reinforcement. However, in response to significant
11 growth in the Panhandle System Market, particularly in the greenhouse sector, Union recently
12 completed a reinforcement of the Panhandle System (EB-2016-0186). This reinforcement
13 involved the construction of approximately 40 kilometres of NPS 36 pipeline from Dawn in the
14 Township of Dawn-Euphemia to the Dover Transmission Station ("Dover Transmission") in the
15 Municipality of Chatham-Kent. To complete the installation of the new NPS 36 pipeline, the
16 existing section of NPS 16 pipeline was removed and replaced with NPS 36 pipeline primarily in
17 the same easement. The EB-2016-0186 reinforcement was placed in service in November, 2017.
18 For a more detailed illustration of the Panhandle System Market as well as the Kingsville-
19 Leamington market area please see Exhibit A, Tab 4, Figure 4-1.
20

21 As proposed, the Project is designed to relieve the system constraints resulting from the
22 accelerated natural gas demand in the Kingsville-Leamington market area and meet the

1 increasing demand for firm service in the Panhandle System Market. Union continues to receive
2 requests for firm natural gas service from general service customers, consisting of residential,
3 commercial and small industrial customers, and contract rate customers across the Panhandle
4 System Market, including greenhouse operators located in the Kingsville-Leamington and
5 Chatham-Kent market areas.

6
7 As detailed at Exhibit A, Tab 6, Tab 7 and Tab 8, the Panhandle System is forecast to reach its
8 Design Day capacity earlier than forecast in EB-2016-0186. The increased forecast of demand
9 growth accelerates the timing of the Project from 2022 (estimated in EB-2016-0186) to 2020. In
10 addition to the increased demand, there is a constraint within the Leamington–Kingsville high
11 pressure distribution system (“distribution system”) preventing customers from attaching even
12 though Panhandle System capacity is available. Moving the Project’s in-service date from 2020
13 to 2019 will alleviate the distribution constraint and avoid the need to install significant
14 distribution system reinforcement in 2019.

15
16 The Project as proposed is designed to reliably serve these increased forecast demands for firm
17 service not only in the Kingsville-Leamington market area but across the Panhandle System
18 Market. This is very important for the continued economic well-being of the Market. The
19 additional capacity of 71 TJ/d resulting from the Project will help support the continued reliable
20 and secure delivery of natural gas to residential, commercial and industrial customer segments
21 within the Market.

1 The Project reinforces the high pressure Panhandle System from which not only customers
2 located in the Kingsville-Leamington market area can be served but future development in the
3 Panhandle System Market can be met. Without the availability of this incremental natural gas
4 capacity on the Panhandle System, there is a risk businesses will delay or cancel plans to expand,
5 or may establish their operations in different jurisdictions where reliable, affordable energy is
6 available. Further, without the availability of this incremental capacity, residential developments,
7 schools, hospitals as well as other small volume customers in the Panhandle System Market may
8 require an alternative (more expensive and less clean burning) energy source. In doing so, this
9 will put additional pressure on the finances and operating budgets of the residents and businesses
10 within the Market. If the Kingsville Transmission Reinforcement Project (the Project) is not
11 constructed, economic development in this region of Ontario may be significantly impacted. To
12 further illustrate this point, Letters of Support are included at Exhibit A, Tab 5, Schedule 2.

13
14 The economic benefits natural gas provides are also significant. Such benefits include, but are
15 not limited to:

- 16 • residential energy savings enabling more consumer spending at local businesses and
17 across the community (e.g. charitable organizations);
- 18 • energy savings supporting the ability of new businesses to be competitive;
- 19 • enhanced ability to attract new residents and new businesses to the community;
- 20 • enhanced ability for existing businesses to grow and expand;
- 21 • increased housing values and resulting property tax assessments; and

- 1 • municipal energy cost savings in municipal buildings such as arenas and community
2 centres.

3
4 This application by Union is brought in response to new forecast market demands in the
5 Kingsville-Leamington market area as well as the overall Panhandle System Market. The
6 Application consists of the following requests:

- 7 1) Section 90 (1) of the Ontario Energy Board Act (“the Act”) granting leave to
8 construct approximately 19 kilometres of NPS 20 pipeline from the existing NPS 20
9 Panhandle Line in the Town of Lakeshore to a new station in the Town of Kingsville
10 in the County of Essex; and
- 11 2) Section 36 of the Act granting approval of recovery of cost consequences of the net
12 revenue requirement for the period 2019 through 2028 of all facilities associated with
13 the development of the Project from ratepayers in accordance with the Board’s
14 Incremental Capital Module (“ICM”) Mechanism as described in Union and
15 Enbridge Gas Distribution’s (“Enbridge”) Rate Setting Mechanism (EB-2017-
16 0307) ¹; and
- 17 3) Section 36 of the Act granting approval of an accounting order to establish the
18 Kingsville Transmission Reinforcement Project Costs Deferral Account.

19 As detailed at Exhibit A, Tab 9, Schedule 1, the total capital cost of the Project is estimated to be
20 \$105.7 million, consisting of:

21

¹ EB-2017-0307 Union and Enbridge’s Rate Setting Mechanism filed November 23, 2017

1 1) Construction of the proposed pipeline at a cost of \$96.1 million; and

2 2) Station costs of \$9.6 million.

3
4 As identified in Union and Enbridge's Rate Setting Mechanism pre-filed evidence (EB-2017-
5 0307), during the deferred rebasing period, the amalgamated company ("Amalco") will apply for
6 rate adjustments using the Board's ICM to recover costs associated with qualifying incremental
7 capital investments beyond what is normally funded through Union's Board-approved rates.
8 Although these proceedings overlap, the evidence filed in this application (EB-2018-0013) is
9 premised upon the assumption that the Board approves Union and Enbridge's Rate Setting
10 Mechanism application that allows the ICM funding module as set out in the Rate Setting
11 Mechanism application. The Project meets the need, materiality and prudence eligibility criteria
12 for ICM treatment.

13
14 As part of EB-2018-0013, Union is requesting pre-approval of the cost consequences of the net
15 revenue requirement of the Project in rates for the period of 2019 through 2028. Union is
16 requesting approval of the Project through ICM, subject to finalization of the 2019 ICM
17 threshold calculation in the 2019 Rates application. The specifics along with the eligibility
18 criteria for the ICM are detailed at Exhibit A, Tab 10.

19
20 The annual revenue requirement associated with the Project is approximately \$0.3 million in
21 2019 and \$8.3 million in 2028. The revenue requirements represent the costs associated with the

1 Project facilities deemed to be in service in each year of the deferred rebasing period from 2019
2 to 2028.

3
4 The net revenue requirement associated with the Project is approximately \$0.2 million in 2019
5 and \$5.0 million in 2028, with the largest net revenue requirement of \$7.2 million in 2021. The
6 net revenue requirement represents the revenue deficiency of the Project and is calculated as the
7 total annual Project revenue requirement less the incremental Project revenue. Union has
8 provided the bill impacts of the Project based on the largest net revenue requirement of \$7.2
9 million in 2021. To illustrate the change to the bill impacts over the deferred rebasing period,
10 Union has also provided the bill impacts of the Project for the final year of the deferred rebasing
11 period, based on a net revenue requirement of \$5.0 million in 2028.

12
13 In comparison to Board-approved rates per EB-2017-0087 (Union's 2018 Rates), the annual bill
14 impacts for the average Rate M1 residential customer in Union South consuming 2,200 m³ per
15 year is an increase of \$2.28 in 2021. By the final year of the deferred rebasing period, the Rate
16 M1 bill impact decreases by \$1.01, for a total bill increase of \$1.27 in 2028.

17
18 For the average Rate 01 residential customer in Union North consuming 2,200 m³ per year, the
19 annual bill impact is a decrease of \$0.92 in 2021. By the final year of the deferred rebasing
20 period, the Rate 01 bill impact increases by \$0.61, for a total bill decrease of \$0.31 in 2028.

1 The estimated delivery bill impacts for Union South in-franchise rate classes in years 2021 and
2 2028 are provided in Table 3-1 below.

<p style="text-align: center;">Table 3-1 <u>Union South In-franchise Delivery Bill Impacts</u></p>				
Line No.	Rate Class	Year 2021 (a)	Change (b) = (c - a)	Year 2028 (c)
1	Rate M1	0-1%	(0%)	0-1%
2	Rate M2	1-2%	(1%)	0-1%
3	Rate M4	4-5%	1-2%	5-7%
4	Rate M5	(0-1%)	0%	(0-1%)
5	Rate M7	6-8%	3%	9-11%
6	Rate M9	4-5%	(2%)	2-3%
7	Rate M10	9-10%	(5%)	4-5%
8	Rate T1	2-4%	(1-2%)	1-2%
9	Rate T2	4-5%	(2%)	2-3%
10	Rate T3	5-6%	(3%)	2-3%

3

4 The Discounted Cash Flow (“DCF”) of the Project has been assessed using methodologies
5 consistent with E.B.O. 134 – Filing Guidelines on the Economic Tests For Transmission Pipeline
6 Applications (“EBO 134”). Stage 1 economics were completed for the Project and results of the
7 Stage 1 DCF analysis are shown at Exhibit A, Tab 9, Schedule 4. The results indicate a
8 cumulative NPV of (\$59.2) million and a PI of 0.44 over the DCF term. Consistent with the
9 requirements of E.B.O. 134, since the Project’s NPV is less than \$0 and/or the PI is less than 1.0,
10 a Stage 2 benefit/cost analysis was undertaken in order to quantify benefits and costs accruing to
11 Union’s customers as a result of the Project. The NPV of quantified benefits to customers
12 resulting from the Stage 2 analysis is added to the Project NPV from Stage 1 and then discounted
13 at a social discount rate in order to calculate the direct net benefit of the Project to Union’s
14 customers. A Stage 3 analysis considers other quantifiable benefits and costs related to the

1 construction of the proposed facilities that are not included in the Stage 2 analysis, and other
2 non-quantifiable public interest considerations. A summary of the findings from the Stage 1-3
3 analysis that shows the Project is in the Public Interest is provided in Exhibit A, Tab 9.

4
5 As detailed in Exhibit A, Tab 6 and as noted above, the Panhandle System is currently forecast to
6 reach its Design Day capacity earlier than that forecast in EB-2016-0186. This increased
7 forecasted demand growth accelerates the timing of additional required reinforcement from 2022
8 to 2020. In addition to the increased demand, there is a constraint within the distribution system
9 located in the Kingsville-Leamington market area thus preventing customers from attaining
10 natural gas service even though Panhandle System capacity is available. Constructing the Project
11 into the Kingsville-Leamington market area will allow natural gas to move more efficiently to
12 the distribution system therefore alleviating the system constraint and allowing for further
13 growth over the entire transmission system. Please see Exhibit A, Tab 8 for more detail. An
14 additional lateral into the Town of Kingsville will also have the added benefit of avoiding
15 significant distribution reinforcement.

16
17 In response to the system constraints and increased demand growth, Union reviewed and
18 compared a number of Project alternatives. These alternatives are discussed in Exhibit A, Tab 8.
19 These alternatives included the construction of incremental pipeline (distribution and
20 transmission) facilities, Liquefied Natural Gas (“LNG”), Compressed Natural Gas (“CNG”) and
21 commercial alternatives including contracting for incremental deliveries at Ojibway through
22 Panhandle Eastern Pipeline Company L.P. (“Panhandle Eastern”) firm transportation service

1 contracts. The preferred alternative (the Project) involves the construction of approximately 19
2 km of NPS 20 pipeline from the existing NPS 20 Panhandle Line in the Town of Lakeshore to a
3 new station in the Town of Kingsville. As detailed in Exhibit A, Tab 8 the preferred alternative
4 provides a number of benefits including:

- 5 1. Provides capacity to meet the growing near term firm demands along the Panhandle
6 System for the next five years;
- 7 2. Positions the Panhandle System and the distribution system to meet the long term
8 growth in the most efficient manner;
- 9 3. Offsets costly distribution reinforcement projects that will no longer be required once
10 the Project is built; and
- 11 4. Provides the necessary incremental capacity without the increased reliance on third
12 party gas supply transportation services, which contain price, term and capacity risk
13 at a cost premium.

14
15 Union is proposing to construct the Project in 2019 following its standard construction practices
16 which have been in place for many years. The design of the pipeline will meet or exceed all
17 CSA code requirements. Experienced contractors familiar with Union's design and construction
18 practices are available to construct the proposed facilities.

19
20 The permanent and temporary land rights necessary for the construction of the Project will be
21 acquired from individual landowners. The majority of the proposed pipeline will be constructed
22 in agricultural land within new easement. Union will be required to obtain approximately 93

1 acres of new permanent easement and approximately 82 acres of Temporary Land Use (“TLU”)
2 area for construction and top soil storage purposes. Union has initiated meetings with the
3 landowners from whom either permanent easements or TLU rights are required and will continue
4 to meet with those landowners to acquire the necessary land rights. Union has secured options
5 for over 80% of the necessary land rights.

6
7 An Environmental Report (“ER”) has been prepared for the Project. The ER was prepared to
8 identify the preferred route of the proposed pipeline and identified related mitigation measures
9 for construction of the proposed pipeline. Union believes that by following its standard
10 construction practices and adhering to the recommendations and mitigation identified in the ER,
11 there will be no significant environmental impacts resulting from the construction of the
12 Proposed Project. The cumulative effects assessment completed as part of the ER indicates that
13 no significant cumulative effects are anticipated from the development of the Project.

14
15 To ensure area residents and other key stakeholders were made aware of the Project, Union
16 implemented a consultation outreach plan. As part of this plan, Union mailed affected
17 individuals a Project-specific information letter and held four separate Information Sessions
18 within the Project area. The primary purpose of these Information Sessions was to engage with
19 and solicit input from landowners, tenants and the general public with respect to the Project.
20 In addition to meeting with landowners, Union followed the new environmental guidelines in
21 relation to Indigenous Consultation. Union has worked with the Ministry of Energy to ensure
22 that the affected Indigenous communities are aware of the Project and that their concerns and

1 issues have been identified and addressed. Union also met with municipal officials and a number
2 of industry and agricultural associations. Union will continue its commitment to public
3 consultation throughout the completion of the Project.

4
5 Construction of the Project is scheduled to commence in the spring of 2019. The construction
6 schedule utilizes the favourable summer construction weather thereby minimizing the impact of
7 construction on agricultural lands and other features such as watercourses.

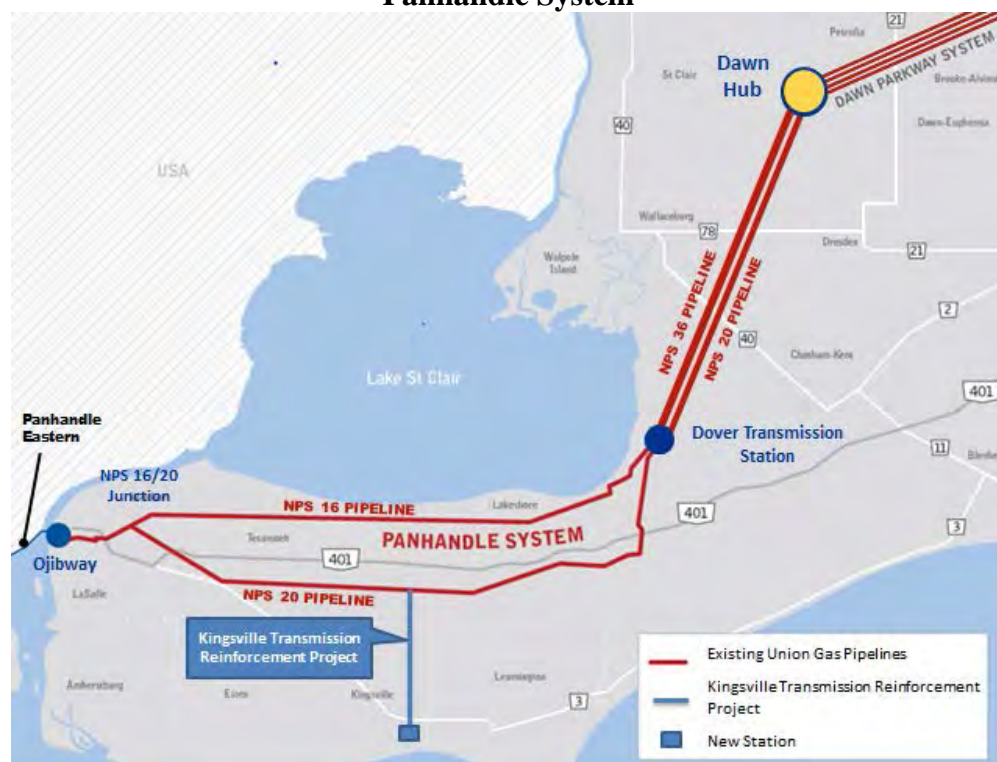
8
9 The proposed in-service date for the Project is November 1, 2019. Union is filing now to provide
10 sufficient time to allow for the ordering of long-lead construction materials and ensure the
11 required permits and necessary land rights are secured in advance of construction.

12
13 In summary, the Project is critical to meet the immediate needs of customers in Kingsville-
14 Leamington market area and to provide additional capacity on the Panhandle System for growth
15 in the remainder of the Panhandle System Market. This, combined with the fact natural gas
16 offers a competitive advantage for commercial and industrial customers, helps to ensure
17 economic growth not only in the Panhandle System Market but Ontario as a whole. As further
18 detailed at Exhibit A, Tab 5, if the Project is not constructed, economic development in this
19 region of Ontario may be significantly impacted.

PANHANDLE SYSTEM AND MARKET AREA OVERVIEW

The purpose of this section of evidence is to provide an overview of natural gas supply to the Panhandle System Market. The Panhandle System is the transmission system that supplies natural gas to Union's distribution systems which serve the in-franchise markets in the municipalities of Chatham-Kent, Windsor, Lakeshore, Leamington, Kingsville, Essex, Amherstburg, LaSalle, and Tecumseh. The Panhandle System also provides Rate C1 transportation services between Ojibway¹ and the Dawn Hub. Figure 4-1 illustrates the Panhandle System and the market areas it supplies.

**Figure 4-1
Panhandle System**



¹ Ojibway is known as the point of interconnection between the Panhandle System and the Panhandle Eastern System at the international border under the Detroit River.

The Panhandle System is critical to providing reliable and affordable natural gas to Union in-franchise residential, commercial, natural gas fired generation and industrial customers in the Panhandle System Market. A cost competitive energy supply is fundamental to economic well-being and growth in southwestern Ontario. As detailed in Exhibit A, Tab 6, the forecast rate of growth in the Market along the Panhandle System, including the Kingsville-Leamington market area has surpassed Union's expectation. This increased forecast demand and the resulting system constraint are driving the immediate need for the Project.

Panhandle System

As shown on Figure 4-1, Union's Panhandle System is a high pressure transmission system made up of the following pipelines; i) an NPS 20 pipeline extending from the Dawn Compressor Station ("Dawn Hub" or "Dawn") to where it connects with the NPS 16 pipeline in the City of Windsor ("NPS 16/20 Junction"); ii) an NPS 36 pipeline extending approximately 40 km from the Dawn Hub to the Dover Transmission Station ("Dover Transmission")²; and iii) an NPS 16 pipeline extending from Dover Transmission to Ojibway in the City of Windsor. The NPS 16 pipeline was completed in 1951 and the NPS 20 pipeline was completed in 1973. The NPS 36 pipeline was placed in-service in November 2017. The Panhandle System travels west from the Dawn Hub through the Township of Dawn-Euphemia, Township of St. Clair, Municipality of Chatham-Kent, Town of Lakeshore, Town of Tecumseh and the City of Windsor.

The NPS 16 pipeline extending from Dover Transmission to the City of Windsor connects to two NPS

² EB-2016-0186 Board Decision and Order dated February 23, 2017

12 pipelines at its western terminus that undercross the Detroit River and connect with Panhandle Eastern Pipeline Company L.P. (“Panhandle Eastern”), an Energy Transfer Equity L.P. company, at the International Border (“the Panhandle River Crossing”). This interconnection between Union and Panhandle Eastern was established in 1947 and is commercially known as “Ojibway”. A schematic of the Panhandle System, showing existing and proposed facilities, is shown at Exhibit A, Tab 7, Schedule 1.

The Panhandle System is the primary transmission pipeline asset that transports natural gas to Union’s distribution systems serving residential, commercial, natural gas fired power generation and industrial customers in the Panhandle System Market. The Panhandle System predominantly flows west from the Dawn Hub. Approximately 90% or 553 TJ/d of the demand on the Panhandle System is served from the Dawn Hub on Design Day.

The Panhandle System also flows from Ojibway east to the Market. Approximately 10% or 60 TJ/d of the Design Day demand on the Panhandle System is served through Union’s gas supply delivered at Ojibway (purchased by Union to serve system customers). Union relies on these firm deliveries in Design Day analysis of the Panhandle System which helps reduce the physical transportation needs from the Dawn Hub.

Ojibway provides some interconnectivity to the Dawn Hub, enables access to natural gas supplies shipped through Panhandle Eastern and, contributes to the security and diversity of Union’s natural gas supply portfolio and supply to the Dawn Hub. Ojibway is not a liquid trading point (it has limited

buyers and sellers), but is a trans-shipment point between two pipeline systems. Currently, two Rate C1 ex-franchise shippers have firm transportation contracts of a total of 58 TJ/d to transport natural gas from Ojibway to the Dawn Hub on a year round basis. However, Union cannot rely on these volumes being delivered to Ojibway when designing its system since Union does not control the utilization of the Rate C1 contracts.

The amount of natural gas Union can accept from Panhandle Eastern and transport from Ojibway toward Dawn is limited by the minimum daily Windsor area consumption and the capacity of the Sandwich Compressor Station located in the Town of Tecumseh. Currently, Union has a maximum capability to accept firm imports of 115 TJ/d at Ojibway on an annual basis. This is an operational constraint that occurs in the summer and is a limit because at an amount greater than 115 TJ/d there is not sufficient demand in the Windsor area to consume the imported gas and insufficient compression to move the surplus gas past Sandwich toward Dawn. The 115 TJ/d constraint becomes the annual maximum since firm annual import volumes greater than that would provide natural gas to the Windsor area that Union is not operationally able to accept in the summer. As stated in EB-2016-0186, this maximum capacity limit of 115 TJ/d limit is not artificial. Rather as noted in response to Undertaking JT1.5 and further reiterated in Union's Reply Argument, the amount of firm receipts is determined based on available market and facility/system capability.

"The limit is based on sound methodology that uses historical data over a significant period of time. The maximum firm import capacities are determined based on available Windsor market and facility/system capability. The available market at Ojibway is calculated based on an average of the lowest demands for 20

1 *days of each month. This average value is compared each month across a rolling 5-year timeframe to*
2 *determine a reasonably available market and to create a minimum demand profile.”³*

3
4 The Board accepted this limit in their Decision and Order:

5
6 *“In considering alternatives, Union must select one that will provide sufficient pressure on its NPS 20 on*
7 *the Panhandle System to serve this area. The OEB accepts Union’s evidence that the annual maximum*
8 *supply capacity at Ojibway is now 115 TJ/day given the design day forecast, forecast Windsor demand,*
9 *pressure requirements and other operational considerations of the Panhandle System.”⁴*

10
11 The depth and liquidity of the market at the Dawn Hub provides value to all Ontario customers by way
12 of competitive natural gas commodity prices and by attracting diverse natural gas supply to Ontario.

13 The Panhandle System Market benefits from having direct access to the Dawn Hub through the
14 Panhandle System.

15
16 The Dawn Hub is one of the largest and most important North American natural gas market hubs. It is
17 also the main source of supply for Union South in-franchise customers and Union’s Dawn Parkway
18 System. The Dawn Hub is connected to a combination of interconnecting pipelines and underground
19 natural gas storage. In Ontario, Union owns 157 Bcf of natural gas storage in 23 pools that are all
20 connected to the Dawn Hub. In addition, Enbridge operates 112 Bcf of natural gas storage (the

³ EB-2016-0186 Reply Argument (dated December 30, 2016), para. 73, p.26

⁴ EB-2016-0186 Decision and Order (dated February 23, 2017), p. 15

1 Tecumseh facilities) that is connected to the Dawn Hub. Dawn is also connected through various
2 upstream pipelines to approximately 675 Bcf of underground natural gas storage in Michigan and other
3 natural gas storage in the Great Lakes region.

4
5 A number of pipelines are connected to the Dawn Hub: Great Lakes Gas Transmission (“GLGT”) via
6 TransCanada Pipelines, Vector Pipeline, Bluewater Gas Storage, DTE (former Michigan
7 Consolidated), Panhandle Eastern via Union’s Panhandle System, the Enbridge (Tecumseh) system,
8 and ANR via the Niagara Gas Transmission (Niagara Link) and Enbridge (Tecumseh) systems. In
9 2018, the Rover Pipeline and Nexus Pipeline are expected to be completed and will indirectly connect
10 to Dawn from Michigan through the Vector Pipeline and DTE systems. In addition, a new service on
11 the TransCanada Mainline was created in 2017 to allow Western Canadian production access to the
12 Dawn market at steeply discounted rates.

13
14 Dawn is also connected to pipelines at the Ontario/New York border via TransCanada and the Dawn
15 Parkway System that include Tennessee Gas Pipeline, Dominion Transmission, National Fuel Gas
16 Supply Corporation and Empire State Pipeline.

17
18 The Dawn Hub is one of the most physically traded, liquid hubs in North America and is the most
19 physically traded natural gas hub in the Great Lakes region. The liquidity of the Dawn Hub is the result
20 of the combination of:

- 21 1. access to underground storage;
- 22 2. interconnections with upstream pipelines;

3. take away capacity to growth markets;
4. a large number of buyers and sellers of natural gas; and,
5. price transparency.

Summary

The Panhandle System is a critical natural gas pipeline system that supports Union's residential, commercial, natural gas fired generation and industrial customers west of the Dawn Hub. With continued increasing firm demand forecast in the Panhandle System Market, including the Kingsville-Leamington market area, the Project will increase long term capacity on the Panhandle System and support the economic well-being of the Market.

1 **NEED FOR FACILITIES – PANHANDLE SYSTEM DEMAND**
2

3 The purpose of this section of evidence is to highlight the forecast increased growth for natural
4 gas service in the Panhandle System Market and the need for incremental facilities beyond those
5 approved in EB-2016-0186¹.
6

7 **Increased Growth**

8 As noted throughout the EB-2016-0186 proceeding, there has been increasing demand for firm
9 service over the past five years from both existing and new customers served by the Panhandle
10 System. The facilities approved in EB-2016-0186 recognized this increasing demand and the
11 resulting need for additional natural gas infrastructure reinforcement for the Panhandle System
12 Market; however growth in this area is occurring at a rate higher than forecast in EB-2016-0186.
13 Prior to the November 1, 2017 in service date for the EB-2016-0186 facilities, Union had already
14 contracted for 95% of the year 1 forecasted volume that were expected to occur over a 12 month
15 period.
16

17 Until the EB-2016-0186 facilities were placed in-service, Union served the Panhandle System
18 Market for decades using the existing pipeline system with limited reinforcement of the NPS 16
19 and NPS 20 pipelines. However within the last five years, Union has twice reinforced high
20 pressure laterals connected to the NPS 20 Panhandle Line to support the rapidly growing

¹ Union's Panhandle System Reinforcement Project

greenhouse sector in the Leamington and Kingsville areas². More recently, EB-2016-0186 enabled the increased utilization of the Panhandle System to move gas from the Dawn Hub to the Panhandle System Market.

The facilities approved in EB-2016-0186 created 106 TJ/d of incremental capacity³ for the Panhandle System. This incremental capacity was projected to be fully utilized in five years (2017-2021). Due to incremental growth in the Market, this incremental capacity is now forecast to be fully utilized before the end of 2020. A comparison of the Panhandle Reinforcement Project forecast and the Kingsville Transmission Reinforcement Project demand forecasts is provided in Table 5-1.

Table 5-1
Demand Forecast Comparison
(TJ/day)

	2019	2020	2021	2022	2023	2024
Panhandle (EB-2016-0186)	85	96	106	113	120	127
Kingsville Transmission Reinforcement Project	98	112	133	144	154	165
Difference	13	16	27	31	34	38

As a result of the increased firm demand, there is a constraint within the Leamington-Kingsville high pressure distribution system (see Exhibit A, Tab 7). To serve this increased demand, Union would require additional distribution system reinforcement in 2019. Constructing the Project in 2019 will alleviate the distribution system constraint and eliminate the need for the new distribution system reinforcement in 2019 that would no longer be required and no longer be

² Leamington Expansion Phase I (EB-2012-0431) and Leamington Expansion Phase II (EB-2016-0013)

³ See Exhibit A, Tab 7, p. 9 for explanation of adjustment to capacity from 106 TJ/d as filed in EB-2016-0186 to 102 TJ/d incremental capacity.

1 beneficial to the distribution system with the construction of the Project in the following year.

2 Construction of the Project in 2019 is a more efficient use of resources.

3
4 Taking a longer term view to meet more than one year of growth through construction of the
5 Project will have the added benefit of providing more certainty for customers' planning
6 purposes. If Union were to propose to reinforce the distribution system year by year, for one year
7 of growth only, customers including contract customers would only be able to make a one-year
8 business plan due to the uncertainty of natural gas distribution service being available for
9 expansions to their businesses. This uncertainty would cause the customers to reconsider (defer
10 or possibly abandon) growth plans until such time as the Project is built. In doing so, customers
11 could look to locations outside the Panhandle System Market, both in the United States and
12 Canada, to locate or expand their operations.

13
14 Union has and continues to receive requests from general service customers, consisting of
15 residential, commercial and small industrial customers, and contract rate customers, with a large
16 number of requests from greenhouse customers located in the Kingsville-Leamington market
17 area. The Project as proposed is designed to reliably serve this increasing demand for firm
18 service not only in the Kingsville-Leamington market area but along the entire Panhandle
19 System. This is very important to the continued economic well-being of the Panhandle System
20 Market as the growth forecast for the Market is not only real but is continuing to grow at a rate
21 more rapid than projected in EB-2016-0186. The Project will help support the continued reliable
22 and secure delivery of natural gas to residential, commercial and industrial customer segments

1 within the Panhandle System Market. For example, one incremental project that will be able to
2 use this capacity is the proposed Chatham-Kent Rural Pipeline Expansion Project⁴ (“CK Rural”).
3 The CK Rural project is one of the applications Union submitted to the provincial government
4 seeking funding from the Natural Gas Grant Program. CK Rural is currently awaiting an
5 announcement from the Provincial Government whether the funding application was successful.
6 In addition to meeting the needs in the overall Panhandle System Market as noted above, Union
7 submits that the Project is fundamental to the economic well-being of Ontario as a whole. The
8 benefits of the Project include:

- 9 1. Competitive and affordable energy supply;
 - 10 2. Industry and business retention;
 - 11 3. Encourages economic growth; and
 - 12 4. Creates employment opportunities.
- 13

14 Economic impacts are further discussed in Exhibit A, Tab 6.

15

16 **Reverse Open Season**

17 In order to promote the most efficient means of meeting demand in the Panhandle System
18 Market, including minimizing the need for incremental facilities and thereby the overall costs to
19 ratepayers, Union conducted a reverse open season. The purpose of the reverse open season was
20 to proactively confirm with existing firm contract in-franchise rate customers in the Panhandle

⁴ The CK Rural Pipeline Expansion project will provide 28 TJ/day of capacity to the Chatham-Kent region with the installation of 500 metres of NPS 12 pipeline and approximately 13 km of NPS 8 pipeline. It creates sufficient natural gas capacity for up to 330 new acres of high technology greenhouse in Chatham-Kent.

1 System Market that they did not want to reduce their firm contract demand (“Firm CD”) or
2 convert their Firm CD to interruptible distribution service before the end of their primary
3 contract term.

4
5 On September 27, 2017 Union sent 114 Binding Reverse Open Season Bid Forms (see Exhibit
6 A, Tab 5, Schedule 1) to customers who have contract rate firm distribution service in the
7 Panhandle System Market. A further reminder was also sent to these customers on October 17,
8 2017. The reverse open season closed on October 18, 2017. A total of seven responses were
9 received, all indicating that they did not want to reduce their Firm CD or convert their Firm CD
10 to interruptible service. As indicated in the Bid Form, a non-response was considered to
11 represent no request for reduction to the Firm CD and no request for conversion of existing Firm
12 CD to interruptible. Based on the responses and non-responses, no firm capacity was turned
13 back or converted to interruptible service. Union has not received any further communications
14 from customers since the close of the reverse open season related to requests to reduce their
15 existing Firm CDs.

16 17 **Contracting and Customer Impact**

18 As the Project provides additional transportation capacity into the Market, it supports the entire
19 Panhandle System Market not just a defined customer segment. The forecast demands are for
20 both general service and contract rate customers, not all located in Kingsville-Leamington area,
21 though a significant amount has been identified for the rapidly growing greenhouse sector.

1 Consistent with EB-2016-0186, Union will be seeking five-year contract commitments for
2 contract rate customers who execute Distribution Contracts for capacity in Year 1 of the
3 Project's demand forecast.

4
5 Customers who contract for contract rate distribution service may need to install an individual
6 service, main extension and station(s) and in some cases potentially local distribution
7 reinforcement to bring sufficient natural gas to their site. These costs are the responsibility of the
8 customer. When negotiating a contract with the customer, a DCF analysis is completed for each
9 individual contract. The analysis will provide the individual PI for the customer based on a set
10 of contract parameters and individual customer costs to determine if an aid to construction may
11 be required. Based on the results of the analysis, the customer has the option to choose a
12 contract term with an aid payment or a contract term that reduces the aid payment based on the
13 number of years of the contract term. This is Union's standard practice when providing gas
14 service to any contract rate customer. As indicated above, for the Project Union will require
15 contract rate customers to sign a contract with a minimum term of five years consistent with EB-
16 2016-0186. This minimum five year term could result in no aid payment required by the
17 customer, or, the customer will be provided with an option to contract for a term longer than five
18 years to reduce the aid payment (if required) or eliminate it completely. Please see Exhibit A,
19 Tab 6, Table 6-1 for the five-year demand forecast that underpins the need for the Project.

20
21 Union had customers who had expressed interest in firm distribution service starting November
22 2019. Due to their location and demand, they cannot be provided service currently without the

1 resulting pressure on the distribution system dropping below the required pressure at the system
2 constraint location. This situation resulted in the need to bring the Project forward from 2020 to
3 2019.

4
5 As detailed in Exhibit A, Tab 12, Union conducted two public Open House sessions for the
6 Project at which time Union provided the potential location for the proposed pipeline;
7 subsequently additional customers approached Union expressing interest in access to the firm
8 capacity that the Project will provide. In the past several months additional potential customers
9 have come forward. As of December 2017, 35 customers have expressed interest in firm service
10 starting November 1, 2019. Union has begun to negotiate contracts with the contract rate
11 customers and will continue to contract with customers up to and beyond the in-service date of
12 the Project. To date, Union has executed contracts for approximately 5 TJ/day of capacity.
13 Union is currently in negotiations with additional customers who represent 9 TJ/d of forecasted
14 firm demand.

15
16 **Summary**

17 The Project provides increased Panhandle System capacity from which future development in the
18 Market can be served. Without the availability of this incremental natural gas capacity to meet
19 increased forecasted demands on the Panhandle System and the stability resulting from a longer-
20 term plan, there is a risk businesses will delay or cancel plans to expand, or may establish their
21 operations in different jurisdictions where reliable, affordable energy is available. Furthermore,
22 without the availability of this incremental capacity, residential developments, schools, hospitals

1 as well as other small volume customers in the Market may require an alternative energy source
2 (more expensive and less clean burning). In doing so, this will put additional pressure on the
3 finances and operating budgets of the residents and businesses within the Market. The proposed
4 expansion of the pipeline system to meet the urgent needs of area customers is a critical
5 component to ensure economic growth in Southern Ontario. If the Project is not constructed;
6 economic development in this region of Ontario may be significantly impacted. To further
7 illustrate this point, Letters of Support are included at Exhibit A, Tab 5, Schedule 2.

Binding Reverse Open Season 2017: Panhandle System Firm Distribution Service

September 27, 2017

To meet the growing residential, commercial, and industrial in-franchise market demand for natural gas in Chatham- Kent, Windsor, Lakeshore, Leamington, Kingsville, Essex, Amherstburg, LaSalle, and Tecumseh (**"the Market"**), Union Gas Limited (**"Union Gas"**) is proposing to construct transmission pipeline and station facilities (the **"Kingsville Transmission Reinforcement Project"**). The proposed transmission pipeline project would start at existing Union Gas facilities in the Town of Lakeshore and would end at or near the corner of Concession Road 2 East and Graham Side Road in the Town of Kingsville. The construction of the Kingsville Transmission Reinforcement Project is planned for the summer of 2019, subject to Ontario Energy Board approval and is proposed to be in-service November 1, 2019.

Growth of firm service can be satisfied through the expansion of physical facilities on the system and/or through a reduction in the current firm contractual commitments with existing firm distribution customers on the system. In order to promote the most efficient expansion of the transmission system in the Market, while minimizing the overall costs to ratepayers, Union Gas is conducting a reverse open season to solicit commitment from existing firm contract rate customers in the Market that want to reduce their firm contract demand (**"Firm CD"**) or convert their Firm CD to interruptible distribution service on the Panhandle System before the end of their primary contract term.

Existing firm distribution service customers in the Market (served by the Panhandle System) who have a firm distribution service as part of their contract may elect to;

1. Reduce all or a portion of their Firm CD before the end of the initial term of their contract, or;
2. Convert all or a portion of their Firm CD to interruptible distribution service.

Effective November 1, 2018 or November 1, 2019

Completing the attached binding Firm CD Reduction Form (**"Bid Form"**) will serve to advise Union Gas of your binding commitment to reduce existing contracted firm distribution service or convert firm distribution service to an interruptible distribution service. If you do not submit the Bid Form, your current service level will continue and will not be impacted.

To be eligible to reduce your firm distribution service or to convert all or a portion of your firm distribution service to interruptible distribution service, Bid Forms **must be received prior to 2 p.m. Eastern Time on October 18, 2017**. By 2 p.m. Eastern Time on October 19, 2016, Union Gas will review and acknowledge all Bid Forms received.

Union has the sole discretion to accept or reject the bid, in whole or in part. If a bid is accepted, in whole or in part, Union Gas will notify the capacity holder by 2 p.m. Eastern Time on October 25, 2017.

Bids will be assessed according to the amount of firm distribution service elected to be reduced or converted to interruptible distribution service and the impact on the Panhandle System.

If you have any questions, please contact your account manager.

Binding Firm CD Reduction Bid Form

Binding Reverse Open Season 2017: Panhandle System Firm Distribution Service

Please complete, sign and return this Binding Firm CD Reduction Bid Form on or before 2 p.m. Eastern Time on October 18, 2017 via email to:

ktrp@uniongas.com

In response to Union Gas' Binding Reverse Open Season: Panhandle System Firm Distribution Service, dated September 27, 2017, **(Please print clearly your company name here)**

____ ("Customer") irrevocably and firmly confirms Customer's request to reduce or convert all or a portion of its firm distribution service as of Nov. 1, 2018 or November 1, 2019, as outlined below:

Contract ID (SA#)		
Reduction Start Date	Nov. 1, 2018	Nov. 1, 2019
Reduction of Firm Contracted Demand Service (m ³ /day)		
Conversion of Firm Contract Demand to Interruptible Distribution Service (m ³ /day)		

It is understood that by 2 p.m. Eastern Time on October 19, 2017, Union Gas will review and acknowledge all Bid Forms received. Union has the sole discretion to accept or reject the bid. If a bid is accepted, Union Gas will notify the capacity holder by 2 p.m. Eastern Time on October 25, 2017.

Acknowledged and agreed by:

Signature

Phone

Name (please print)

Fax

Title

Date



OFFICE OF THE CITY ENGINEER

M. Winterton, P. Eng.
City Engineer
1266 McDougall St.
Windsor, Ontario, N8X 3M7
(519) 255-6247 ext. 6356 Fax (519) 973-5476
mwinterton@citywindsor.ca

November 8, 2017

Sean Collier
District Manager, Windsor/Chatham
Union Gas Limited
3840 Rhodes Drive
Windsor, ON N9A 6N7
sacollier@uniongas.com

Re Kingsville Transmission Reinforcement Project-letter of support

Dear Mr Collier:

Further to our conversation and your request, the City of Windsor supports the Kingsville Transmission Reinforcement Project. By CR267/2017 Council has endorsed the upgrades to the Union Gas network and its benefits to the region. We trust this meets the needs of your request and good luck with your project.

Sincerely,

Mark Winterton
City Engineer

MW:hg



Office of the Warden, County of Essex

Warden Tom Bain

October 6, 2017

Via e-mail: sacollier@uniongas.com

Union Gas Limited
Attn: Mr. Sean Collier
District Manager Windsor/Chatham
3840 Rhodes Dr.
Windsor, ON N9A 6N7

Dear Mr. Collier:

Re: Union Gas Kingsville Transmission Reinforcement Project

On behalf of the Corporation of the County of Essex, I am writing to indicate our support for the aforementioned Union Gas Kingsville Transmission Reinforcement Project.

Being Canada's southernmost point, with a population of 177,720, the region boasts the warmest climate in all of Ontario. Surrounded by three bodies of water – Lake Erie, the Detroit River and Lake St. Clair, Essex County has booming tourism and agri-business industries and is in the enviable position of being a gateway to the United States markets via the Detroit-Windsor border.

A thriving, diverse manufacturing industry combined with a skilled workforce and the proximity to U.S. markets and the 401 corridor, make Essex County an ideal location for new businesses to locate.

Agri-business is continually expanding in Essex County. We are home to North America's largest greenhouse industry, with over 1,600 acres under glass and 450 more planned for the near-term. Growers are diversifying into non-traditional crops and nutraceutical herbs. The mild climate also accommodates 17 commercial wineries - and growing - plus food processors and packagers with national and international distribution.

In order for future growth in Essex County to be realized, sufficient natural gas infrastructure will be required. Currently, resources in the Windsor-Essex

Mr. Sean Collier

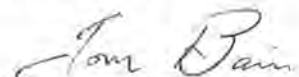
Page **2** of **2**

October 6, 2017

/ Chatham-Kent area are at capacity and an expansion of service will be necessary in order to support future (economic) development in the region.

With this in mind, the Council of the County of Essex passed a resolution at its October 4, 2017 meeting, strongly in support of this project. We look forward to an ongoing positive relationship with Union Gas.

Regards,



Tom Bain

Warden – County of Essex

TB:mb

December 6, 2017

RE: LETTER OF SUPPORT – Union Gas Kingsville Transmission Reinforcement Project

The Essex County Federation of Agriculture (ECFA) is a member based organization that represents over 1400 Essex County farmers. Our general purpose is to lobby on behalf of our members to improve their economic and social well-being.

The Essex County Federation of Agriculture is writing this letter to indicate our support for the proposed Union Gas Kingsville Transmission Reinforcement Project.

Agriculture in Essex County is a diverse and complex industry. To ensure future growth in our industry, a reliable natural gas system is essential. The current service is straining to supply the demand and additional infrastructure is required. Reliable and affordable natural gas provides farmers the ability to remain competitive in the global market.

The Essex County Federation of Agriculture is strongly in support of this project and look forward to a positive relationship between its members and Union Gas.

Sincerely,

Lyle Hall, President

Essex County Federation of Agriculture



318 Erie Street South, Leamington, ON N8H 3C5; 519-326-2721
www.leamingtonchamber.com; wendyp@leamingtonchamber.com

September 26, 2017

Union Gas Limited
3840 Rhodes Drive
Windsor, ON N9A 6N7

Attn: Mr. Sean Collier

Re: Union Gas Kingsville Transmission Reinforcement Project

Dear Mr. Collier:

On behalf of the Leamington District Chamber of Commerce, I am writing to indicate our support for the Union Gas Kingsville Transmission Reinforcement Project.

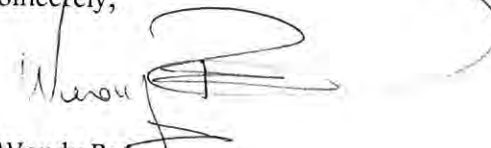
In order for future growth in Leamington and Kingsville, sufficient natural gas infrastructure will be required. At present we are at capacity and an expansion of service will be necessary in order to support future economic development opportunities in this region.

Leamington and Kingsville support a growing Agriculture Sector primarily led by the greenhouse industry. With the current demand for export, our greenhouse producers also look to an expansion in the growing season to aid in market position and energy infrastructure that is necessary to support this growth.


Leamington and Kingsville are lacking the energy infrastructure that will increase the investment in our industrial and commercial development areas thus causing economic impact in our community. Natural gas demand has seen significant growth in recent years and is straining the current system serving the area.

The Leamington District Chamber of Commerce strongly supports this project knowing that efficiently creates strategic infrastructure that lays a foundation for future growth. We continue our partnership and positive relationship with Union Gas as we watch our area's significant progression.

Sincerely,



Wendy Parsons
General Manager



Corey Robertson
President

November 6, 2017

Union Gas Ltd.
3840 Rhodes Dr.
Windsor, ON N9A 6N7

Attn: Sean Collier - District Manager, Windsor/Chatham

Dear Mr. Collier,

Re: Support for the Kingsville Transmission Reinforcement Project

The Municipality of Leamington is writing to indicate support of the proposed Union Gas Kingsville Transmission Reinforcement Project.

The Municipality of Leamington is an agricultural community with a substantial greenhouse sector, which contributes significantly to employment in the area. This sector has expanded dramatically in the last five years and growth is expected to continue as the industry works to respond to market demands. Sufficient natural gas infrastructure will be essential for this growth to be recognized. Union Gas' transmission pipeline system in Southwestern Ontario supplies reliable natural gas to residential, commercial, industrial, power generation, and agricultural customers and the demand for natural gas created by expansion will place a strain on the current system serving the area.

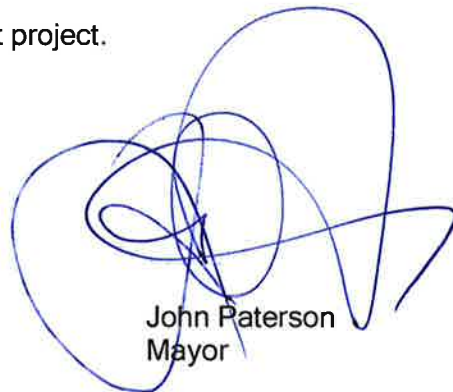
The Kingsville Transmission Reinforcement Project will: retain and attract industry within Southwestern Ontario with reliable, affordable energy; provide benefits to the area as well as Ontario through enhanced economic development opportunities; efficiently create strategic infrastructure that lays a foundation for future growth; and, provide incremental firm capacity to the area to meet current and future forecasted growth. For these reasons, the Municipality of Leamington is in support of the project and looks forward to an ongoing positive relationship with Union Gas.

We look forward to the completion of this very important project.

Yours truly,



Peter Neufeld
Chief Administrative Officer



John Paterson
Mayor



Ontario Greenhouse Vegetable Growers Association
32 Seneca Road
Leamington, Ontario N8H 5H7
OGVG.com

July 27, 2017

Attention: Mr. Patrick Boyer
Manager, Greenhouse, REM, Wholesale Markets
Union Gas Ltd
P.O. Box 2001
Chatham, Ontario, N7M 5M1

Re: Kingsville Transmission Reinforcement Project

Dear Mr. Boyer,

The Ontario Greenhouse Vegetable Growers Association (OGVG) would like to formally offer its support to the Kingsville Transmission Reinforcement Project.

OGVG represents approximately 200 growers responsible for 2,880 acres of greenhouse tomatoes, peppers and cucumbers across the province. Much of this acreage is in Windsor-Essex and Chatham-Kent. Particularly, Leamington has the highest concentration of greenhouses in North America. We are pleased to see infrastructure projects like these that will better serve the community. Ontario's greenhouse sector has a consistent track record of growth, expanding at 5.8% annualized over the past 8 years. We expect this growth will continue and predict the sector could grow by 750 acres over the next 5 years, contributing an additional \$1.3 billion to the Ontario economy and supporting over 3,000 new jobs.

To realize the described growth and development, current and future greenhouse growers require sufficient access to natural gas infrastructure. Currently, resources in the Essex region are at capacity and a transmission reinforcement is necessary to ensure continued regional economic development. Additionally, some growers in the region are on interruptible service contracts, as firm service is not currently available. This project should increase local access to firm service, which will add cost-stability for growers as they will not be required to purchase alternative fuel during periods of peak market demand.

The Ontario Greenhouse Vegetable Growers are strongly in support of this transmission reinforcement project and look forward to an ongoing positive relationship with both Union Gas and the Ontario Energy Board. We appreciate being a part of this consultation and engagement process.

Sincerely,

George Gilvesy
Chair, OGVG



2021 Division Road North
Kingsville, Ontario N9Y 2Y9
Phone: (519) 733-2305
www.kingsville.ca
kingsvilleworks@kingsville.ca

OFFICE OF THE MAYOR

Via email sacollier@uniongas.com

October 31, 2017

Union Gas Limited
3840 Rhodes Dr.
Windsor, Ontario
N9A 6N7

Attention: Mr. Sean Collier

RE: UNION GAS KINGSVILLE TRANSMISSION REINFORCEMENT PROJECT

The Corporation of the Town of Kingsville is writing to indicate its support for the proposed Union Gas Kingsville Transmission Reinforcement Project.

Kingsville represents one of seven municipalities in the County of Essex located in deep southern Ontario. We are home to a residential population of 21,552 offering a unique powerhouse of diversity to its residents, businesses, and visitors. As such, Kingsville is also a sought after strategic location for businesses due to its proximity to the United States and access to three provincial highways. We are also known nationally for our dynamic and diverse technology-based agricultural greenhouse sector. Together with the Municipality of Leamington, our neighbouring communities represent and host the largest concentration of Greenhouse development in North America—and still growing.

In order for future growth in Kingsville to be realized, sufficient natural gas infrastructure will be required. Already recognizing that Union Gas' transmission pipeline system in Southwestern Ontario supplies reliable natural gas to residential, commercial, industrial, power generation and agricultural customer, the recorded growth and future anticipated development only compounds the demand for an expansion to the current system. Natural gas demand has seen significant growth in recent years and is straining the current system servicing the area. Union Gas continues to see more requests for natural gas service. This additional growth as forecasted clearly cannot be accommodated by the existing system and thus our municipality's full support and endorsement for the proposed Kingsville Transmission Reinforcement Project.

The Council of The Corporation of the Town of Kingsville strongly supports this project, and endorses the initiative. We believe this reinforcement project will retain and attract further industry within the entire Southwestern Ontario corridor beyond our own municipal boundaries with access to reliable and affordable energy. As we grow, the project efficiently places strategic infrastructure that lays a foundation for future growth and will provide incrementally firm capacity to our region to meet the current and future forecasted growth. Looking ahead, our community looks forward to an ongoing positive relationship with Union Gas.

Please consider this letter as confirmation of the Town of Kingsville's support of the Union Gas Kingsville Transmission Reinforcement Project.

Yours very truly,



Mayor Nelson Santos

Enclosure

Cc: The Hon. Kathleen Wynne, Premier of Ontario

Cc: Ontario Energy Board.



TOWN OF LAKESHORE

419 Notre Dame St.
Belle River, ON N0R 1A0

January 2, 2018

Union Gas Limited
3840 Rhodes Dr.
Windsor, Ontario
N9A 6N7

Attn: Sean Collier, District Manager, Windsor-Chatham

Dear Mr. Collier:

RE: KINGSVILLE TRANSMISSION REINFORCEMENT PROJECT

On behalf of the Council of the Town of Lakeshore, I am pleased to offer our support for the aforementioned Union Gas Kingsville Transmission Project.

Lakeshore with a population of 36,200 is in the top 13 percentile in Canada in size, the 7th safest community in Canada, is the fastest growing, highly educated as well as high income and the largest concentration of families and seniors in the region. Located approximately 30 minutes from the gateway that leads to the United States markets via the Detroit-Windsor border.

A thriving, diverse manufacturing industry combined with a skilled workforce and the proximity to U.S. markets and the 401 corridor, makes Lakeshore an ideal location for new businesses to locate.

In order for future growth to continue in Lakeshore, sufficient natural gas infrastructure will be required. Natural Gas resources are at capacity in the Windsor-Essex County area, therefore an expansion of service is necessary to support future economic development initiatives.

Trusting this support for the reinforcement project will be given due consideration, I remain.

Yours truly

Tom Bain
Mayor

/km

November 2, 2017

Sean Collier
District Manager Windsor/Chatham
Union Gas Limited
3840 Rhodes Dr.
Windsor, ON N9A 6N7

Dear Mr. Collier,

The Windsor-Essex Regional Chamber of Commerce (WERCC) proudly supports the proposed Union Gas Kingsville Transmission Reinforcement Project.

As the voice of business and professionals in our region, the WERCC works to encourage an economic climate favourable to business and industry. We represent over 800 members in the Windsor-Essex region and are part of the provincial and national Chamber networks (Ontario Chamber of Commerce with 60,000 members and the Canadian Chamber of Commerce with 200,000 members).

The WERCC has advocated and continues to advocate for affordable energy on behalf of our members. The cost of doing business in Ontario is entirely too high, one of the hurdles being a lack of reliable, affordable energy in the province. The Union Gas Kingsville Transmission Reinforcement Project will serve to aid in this issue, not just now, but into the future as the project provides enhanced economic development opportunities and strategic infrastructure that lays the foundation for growth.

Union Gas is a long-time and valued member of the WERCC. The WERCC is strongly in support of this project and looks forward to an ongoing positive relationship with Union Gas.

Sincerely,

A handwritten signature in black ink, appearing to read "Matt Marchand". The signature is fluid and cursive, with a large loop at the end.

Matt Marchand
President & CEO
Windsor-Essex Regional Chamber of Commerce

November 8, 2017

Union Gas Limited
3840 Rhodes Drive
Windsor, ON
N9A 6N7

Attention: Mr. Sean Collier – District Manager, Windsor/Chatham

RE: Kingsville Transmission Reinforcement Project

Dear Mr. Collier:

On behalf of the WindsorEssex Economic Development Corporation, I am pleased to provide this letter of support for the Kingsville Transmission Reinforcement Project in conjunction with the Union Gas Application to the Ontario Energy Board and Project approval process.

We are the leading economic development agency in the Windsor and Essex County region, responsible for advancing economic development to grow and sustain prosperity in the region. Our main focus is to develop and execute strategies to retain, expand, attract and help new businesses start up in the Windsor-Essex region, and to facilitate the process of starting, growing or locating in Windsor-Essex.

Our region has experienced a positive economic trend since the 2008-2009 recession. The region's economy expanded at its fastest rate in 16 years in 2016 and the outlook for 2017-2018 is solid, according to the Conference Board of Canada. The unemployment rate for the Windsor CMA, has significantly decreased over the last two years (averaging 5.6%) and continues to steady itself below the national average. This positive turn-around and confidence in the region, can be attributed in part, to the recovery of the auto sector which resulted in a \$2 billion investment by FCA in the massive renovation and retooling of its Windsor Assembly Plant, investment in large infrastructure projects such as the completion of the Rt. Hon. Herb Gray Parkway, a \$1.4B highway infrastructure project, and continued progress of more than \$350 million in ongoing works at the Canadian and US project sites of the construction of the Gordie Howe International Bridge. Trade through the Windsor-Detroit corridor will increase, generating more opportunities for growth across all key sectors. The Windsor-Detroit trade corridor is the busiest commercial border crossing in the world; it is estimated that more than \$450 million in goods cross the Windsor–Detroit border every day, representing one-quarter of all trade between Canada and the USA.

In addition, the sustained and solid growth of the Windsor-Essex region can be attributed to the success of our key industry sectors: advanced manufacturing and agriculture. The Windsor-Essex region is the manufacturing heartland of Ontario and boasts an industry profile of more than 1000 manufacturers, more than \$3.3B in annual GDP in manufacturing-28% of our region's total, 90 plus auto and parts manufacturers and in excess of 250 machine tool, die and mold manufacturers – the largest cluster in all of North America.

700 California Avenue, Suite #200
Windsor, Ontario, Canada N9B 2Z2
Tel: 519-255-9200 or Toll Free 1-888-255-9332



Our Location. Your Advantage.

The agriculture sector in Windsor-Essex, which includes a greenhouse cluster growing beyond 2,500 acres, and many food processing facilities, felt little impact from the recession and actually emerged as a thriving sector during that challenging time, and continues to do so. Ontario agriculture exports to the U.S. in 2016, totaled \$683.5 million, with a large percentage of greenhouse produce coming from Essex County. The Leamington-Kingsville area has the highest concentration of greenhouses in North America in addition to future expansion projects and those already in construction phase. The greenhouse sector has a consistent track record of growth, and its forecasted growth of approximately 750 acres over the next five years clearly demonstrates the need for access to a reliable natural gas supply, supported by sufficient and dependable natural gas infrastructure, to meet the increasing demand in the region and to remedy the strains on the current system serving the area. We strongly believe that the projected growth will not occur without this enhancement. **Currently, many growers in the region are engaged in interruptible service contracts because firm service is not currently available.** The Kingsville Transmission Reinforcement Project should increase local access to firm service, assisting with cost stability for growers as they will not be required to purchase alternative fuel during periods of peak market demand.

Finally, the project will help this industry meet its requirements for high-tech diversification, which ultimately will heighten its competitive advantage, secure its footprint in Windsor-Essex and support economic development.

The WindsorEssex Economic Development Corporation is in strong support of this transmission reinforcement project and we look forward to an ongoing positive and collaborative relationship with Union Gas and the Ontario Energy Board. We appreciate being a part of this consultation and engagement process.

Sincerely,



C. Stephen MacKenzie
Chief Executive Officer

SYSTEM GROWTH AND MARKET DYNAMICS

The purpose of this section of evidence is to address the natural gas demand growth in the Panhandle System Market. This section also highlights the capability of the existing transmission and distribution facilities that are essential to providing natural gas service to customers located in the Market.

Due to accelerated incremental market growth in the Market, without constructing the Kingsville Transmission Reinforcement Project, Union will not be able to meet the growing demands in the Kingsville-Leamington market area and the demand forecast for the overall Panhandle System Market beyond 2020.

Union continues to forecast significant growth on the Panhandle System. This growth has exceeded what was forecast in EB-2016-0186¹. Union stated in EB-2016-0186 that the Project (although slightly different scope) was required in 2022 in order to continue to meet the ongoing need of the Panhandle System Market.² Based on more recent demand forecasts, the existing pipeline facilities will no longer be sufficient to meet Market Design Day demand in 2020. As detailed in Exhibit A, Tab 7 and Tab 8, the Leamington-Kingsville high pressure distribution system is unable to fully service the forecasted growth without significant distribution system reinforcement in 2019. However, constructing the Project in 2019 will eliminate the need for those incremental distribution facilities. Thus, in order to eliminate the need for the costly

¹ EB-2016-0186 Exhibit A, Tab 5. Please see Table 5-1 for a comparison of the forecasts.

² EB-2016-0186 Exhibit A, Tab 6, Table 6-1

distribution system reinforcement in 2019, the proposed in-service date for the Project is November 2019.

To forecast future Design Day Panhandle System demand, Union used historical attachments for General Service customers in addition to a load growth forecast for contract rate customers. The information was compiled into a 20-year Project Growth Forecast 2017-2036. Growth is expected to occur across the entire Panhandle System.

The greenhouse market in the Kingsville-Leamington market area continues to expand as does the need for incremental firm service across all customer sectors on the Panhandle System. As further detailed in Exhibit A, Tab 7 and shown in Table 6-1 below, the total cumulative increase in firm Design Day demand between 2017 and 2021 is now forecast to be 133 TJ/d. This demand forecast exceeds the 106 TJ/d previously forecast and filed in EB-2016-0186 by 27 TJ/d.

Table 6-1
Growth forecast - Comparison to Panhandle Reinforcement Project

Area/Customer	Panhandle Reinforcement Project Forecast Growth by Region (TJ/Day) (as per EB-2016-0186 Exhibit B.BOMA.3d)					Kingsville Transmission Reinforcement Project Forecast Growth by Region (TJ/Day)									
	2017	2018	2019	2020	2021	2017	2018	2019	2020	2021	2022	2023	2024	2025	
Chatham-Kent	1	6	10	12	13	1	9	21	23	26	29	32	34	37	
Leamington/Kingsville	38	45	51	57	63	44	45	61	70	84	92	100	109	117	
Lakeshore	0.3	0.3	0.3	0.3	0.3	0	0	0	0	0	0	0	0	0.3	
Tecumseh	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Windsor	18	21	23	26	29	9	12	15	18	21	21	21	21	21	
West Windsor Cogen	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Brighton Beach Power	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	58	73	85	96	106	55	67	98	112	133	144	154	165	176	
Annual Increase		15	12	11	10		12	31	14	21	11	11	11	11	

Future Growth of Panhandle System

Based on the most recent demand forecast, the projected future demand beyond 2021 has increased to 10.9 TJ/d per year, resulting in total growth of 68 TJ/d between 2020 and 2024³.

Total growth over the 20 year period 2017 to 2036 is 296 TJ/d.⁴

Union forecasts that residential customer attachments in the Panhandle System Market will increase by approximately 8,400⁵ customers between 2017 and 2024 provided enough system capacity exists. Based on this demand forecast, future natural gas supply and facility needs can be identified, evaluated, analyzed and scheduled to meet the future growth demands on the Panhandle System.

Table 6-2
Residential Customer Attachment Forecast

Year	Actual 2014	Actual 2015	Actual 2016	Actual 2017	2018	2019	2020	2021	2022	2023	2024
Number of residential attachments	1261	1294	1742	1574	1200	1200	1200	1200	1200	1200	1200

Economic Impacts

Affordable energy is critical to the development and prosperity of both communities and businesses. Affordable energy promotes growth in the economy, provides savings for residential customers and helps maintain the global competitiveness of Ontario's businesses. Natural gas is the most affordable energy source available to customers.

³ Per Table 6-1, 2020 to 2024 growth of 14 + 21 + 11 + 11 + 11 = 68

⁴ 20 year growth of 165 TJ (per Table 6-1 for years 2017-2024) + 12 years @10.9 TJ = 296 TJ/d

⁵ Based on an average of 1,200 attachments each year.

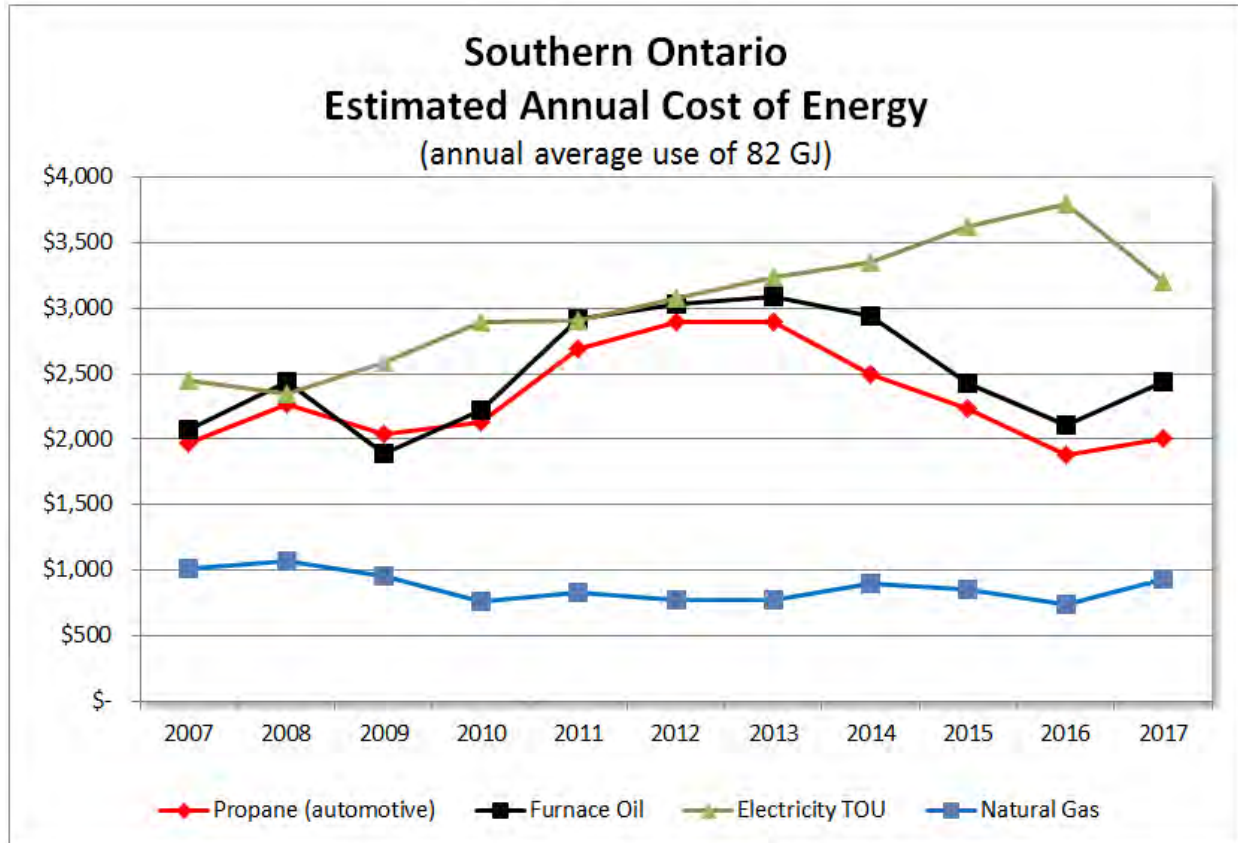
1 In addition to individual customer benefits, the economic benefits natural gas can provide a
2 community are also significant. Such benefits include:

- 3 i. Residential energy savings enabling more consumer spending at local businesses and
4 across the community (including charitable organizations);
- 5 ii. Energy savings supporting the ability of local businesses to remain competitive,
6 employing people in the community;
- 7 iii. Enhanced ability to attract new residents and new businesses to the community;
- 8 iv. Increased housing values and resulting property tax assessments; and,
- 9 v. Municipal energy cost savings in municipal buildings such as arenas and community
10 centres.

11 12 Residential Customers

13 Within the Market the predominant alternative energy sources to natural gas for residential
14 customers are propane and electricity. Both of these alternatives are significantly more expensive
15 than natural gas as shown in Figure 6-1. For example, a residential customer who uses 2,200 m³
16 per year of natural gas in 2017 would pay approximately \$1,100 more per year for propane and
17 approximately \$2,300 more per year for electricity, relative to natural gas.

Figure 6-1
Estimated Annual Cost of Alternative Energy Sources (\$/yr)⁶



Home Propane based on automotive less HST less Provincial excise tax

Commercial/Industrial Customers

In addition to the significant savings from heating load requirements, commercial and industrial customers are increasingly looking to natural gas to mitigate the high cost of electricity. The ability for these customers, such as the planned Mega hospital in Windsor, greenhouses and other customers within the Panhandle System Market, to reduce their reliance on electricity from the

⁶ Based on November 2017 Union cost comparisons including all volumetric and fixed charges appearing on consumer energy bills, with data sourced from: The Kent Group for propane and heating oil (rates for London); OEB time of use rates and utility specific charges (rates for London); and Union rate schedules. All figures based on average annual use of 82 GJ or 2,200 m³ of residential consumption for home heating and water heating.

1 grid through the use of natural gas fired Combined Heat and Power (“CHP”) units can have a
2 significant impact on their overall energy cost. Ontario Greenhouse and Vegetable Growers
3 (“OGVG”) members, for example, are heavily reliant on energy, particularly natural gas. Over
4 one third of greenhouse production costs are energy-related. If natural gas is not available, these
5 customers will be forced to either use a far more expensive alternative, which will threaten their
6 competitiveness, or move their operations to an area with more affordable energy.
7

8 The Province of Ontario has recently expressed its support for the compressed natural gas
9 transportation market with the December 2017 launch of the Green Commercial Vehicle
10 Program. The transportation network is typically supported by diesel powered trucks that
11 comprise one of the largest sources of greenhouse gas (“GHG”) emissions in Ontario. Access to
12 adequate natural gas infrastructure is critical in developing compressed natural gas refueling
13 stations to support the conversion of diesel trucks to natural gas. The adoption of natural gas
14 trucks can deliver significant economic and environmental benefits into the industrial supply and
15 delivery chain.
16

17 The economic impacts resulting from the Project will help support job growth, increase property
18 tax revenue for the affected municipalities and tax revenue for the province. Additional detail
19 specific to these economic impacts is included in Exhibit A, Tab 9.
20

1 With this commitment to growth and extending natural gas service, recognition of the Ontario
2 government's goal of energy conservation and reducing GHG emissions is also important as
3 noted in the following paragraphs.

4
5 **Demand Side Management (DSM)**

6 Since the 1990s, Union has successfully implemented DSM initiatives under the Board's
7 frameworks to help reduce natural gas consumption and thereby reduce the carbon footprint of
8 natural gas consumers. Union has a suite of DSM offerings available for customers, as detailed
9 in its 2015-2020 DSM Plan (EB-2015-0029) and further supported in Union's subsequent DSM
10 submissions including its Mid-Term Review of the 2015-2020 DSM Framework for Natural Gas
11 Distributors submission (EB-2017-0127).⁷

12
13 Union's DSM programs include:

- 14 i. Resource acquisition programs that seek to achieve direct, measurable natural gas
15 savings on a customer-by-customer basis;
- 16 ii. Low-income programming designed to address the specific needs of this customer
17 segment to achieve energy savings;
- 18 iii. Custom offerings that seek to generate long-term and cost effective energy savings,
19 including a mix of customer incentives, education and awareness for commercial and
20 industrial customers across all segments; and,

⁷ EB-2017-0127 Submission of Union Gas dated January 15, 2018

1 iv. Market Transformation programs that seek to make a permanent change in the
2 marketplace to increase market share for high-efficiency products or services.
3

4 The impact of Union's DSM activity for in-franchise customers is embedded in the Design Day
5 requirement. The Design Day demands for the Panhandle System are based on the previous
6 winter's actual daily measured volumes and as such take into account in-place DSM program
7 impacts.
8

9 DSM - Infrastructure Planning

10 As stated in EB-2017-0127, *"Infrastructure Planning is based on a long term load forecast*
11 *intended to identify potential system constraints leading to incremental infrastructure*
12 *requirements and to develop these plans prior to the need for new infrastructure ...The impact of*
13 *broad based DSM programs on infrastructure investment is inherently captured in the*
14 *infrastructure planning process. Historical gas throughput is used as a base to predict future*
15 *consumption and is updated each year. These historical forecasts include changes in gas usage*
16 *resulting from implementation of historical DSM measures, as well as other natural*
17 *conservation factors such as improved building codes, and higher energy efficiency standards*
18 *for natural gas equipment. The infrastructure plans do not explicitly factor in future projections*
19 *of DSM program effects on peak day or peak hour demand. Network analysis and infrastructure*
20 *planning adjusts its forecast in gas demand on a regular basis to ensure trends are reflected in*

1 *the most recent results.”*⁸ Consistent with the Project and as further stated in EB-2017-0127,
2 *“Reinforcements are only constructed when needed and the scope of the facilities required is*
3 *adjusted as required.”*

4
5 Any reduction in consumption as a result of DSM programs is not sufficient to offset load
6 growth in the Market and the resulting need for system reinforcement on Design Day. Any
7 change in Design Day demand resulting from DSM effort is expected to take significant time to
8 materialize

10 **Cap-and-Trade**

11 Union does not expect a material impact in the short or medium term from the Cap-and-Trade
12 program⁹ and the Climate Change Action Plan (“CCAP”). Initiatives described in Union’s 2018
13 Cap-and-Trade Compliance Plan (EB-2017-0255) to support the province’s GHG reduction
14 targets could have varying impacts on Union, including:

- 15 • Displacement of fossil-based natural gas with RNG;
- 16 • Compressed Natural Gas/Liquefied Natural Gas (“CNG”/“LNG”) for Transportation;
- 17 • Energy efficiency initiatives (such as DSM programs) to reduce the carbon footprint
- 18 of natural gas consumers throughout Ontario; and,

⁸ EB-2017-0127 Appendix B Transition Plan, p.7

⁹ Ontario’s Cap-and-Trade program became effective January 1, 2017. Union has a compliance obligation for customer and facility emissions, and GHG emission reporting and verification requirements. In addition, Union must comply with the OEB Regulatory Framework for the Assessment of Costs of Natural Gas Utilities’ Cap and Trade Activities. Union filed its 2018 Cap-and-Trade Compliance Plan (EB-2017-0255) on November 9, 2017.

- Various natural gas-related related technology and innovation initiatives that could lower customer and/or facility GHG emissions.

Longer term impacts (i.e. beyond 20 years) of the Cap-and-Trade program on Union remain uncertain. The Cap-and-Trade program in Ontario is nascent, with certain program elements being new or still in development. In addition, Ontario capped participants have no experience yet with the Western Climate Initiative (“WCI”) carbon market. Ontario joined this market on January 1, 2018. As a result of this uncertainty, Union has not included long-term impacts related to Cap-and-Trade on its forecast. The Board’s EB-2016-0186 Decision acknowledged this uncertainty in stating that “a reduction to the forecast would be premature as the market has not had time to react and data is not available. The OEB agrees that such unknowns add uncertainty to any forecast.”¹⁰

With respect to the Project, Union maintains that the demand on the Panhandle System is sustainable at least over the next 20 years based on specific identified projects, reasonable generic growth, projections based on historical experience, market knowledge and the continuing economic advantage that natural gas has over alternative fuels.

The price of carbon is reflected in gas and alternative fuel costs in economic evaluation as found at Exhibit A, Tab 9. See Exhibit A, Tab 9 Schedule 5 for assumptions used in the analysis. More specifically, Union assesses GHG emission impacts as part of a Stage 2 economic

¹⁰ EB-2016-0186 OEB Decision, p.6

1 assessment. Union expects that Cap-and-Trade will increase the cost of all fuels with associated
2 GHG emissions. Since natural gas has lower GHG emissions than oil and propane, Union
3 expects the costs of those fuels will increase by at least as much as natural gas. The impact on
4 electricity prices will be lower due to the electricity fuel mix¹¹. However, natural gas will remain
5 an economic option for customers in a low carbon economy as the price differential between
6 natural gas and electricity is so high.

7 8 **Impact of Project not Proceeding**

9 Economic development in Southern Ontario is dependent on the availability of natural gas to
10 support commercial and industrial business and the residents employed at those businesses. If the
11 Project is not constructed, economic development in Southern Ontario may be significantly
12 impacted and the benefits identified in the following paragraphs may not occur. Consistent with
13 the evidence filed in EB-2016-0186, Mayors, CAOs, local Chamber of Commerce and Economic
14 Development officers revealed that 80-90% of current economic development opportunities were
15 companies that rely on access to natural gas. In the absence of available firm capacity, many
16 customers will look elsewhere to establish or expand their operations including outside of
17 Ontario.¹²

18
19 The growth of the agriculture industry in Southern Ontario is vital to the economic prosperity of
20 the region. The greenhouse sector is one area of the agriculture industry that is particularly

¹¹ This does not take into account the cost of new power generation, electric transmission and electric distribution facilities that may be necessary.

¹² EB-2016-0186 Exhibit A, Tab 5, p.18

1 reliant on natural gas and has a significant impact on the local economy. Natural gas is uniquely
2 suited to the greenhouse sector. It is used to heat greenhouses and, a common practice within the
3 greenhouse sector is for the CO₂ that would normally be emitted into the atmosphere to be
4 captured and used within the greenhouse where it is consumed by the growing plants, resulting in
5 faster growth and increased production. The main alternate fuels used in the greenhouse sector
6 are oil, diesel and propane. These fuels are not only more expensive than natural gas but also
7 prevent the greenhouse operations from using the CO₂ emissions within the greenhouse because
8 other elements within the exhaust of these fuels will harm the plants. As a result, without natural
9 gas, not only is it likely that a more expensive and higher carbon intensive energy source needs
10 to be procured for heat; a source of CO₂ will also need to be acquired to maintain production
11 levels that would be similar to those if using natural gas.

12
13 Consistent with the Exhibit A, Tab 5 evidence filed in EB-2016-0186, every acre of greenhouse
14 development creates jobs for five employees, results in significant capital investment of
15 approximately \$700,000 to \$800,000 per acre, results in additional spin-off employment and
16 produces approximately \$330,000 worth of produce (farm gate value). The greenhouse market in
17 Southern Ontario has experienced significant growth, increasing in size from approximately
18 1,500 acres in 2007 to approximately 2,500 acres in 2017. This industry provides approximately
19 13,000 jobs to Southern Ontario and supports food processing plants and packagers located in
20 the area. Local Economic Development officers indicated that Ohio, Michigan and New York
21 are areas that would likely take advantage of any shift away from natural gas in Ontario and

1 make this a key selling point to try to attract industries currently in Ontario or looking to locate
2 in Ontario.

3
4 The agricultural sector is not the only industry in the area that relies heavily on natural gas. The
5 automotive sector also requires natural gas. Windsor is home to major automotive manufacturers
6 and supporting tier 1 and tier 2 automotive suppliers, employing thousands of people in the area.
7 Natural gas is used in paint baking, paint shop humidification, and melting metal for auto parts
8 and cannot be easily substituted with other energy sources.

9
10 Additionally, Ontario's 401 highway which ends in Windsor has been identified as one of the
11 busiest highways in North America and supports a major export point of goods in Canada. Both
12 the Federal and Provincial governments have announced plans to reduce the emissions created
13 by this corridor by converting heavy and medium duty trucks to compressed and liquefied
14 natural gas. Without access to natural gas and the needed infrastructure, the required compressed
15 natural gas refueling stations will not be able to be built in an area critical to the movement of
16 goods and services.

17
18 This long-term planning approach applied by Union allows it to identify the optimum means of
19 supplying the forecast growth served by the Panhandle System, including new supply and facility
20 requirements. Through the new five-year demand forecast that underpins the need for the
21 Project, Union is able to identify, evaluate and schedule the facility requirements necessary to
22 efficiently meet customer needs and future growth demands on the Panhandle System.

PANHANDLE SYSTEM DESIGN AND OPERATION

The purpose of this section of evidence is to review the current and future operation of the Panhandle System and review system design criteria and constraints of the Panhandle System.

This evidence is comprised of the following sections:

1. Panhandle System Design
2. Design Day Firm and Interruptible Demand
3. Current Panhandle System Constraints
4. Leamington-Kingsville High Pressure Distribution System Constraint
5. Efforts to Manage Market Need to Date
6. Panhandle System Capacity and Growth
7. Reinforcement Timing – Integrated Panhandle and Distribution Systems

Union transports natural gas to delivery locations along the Panhandle System to reliably serve energy demands and pressure requirements of Union's customers located in the Panhandle System Market.

The primary functions of the Panhandle System include:

- i. Transportation of natural gas to meet in-franchise demands. Natural gas is delivered to take off points along the pipeline system between Dawn and Ojibway for in-franchise general service and contract rate customers; and

- ii. Transportation of Union's gas supply deliveries for sales service customers and transportation of ex-franchise storage and transportation customer contracts from Ojibway easterly.

1. Panhandle System Design

Union models the capacity of the Panhandle System to reliably serve firm in-franchise demand on Design Day. The flow of gas moves in a westerly direction from Dawn to the Market on Design Day. The Design Day weather condition for Union South is 43.1 Degree Days (43.1DD), which represents an average daily temperature of -25.1 degrees centigrade. This degree day is the coldest historical day based upon weather data from the London Airport. The Design Day model of the Panhandle System includes the following assumptions:

1. All in-franchise interruptible customers have been curtailed;
2. All in-franchise customers consume volumes equivalent to Design Day estimates, which are derived from firm contract demand, historical consumption, and forecast growth;
3. There are no supply failures of Union deliveries arriving at Ojibway;
4. Ex-franchise Rate C1 Ojibway to Dawn transportation contracts are not assumed to be flowing;
5. System cannot operate above its maximum operating pressure;
6. Required pressure and supply are available from Dawn;
7. Minimum pressures for laterals and stations supplying in-franchise customers are met;
8. Must operate within station flow capacity constraints;

- 1 9. Minimum contractual delivery pressure at Brighton Beach Power Station (“BBPS”) of 1724
2 kPag is met; and,
3 10. Minimum delivery pressure at Leamington North Gate Station of 2275 kPag is met.
4

5 **2. *Design Day Firm and Interruptible Demand***

6 Design Day Demand (Firm Demand)

7 Union plans its facilities to reliably serve the demands on the coldest day, defined to be the Design
8 Day. The majority of the customers served by the Panhandle System are heat sensitive and their
9 maximum demands occur during the coldest day.
10

11 The Design Day demand is defined as the amount of firm demand that Union is committed to supply
12 through its system on a Design Day. The total Design Day demand for the in-franchise market is the
13 sum of the firm demands of Union’s in-franchise general service and contract rate customers connected
14 to the system. Interruptible in-franchise demands are curtailed and are not included in Design Day
15 demand.
16

17 The general service (Rate M1 and Rate M2) customers consist of residential, commercial and small
18 industrial customers. Approximately 45% of the firm demand served by the Panhandle System is for
19 the general service market.
20

21 The contract rate market accounts for about 55% of the firm demand served by the Panhandle System.
22 The contract rate demand consists of large commercial, greenhouses, institutional, industrial and power

generation customers. The mix is 40% power generation, 38% greenhouse and 22% large commercial, institutional and industrial customers.

Interruptible Demand

When the temperatures are warmer than Design Day temperatures, firm demand is less than Design Day demand and there is capability available on the system to serve some of the interruptible demand. The warmer the temperature, the more interruptible demand can be served, which is contractually limited to 40 days of interruption per year.

The Panhandle Reinforcement Project (EB-2016-0186) created a large volume of firm and interruptible gas available for customers. New and expanding customers are not requesting interruptible service, but some customers are willing to take interruptible service on a short-term basis as a bridge until firm service becomes available. Customers that have expressed interest in interruptible gas to bridge their gas demand requirements until the next project is completed will still require significant distribution system reinforcement to accommodate interruptible service.

3. *Current Panhandle System Constraints*

As described in Exhibit A, Tab 4, the Panhandle System consists of the following pipelines; i) an NPS 20 pipeline extending from the Dawn Compressor Station (“Dawn Hub” or “Dawn”) to where it connects with the NPS 16 pipeline in the City of Windsor (“NPS 16/20 Junction”); ii) an NPS 36 pipeline extending approximately 40 km from the Dawn Hub to the Dover Transmission Station

1 (“Dover Transmission”)¹; and iii) an NPS 16 pipeline extending from Dover Transmission to Ojibway
2 in the City of Windsor. The Panhandle System connects to the Panhandle Eastern system via two NPS
3 12 Detroit River Crossing pipelines. Exhibit A, Tab 7, Schedule 1 shows a schematic of the Panhandle
4 System.

5
6 The NPS 36 pipeline has a Maximum Operating Pressure (“MOP”) of 6040 kPag from Dawn to Dover
7 Transmission in the Municipality of Chatham-Kent. Between Dover Transmission and the Grand
8 Marais Station (“Grand Marais”), the MOP of the NPS 16 pipeline is 4140 kPag. Between Grand
9 Marais and Ojibway the MOP of the NPS 16 pipeline is 3450 kPag. The Detroit River Crossing MOP
10 is lower than the rest of the Panhandle System at 2930 kPag.

11
12 The NPS 20 pipeline has a MOP of 6040 kPag between Dawn and the Sandwich Transmission Station
13 (“Sandwich”), located in the Town of Tecumseh. Sandwich also includes a compressor (“Sandwich
14 Compressor”) that facilitates the easterly flow of gas from Ojibway to Dawn during times when the
15 Windsor market is insufficient to consume all of the Ojibway supply. The MOP of the NPS 20 pipeline
16 between Sandwich and the NPS 16/20 Junction is 3450 kPag.

17
18 The Panhandle System has two constraints:

- 19 i) The pipelines that feed Brighton Beach Power Station (“BBPS”) and West Windsor Power
20 Station (“WWPS”) are located at the extreme western end of the Panhandle System and are
21 connected to the Panhandle System at a valve site just east of Ojibway. The pressure

¹ EB-2016-0186 Board Decision and Order dated February 23, 2017

constraint for the entire Panhandle System is located at the outlet of the BBPS customer station, where the contracted minimum delivery pressure must be maintained at or above 1724 kPag;

- ii) The Leamington North Gate Station is the endpoint of the North Leamington Line pipeline off of the NPS 20 Panhandle. This station must maintain a minimum inlet pressure of 2275 kPag.

4. Leamington-Kingsville High Pressure Distribution System Constraint

The Leamington-Kingsville high pressure distribution system² (“distribution system”) is fed from the Panhandle System via four laterals that operate at 6040 kPag. These laterals are referred to as Essex, Leamington North, Leamington North Reinforcement (Mersea) and Leamington North Loop. The distribution system downstream of these laterals operates at 1900 kPag. The main feed to the distribution system is the Leamington North Gate Station and County Rd. 18 Station, fed by the Leamington North and Leamington North Loop laterals. These stations are located in the Town of Leamington. The Mersea lateral, which feeds the distribution system via Mersea Gate Station, is a secondary feed due to the distance from the demand. The Essex Line provides a minor feed into the distribution system via Essex Transmission Station.

The current distribution system constraint is the inlet pressure to Kingsville Gate Station. The distribution system is at capacity today based on this constraint and Union is unable to connect any significant contract customer demand.

² References to the distribution system relate to the 1900 kPag system. Does not include any systems operating at lower MOP.

The options for alleviating the distribution system constraint include the installation of NPS 12 reinforcement from County Rd. 18 station towards Kingsville Gate Station in phases as demand increases or constructing a new lateral south from the NPS 20 Panhandle Line to the Town of Kingsville. As shown in Exhibit A, Tab 7, Schedule 2 the Kingsville Gate station is a significant distance from the laterals that supply the distribution system. Building a lateral to the Town of Kingsville is the most efficient way to reinforce the distribution system as it provides a high pressure source of gas in close proximity to the constraint of the distribution system.

5. *Efforts to Manage Market Need To Date*

Since the existing NPS 16 and NPS 20 Panhandle pipelines were installed, the market areas these pipelines supply have continued to grow. In serving this growth Union has been able to defer, until last year (2017), reinforcement on the Panhandle System by constructing downstream facilities such as the Leamington North Loop (Leamington Expansion Phase I and Phase II pipeline projects) and, increasing reliance on Union's firm gas supply arriving at Ojibway. As part of the Union South gas supply plan, some of the gas supply volumes delivered to Union for in-franchise sales service customers arrive at Ojibway. Prior to 2013, Union did not require its own gas supply arriving at Ojibway to support Design Day market demands. Today, Union relies on 58 TJ/d (increases to 60 TJ/d in 2019) of this gas supply arriving on Design Day to help reduce the physical transportation needs from Dawn to Ojibway. Even with this added volume and the construction of the EB-2016 -0186 facilities, the Panhandle System will be at capacity effective November 1, 2020.

The aforementioned efforts that have, in the past, allowed Union to serve growth in absence of Panhandle System reinforcement, can no longer meet Market demand. Significant growth in demands throughout the Panhandle System Market results in the need for further reinforcement.

Similarly, incremental supply at Ojibway is only suited to efficiently serve demands in the far west end of the Market in Windsor (between Ojibway and Sandwich Compressor) and does not provide the increase in pressures that are needed to support growth in the Kingsville-Leamington market area. In order to serve firm demand growth, reinforcement is required.

The Panhandle System's ability to transport gas from Ojibway to Dawn on a firm basis is limited by its physical assets between Ojibway and Dawn and the minimum market available to consume gas between Ojibway and Dawn, specifically the Windsor area, which occurs in the summer. The gas delivered at Ojibway is consumed in the market in Windsor (west of the Sandwich Compressor Station). The firm receipt capacity at Ojibway is 115 TJ/d in the summer and 140 TJ/d in the winter.

6. *Panhandle System Capacity and Growth*

The Design Day demand of 557 TJ/d in Winter 2016/2017 is forecast to increase to a Design Day demand of 690 TJ/d in Winter 2021/2022 (see Table 7-1). After the Winter 2016/2017 operating season, actual customer consumption data was analyzed, along with the change in natural gas heating value, resulting in a decrease in Design Day demand from 565 TJ/d (total filed in EB-2016-0186) to 557 TJ/day.

Since EB-2016-0186, the Panhandle System capacity for W16/17 has seen a decrease from 565 TJ/day to 564 TJ/day. This decrease in capacity is attributed to the actual customer attachment location and impacts of conversion to a Geographic Information System (“GIS”) model, and is offset by a change in natural gas heating value. As per Table 7-1, the capacity of the Panhandle System for Winter 2017/2018 with the EB-2016-0186 facilities included, is 666 TJ/day. The resulting capacity of the EB-2016-0186 facilities is 102 TJ/day. This compares to the capacity filed in EB-2016-0186 of 106 TJ/day. The main driver for the reduction in capacity was a shift in the forecast location of customer attachments. More specific, the level of customers forecast to attach in Windsor-Chatham decreased while the attachments forecast in the Kingsville-Leamington market area increased.

Table 7-1
Design Day (TJ/d)

Panhandle	Rate Class	Historical					Forecast								
		W 12/13	W 13/14	W 14/15	W 15/16	W 16/17	W 17/18 (Panhandle Reinforcement Project)	W 18/19	W 19/20	W 20/21	W 21/22	W 22/23	W 23/24	W 24/25	W 25/26
System Capacity (43.1 IOFF) (TJ/d)		490	527	529	529	564	666	666	666	666	666	666	666	666	666
System Demand (43.1 IOFF) (TJ/d)	M1/ M2	278	284	308	292	291	291	294	296	297	299	300	302	303	304
	M4	49	64	44	45	43	92	99	126	137	147	151	158	165	171
	M5	3	2	8	5	12	1	1	1	1	1	1	1	1	1
	M7	5	4	7	15	32	44	45	45	48	57	62	65	68	71
	T-1	155	162	34	31	28	30	30	31	31	31	31	31	31	31
	T-2	0	0	127	141	151	155	155	155	155	155	155	155	155	155
System Demand (43.1 IOFF) (TJ/d)	Total	490	515	527	528	557	612	624	655	669	690	701	712	723	734

Forecast future Design Day demands were based on the forecast as detailed in Exhibit A, Tab 6, Table 6-1 to identify reinforcement facilities to support growth on the Panhandle System. The 20-year growth forecast of 296 TJ/d for the period 2017 to 2036, as identified at Exhibit A, Tab 6, results in Design Day demands of 853 TJ/d by 2036³.

³ November 1, 2016 Design Day Demand requirement of 557 TJ/d plus growth of 296 TJ/d results in total Design Day demands of 853 TJ/d in 2036.

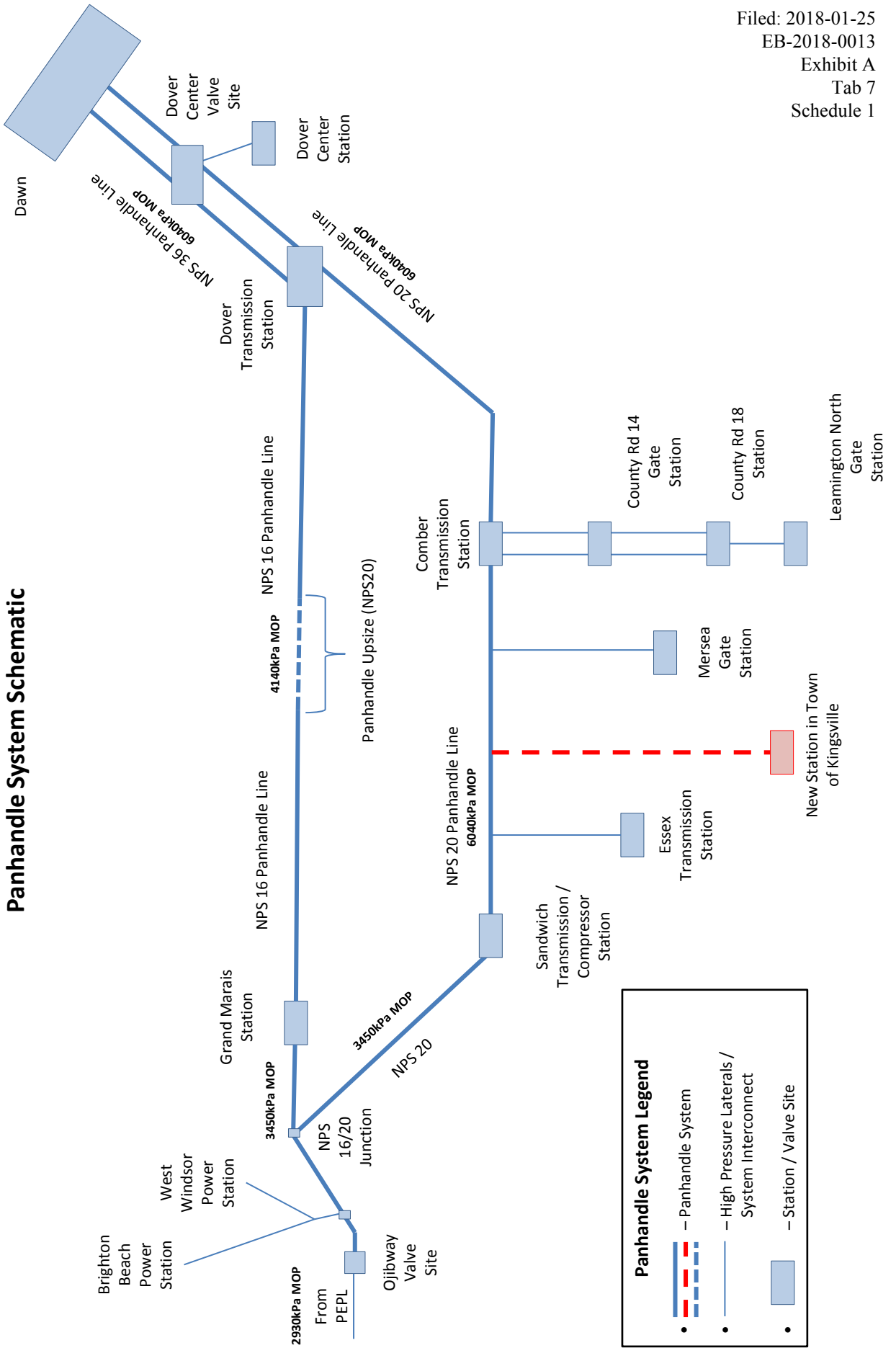
1

2 ***7. Reinforcement Timing- Integrated Panhandle and Distribution System***

3 Hydraulic analysis shows that the operational requirements of the Panhandle System will not be met for
4 Winter 2020/2021 based on continued forecasted growth to a Design Day demand of 669 TJ/d and no
5 changes to existing facilities. In order to continue to provide service to new general service and
6 contract customers, additional Panhandle System capacity is required by November 1, 2020. The
7 distribution system is unable to fully service the forecasted growth as identified in EB-2016-0186
8 without significant distribution reinforcement. Please refer to Exhibit A, Tab 8 for a detailed review of
9 the proposed facilities and alternatives. The Exhibit A, Tab 8, evidence further supports that
10 constructing the Project in 2019 will offset the need for significant distribution system reinforcement.

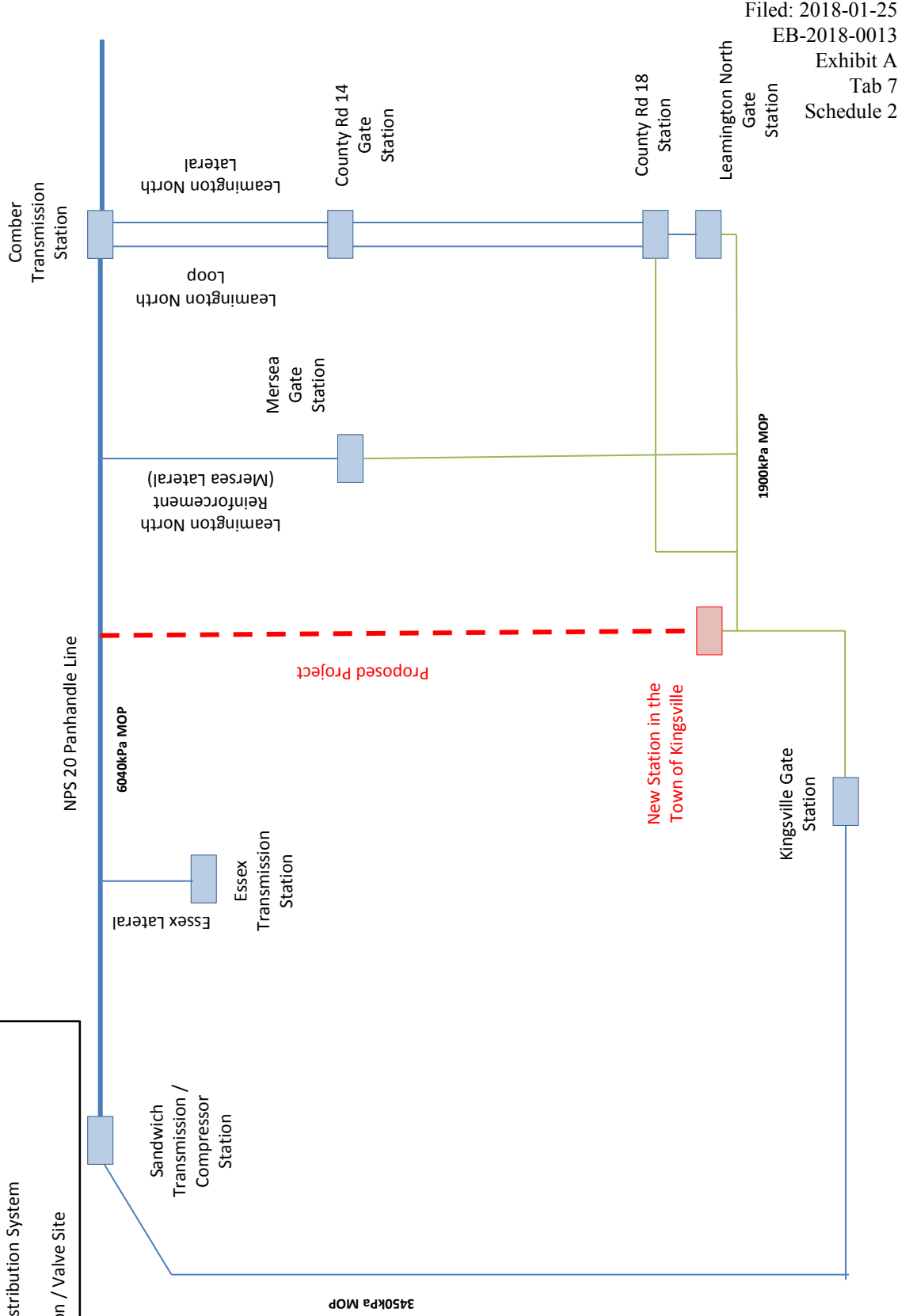
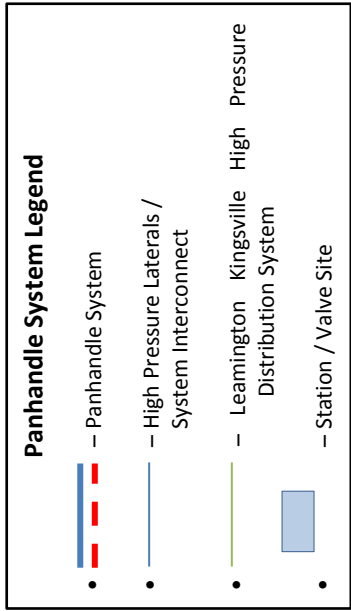
Panhandle Reinforcement Project

Panhandle System Schematic



Kingsville Transmission Reinforcement Project

Leamington Kingsville High Pressure Distribution System Schematic



PROPOSED FACILITIES AND ALTERNATIVES

The purpose of this section of evidence is to review and compare the various alternatives Union evaluated to reliably serve the growing Design Day demand of the Panhandle System. The preferred alternative is the proposed Project, which is the construction of a new NPS 20 pipeline from the existing NPS 20 Panhandle Line into the Town of Kingsville. The proposed Project adds 71 TJ/d of capacity.

This evidence is comprised of the following sections:

1. Overview of Proposed Reinforcement
2. Description of Alternatives
3. Description of Alternative Evaluation Criteria
4. Assessment of Alternatives
 - Including long term comparison
5. Proposed Solution

1. Overview of Proposed Reinforcement

The Panhandle System is currently forecast to reach its Design Day capacity earlier than forecast in the Panhandle Reinforcement Project application (EB-2016-0186). The increased forecast of demand growth accelerates the timing of required Panhandle System reinforcement to 2020. In addition to the increased demand, there is also a constraint within the distribution system preventing customers from attaching even though Panhandle System capacity is available. Moving the Project from 2020 to 2019

1 will alleviate the distribution constraint and offset the installation of significant distribution system
2 facilities that would no longer be required and no longer be beneficial to the distribution system
3 capacity after the installation of the Project in 2020.
4

5 The NPS 36 Panhandle Reinforcement Project¹ greatly increased system pressures along the NPS 20
6 Panhandle Line between Dawn and Sandwich; however the existing laterals (Essex, Leamington North,
7 Leamington North Reinforcement (Mersea), Leamington North Loop) from the NPS 20 Panhandle
8 Line to the distribution system are not sufficiently sized to serve the increased demand. In other words,
9 there is a large pressure loss in the laterals between the NPS 20 Panhandle Line and the distribution
10 system.
11

12 In absence of the Project a significant amount of distribution reinforcement is required to be
13 constructed between the County Rd 18 Station and the Kingsville Gate Station. To meet the market
14 demands, distribution reinforcement would be required every year until a pipeline is built between the
15 NPS 20 Panhandle Line and the Town of Kingsville.
16

17 Construction of the Project will decrease the pressure loss on the laterals between the NPS 20
18 Panhandle Line and the distribution system thus alleviating the constraint on the Panhandle System and
19 allowing future system-wide growth. The Project will also bring a high pressure source of gas close to
20 the location of the distribution constraint at the Kingsville Gate Station thus alleviating this constraint.
21 This has the added benefit of offsetting significant distribution system reinforcement. The cost of the

¹ EB-2016-0186

distribution reinforcement required for 2019 is \$10.4 million. The need for this distribution reinforcement would be eliminated by moving the Project forward one year from 2020 to 2019.

A commercial alternative of buying incremental supply at Ojibway is only suited to efficiently serve demands in the far west end of the Panhandle System Market in Windsor (between Ojibway and Sandwich Compressor) and does not provide the increase in pressures that are needed to support growth for customers served by the NPS 20 Panhandle Line between Dawn and the Sandwich Compressor. In order to reliably serve firm demand growth, the Project is required.

The long term (20 year term 2017 to 2036) analysis shows that the Panhandle System requires a pipeline between the NPS 20 Panhandle Line to the Town of Kingsville for each alternative. All the alternatives discussed have essentially the same facilities over the 20 year planning timeframe but the order of the builds is different. The alternatives considered are summarized in Exhibit A, Tab 8, Schedule 1.

A review of the Project as well as alternatives to serve the increased customer demands of the Panhandle System is provided in the following sections.

2. Description of Alternatives

Union evaluated alternatives that included the construction of additional pipeline facilities, LNG, CNG and commercial alternatives including contracting for incremental deliveries at Ojibway through Panhandle Eastern firm transportation service contracts or a firm delivered service from the secondary

market at Ojibway . For the purpose of this evidence, the following alternatives were identified and assessed. The alternatives were split into Potential Alternatives and Other Alternatives. The Potential Alternatives were assessed using NPV, costing and long term analysis. The Other Alternatives were considered but eliminated early based on excessive cost, having a detrimental long/short term impact to system capacity or, did not meet required reinforcement needs. A summary of the Potential Alternatives is provided at Exhibit A, Tab 8, Schedule 1, p. 1. The Other Alternatives are summarized at Exhibit A, Tab 8, Schedule 1, p. 2.

Potential Alternatives:

1. New pipeline from existing NPS 20 Panhandle Line to the Town of Kingsville; (NPS 16 and 20)
2. Incremental deliveries at Ojibway with new pipeline from existing NPS 20 Panhandle Line into the Town of Kingsville;
3. NPS 36 reinforcement of the Panhandle System; and
4. Distribution reinforcement constructed in 2019 and new NPS 20 pipeline in 2020;

These Alternatives were compared on a 20 year time frame for cost/capacity consideration.

Other Alternatives reviewed include:

- New pipeline from existing NPS 20 Panhandle Line to the Town of Kingsville; (NPS 12 and 24)
- New LNG Plant; and

- New CNG facilities

3. *Description of Alternative Evaluation Criteria*

In completing its evaluation of each alternative, Union considered two main criteria: i) Design and Operational Requirements; and ii) Net Present Value (“NPV”) Cost.

i) Design and Operational Requirements: The Panhandle System provides customers firm natural gas requirements while meeting the minimum inlet pressures necessary to supply downstream distribution systems. An acceptable alternative must be able to maintain these minimum pressure parameters on a Design Day and meet Design Day delivery requirements.

The alternatives are intended to serve at least five years of forecast growth (2020-2024) and lay a foundation for expected future growth. Beginning in 2020, the existing Design Day demands plus the forecasted growth will exceed the current Panhandle System capacity, and therefore reinforcement is required. As described in Exhibit A, Tab 7, Table 7-1, the Design Day demand of the Panhandle System is forecast to grow from 655 TJ/d to 723 TJ/d by 2024, an increase of 68 TJ/d. The alternatives, therefore, are required to provide at least 68 TJ/d of incremental capacity to the Panhandle System to move natural gas to the distribution systems it supplies. Each viable alternative is evaluated using this same time horizon, and considers the longer term growth forecast in choosing the preferred alternative. Facilities required to support the forecasted growth beyond 2024 are not being proposed as part of this Application but were included in the alternative analysis to determine long term benefits of potential alternatives beyond 5 years of growth.

ii) Net Present Value (“NPV”) Cost: Union evaluated the NPV of each of the potential alternatives. The NPV of the Project and the alternatives are shown in Exhibit A, Tab 9, Table 9-1 and included in Exhibit A, Tab 8, Schedule 1.

4. *Assessment of Alternatives*

Each alternative (potential and other) was evaluated based on the need for incremental system capacity of approximately 68 TJ/d effective November 1, 2020. The facilities are required to provide incremental capacity to the Panhandle System and meet the forecasted five year firm Design Day growth. Providing incremental capacity for at least five years offers assurance to the Market that capacity will exist to reliably serve the growing needs of residential, commercial and industrial customers. The following summarizes the assessment findings for each alternative identified above.

4.1 New Pipeline from Existing NPS 20 Panhandle Line to the Town of Kingsville

The construction of high pressure pipeline facilities between the NPS 20 Panhandle Line and the distribution system in the Town of Kingsville will reduce the pressure loss in the laterals (Essex, Leamington North, Leamington North Reinforcement (Mersea) and Leamington North Loop) and thus increase the Panhandle System capacity. The pipeline will also bring a high pressure source of gas close to the location of the distribution constraint at Kingsville Gate Station thus alleviating the constraint on the distribution system. Therefore, the pipeline also has the added benefit of offsetting significant distribution system reinforcement.

1 Union reviewed multiple pipeline size options to connect the NPS 20 Panhandle Line to the Town of
2 Kingsville with a 6040 kPag MOP pipeline, including NPS 12, NPS 16, NPS 20 and NPS 24.

3
4 Union reviewed the option of an NPS 16 or NPS 20 pipeline from the NPS 20 Panhandle Line to the
5 Town of Kingsville. For the forecast growth to 2025 an NPS 16 and NPS 20 pipeline will provide
6 similar incremental capacity. The capital cost required for an NPS16 pipeline is \$99.8 million and an
7 NPS 20 is \$105.7 million. A long term analysis was completed to determine the capacity of each
8 project over a 20 year timeframe. When considering a 20 year growth forecast the total reinforcement
9 required for the NPS 20 alternative is more cost effective than the NPS 16 alternative. Please refer to
10 Exhibit A, Tab 9, Table 9-1 for costing specifics.

11
12 An NPS 20 pipeline will also minimize future distribution system reinforcement in and near the Town
13 of Kingsville. Projects such as the McCormick Reinforcement project (identified as a future
14 reinforcement requirement alternative in the Panhandle Reinforcement Project EB-2016-0186) can be
15 replaced with more efficient reinforcement that utilizes the NPS 20 pipeline. Based on the factors
16 discussed above, the NPS 20 pipeline best positions the Panhandle System to meet long-term growth in
17 the most efficient manner.

18
19 NPS 12 and NPS 24 pipeline scenarios were reviewed and were not pursued. These are addressed
20 under Other Alternatives.

21

1 4.2 New Pipeline from NPS 20 Panhandle Line to the Town of Kingsville with Incremental Deliveries
2 at Ojibway

3 With incremental supply deliveries at Ojibway in Windsor, a different set of facilities than considered
4 above are required to serve the forecast Design Day demand. The aim of this option is to downsize or
5 avoid facilities.

6
7 This alternative includes Union contracting an incremental 55 TJ/d of supply from a limited market at
8 Ojibway²³. There are no stand-alone commercial services that can be contracted at Ojibway with either
9 a pipeline company or secondary market that would deliver natural gas via the Panhandle System into
10 the distribution systems and eliminate the need for additional pipeline and station facilities to meet
11 Market demand growth. Ojibway deliveries are well-suited to satisfy demands in the Windsor market,
12 which is in close proximity to Ojibway, but are neither effective nor efficient for satisfying demands on
13 the remainder of the Panhandle System. Incremental Ojibway deliveries yield diminished returns to
14 serve demand beyond the Windsor market between Sandwich and Dawn (eg. 55 TJ/d of incremental
15 Ojibway deliveries provides only 27 TJ/d of capacity between Sandwich and Dawn). This issue was
16 discussed in detail during EB-2016-0186. See Exhibit A, Tab 8, Schedule 2 for detailed explanations
17 provided in two interrogatory responses filed by Union during EB-2016-0186⁴.

² This would bring the total contracted Union deliveries at Ojibway to 115 TJ/d, which maximizes Union's import capability given the 115 TJ/d limit

³ For any commercial service to be considered viable, the commercial service must be firm with ongoing renewal rights and renewal notice of at least three years. This is to ensure that if a commercial service is no longer available in the future, Union has sufficient time to contract for other supply and/or construct required facilities.

⁴ Exhibit A, Tab 8, Schedule 2 includes Union EB-2016-0186 interrogatory responses - Exhibit B.FRPO.15 and Exhibit B.FRPO.18

1 In addition to the commercial service, this alternative also requires an NPS 12 pipeline from the NPS
2 20 Panhandle Line to the Town of Kingsville in 2022 to serve the remainder of the forecast demand
3 growth from Dawn.

4
5 The commercial services at Ojibway could delay the installation of a new lateral to the Town of
6 Kingsville; however, the Panhandle System would continue to require significant distribution system
7 reinforcement. Each year the lateral is delayed beyond 2019, major distribution reinforcement is
8 required annually until the lateral is built. Once the lateral is in-service this distribution reinforcement
9 becomes significantly under-utilized. Therefore, pipeline and station facilities are required in addition
10 to any commercial arrangement at Ojibway in order to integrate the additional supply into Union's
11 Panhandle System and downstream distribution systems to reliably serve the growing Design Day
12 demands across the Panhandle System Market.

13
14 In evaluating the potential of incremental gas supply delivered at Ojibway, Union adhered to its Gas
15 Supply Planning Principles⁵ which focus on providing reliable, secure and diverse supplies to Union's
16 customers at a prudent cost. These principles are applied when Union reviews transportation
17 alternatives and makes decisions with respect to serving its customers.

18
19 As identified in recent leave to construct applications filed with the Board, increasing the reliance on
20 third party gas supply services to meet an in-franchise firm demand requirement in place of, or to
21 supplement, a Union facility option could cause many potential issues. As discussed in detail in EB-

⁵ Refer to EB-2014-0182 Exhibit A, Tab 5

2016-0186, such a commercial alternative carries a significant degree of price, term and capacity uncertainty. Further, it creates risk to the Market when relying on third party gas supply services, especially at an illiquid trading point at Ojibway to meet demand. The Board, at p.26 of its EB-2016-0186 Decision and Order (dated February 23, 2017) recognized this risk:

Increasing deliveries at Ojibway will not get the gas to Leamington-Kingsville without an inefficient supply ratio, a significant change in supply mix, the need for additional facilities and the assumption of more risk.

This alternative is not preferred as noted above. However, Union did complete an economic evaluation of the cost of gas and cost of facilities required.

i) Incremental Gas Supply Delivered at Ojibway

In 2019, 115 TJ/d of deliveries at Ojibway will already be contracted. Union contracts with Panhandle Eastern to deliver 60 TJ/d to Ojibway for its in-franchise sales service customers. Two ex-franchise C1 Shippers have contracted 58 TJ/d (21 TJ/d with a marketer and 37 TJ/d with Rover Pipelines)⁶ of firm Ojibway to Dawn capacity and both shippers have the right of first refusal (“ROFR”) at contract expiry. As a result, no further firm annual capacity is available for imports from Ojibway to Dawn.

Of the total 115 TJ/d of capacity at Ojibway, Union controls only 60 TJ/d which is used to reliably serve Design Day demands in the Windsor Market. For this illustrative analysis only, Union has assumed it could purchase a firm delivered service to Ojibway from the secondary market to be

⁶ Total of 60 plus 58 is 118 TJ/d which slightly exceeds deliveries of 115 TJ/d. This is due to conversion of contract from 35 DTh/d to 37 TJ/d.

1 guaranteed to arrive at Ojibway each and every day for Design Day purposes. The incremental
2 Ojibway receipts assume 55 TJ/d on a firm year round basis (to the annual constraint of 115 TJ/d). This
3 would require the holder of the existing C1 capacity to provide the service or the assignment of their
4 capacity to another party to provide the service. This creates an illiquid market for purchasing
5 delivered supply.

6
7 For purposes of economic analysis, Union forecast that the cost of a delivered service to Ojibway
8 would be approximately \$0.427/GJ⁷ higher than the cost of Dawn sourced supply. The associated gas
9 supply premium is approximately \$8.5 million per year. Based on the premium and these additional
10 factors, this alternative is not preferred.

11
12 ii) Cost of Required Incremental Facilities in addition to incremental Ojibway supply

13 With deliveries at Ojibway being inefficient to meet demands between Sandwich and Dawn, significant
14 Panhandle System reinforcement and distribution system reinforcement are required in addition to the
15 incremental 55 TJ/d of firm deliveries at Ojibway. The facility reinforcements include approximately
16 6 km of NPS 12 pipeline, 2 km of NPS 8 pipeline to be built between 2019 and 2021 and an additional
17 19 km of NPS 12 pipeline and a new station is required to be constructed in 2022. These facilities have
18 an estimated capital cost of \$100.2 million in addition to cost of gas supply mentioned above. Longer
19 term the required facilities have an estimated capital cost of \$386 million and include 14 km of NPS 36
20 looping on the Panhandle in 2025, plus further 16 km of NPS 36 looping in 2028 and NPS 16 looping
21 of the pipeline into the Town of Kingsville in 2033.

⁷ \$ 0.36 US/MMBTU *Times FX of 1.25 divided 1.0551 (mmBTU to GJ factor) = \$0.427 CAD/GJ. Cost of \$0.36 US/MMBTU as per Q4 ICF forecast basis (2017 - 2026).

Therefore it is far more efficient to construct the Project first as it eliminates the need for distribution system reinforcement and delays the need for the NPS 36 Panhandle Reinforcement between Dover Transmission and Comber. The bottleneck to increasing the system capacity is the pressure drop between the NPS 20 Panhandle Line and the distribution systems, not the upstream Panhandle System.

Based on the supply premium and these additional factors, this alternative is not economic and not preferred. The comparison in NPV in the near term and long term of this alternative compared to the proposed project is included in Exhibit A, Tab 9, Table 9-1.

4.3 NPS 36 Reinforcement of the Panhandle System

Union reviewed looping the NPS 20 Panhandle Line with NPS 36 pipeline from Dover Transmission towards Comber to increase Panhandle System capacity to reliably serve the forecast demand growth. Initially, distribution facilities of 3.8 km of NPS 12 pipe and 1 km of NPS 8 pipe would be required in 2019. The following year 14 km of NPS 36 would be required from Dover Transmission towards Comber along with significant distribution facilities similar to what was required in 2019. Each subsequent year that a pipeline into the Town of Kingsville is delayed, distribution reinforcement of the magnitude described above will be required. In 2025 the next phase of 16 km of NPS 36 pipeline to Comber would be required. Once the NPS 36 pipeline reaches Comber the only pipeline reinforcement that increases Panhandle System capacity is the NPS 20 pipeline from the NPS 20 Panhandle Line to the Town of Kingsville (the Project facilities) in 2034. Once this pipeline into the Town of Kingsville is built, all previous distribution system reinforcement facilities are no longer required and are no longer beneficial to the distribution system capacity. Due to these factors, Union does not consider this

a viable alternative to the Project. The long term capital cost of this alternative is approximately \$418.6 million as compared to the project at a long term capital cost of \$216.4 million as per Exhibit A, Tab 9, Table 9-1.

4.4 Distribution System Reinforcement

Reinforcing the distribution system in 2019 would allow for the Project to be delayed one year to 2020. The reinforcement identified results in a capital cost of approximately \$10.4 million and does not create any increased capacity on the Panhandle System. The \$10.4 million consists of 4 distribution projects totaling 3.8 km of NPS 12 and 1 km of NPS 8. The Project as proposed would need to be constructed in 2020 based on the forecast Panhandle System demand growth and once in-service, the distribution system reinforcement facilities are no longer required and are no longer beneficial to the distribution system capacity. No amount of additional distribution system reinforcement would benefit the remainder of the Panhandle System and market. Based on these factors, Union rejected the distribution system reinforcement as a viable alternative to the Project.

4.5 Long Term Facility Requirements

An analysis of the longer term view was also completed to compare potential alternatives to the Project. The forecast long-term demand (2025-2036) of the Panhandle System Market is expected to grow by a further 130 TJ/d. Additional pipeline and station facilities will be required to reliably serve the forecast long-term demand. In reviewing the long-term facility requirements, it is important to note that all alternatives will eventually require the installation of a pipeline from the NPS 20 Panhandle Line to the Town of Kingsville, and ultimately further Panhandle System reinforcement between Dover

Transmission and Comber. Regardless of the alternative, the long-term facility solution requires increasing the capacity of the Panhandle System by constructing a pipeline to the Town of Kingsville to maintain the required system delivery pressures and serve the growing Design Day demands, as proposed in this Project.

The economic analysis is detailed in Exhibit A, Tab 9 and is summarized in Table 9-1. The comparison illustrates that the most economic option over the longer term is the Project as proposed.

4.6 Other Alternatives

Additional alternatives, including NPS 12 and NPS 24 sizing of the proposed lateral, LNG and CNG were also evaluated and rejected as noted below.

a) NPS 12 Pipeline from NPS 20 Panhandle Line to the Town of Kingsville

Based on Union's forecasted growth, an NPS 12 pipeline only provides four years of customer growth. The NPS 12 pipeline will greatly reduce the capacity of Union's future anticipated projects as it is too small to serve long term forecast demand. This option was not included further in the analysis.

b) NPS 24 Pipeline from NPS 20 Panhandle Line to the Town of Kingsville

An NPS 24 pipeline option was also considered. Using the long term analysis completed for the NPS 16 pipeline and NPS 20 pipeline options, Union eliminated the NPS 24 pipeline option without further analysis. Over the 20 year timeframe the NPS 20 pipeline never becomes the constraint on the Panhandle System. Upsizing to a NPS 24 pipeline from the NPS 20 pipeline would provide no

1 additional benefit to increase system capacity within the 20 year period. As a result, this option was not
2 included further in the analysis.

3
4 c) New Liquefied Natural Gas plant

5 Union considered LNG early in the alternatives stage and rejected the option because it is not
6 economically feasible. In EB-2016-0186, LNG was costed (see Exhibit JT1.24) at approximately \$235
7 million with about \$5 million in annual operating expenses. The sizing of the LNG plant was to meet
8 the Panhandle System capacity of 106 TJ/d created by the NPS 36 pipeline option. The Project creates
9 Panhandle System capacity of 68 TJ/d. Prorating the \$235 million by 64 % ($68 \text{ TJ/d} / 106 \text{ TJ/d} = 64\%$)
10 gave an indicative cost of LNG at about \$150 million plus operating expenses. Given the magnitude of
11 these costs Union did not pursue LNG further.

12
13 d) Compressed Natural Gas Option

14 CNG was also considered early in the alternatives assessment and not pursued further. For this
15 application, Union rejected CNG due to both cost and logistical concerns. As stated at Exhibit JT1.24
16 in EB-2016-0186, the compression cost was \$97 million, with trucks and trailers a further \$62 million,
17 and operating costs of \$16 million per year. Some 500 plus loads per day were required to meet the 106
18 TJ/d requirements. On a simple basis, the capital expenditures for 68 TJ/d could be in the order of 64%
19 of \$159 million, or \$102 million plus a very significant operating cost of approximately \$10 million per
20 year. Given the logistical concerns and the magnitude of these figures, Union did not pursue CNG
21 further.

1 **5. *Proposed Solution***

2 To provide reliable, secure, economic natural gas supply to meet the growing Design Day demand of
3 the Panhandle System, Union is proposing to construct approximately 19 km of NPS 20 pipeline from
4 the existing NPS 20 Panhandle Line to the Town of Kingsville. The Project will have an in-service date
5 of November 1, 2019. The location of the Project is shown at Exhibit A, Tab 4, Figure 4-1.

6
7 The Project provides many benefits and is the best alternative for the following reasons:

- 8 1. It is the lowest cost (best NPV) to customers; (refer to Exhibit A, Tab 9, Table 9-1)
- 9 2. Provides market assurance in meeting the growing near term firm demands along the
10 Panhandle System for the next five years;
- 11 3. Positions the Panhandle System and the pipelines connecting to the distribution system to
12 meet the long term growth in the most efficient manner. This Project will reduce the
13 pressure loss between the NPS 20 Panhandle Line and the distribution system. It will re-
14 distribute load from the Leamington North laterals, which are currently nearing capacity, on
15 to the Project;
- 16 4. Eliminate the need for costly and avoidable distribution system reinforcement projects; and
- 17 5. Provides the necessary incremental capacity without increased reliance on third party gas
18 supply transportation services, which contain price, term and capacity risk at a cost
19 premium.

Kingsville Transmission Reinforcement Projects Summary of Alternatives

Alt #	Alternative Description	Facility Requirements	Capital Costs (million)	NPV	In-Service Date	Future Facility Requirements (2024-2036)	Cummulative Capital Cost (million)	NPV	Rationale
	Proposed Project New Pipeline from NPS 20 Panhandle into Kingsville NPS20	2019 - Install 19 km of NPS 20 Pipe from Panhandle to Kingsville. New Gate Station at end of pipeline.	105.7	(59.2)	1-Nov-19	Install approximately 14 km of NPS36 pipe from Dover towards Comber in 2026.	216.4	(128.0)	NPS 20 gives the best long term benefit to capacity of the entire Panhandle System
Alt 1	New Pipeline from NPS 20 Panhandle into Kingsville NPS16	2019 -Install 19 km of NPS 16 Pipe from Panhandle to Kingsville. New Gate Station at end of pipeline.	99.8	(54.3)	1-Nov-19	Install approximately 14 km of NPS36 pipe from Dover towards Comber in 2026. Plus Install approximately 6.5 km of NPS36 pipe from 2026 Phase 1 towards Comber in 2033.	291.5	(156.7)	Significantly more costly over longer term relative to a \$4.9 NPV higher upfront cost for proposed NPS 20
Alt 2	55 TJ/d Incremental Deliveries at Ojibway Plus Distribution Reinforcement Plus New NPS 12 from NPS 20 Panhandle into Kingsville	Install NPS 12 Distribution looping each year through 2021. Increase Ojibway import contracts to 115 TJ/d. Install 19 km of NPS12 pipe from Panhandle to Kingsville in 2022.	100.2	(147.2)	1-Nov-19	Install approximately 14 km of NPS36 pipe from Dover towards Comber in 2025. Plus Install approximately 16 km of NPS36 pipe from 2025 Phase 1 to Comber in 2028. Plus Loop NPS 12 Kingsville pipe with 6.5 km of NPS16 pipe in 2033.	386.0	(310.9)	Significantly more costly over near and longer term due to Capex and Gas Costs Distribution reinforcement constructed between 2019-2021 will be significantly under-utilized once the NPS12 into Kingsville is built in 2022. Exhibit A, Tab 8
Alt 3	New NPS 36 Pipeline from Dover towards Comber Panhandle line reinforcement	Install 14 km of NPS36 Pipe from Dover Trans towards Comber to loop current Panhandle System in 2020. Install NPS12 Distribution reinforcement in 2019.	131.8	(78.0)	1-Nov-20	Install approximately 16 km of NPS36 pipe from previous loop to Comber in 2025. Plus Each year significant distribution reinforcement is required (~\$4/year). Plus In 2034 NPV 16 Kingsville lateral	418.6	(221.7)	Significantly more costly over near and longer term. Looping the Panhandle system with NPS36 requires the Kingsville lateral within the 20 year timeline. Distribution reinforcement constructed between 2019-2033 will be significantly under-utilized once the NPS16 into Kingsville is built in 2034. Exhibit A, Tab 8
Alt 4	New Distribution Reinforcement in Kingsville Leamington market area	Install 3 sections of NPS 12 (totalling 3.8 km) and 950 m of NPS 8 Distribution pipe in 2019 to transport gas from Leamington North and Mersea laterals towards Kingsville Gate Station Plus Install 19 km of NPS 20 (Kingsville Reinforcement Project as per proposed) in 2020	119.3	(70.9)	1-Nov-19	Install approximately 14 km of NPS36 pipe from Dover towards Comber in 2026. (same as proposed)	230.0	(139.7)	Once NPS 20 pipe is constructed in 2020, distribution facilities constructed in 2019 are significantly under-utilized.

Other Alternatives
Considered and Rejected
in Early Analysis

Alt #	Alternative Description	Facility Requirements	Capital Costs (million)	NPV	In-Service Date	Future Facility Requirements (2024-2036)	Cummulative Capital Cost (million)	NPV	Rationale
Case 5	New Pipeline from NPS 20 Panhandle into Kingsville NPS12	Install 19 km of NPS 12 Pipe from Panhandle to Kingsville. New Gate Station at end of pipeline.			1-Nov-19	Install approximately 14 km of NPS36 pipe from Dover towards Comber in 2023. Did not continue analysis past this point.			Pipeline is too small to support forecasted growth. Does not meet minimum 5 years of growth. Did not pursue costing of facilities. Exhibit A, Tab 8
Case 6	New Pipeline from NPS 20 Panhandle into Kingsville NPS24	Install 19 km of NPS 24 Pipe from Panhandle to Kingsville. New Gate Station at end of pipeline.			1-Nov-19	Same facilities as NPS 20 Did not continue analysis past this point.			NPS 20 pipeline does not create a constraint on the system. Therefore, increasing to NPS24 provides no additional benefit to Panhandle System capacity. Did not pursue costing of facilities. Exhibit A, Tab 8.
Case 7	New Liquified Natural Gas ("LNG") Plant	Install LNG Facility at Comber. Install NPS 12 Distribution reinforcement each year.	\$150 Plus ~ \$5 Mil operating costs	NA	1-Nov-19				High level LNG plant cost estimated. Did not estimate other related pipeline costs. Capex and Opex too high, operating and logistical concerns. Exhibit A, Tab 8.
Case 8	New Compressed Natural Gas ("CNG") Plant	Install LNG Facility at Comber. Install NPS 12 Distribution reinforcement each year.	\$102 Plus \$10 Mil operating costs	NA	1-Nov-19				High level CNG plant cost estimated. Did not estimate other related pipeline costs. Capex and Opex too high, operating and logistical concerns. Exhibit A, Tab 8.

UNION GAS LIMITED

Answer to Interrogatory from
Federation of Rental-housing Providers of Ontario ("FRPO")

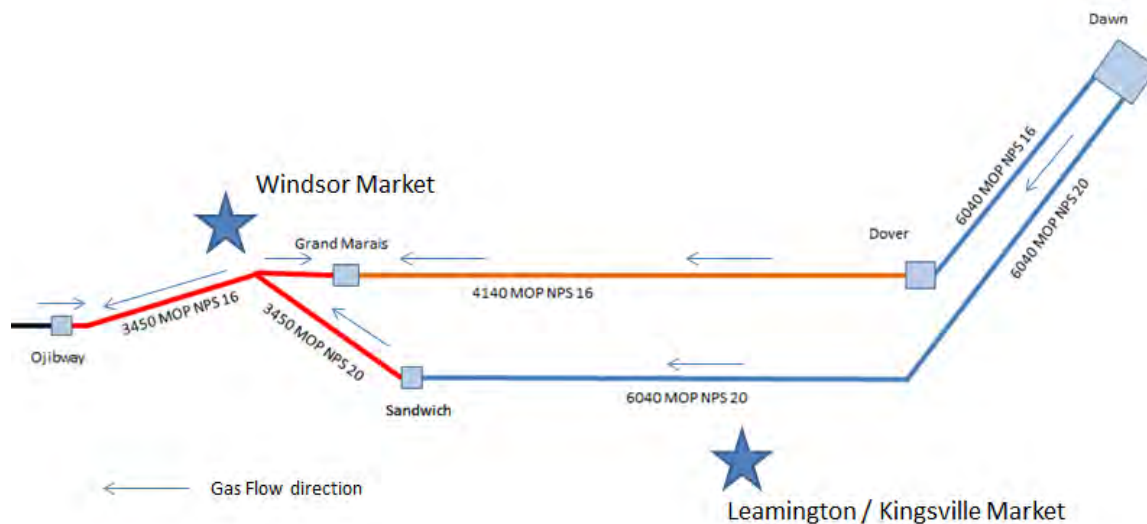
Reference: Tab 5, p.17, lines 18 – 21.

Preamble: "Similarly, incremental supply at Ojibway is only suited to efficiently serve demands in the far west end of the Market in Windsor (between Ojibway and Sandwich Compressor) and does not provide the increase in pressures along the NPS 20 pipeline that are needed to support growth in Leamington - Kingsville."

Please fully explain why supply at Ojibway "is only suited to efficiently serve demands" between Ojibway and Sandwich. Please ensure the response provides detail on the physical engineering limitations of the pipeline, compressor and estimated costs to overcome any of these limitations.

Response:

Please refer to the following schematic.



Demand on the Panhandle Transmission System is served by three means:

1. From Dawn via the NPS 16
2. From Dawn via the NPS 20

3. From Ojibway

From a hydraulic perspective, capacity of the Panhandle System is maximized when the NPS 16 at the outlet of Dover Transmission is set at MOP, maximizing its capability to serve the Windsor area market, while leaving the NPS 20 dedicated to serve demands in the Leamington/Kingsville market. Since demand in Windsor exceeds the ability of the NPS 16 pipeline plus Ojibway supply, the NPS 20 pipeline must supplement this market by supplying gas through the Sandwich Transmission Station from the 6040 kPa MOP system to the 3450 kPa system. Growth in the Windsor market can only be served by an increase in supply at Ojibway or by sending more gas from the NPS 20 pipeline through Sandwich. Growth in the Leamington/Kingsville market can only be served by increasing the pressure on the NPS 20 pipeline upstream of Sandwich.

Ojibway supply can serve the Windsor market efficiently at a 1 to 1 ratio on Design Day due to a number of factors which include:

- A large portion of Windsor demand is located near Ojibway and is fed from the 3450 kPa MOP system that Ojibway directly supplies.
- Power generation plants, which make up a large portion of the demand in the Windsor market, consume at a constant volumetric rate with no peak hour factor; Ojibway supply also arrives at a constant volumetric rate.
- Distribution systems are at, or very close to, the NPS 16.
- The NPS 20 pipeline continues to be available to supplement intra-day peaks in demand on the NPS 16 via the regulation at Sandwich Transmission Station, which feeds only enough gas into the 3450 kPa MOP system from the 6040 kPa MOP system to maintain required system pressures.

These factors allow supply arriving at Ojibway to enter the market areas with no additional pressure losses, which, if present, would require more supply to arrive than is being delivered to the market. Ojibway supply can *efficiently* serve the west end of the Windsor market.

In contrast to the Windsor market, serving growth in the Leamington/Kingsville market requires more supply from Ojibway than is being delivered to the market on Design Day:

The differences which contribute to this inefficiency include:

- Regulation at Sandwich prevents Ojibway gas, which is delivered into the 3450 kPa MOP system from flowing into the 6040 kPa MOP system on the NPS 20 pipeline east of Sandwich. Transmission Station in absence of constructing incremental facilities.
- Ojibway supply does not flow directly into the Leamington/Kingsville market, which can only be served by Ojibway through displacement, i.e., additional Windsor volume served by Ojibway means less Windsor market volume served by the NPS 20 pipeline.
- The Leamington/Kingsville market has a peak hour factor of 1.3, which means that the demand pattern throughout the day does not match the constant volumetric supply rate of

Ojibway. In the absence of incremental facilities along the NPS 20 pipeline, there is no mechanism to manage the intra-day peaks in the incremental demand in the Leamington/Kingsville market.

- The distribution systems that supply the Leamington/Kingsville market are fed from long (10 to 18km) smaller diameter laterals that require an increase in upstream pressure (along the NPS 20 pipeline) in order to provide the necessary incremental capacity to the market. An increase in Ojibway supply, corresponding to a decrease in the Windsor market demand being fed from the NPS 20 pipeline, does not result in an increase in pressure along the NPS 20 pipeline sufficient to serve a corresponding increase in demand in the Leamington/Kingsville market.

As a result of these factors, in order to serve incremental demand in the Leamington/Kingsville market with supply at Ojibway, a greater volume of supply must arrive than is being delivered to the market. It is therefore *inefficient* to serve the Leamington/Kingsville market with Ojibway supply.

Filed: 2016-09-19

EB-2016-0186

Exhibit B.FRPO.18

Page 1 of 4

UNION GAS LIMITED

Answer to Interrogatory from Federation of Rental-housing Providers of Ontario ("FRPO")

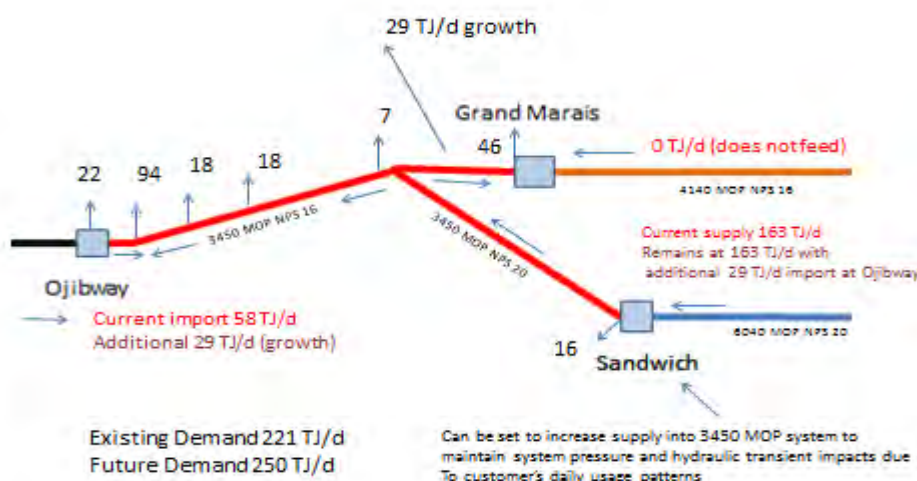
Reference: Tab 6, p.12, lines 2 – 4.

Preamble: "Incremental Ojibway deliveries yield diminished returns to serve demand beyond the Windsor market between Sandwich and Dawn (i.e. for each 1 GJ of incremental Ojibway deliveries, less than 1 GJ of capacity is created east of Sandwich)".

- Please explain, by way of a numerical example, the derivation of the 1 GJ of incremental Ojibway deliveries that equates to less than 1 GJ of capacity east of Sandwich.
- Please provide, similar to (a) above, for 1 GJ of incremental Dawn deliveries to west of Sandwich.
- Please confirm the results in (a) and (b) above would be the same for capacity east/west of Comber Transmission Station instead of Sandwich. If not confirmed, please provide similar analyses provided in (a) and (b) above.

Response:

- Please see the response at Exhibit B.FRPO.15.



A large portion of the demand in the Windsor market is fed from the 3450 kPag system between Ojibway, Grand Marais and Sandwich and is currently 221 TJ/d. There is 29 TJ/d of growth located in Windsor in the 5-year forecast and will be used for these examples.

The 3450 kPag system is predominately supplied from the NPS 20 6040 MOP system from Dawn through Sandwich. The current supply from Sandwich is 163 TJ/d with 58 TJ/d of Union supply delivered at Ojibway. The 4140 kPag MOP system *does not* feed into the 3450 kPag system.

The supply from Sandwich flows into the 3450 kPag MOP NPS 20 pipeline and flows northward where it connects to the NPS 16 pipeline. At this point, the flow heads easterly to Grand Marais Station and flows westerly to Brighton Beach and West Windsor Power Station which have a demand of 94 TJ/d.

Ojibway supply can freely enter the NPS 16 pipeline and feeds a distribution system located at Ojibway and easterly into the power generating stations located adjacent to Ojibway.

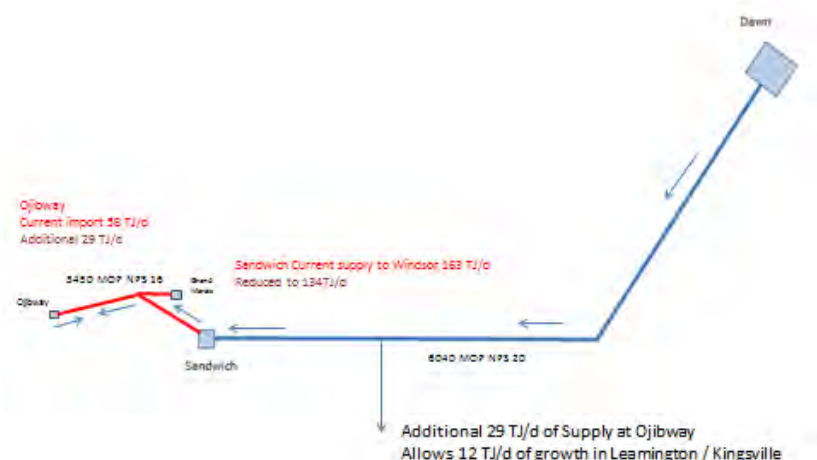
One option to feed forecast 29 TJ/d of growth in Windsor market is to contract for additional supply from Ojibway. Physically the additional molecules will feed a larger portion of the 94 TJ/d power generation load.

Power generators consume at a constant volumetric rate with no peak hour factor which correlates well with the Ojibway supply arriving at a constant volumetric rate.

The NPS 20 pipeline continues to be available to feed in at the current rate of 163 TJ/d and supplement the intra-day peaks in demand on the NPS 16 pipeline via the regulation at Sandwich.

Sandwich is controlled to feed only enough gas into the 3450 kPag system to maintain the minimum inlet pressure at Brighton Beach Power Station of 1724 kPag to maximize the amount of capacity available to feed the Leamington/Kingsville market.

These factors allow the 29 TJ/d of growth in Windsor market to be fed with an additional 29 TJ/d of Ojibway supply which is efficient and a 1 to 1 ratio.



In contrast, the Leamington/Kingsville market growth requires more supply from Ojibway than is being delivered into the market. This example is created assuming the same amount of Ojibway supply (29 TJ/d).

The regulation at Sandwich Transmission Station prevents Ojibway gas, which is delivered into the 3450 kPag system from flowing directly into the 6040 kPag system on the NPS 20 pipeline east of Sandwich.

Without incremental facilities upstream of the Leamington / Kingsville market the only way to increase the demand in the Leamington / Kingsville market is to reduce the flow on the 6040 kPag NPS 20 pipeline. This is accomplished by adjusting the regulation at Sandwich to flow less gas into the 3450 kPag system at Sandwich Transmission Station.

Using the same incremental 29 TJ/d of Ojibway supply, the flow through the 6040 kPag NPS 20 pipeline is reduced by 29 TJ/d. Only 12 TJ/d of additional growth can be accommodated in Leamington/Kingsville.

This additional 29 TJ/d of gas flows into Ojibway at a constant rate and is reduced on the NPS 20 pipeline at the same constant rate, however the customers in the Leamington / Kingsville area consume gas with a demand profile which has a peak hour factor of 1.3. The existing NPS 20 pipeline cannot manage these additional intraday peaks.

The distribution systems that supply the Leamington/Kingsville market are fed through long (10 to 18 km) small diameter laterals which introduce additional intraday pressure losses that the existing NPS 20 pipeline cannot manage.

In this scenario in the absence of incremental upstream facilities 2.5 GJ/d needs to be supplied at Ojibway for every additional 1 GJ/d that is delivered to the Leamington / Kingsville market. It is inefficient to serve the Leamington /Kingsville market with Ojibway supply.

- b) Capacity can be created at a 1 to 1 ratio when customers are served west of Sandwich Transmission Station from Dawn because Dawn provides gas supply to the Panhandle System at a variable rate to match the intraday peak consumption rates. The system is designed to move gas westerly from Dawn to consuming markets on a 1 to 1 basis.
- c) The impact to capacity east and west of Comber is the same as that noted in part a) above as Comber is east of Sandwich. The impact of Ojibway deliveries is different east and west of Sandwich Transmission Station.

PROJECT COSTS AND ECONOMICS

The purpose of this evidence is to describe the costs and economics of the Proposed Facilities and the economics of the alternative facilities considered.

Proposed Facilities

For the 2019 Kingsville Transmission Reinforcement Project (“Project”), Union will be constructing approximately 19 km of NPS 20 pipeline and related station work at a combined cost of \$105.7 million:

Total Pipeline Cost (including Environmental cost)	\$96.1
Total Station Cost	\$9.6
Total Project Cost	\$105.7

Refer to Exhibit A, Tab 9, Schedule 1 for costing details.

The proposed facilities are forecast to be in service for November 1, 2019 as further described in Exhibit A, Tab 8.

The amounts shown in Exhibit A, Tab 9, Schedule 1 cover all costs related to materials, construction and labour, environmental protection measures, contingencies, and interest during construction (“IDC”). IDC is included for capital costs incurred prior to the in-service date of the Project.

The total material cost covers the cost of all pipe, valves, fittings, coatings, associated equipment, miscellaneous items and stores overheads. The material costs are based on historical records as well as more recent quotes received and purchases made.

The total construction and labour cost covers the costs of the installation of the pipelines and related station facilities. It includes the costs of all labour on the Project. The capital costs exclude general overheads, which would be incurred whether or not the Project proceeds. The installation costs are based on project specific information and quotes, along with historical records and are adjusted for current market conditions.

The environmental protection costs are shown at Exhibit A, Tab 12, Schedule 3. These costs are identified as pre-construction related, construction related and post-construction related. These costs are included in Exhibit A, Tab 9, Schedule 1.

Project Economics

Economic Feasibility Tests

The Discounted Cash Flow (“DCF”) of the Project has been assessed using methodologies consistent with EBO 134 “Economic Tests for Transmission Pipeline Applications” (“EBO 134”).

Stage 1 consists of a DCF analysis specific to Union. All incremental cash inflows and outflows resulting from the project are identified. The net present value (“NPV”) of the cash inflows is divided by the NPV of the cash outflows to arrive at a profitability index (“PI”). If the NPV of the cash inflows

1 is equal to or greater than the NPV of the cash outflows, the PI is equal to or greater than one and the
2 project is considered economic based on current approved rates.

3
4 If the project NPV is less than \$0 or the PI is less than 1.0, a Stage 2 benefit/cost analysis may be
5 undertaken in order to quantify benefits and costs accruing to Union's customers as a result of the
6 project. The NPV of quantified benefits to customers resulting from the project is discounted at a
7 social discount rate and added to the project NPV from Stage 1 in order to calculate the direct net
8 benefit of the project to Union's customers. The project is considered to be in the public interest if the
9 net benefit is greater than \$0.

10
11 The Stage 3 analysis considers other quantifiable benefits and costs related to the construction of the
12 proposed facilities that are not included in the Stage 2 analysis, and other non-quantifiable public
13 interest considerations.

14
15 Project Specific Discounted Cash Flow Analysis

16 The DCF analysis of the Project can be found at Exhibit A, Tab, 9, Schedule 4. The DCF shows a PI of
17 0.44 and a NPV of negative \$59.2 million.

18
19 The DCF parameters are summarized in Exhibit A, Tab 9, Schedule 2.

20
21 Incremental cash inflows are estimated based on the transmission portion ("transmission margin") of
22 the customers' rates. The revenue calculation for the transmission margin is provided at Exhibit A, Tab

9, Schedule 3.

All customers receiving firm service have transmission costs included in their rates. The transmission margin is this portion of their rates. The transmission margin in customer rates is based on the historical cost which has been depreciated over many years. The new capacity costs are much higher than the historical depreciated cost which thereby provides a PI less than 1.0 as a consequence. This mis-match between new incremental cost and historical depreciated margins is and will continue to challenge the ability to provide service to customers for the foreseeable future.

The following is a description of the revenues that are attributable to the Project. For the Project, the gross revenue requirement is based on \$105.7 million for the transmission assets of the Project. The net revenue requirement is the gross revenue requirement of the transmission facilities less the “transmission margin” associated with those facilities. It does not and should not include any distribution margins unless the associated distribution capital and operating expenses are also included in the gross revenue requirement. The distribution capital is not included in this Application. The distribution margin will be used to recover the distribution capital and operating costs as the customer connections are incurred by Union.

This is in contrast to the Board’s Decision and Order in Union’s Panhandle Reinforcement Project application (EB 2016-0186). The Decision directed that the revenue forecast be applied in a manner inconsistent with the underlying cost:

1 *By including the words “net delivery” the OEB directs Union to track the difference between*
2 *the forecast and actual net delivery revenue requirement, which should include both*
3 *transmission and distribution margin (emphasis added) to the extent that it can be attributable*
4 *to the Project.*

5
6 *The OEB agrees with LPMA that Union should be able to quantify, at a minimum, the*
7 *incremental distribution margin associated with the customers switching from interruptible to*
8 *firm service, as a result of the Project. Furthermore, Union identified incremental demand*
9 *from specific customers in its application (Windsor Hospital, Gordie Howe International*
10 *Bridge) and provided individual letters of support from customers. Union should therefore be*
11 *in a position to forecast distribution revenues from such customers. The OEB does not accept*
12 *Union’s view that it does not have sufficient information to detail distribution revenue.¹*

13
14 Union’s filed evidence in EB-2016-0186 included the transmission margin which is the incremental
15 revenue Union would receive from customers switching from Interruptible services (“IT”) to firm as
16 well as the transmission margin for new firm load from distribution customer growth. The distribution
17 margin is the portion of customer rates that will recover the cost of the distribution assets. Both firm
18 and IT customers pay for distribution assets. The Decision required Union to reduce the gross revenue
19 requirement by the sum of the transmission margin (as filed by Union) plus the “distribution margin”.
20 The concept of including the “distribution margin” is not appropriate because distribution margin is
21 required to support the additional distribution capital to be spent to connect the customers at the time of

¹ Eb-2016-0186 Decision and Order (dated February 23, 2017), p.23, para. 2-3.

customer requests for service. As such, including a “distribution margin” for a transmission project is inappropriate because it creates a mismatch between incremental costs and incremental revenues. In effect, including both incremental distribution margin and incremental transmission margin in the transmission facilities economic analysis over estimates the margin attributable to the project and leaves no margin to support distribution facilities.

The DCF includes all incremental cash inflows and outflows resulting from the Project. The NPV of the cash inflows is divided by the NPV of the cash outflows to arrive at a PI.

Incremental cash outflows include the cost of the Project specific facilities. The capital costs exclude general overheads, which would be incurred whether or not the Project proceeds.

All cash flows are discounted using Union’s after tax incremental weighted average cost of capital. The average cost of capital is the weighted average of the expected incremental cost of each of the components of the capital structure in the same proportions as approved in Union’s 2013 Rebasing application (EB-2011-0210).

DCF for Alternatives

The alternatives to the Project are described in Exhibit A, Tab 8. The descriptions of the Project and the alternatives are abbreviated in Table 9-1. The full descriptions and specific facilities are described in Exhibit A, Tab 8. A summary of alternatives is included at Exhibit A, Tab 8, Schedule 1.

1 The alternative referencing Ojibway supply is simply the mathematical outcomes using the costs
2 provided. Union has not addressed whether gas is available or not and the risks associated with that
3 supply, given that Table 9-1 shows that even if gas is available, the Project has a cost far less than the
4 Ojibway alternative.

Table 9-1
Proposed Project and Alternatives
Stage 1 Capex and NPV (\$ millions)

Line #	Description	Near Term (1)		Long Term (2)	
		Capex (a)	NPV (b)	Capex (c)	NPV (d)
1	Proposed Project (NPS 20)	105.7	(59.2)	216.4	(128.0)

Potential Alternatives

2	Alternative 1: NPS 16	99.8	(54.3)	291.5	(156.7)
3	Alternative 2: 115 TJ Ojibway Supply + Pipe(s)	100.2	(147.2)	386.0	(310.9)
4	Alternative 3: Panhandle NPS 36 + Distribution Reinforcement	131.8	(78.0)	418.6	(221.7)
5	Alternative 4: 2019 Distribution Reinforcement, 2020 Kingsville NPS 20	119.3	(70.9)	230.0	(139.7)

Other Alternatives Considered

6	LNG	150	NA		
7	CNG	102	NA		
8	Kingsville NPS 12	NA			
9	Kingsville NPS 24	NA			

Comparison of Proposed vs Potential

10 = Line 1 - 2	NPS 20 vs NPS 16	5.9	(4.9)	(75.1)	28.7
11 = Line 1 - 3	NPS 20 vs 115 TJ Ojibway Supply	5.5	88.0	(169.7)	182.9
12 = Line 1 - 4	NPS 20 vs Panhandle NPS 36 + Distribution Reinforcement	(26.1)	18.8	(202.2)	93.8
13 = Line 1 - 5	NPS 20 vs 2019 Distribution Reinforcement + NPS 20 in 2020	(13.6)	11.7	(13.6)	11.7

Notes

- (1) Near term means Capex 2019 to end of 2025 for Line 1, 2 and 5
Near term means Capex 2019 to end of 2024 for Line 3, 4
(2) Long term means Capex from 2019 thru 2036

All cases use only the transmission revenue attributed to the capacity of the NPS 20 pipeline; Refer to Exhibit A, Tab 9, Schedule 3
The NPV over the longer term is not recognizing additional transmission revenue for future capacity additions.

The revenue element is common to all cases so the difference is moot between cases. It is only the cost that provides the differences in NPV

Columns (a) and (b) in Table 9-1 use the costs for initial builds and columns (c) and (d) consider the costs for the future upstream facilities required to support future growth. The NPS 20 pipeline and NPS 16 pipeline in lines 1 and 2 are built in 2019 and no subsequent upstream construction until 2026.

For example, line 10 in Table 9-1 indicates the NPS 20 pipeline has a Capex cost of \$5.9 million more than the NPS 16 alternative (column a); however the subsequent sets of facilities for growth will be \$75.1 million more expensive (column c) because of the system constraints created by the construction of the NPS 16 pipeline rather than the NPS 20 pipeline. The longer term view confirms the NPS 20 pipeline is \$28.7 million NPV lower cost as shown in column (d). The \$4.9 million increase (line 10 column b) is six times lower than the implication of constructing the NPS 16 and adding additional costs in the future. The longer term view is based on each of the NPS 20 pipeline and NPS 16 pipeline requiring additional capacity upstream in year 2026.

The alternative with 115 TJ/d gas supply at Ojibway (line 3) has the incremental gas supply beginning in 2019, plus it requires various distribution pipelines to be constructed in years 2019 through 2021 and transmission facilities to be constructed in 2022 to equate to the equivalent capacity of the proposed NPS 20.

The NPV in Line 11, column (b) and column (d) in Table 9-1 shows the alternative using Ojibway gas supply is \$88 million to \$182.9 million more costly than the Project.

The alternative with incremental Ojibway gas supply assumes \$0.427² CAD per GJ as a price premium (excluding Rate C1 toll from Ojibway to Dawn) relative to Dawn gas pricing. This is a cost to customers of \$8.5 million each year. A sensitivity analysis was done to determine the Ojibway price premium needed to equate the NPV of the NPS 20 pipeline alternative (line 1, column b). The price

² Gas supply premium \$ 0.36 US/mmbtu * FX of 1.28 divided by 1.0551 (Factor for mmbtu to GJ)= \$0.427 CAD/GJ. . Cost of \$0.36 US/MMBTU as per Q4 ICF forecast basis (2017 - 2026).

premium would need to decrease from \$0.427 CAD/GJ to \$0.073 CAD/GJ. For clarity, Union has 60 TJ/d of existing gas supply at Ojibway. The premium is only applied to the incremental supply of 55 TJ/d (115 TJ/d less 60 TJ/d = 55 TJ/d).

The comparison of the Project to the alternative of extending the Panhandle NPS 36 pipeline is shown in line 12. Columns (b) and (d) show that the NPV of extending the NPS 36 pipeline is \$18.8 million to \$93.8 million more costly than the Project.

Stage 2 – Benefit/Cost Analysis

A Stage 2 analysis may be undertaken when the Stage 1 NPV is less than zero. The Stage 2 analysis considers the estimated energy cost savings that accrue directly to Union's infranchise customers as a result of using natural gas instead of another fuel to meet their energy requirements. The difference in fuel cost is derived as [Weighted Ave alternative fuel cost less Cost of Natural Gas] multiplied by energy use. Union has a reasonable forecast of demand for gas however estimating the energy use of alternative fuels if gas is not available is difficult to quantify. More specifically, if gas is not available Union expects a substantial portion of the potential contract market gas load will not occur in Unions' franchise area and the economic and energy growth will likely occur in an area of the United States where gas is available.

The Stage 2 NPV of energy cost savings are estimated to be in the range of approximately \$283 million to \$472 million over a period of 20 years and \$384 million to \$639 million over 30 years. A range has been provided as the outcome can vary depending upon the assumptions for alternative fuel mix,

energy use, fuel prices and term. The results and assumptions can be found in Exhibit A, Tab 9, Schedule 5.

Stage 3 – Other Public Interest Considerations

There are a number of other public interest factors for consideration as a result of the addition of the Project. Some are quantifiable and others are not readily quantifiable. Quantifiable factors include the GDP, taxes and employment impacts. Other less quantifiable impacts include, but are not limited to, energy choice options and environmental benefits. These factors are detailed below.

Economic Benefits for Ontario

The construction of the Project will provide direct and indirect economic benefits to Ontario estimated at approximately \$117 million. Exhibit A, Tab 9, Schedule 6 shows how this figure is derived. This figure is related only to the construction of the Project and does not include the similar direct and indirect economic benefits to Ontario when the gas customers invest and growth their operations.

Employment

The construction of this Project will result in additional direct and indirect employment. There will be additional employment of persons directly involved in the construction of the Project. In addition, there is a trickledown effect on employment. The Project is estimated to create approximately 1,615 jobs as referenced in Exhibit A, Tab 9, Schedule 6.

1 Utility Taxes

2 A decision to proceed with this Project will result in Union paying taxes directly to various levels of
3 government. These taxes include Ontario income taxes and municipal taxes paid by Union as a direct
4 result of the Project and are included as costs in the Stage 1 analysis. These taxes are not true
5 economic costs of the Project since they represent transfer payments within the economy that are
6 available for redistribution by the federal, provincial and municipal governments. The net present value
7 of Ontario income taxes and municipal taxes payable by Union related to the Project over the project
8 life is approximately \$7 million with a further \$2 million paid to the Federal Government. These
9 figures are further detailed in Exhibit A, Tab 9, Schedule 6.

11 Employer Health Taxes

12 The additional employment that will result from the construction of the Project will generate additional
13 employer health tax payments to aid in covering the cost of providing health services in Ontario.

15 Environmental Effects

16 Natural gas, because of its clean-burning properties, has an increasingly important role to play in
17 reducing the environmental impacts of energy use. The use of natural gas either with or in place of
18 other fossil fuels, in residential, commercial, industrial and transportation applications reduces the
19 environmental impact in two key areas. First of all, the process is frequently more efficient, reducing
20 total energy use. Secondly, natural gas pollutant release per unit of energy is less than other fossil
21 fuels.

Some of the inherent advantages of natural gas are as follows:

- a) Unlike the combustion of both coal and cheaper grades of fuel oil for electrical power generation, natural gas combustion produces virtually no sulphur dioxide – the most significant component to acid rain formation.
- b) Natural gas vehicles emit up to 90% less carbon monoxide than gasoline-powered vehicles.
- c) Natural gas combustion also emits significantly lower amounts of reactive hydrocarbons and nitrogen oxides – the key photochemical agents in the formation of urban smog.
- d) For stationary power generation, natural gas can reduce carbon dioxide emissions by approximately 50% per unit of energy when compared to coal and by 35% when compared to fuel oil.

Summary of Stages 1 to 3

Table 9-2 shows the NPV calculated for the 3-stage economic analysis completed for the Project.

Table 9-2
NPV \$ Millions

Stage	NPV
Stage 1	(\$59)
Stage 2	\$283 to \$639
Stage 3	+ 117
Total	+\$341 to \$697

On February 21, 2013, the Board issued a new requirement to the Filing Guidelines on the Economic Tests for Transmission Pipeline Applications with respect to EBO 134 (EB-2012-0092). This new requirement is:

“Any project brought before the Board for approval should be supported by an assessment of the potential impacts of the proposed natural gas pipeline(s) on the existing transportation pipeline

1 *infrastructure in Ontario, including an assessment of the impacts on Ontario consumers in terms*
2 *of cost, rates, reliability and access to supplies.”*
3

4 The Project has no impacts on any other pipeline operators in Ontario. The impact in terms of costs and
5 rates can be found in Exhibit A, Tab 10. In fact, incremental demand served through Dawn can increase
6 the utilization of pipelines connected to the Dawn Hub (see Exhibit A, Tab 4). The Project will increase
7 the availability and reliability of natural gas to the areas served by the Project and will increase the
8 capacity of the Panhandle System providing all customers served by the Panhandle System with
9 additional gas supplies and the opportunity to grow economically.

Kingsville Transmission Reinforcement Project

Total Estimate Pipeline & Station Costs

	Mainline	Station	Total
Materials	\$ 5,514,000	\$ 2,210,000	\$ 7,725,000
Construction and Labour	\$ 76,917,000	\$ 6,014,000	\$ 82,931,000
Contingencies	\$ 12,365,000	\$ 1,234,000	\$ 13,598,000
Interest During Construction	\$ 1,332,000	\$ 130,000	\$ 1,462,000
	<hr/>		
Total Estimated Capital Costs - 2019 Construction	\$ 96,128,000	\$ 9,588,000	\$ 105,716,000

Kingsville Transmission Reinforcement Project (KTRP)

InService Date: Nov-01-2019

(Project Specific DCF Analysis)

**Stage 1 DCF - Listing of Key Input
Parameters, Values and Assumptions
(\$000'S)**

Discounting Assumptions

Project Time Horizon

40 years commencing at facilities in-service date of
01 Nov 19

Discount Rate

Incremental after-tax weighted average
After Tax Cost of Capital of 5.48%

**Key DCF Input Parameters,
Values and Assumptions**

Net Cash Inflow:

Incremental Revenue:

Transmission portion of customer rates

0.17788 \$/ M3 / month applied to Contract Demand

0.01980 Transmission Margin \$ / M3 consumed
applied to general service demands

Operating and Maintenance Expense

Estimated incremental cost

Incremental Tax Expenses:

Municipal Tax

Income Tax Rate

Estimated incremental cost
26.50%

CCA Rates:

CCA Classes:	CCA Class	CCA Rate
Land Rights	14	5%
Steel Mains	49	8%
Transmission - Measuring & Reg	8	20%

Declining balance rates by CCA class:

Cash Outflow:

Incremental Capital Costs Attributed

Refer to DCF Schedule 4

Change in Working Capital

5.051% applied to O&M

Calculation of Revenue (Transmission Margins)

Kingsville Transmission Reinforcement Project (KTRP)

InService Date: Nov-01-2019

Line	Project Year	1	2	3	4	5	6	7	8	9	10
Transmission costs are recovered from Contract rate classes based on Firm Contract Demand (CD) The deemed incremental revenue is based on the capacity created on the Pan Handle system											
Contract Methodology: Total CD * 12 *Transmission Margin											
1	Transmission Margin \$/M3 / month			0.1779							
2	Contract Demand 10^3m^3/month	216	309	665	879	1,094	1,308	1,425	1,425	1,425	1,425
3	Transmission Margin	\$460	\$659	\$1,420	\$1,877	\$2,334	\$2,792	\$3,042	\$3,042	\$3,042	\$3,042
General Service Transmission Margin = Volumes * Transmission Margin											
4	Transmission Margin \$ / M3 consumed										
5	Volume 10 ^3 M^3	-	-	1,342	4,027	6,711	9,395	12,080	13,422	13,422	13,422
6	Transmission Margin	\$0	\$0	\$27	\$80	\$133	\$186	\$239	\$266	\$266	\$266
7	Total Transmission Margin	\$460	\$659	\$1,447	\$1,957	\$2,467	\$2,978	\$3,281	\$3,308	\$3,308	\$3,308

Notes: The KTRP project increases the capacity of the Panhandle system. Transmission margins for the general service class are deemed to be starting in 2023 after the end of the load forecast for the Panhandle case (2022).

Overall the KTRP project increases the capacity of the Panhandle system by 71TJ and for the Transmission revenue calculations the capacity is split between contract and general service because the transmission cost are charged to customer on the basis of Contract Demand and Throughput respectively

The transmissions margins are Jan 2018 rates

Profitability Index

By Year PI
Project PI

Kingsville Transmission Reinforce
InService Date: Nov-01-2019

<u>Project Year</u>	<u>11</u>	<u>12</u>	<u>13</u>	<u>14</u>	<u>15</u>	<u>16</u>	<u>17</u>	<u>18</u>	<u>19</u>	<u>20</u>
<u>Cash Inflow</u>										
Revenue	3,308	3,308	3,308	3,308	3,308	3,308	3,308	3,308	3,308	3,308
Expenses:										
O & M Expense	(20)	(20)	(20)	(20)	(20)	(20)	(20)	(20)	(20)	(20)
Municipal Tax	(269)	(269)	(269)	(269)	(269)	(269)	(269)	(269)	(269)	(269)
Income Tax	127	50	(19)	(82)	(140)	(192)	(239)	(283)	(323)	(359)
Net Cash Inflow	3,145	3,069	2,999	2,936	2,879	2,827	2,779	2,736	2,696	2,659
<u>Cash Outflow</u>										
Incremental Capital	-	-	-	-	-	-	-	-	-	-
Change in Working Capital	-	-	-	-	-	-	-	-	-	-
Cash Outflow	-	-	-	-	-	-	-	-	-	-
<u>Cumulative Net Present Value</u>										
Cash Inflow	24,518	26,179	27,718	29,146	30,474	31,709	32,861	33,936	34,940	35,879
Cash Outflow	105,573	105,573	105,573	105,573	105,573	105,573	105,573	105,573	105,573	105,573
NPV By Year	(81,055)	(79,395)	(77,856)	(76,427)	(75,100)	(73,864)	(72,712)	(71,637)	(70,633)	(69,694)

Project NPV

Profitability Index

By Year PI
 Project PI

0.23 0.25 0.26 0.28 0.29 0.30 0.31 0.32 0.33 0.34

Kingsville Transmission Reinforce
InService Date: Nov-01-2019

<u>Project Year</u>	<u>21</u>	<u>22</u>	<u>23</u>	<u>24</u>	<u>25</u>	<u>26</u>	<u>27</u>	<u>28</u>	<u>29</u>	<u>30</u>
<u>Cash Inflow</u>										
Revenue	3,308	3,308	3,308	3,308	3,308	3,308	3,308	3,308	3,308	3,308
Expenses:										
O & M Expense	(20)	(20)	(20)	(20)	(20)	(20)	(20)	(20)	(20)	(20)
Municipal Tax	(269)	(269)	(269)	(269)	(269)	(269)	(269)	(269)	(269)	(269)
Income Tax	(393)	(423)	(452)	(478)	(502)	(524)	(544)	(563)	(580)	(596)
Net Cash Inflow	2,626	2,595	2,567	2,541	2,517	2,495	2,474	2,456	2,438	2,422
<u>Cash Outflow</u>										
Incremental Capital	-	-	-	-	-	-	-	-	-	-
Change in Working Capital	-	-	-	-	-	-	-	-	-	-
Cash Outflow	-	-	-	-	-	-	-	-	-	-
<u>Cumulative Net Present Value</u>										
Cash Inflow	36,758	37,582	38,354	39,079	39,759	40,399	41,000	41,566	42,098	42,600
Cash Outflow	105,573	105,573	105,573	105,573	105,573	105,573	105,573	105,573	105,573	105,573
NPV By Year	(68,815)	(67,992)	(67,219)	(66,495)	(65,814)	(65,175)	(64,574)	(64,008)	(63,475)	(62,974)

Project NPV

Profitability Index

By Year PI
Project PI

0.35 0.36 0.36 0.36 0.37 0.38 0.38 0.39 0.39 0.40 0.40

Profitability Index

By Year PI	Project PI
2019	2019
2020	2020
2021	2021
2022	2022
2023	2023
2024	2024
2025	2025
2026	2026
2027	2027
2028	2028
2029	2029
2030	2030

Stage 2 (Customer Fuel Savings) Data for KTRP

Assumptions

Line (a) (b) (c) (d)=(b)-(c)

Fuel Prices	\$/m ³	Gas \$/m ³	Diff \$/m ³
Heating Oil	0.98	0.16	0.82
Number 6 Oil	0.37	0.16	0.22
Diesel	0.76	0.16	0.60
Propane	0.73	0.16	0.58
Electricity	1.02	0.16	0.87

Fuel Mix in the Event Gas is Not Available

	(e)	(f)=(d)*(e)	(g)	(h)=(d)*(g)
	Contract		General Service	
	Fuel Mix	Wt Ave Diff \$/ m3	Fuel Mix	Wt Ave Diff \$/ m3
Heating Oil	-	0.00	30%	0.25
Number 6 Oil	60%	0.13	-	0.00
Diesel	25%	0.15	-	0.00
Propane	15%	0.09	55%	0.32
Electricity	-	0.00	15%	0.13
Total %	100%		100%	
Weighted Savings \$/m ³		0.37		0.69

Gas and alternative fuel prices are the average posted prices for the 12 month period ending December 2017

Prices in the table are before the added cost of Carbon.

Carbon Prices

The cost of carbon is added to the price of each fuel in above table

	2018	2019	2020	2021	2022	2023	2024
Cost per tonne	\$17	\$18	\$18	\$19	\$20	\$21	\$31
	2025	2026	2027	2028	2029	2030	2031
Cost per tonne	\$36	\$43	\$50	\$57	\$57	\$57	\$57

Future Yrs at cost \$57

Calculations for New Firm Load

Forecasted new Contract load was reduced by % as a factor to indicate potential customers may not make incremental investments in a geographic zone that does not have access to natural gas. Potential customers would invest in another country or another part of Ontario/Canada where the lower cost energy was available.

It is impossible to determine a specific load loss, Union has assessed Stage 2 based on a range of demand reductions

Reduction in Demand applied to Contract Market

Case 1: Low Reduction in Demand	60%
Case 2: High Reduction in Demand	80%

Calculation for Stage 2 Incremental Energy Demand

	Estimated Energy Demand with Pipeline Built
Minus	Low/ High Case of Loss of 60% to 80% of Contract Market Demand
Equals	Potential annual energy demand (for Stage 2 calculations)
Times	Weighted Average Savings per M3 (including cost of carbon)
Equals	Annual Fuel Savings: Natural Gas Vs Alt Fuels

Discount Rate for Net Present Values 4.0%

Length of Term for Fuel Savings

Stage 2 estimated based on 20 years and 30 years

Present Value of Customer Fuel Savings

For conservatism, the NPV is assessed over 20 years with sensitivity at 30 years

Figures in \$ millions	20 Years			30 Years		
Total Fuel Savings \$ Millions	Contract	Gen Service	Total	Contract	Gen Service	Total
Case 1: 60% reduction in demand	379	93	472	510	129	639
Case 2: 80% reduction in demand	190	93	283	255	129	384

NPV Fuel Savings Range from \$283 to \$472 Mil on 20 yrs

Kingsville Transmission Reinforcement Project (KTRP)
Economic Benefits from Infrastructure Spending
Figures in \$ Millions

Line No	Description	Capex Spend Out of Country	Capex Spend within Ontario	Capex Spend within Canada Excluding Ontario	Capex Total (d)= sum (a-c)	
		(a)	(b)	(c)		
1	Proposed Facilities	\$ 8	\$ 97	\$ 1	\$ 105.7	
2						
3	% of Total Spend	8%	91%	1%	100%	Line 1 /Total Line 1 Col (d)
4						
5	GDP					
6	GDP Factor		1.14			
7	GDP Impact \$ Millions		\$ 110			Line 1 * Line 6
8						
9	Employment (Jobs)					
10	Jobs Factor		16.7			
11	Jobs Created		1,615			Line 1 * Line 10
12						
13	Taxes Paid by Union Gas					
14	Property Tax		\$ 4			Source: NPV DCF
15	Provincial Income Tax		\$ 3			Source: NPV DCF
16	Total Provincial Taxes		\$ 7			
17	Federal Income Tax		\$ 2			Source: NPV DCF
18	Total Taxes Paid		<u>\$ 9</u>			
19						
20	Total Value to Ontario					
21	GDP Impact \$ Millions		\$ 110			Line 7
22	Total Provincial Taxes		\$ 7			Line 16
23	NPV Total Value to Ontario		<u>\$ 117</u>			

1 **INCREMENTAL CAPITAL MODULE AND RATE IMPACTS**

2

3 The purpose of this evidence is to support Union’s request for approval of the cost consequences

4 of the Project, including the net revenue requirement, proposed cost allocation, and rate impacts

5 associated with the Project.

6

7 This evidence is organized into the following sections:

- 8 1. Incremental Capital Module
- 9 2. Kingsville Transmission Reinforcement Project Revenue Requirement and Revenue
- 10 Deficiency
- 11 3. Cost Allocation
- 12 4. Proposed Treatment of Incremental Project Revenue
- 13 5. Bill Impacts
- 14 6. Rate Implementation

15

16 **1. *Incremental Capital Module (ICM)***

17 From 2014 through 2018, Union has utilized the Capital Pass Through Mechanism¹ (“CPM”) to

18 recover prudently incurred costs associated with discrete capital projects requiring significant

19 capital investments that are not funded through Union’s approved rates. This mechanism expires

20 at the end of 2018, and based on the criteria included in the mechanism, projects entering service

21 in late 2018 and in 2019, such as the Kingsville Transmission Reinforcement Project, do not

¹ As described at EB-2013-0202 Union Incentive Regulation Application, Evidence and Settlement Agreement filed July 31, 2013, Section 4.7.5 Major Capital Additions, pp. 29-35.

1 qualify for cost recovery under the Capital Pass Through Mechanism. Had this Project been
2 required in 2014 through 2017, it would have met the criteria for Capital Pass Through
3 treatment. Due to the timing of the Project and the expiry of the Capital Pass Through
4 mechanism (as part of Union's ICM), to ensure cost recovery of prudently incurred capital
5 investments not funded through existing approved rates and which cannot be delayed, Union has
6 filed this application with a request to utilize the proposed Incremental Capital Module, given
7 that the Project meets the criteria of ICM. Both mechanisms are intended to recover in rates
8 incremental discrete projects not funded in approved rates and Union will now transition from
9 the CPM to ICM.

10
11 Union and Enbridge Gas Distribution ("Enbridge") have filed an application with the OEB for
12 approval to amalgamate and to defer rebasing from 2019 to 2029 under EB-2017-0306. In
13 addition, Union and Enbridge have filed for approval of the Rate Setting Mechanism and
14 associated parameters during the deferred rebasing period under EB-2017-0307. As identified in
15 the pre-filed evidence of the Rate Setting Mechanism, the amalgamated company ("Amalco")
16 will apply for rate adjustments to address incremental capital needs using the OEB's ICM. The
17 purpose of the ICM is to recover costs associated with qualifying incremental capital investment
18 beyond what is normally funded through approved rates. Although these processes overlap, this
19 evidence is premised upon the assumption that the Board approves Union and Enbridge's
20 MAAD's application and Rate Setting Mechanism application that allows the ICM funding
21 module as set out in that evidence.

1 Union is requesting pre-approval of the cost consequences of the net revenue requirement of the
2 Project in rates for the period 2019 through 2028. Please see Exhibit A, Tab 10, Schedule 2 for
3 the revenue requirements by year. Union is requesting approval of this capital project through
4 ICM, subject to finalization of the 2019 ICM threshold calculation in the 2019 Rates application.
5 This project will exceed the threshold provided as part of the 2019 Rates application. Union is
6 requesting this approval in this Leave to Construct application as identified in evidence filed in
7 EB-2017-0307 at Exhibit B, Tab 1, page 15,

8
9 *“In the case of a qualifying project that requires a Leave to Construct (“LTC”) application the*
10 *request for approval of the proposed adjustment to rates will be filed with the LTC. Proposals to*
11 *adjust rates for investments not subject to LTC will be addressed in the annual rate setting*
12 *process.”*

13
14
15 Given the size of the project (\$106 million) Union cannot proceed with the project without
16 certainty of cost recovery. As well, the Board’s determination of the appropriateness of the cost
17 consequences in this proceeding represents an efficient use of regulatory time and resources, and will
18 benefit future Board panels as they incorporate the rate and operational impacts of the Project into
19 Union’s prospective rates and other applications. Further, it is more efficient for the Board to address
20 all known impacts from the Project at once. Consistent with the treatment of Capital Pass Through
21 mechanism pre-approvals, by combining the Section 36 rate recovery request with the facilities
22 application, Union has provided a complete evidentiary basis for the Board to evaluate the impacts of
23 the Project.

24

Qualifying incremental capital investments must satisfy the need, materiality and prudence criteria documented in the OEB-established policy on ICM². The established criteria and the related sub-parts are provided at Table 10-2. One of the qualifying criteria to determine materiality is that the capital investment of a discrete project will cause the total capital budget to exceed the OEB-defined threshold value of capital expenditures that can be funded through approved rates. As the Project is discrete and causes the total capital budget to exceed the threshold value noted below, it qualifies for ICM treatment.

The level of capital spend that can be managed under the Price Cap approach is determined by the OEB's calculation of the ICM materiality threshold value.

$$\text{Threshold value (\%)} = 1 + [(RB/d) \times (g + PCI \times (1 + g))] \times ((1+g) \times (1+PCI))^{n-1} + 10\%$$

Rate Base	RB	approved rate base from the last cost of service application
Depreciation	d	approved depreciation expense from the last cost of service application
Growth	g	annual growth rate
Price Cap Index	PCI	Price cap index for the most recent Price Cap IR application
Years since rebasing	n	the number of years since the cost of service rebasing

² [Report of the Board – New Policy Options for the Funding of Capital Investments: The Advanced Capital Module, September 18, 2014](#) and [Report of the OEB – New Policy Options for the Funding of Capital Investments: Supplemental Report, January 22, 2016](#). The ICM Filing Requirements are also documented in the OEB's Filing Requirements for Electricity Distribution Rate Applications.

The Project has an expected in-service date of November 1, 2019. The calculation of Union's 2019 capital investment threshold value is shown in Table 10-1 and has been calculated using 2013 Board-approved rate base and depreciation.

Table 10-1
Illustrative ICM Threshold Value Calculation for 2019 for Union
(\$ millions)

Base year	2013
Rate base	3,734
Depreciation	196
PCI %	1.73%
Growth %	0.93%
Years since rebasing	6
Threshold value %	168%
Threshold value	330

For 2019, Union expects normal in-franchise growth and Maintenance capital investment required to maintain safe and reliable operations to exceed the \$330 million threshold. For context, during the last five-year period, since rate rebasing in 2013, Union has spent an average of \$220 million on Maintenance capital projects to maintain the safety and reliability of the system. Union has also spent an average of \$110 million on In-franchise Growth capital projects, excluding projects qualifying for the Capital Pass Through Mechanism³, to attach new residential, commercial and industrial customers across the franchise area. The average annual spend since 2013 to maintain safe and reliable operations and grow the business has been \$330 million. As defined by the ICM Threshold in Table 10-1, this level of investment can be managed under the threshold based on existing rates. The \$105.7 million cost of the capital investment of the Project is in excess of this amount and causes Union to exceed the capital

³ As described at EB-2013-0202 Union Incentive Regulation Application, Evidence and Settlement Agreement filed July 31, 2013, Section 4.7.5 Major Capital Additions, pp. 29-35.

1 spending threshold, therefore requiring ICM rate recovery. The \$105.7 million cost is
2 approximately equal to the average annual In-franchise Growth capital budget and is not
3 supported in existing approved rates.

4
5 To qualify for rate adjustment under the ICM, the Board has established Eligibility Criteria as
6 shown in Table 10-2. The table also provides the applicable reference in the application where
7 this evidence to support the criteria can be found.

8 **Table 10-2**
9 **ICM Eligibility Criteria and Application Reference and Support**

Eligibility Criteria	Application Reference/Support
Materiality	
The capital budget must exceed the OEB-defined materiality threshold value	The threshold value calculation is provided in table 10-1. The Project represents a significant investment in excess of the investment required for normal in-franchise and normal ongoing Maintenance capital investments funded through approved rates.
Need	
The project must meet the definition of a discrete project	The Kingsville Transmission Reinforcement Project is an incremental project required to meet increasing demand for firm service growth and underpins this Leave to Construct and Rates application for Board approval.
Defined need that drives the project that has a significant influence on operations	The Project is required to reliably serve the strong demand growth for firm service not only in the Kingsville-Leamington market area but across the Panhandle System Market. Union continues to receive incremental requests for firm transportation service from the Market in excess of the Panhandle Reinforcement Project (EB-2016-0186) that was expected to meet demand to 2021, but due to this rapid demand growth, more capacity is required as early as 2019. The Project will help to meet this demand growth and ensure the continued reliable delivery of natural gas to the Market.
The applicant must pass the means test	Union's most recent actual utility ROE did not exceed 300 basis points above Union's allowed rate

	of return. Union's actual ROE in 2016 was 9.24%, as compared to an allowed return of 8.93 %. Please see Tab 10 Schedule 1 for Union's 2016 Earnings Sharing calculation schedule as filed in EB-2017-0091.
The amount requested for approval must be outside the base upon which rates were derived	This growth Project was not included when existing base rates were established for 2013.
Prudence	
The amount to be incurred must be prudent and represent the most cost-effective option for ratepayers	Exhibit A, Tab 8, page 16 summarizes the benefits of the Project including confirming it is the lowest cost (best NPV) to customers. Exhibit A, Tab 9 Table 9-1 summarizes the economic evaluation of the Project and the alternatives.

2. Kingsville Transmission Reinforcement Project Revenue Requirement and Revenue Deficiency

The annual revenue requirement associated with the Project is approximately \$0.3 million in 2019 and \$8.3 million in 2028. The revenue requirements represent the costs associated with the Project facilities deemed to be in service in each year of the deferred rebasing period from 2019 to 2028.

The net revenue requirement associated with the Project is approximately \$0.2 million in 2019 and \$5.0 million in 2028, with the largest net revenue requirement of \$7.2 million in 2021. The net revenue requirement represents the revenue deficiency of the Project and is calculated as the total annual Project revenue requirement less the incremental Project revenue. The incremental Project revenue increases during the deferred rebasing period from \$0.1 million in 2019 to \$3.3 million in 2028, consistent with the annual growth in the demand forecast of the Project. The

1 incremental Project revenue is calculated as the transmission margin included in delivery rates
2 multiplied by the incremental demands met by the Project.

3
4 The calculation of the total revenue requirement and the net revenue requirement for 2019 to
5 2028 and the underpinning assumptions are provided at Exhibit A, Tab 10, Schedule 2.

6
7 **3. Cost Allocation**

8 In its 2013 OEB-approved cost allocation study, Union classifies transmission costs as Dawn
9 Station, Dawn-Parkway, Ojibway/St. Clair and Other Transmission consistent with plant
10 accounting records. The Project will be recorded as an Other Transmission asset in the plant
11 accounting records and accordingly, will be classified as Other Transmission for the purposes of
12 cost allocation.

13
14 Other Transmission costs include the costs associated with transmission lines that serve Union
15 South in-franchise customers but are not directly associated with Dawn Station or the Dawn-
16 Parkway, Panhandle and St. Clair transmission systems. The classification of the Project as Other
17 Transmission is consistent with the classification of other transmission laterals on the Panhandle
18 System, such as the Essex Line and North Leamington Line. Other examples of Other
19 Transmission lines include the Owen Sound, London, Burlington-Oakville and the Sarnia
20 Industrial lines.

21
22 Union's OEB-approved cost allocation methodology allocates Other Transmission Demand costs
23 to Union South in-franchise rate classes in proportion to Union South in-franchise firm Design

1 Day demands. This cost allocation methodology recognizes that Other Transmission lines are
2 designed to meet Union South in-franchise demands on Design Day. The current OEB-approved
3 methodology for allocating Other Transmission Demand costs was most recently approved by
4 the OEB in Union's 2013 Cost of Service proceeding (EB-2011-0210).

5
6 Union is proposing to allocate the costs associated with the Project in proportion to Union South
7 firm in-franchise Design Day demands, updated for the incremental demands met by the Project
8 in each year. A summary of the incremental Project demands and the updated 2013 Board-
9 approved Other Transmission Demand allocation factors for each year of the Project are
10 provided at Exhibit A, Tab 10, Schedule 3. This cost allocation methodology is appropriate for
11 the costs associated with the Project as it recognizes that the facilities are required to meet
12 Design Day demands in the Kingsville-Leamington market area.

13
14 To illustrate the impacts of the Project, Union has provided the cost allocation of the largest net
15 revenue requirement during the deferred rebasing period. The largest net revenue requirement
16 associated with the Project is \$7.2 million in 2021, which is calculated as the total annual
17 revenue requirement of \$8.0 million less \$0.8 million of Project revenue.

18
19 To calculate the rate impacts in 2021, Union added the revenue requirement of \$8.0 million
20 directly attributable to the Project (rate base, return, interest, tax, depreciation and O&M) to
21 Union's adjusted 2013 OEB-approved cost allocation study. The adjusted cost allocation study
22 has been updated as per EB-2013-0365 (Union's 2014 rates) and per EB-2017-0307 (Rate

1 Setting Mechanism) to reflect the full amortization of the accumulated deferred tax balance at the
2 end of 2018.

3
4 Using the methodology described above, the cost allocation in 2021 results in: (i) an increase of
5 approximately \$8.8 million, allocated to Union South in-franchise rate classes, (ii) a reduction of
6 approximately \$0.5 million allocated to Union North in-franchise rate classes and (iii) a
7 reduction of approximately \$0.3 million, allocated to ex-franchise rate classes. The cost
8 allocation impact by rate class is provided at Exhibit A, Tab 10, Schedule 4, column (a).

9
10 Adding the rate base and operating costs associated with the Project as Other Transmission
11 Demand costs to the 2013 OEB-approved cost allocation study results in the re-allocation of cost
12 components that are functionalized based on rate base and O&M. As a result of the additional
13 transmission rate base and operating costs associated with the Project, \$1.4 million in indirect
14 costs (general plant, administrative and general expenses, and general operations and engineering
15 costs) are re-allocated from distribution, storage and other transmission-related functional
16 classifications to the Other Transmission Demand functional classification. Applying the OEB-
17 approved cost allocation methodology, (\$0.4) million in Project property and income taxes are
18 also allocated to distribution, storage and other transmission-related functional classifications.
19 The total allocation of the (\$1.8) million allocated to other functional classifications is provided
20 at Exhibit A, Tab 10, Schedule 4, column (i).

21
22 Of the total annual revenue requirement of \$8.0 million, \$9.8 million is functionalized to Other
23 Transmission Demand (including \$1.4 million of indirect costs) and allocated to Union South in-

franchise rate classes based on the Union South in-franchise firm Design Day demands, updated for the incremental firm demands met by the Project. The cost allocation impact by rate class to the Other Transmission Demand functional classification is provided at Exhibit A, Tab 10, Schedule 4, column (e).

The impact to Union South in-franchise rate classes is a rate increase as a result of the allocation of the Project costs. Union South in-franchise rate classes will bear 100% (or \$9.8 million) of the Other Transmission Demand costs, which are partially offset by the reduction in the allocation of indirect costs ((\$0.8) million) and Project-related taxes ((\$0.2) million). Please see Exhibit A, Tab 10, Schedule 4, line 11, columns (e), (g) and (h).

The impact to ex-franchise and Union North in-franchise rate classes is a rate reduction as a result of the shift in indirect costs and the allocation of Project-related property and income taxes. Please see Exhibit A, Tab 10, Schedule 4, line 17 and line 23.

4. Proposed Treatment of Incremental Project Revenue

Union is proposing to credit the Project costs by the incremental Project revenue. As described in Section 2, the incremental revenue for the Project is calculated as the transmission margin included in delivery rates multiplied by the forecasted incremental demands met by the Project.

Union is proposing to allocate the incremental Project revenue to rate classes in proportion to Union South in-franchise firm Design Day demands, updated for the incremental firm demands met by the Project, as provided at Exhibit A, Tab 10, Schedule 3. This approach allows Union to match the allocation of Project costs to the allocation of incremental revenue associated with the

1 Project. To illustrate bill impacts of the Project in 2021, Union reduced the annual revenue
2 requirement of \$8.0 million by the incremental Project revenue of \$0.8 million by rate class, as
3 per Table 10-3.

Table 10-3
Allocation of 2021 Incremental Project Revenue

Line No.	Rate Class	Union South In-franchise Firm Design Day Demands (1)		Incremental Project Revenue (2)
		(10 ³ m ³) (a)	% (b)	(\$000's) (c)
1	Rate M1	28,752	42%	(332)
2	Rate M2	9,661	14%	(111)
3	Rate M4	3,564	5%	(41)
4	Rate M5	51	0%	(1)
5	Rate M7	1,437	2%	(17)
6	Rate M9	362	1%	(4)
7	Rate M10	11	0%	(0)
8	Rate T1	2,654	4%	(31)
9	Rate T2	19,541	29%	(225)
10	Rate T3	2,511	4%	(29)
11	Total	68,544	100%	(791)

Notes:

- (1) Based on 2013 approved Union South in-franchise firm Design Day demands per EB-2011-0210, updated for demands met by the Project.
(2) Allocated in proportion to column (a).

4
5 The allocation of the incremental Project revenue on the same basis as the Project costs is
6 consistent with the methodology used in the Panhandle Reinforcement Project (EB-2016-0186).
7

1 **5. *Bill Impacts***

2 Union has provided the bill impacts of the Project based on the largest net revenue requirement
3 of \$7.2 million in 2021. To illustrate the change to customer bills over the deferred rebasing
4 period, Union has also provided the bill impacts of the Project for the final year of the deferred
5 rebasement period, based on a net revenue requirement of \$5.0 million in 2028.

6
7 In comparison to Board-approved rates per EB-2017-0087 (Union's 2018 Rates), the annual bill
8 impacts for the average Rate M1 residential customer in Union South consuming 2,200 m³ per
9 year is an increase of \$2.28 in 2021. By the final year of the deferred rebasing period, the Rate
10 M1 bill impact decreases by \$1.01, for a total bill increase of \$1.27 in 2028.

11
12 For the average Rate 01 residential customer in Union North consuming 2,200 m³ per year, the
13 annual bill impact is a decrease of \$0.92 in 2021. By the final year of the deferred rebasing
14 period, the Rate 01 bill impact increases by \$0.61, for a total bill decrease of \$0.31 in 2028.

15
16 The estimated delivery bill impacts for Union South in-franchise rate classes in years 2021 and
17 2028 are provided at Table 10-4. The detailed calculation of the sales service and direct purchase
18 in-franchise bill impacts for 2021 and 2028 are provided at Exhibit A, Tab 10, Schedule 5 and
19 Schedule 6 respectively.

20

Table 10-4
Union South In-franchise Delivery Bill Impacts

Line No.	Rate Class	Year 2021 (a)	Change (b) = (c - a)	Year 2028 (c)
1	Rate M1	0-1%	(0%)	0-1%
2	Rate M2	1-2%	(1%)	0-1%
3	Rate M4	4-5%	1-2%	5-7%
4	Rate M5	(0-1%)	0%	(0-1%)
5	Rate M7	6-8%	3%	9-11%
6	Rate M9	4-5%	(2%)	2-3%
7	Rate M10	9-10%	(5%)	4-5%
8	Rate T1	2-4%	(1-2%)	1-2%
9	Rate T2	4-5%	(2%)	2-3%
10	Rate T3	5-6%	(3%)	2-3%

6. Rate Implementation

Effective January 1, 2019, Union proposes to build the annual costs associated with the Project into Union South delivery rates, Union North delivery, gas supply transportation and storage rates, and ex-franchise transportation rates based on the cost estimates included in this Application.

Union also proposes to adjust in-franchise and ex-franchise rates on an annual basis from 2019 to 2028 to recover the net revenue requirement associated with the Project during the deferred rebasing period. Please see Exhibit A, Tab 10, Schedule 7 for the proposed annual rate adjustments.

Finally, Union proposes to track any variance between what is approved in rates for the Project and the actual net revenue requirement of the Project in a new deferral account. Union will

- 1 dispose of any balance in the deferral account as part of Union's annual non-commodity deferral
- 2 account disposition proceeding. The proposed draft accounting order is provided at Exhibit A,
- 3 Tab 10, Schedule 8.

UNION GAS LIMITED
Earnings Sharing Calculation
Calendar Year Ending December 31, 2016

Line No.	Particulars (\$000s)	2016 (a)	Unregulated Storage (b)	Adjustments (c)	2016 Utility (d)=(a)-(b)+(c)
	Operating Revenues				
1	Gas Sales	1,529,204	-	(14,668) i	1,514,537
2	Transportation	182,195	(488)	-	182,683
3	Storage	95,598	87,095	-	8,503
4	Other	20,768	-	(4,237) ii	16,530
5		<u>1,827,765</u>	<u>86,607</u>	<u>(18,905)</u>	<u>1,722,253</u>
	Operating Expenses				
6	Cost of gas	716,827	1,715	(14,668) i	700,444
7	Operating and maintenance expenses	414,496	13,410	(3,228) iii	397,858
8	Depreciation	239,080	10,679	-	228,401
9	Other financing	-	-	985 iv	985
10	Property and other taxes	71,199	1,635	-	69,564
11		<u>1,441,601</u>	<u>27,439</u>	<u>(16,910)</u>	<u>1,397,252</u>
	Other				
12	Gain / (Loss) on sale of assets	(624)	(624)	-	-
13	Other / Huron Tipperary	-	-	-	-
14	Gain / (Loss) on foreign exchange	1,592	39	(394) v	1,159
15		<u>967</u>	<u>(585)</u>	<u>(394)</u>	<u>1,159</u>
16	Earnings before interest and taxes	<u>387,132</u>	<u>58,583</u>	<u>(2,389)</u>	326,160
17	Income taxes				<u>4,398</u>
18	Total utility income subject to earnings sharing				<u>321,762</u>
	Less debt and preference share return components				
19	Long-term debt				161,809
20	Unfunded short-term debt				(1,800)
21	Preferred dividend requirements				<u>2,597</u>
22					<u>162,606</u>
	Less shareholder portions of:				
23	Net short-term storage revenue (after tax)				553
24	Net optimization activity (after tax)				<u>247</u>
25					<u>800</u>
26	Earnings subject to sharing				<u>158,356</u>
27	Common equity				1,713,030
28	Return on common equity (line 26 / line 27)				9.24%
29	Benchmark return on common equity + 100 basis points				9.93%
30	50% earnings sharing % (line 28 - line 29, maximum 1%)				0.00%
31	90% earnings sharing % (if line 30=1%, then line 28 - line 29 - line 30)				0.00%
32	50% earnings sharing \$ (line 27 x line 30 x 50%)				-
33	90% earnings sharing \$ (line 27 x line 31 x 90%)				<u>-</u>
34	Total earnings sharing \$ (line 32 + line 33)				<u>-</u>
35	Pre-tax earnings sharing (line 34 / (1 minus tax rate))				<u>-</u>
	Notes:				
i	Reclassification of optimization revenue as cost of gas				
ii	Demand-side management incentive				
iii	Donations	3,089			
	CDM program	<u>139</u>			
		<u>3,228</u>			
iv	Facility fees and customer deposit interest				
v	Foreign exchange gain on bank balances				

UNION GAS LIMITED
Kingsville Transmission Reinforcement Project Revenue Requirement

Line No.	Particulars (\$000's)	2019 (a)	2020 (b)	2021 (c)	2022 (d)	2023 (e)	2024 (f)	2025 (g)	2026 (h)	2027 (i)	2028 (j)
<u>Rate Base Investment</u>											
1	Capital Expenditures (1)	102,959	2,757	-	-	-	-	-	-	-	-
2	Average Investment	12,370	101,287	101,656	99,598	97,539	95,481	93,423	91,365	89,307	87,249
<u>Revenue Requirement Calculation:</u>											
<u>Operating Expenses:</u>											
3	Operating and Maintenance Expenses (2)	3	20	20	21	21	21	22	22	23	23
4	Depreciation Expense (3)	1,002	2,031	2,058	2,058	2,058	2,058	2,058	2,058	2,058	2,058
5	Property Taxes (4)	46	275	279	284	289	294	299	304	309	314
6	Total Operating Expenses	1,051	2,326	2,358	2,363	2,368	2,373	2,379	2,384	2,390	2,395
7	Required Return (6.253% x line 2) (5)	773	6,333	6,356	6,228	6,099	5,970	5,842	5,713	5,584	5,456
<u>Income Taxes:</u>											
8	Income Taxes - Equity Return (6)	149	1,220	1,224	1,200	1,175	1,150	1,125	1,101	1,076	1,051
9	Income Taxes - Utility Timing Differences (7)	(1,690)	(2,200)	(1,936)	(1,676)	(1,447)	(1,245)	(1,065)	(905)	(762)	(634)
10	Total Income Taxes	(1,541)	(980)	(711)	(476)	(272)	(95)	60	195	313	417
11	Total Revenue Requirement (line 6 + line 7 + line 10)	284	7,679	8,003	8,114	8,195	8,249	8,280	8,292	8,287	8,268
12	Incremental Project Revenue	77	493	791	1,532	2,042	2,552	3,028	3,286	3,308	3,308
13	Net Revenue Requirement (line 11 - line 12)	207	7,186	7,212	6,583	6,153	5,697	5,252	5,006	4,979	4,960

Notes:

- (1) Expenditures include \$96.1 million in pipeline costs and \$9.6 million in station costs, for a total of \$105.7 million.
- (2) Expenses include labour, company use gas, utilities, materials and other operating expenses for the transmission stations.
- (3) Depreciation expense at 2013 Board-approved depreciation rates.
- (4) Includes pipeline and station property taxes.
- (5) The required return of 6.253% assumes a capital structure of 64% long-term debt at 4.55% and 36% common equity at the allowed return on equity of 9.28% (0.64 * 0.0455 + 0.36 * 0.0928).
The return on equity of 9.28% is Union's forecast of its 2019 allowed return based on the OEB's cost of capital formula.
The 2021 required return calculation is as follows:
\$101.656 million * 64% * 4.55% = \$2.960 million plus
\$101.656 million * 36% * 9.28% = \$3.396 million for a total of \$6.356 million.
- (6) Taxes related to the equity component of the return at a tax rate of 26.5%.
- (7) Taxes related to utility timing differences are negative as the capital cost allowance deduction in arriving at taxable income exceeds the provision of book depreciation in the year.

UNION GAS LIMITED
Derivation of Updated Other Transmission Demand Allocation Factor by Year

Line No.	Particulars (10 ³ m ³ /d)	2013 OEB-Approved (1) (a)	2019 (b)	2020 (c)	2021 (d)	2022 (e)	2023 (f)	2024 (g)	2025 (h)	2026 (i)	2027 (j)	2028 (k)	Total (l) = (sum b:k)
Incremental Project Demands													
1	Rate M1		-	-	28	28	28	28	28	-	-	-	140
2	Rate M2		-	-	11	8	8	8	8	-	-	-	44
3	Rate M4		246	35	170	114	171	171	94	-	-	-	1,001
4	Rate M5		-	-	-	-	-	-	-	-	-	-	-
5	Rate M7		-	72	237	131	73	73	40	-	-	-	627
6	Rate M9		-	-	-	-	-	-	-	-	-	-	-
7	Rate M10		-	-	-	-	-	-	-	-	-	-	-
8	Rate T1		-	-	-	-	-	-	-	-	-	-	-
9	Rate T2		-	-	-	-	-	-	-	-	-	-	-
10	Rate T3		-	-	-	-	-	-	-	-	-	-	-
11	Total		246	107	447	281	281	281	170	-	-	-	1,813 (2)
Proposed Other Transmission Demand Allocation (3)													
12	Rate M1	28,724	28,724	28,724	28,752	28,780	28,808	28,836	28,864	28,864	28,864	28,864	
13	Rate M2	9,650	9,650	9,650	9,661	9,670	9,678	9,686	9,694	9,694	9,694	9,694	
14	Rate M4	3,113	3,360	3,394	3,564	3,678	3,849	4,021	4,115	4,115	4,115	4,115	
15	Rate M5	51	51	51	51	51	51	51	51	51	51	51	
16	Rate M7	1,128	1,128	1,200	1,437	1,568	1,641	1,715	1,755	1,755	1,755	1,755	
17	Rate M9	362	362	362	362	362	362	362	362	362	362	362	
18	Rate M10	11	11	11	11	11	11	11	11	11	11	11	
19	Rate T1	2,654	2,654	2,654	2,654	2,654	2,654	2,654	2,654	2,654	2,654	2,654	
20	Rate T2	19,541	19,541	19,541	19,541	19,541	19,541	19,541	19,541	19,541	19,541	19,541	
21	Rate T3	2,511	2,511	2,511	2,511	2,511	2,511	2,511	2,511	2,511	2,511	2,511	
22	Total	67,745	67,991	68,098	68,544	68,825	69,106	69,387	69,558	69,558	69,558	69,558	

Notes:

- (1) The 2013 OEB-approved Other Transmission Demand allocation is provided at EB-2011-0210, Exhibit G3, Tab 5, Schedule 23, Updated, page 9 and page 10, line 1.
- (2) Incremental demands of 1,813 10³ m³/d equal to the Project capacity of 71 T1/d based on a heat value of 38.95 GJ/10³ m³.
- (3) Annual allocation factor calculated as column (a) lines 12 to 21 plus incremental project demands, lines 1 to 10, for each year, respectively.

UNION GAS LIMITED
2021 Cost Allocation Impacts of Kingsville Transmission Reinforcement Project

Line No.	Particulars	Total Cost Allocation Impacts (\$000's) (a) = (b + e + i)	Cost Allocation Change in Demands (1) (\$000's) (b)	Other Transmission Demand (2)			Other Functional Classifications		
				Project Costs (3) (\$000's) (c)	Indirect Costs (\$000's) (d)	Total (\$000's) (e) = (c + d)	Project Costs (3) (\$000's) (g)	Indirect Costs (\$000's) (h)	Total (\$000's) (i) = (g + h)
1	Rate M1	3,134	(222)	3,532	571	4,104	(163)	(585)	(748)
2	Rate M2	1,213	(73)	1,187	192	1,379	(22)	(71)	(92)
3	Rate M4	779	296	435	70	505	(3)	(20)	(22)
4	Rate M5	(17)	(0)	6	1	7	(4)	(19)	(24)
5	Rate M7	406	211	174	28	203	(0)	(7)	(7)
6	Rate M9	48	(3)	45	7	52	(0)	(1)	(1)
7	Rate M10	1	(0)	1	0	2	(0)	(0)	(0)
8	Rate T1	342	(22)	326	53	379	(3)	(12)	(15)
9	Rate T2	2,575	(165)	2,401	388	2,789	(14)	(35)	(49)
10	Rate T3	330	(21)	308	50	358	(2)	(5)	(7)
11	Subtotal - Union South	8,812	-	8,416	1,361	9,778	(212)	(754)	(966)
12	Excess Utility Space	(12)	-	-	-	-	(3)	(8)	(12)
13	Rate C1	(3)	-	-	-	-	(1)	(1)	(3)
14	Rate M12	(313)	-	-	-	-	(87)	(226)	(313)
15	Rate M13	(1)	-	(1)	(0)	(1)	(0)	0	(0)
16	Rate M16	(0)	-	(0)	(0)	(0)	(0)	(0)	(0)
17	Subtotal - Ex-franchise	(328)	-	(1)	0	(1)	(92)	(236)	(327)
18	Rate 01	(360)	-	-	-	-	(85)	(275)	(360)
19	Rate 10	(51)	-	-	-	-	(13)	(38)	(51)
20	Rate 20	(34)	-	-	-	-	(6)	(28)	(34)
21	Rate 100	(26)	-	-	-	-	(4)	(22)	(26)
22	Rate 25	(10)	-	-	-	-	(2)	(8)	(10)
23	Subtotal - Union North	(481)	-	-	-	-	(110)	(372)	(481)
24	In-franchise (line 11 + line 23)	8,331	-	8,416	1,361	9,778	(321)	(1,126)	(1,447)
25	Ex-franchise (line 17)	(328)	-	(1)	0	(1)	(92)	(236)	(327)
26	Total (line 24 + line 25)	8,003	-	8,416	1,361	9,777	(413)	(1,361)	(1,774)

Notes:

- (1) Allocation of the 2013 OEB-approved Other Transmission Demand costs updated to include the incremental demands met by the Project of 800 10³ m³/d by 2021, per Exhibit A, Tab 10, Schedule 3, column (d).
- (2) The Other Transmission Demand allocation is provided at EB-2011-2010, Exhibit G3, Tab 5, Schedule 23, Updated, page 9 and page 10, line 1, updated to include the incremental demands of the Project.
- (3) The total 2021 Project costs of \$8.003 million include \$8.416 million directly allocated to the Other Transmission Demand functional classification and (\$0.413) million of property, income taxes and working capital allocated to distribution, storage and other transmission-related functional classifications.

UNION GAS LIMITED
Calculation of 2021 Sales Service and Direct Purchase Bill Impacts for Typical Small and Large Customers - Union North

Line No.	Particulars	Approved - EB-2017-0087 (1)		Proposed - EB-2018-0013		Total Bill Change (\$) (e) = (c - a)	Bill Impact	
		Total Bill	Unit Rate	Total Bill	Unit Rate		Including Customer-Related Cap-and-Trade	Excluding Customer-Related Cap-and-Trade
		(\$)	(cents/m ³)	(\$)	(cents/m ³)		(%) (2)	(%) (3)
		(a)	(b)	(c)	(d)		(f) = (e / a)	(g)
	<u>Small Rate 01</u>							
1	Delivery Charges	455	20.6873	454	20.6495	(0.83)	-0.2%	-0.2%
2	Cap-and-Trade Charges	74	3.3418	74	3.3418	-	0.0%	0.0%
3	Gas Supply Charges (4)	527	23.9359	527	23.9318	(0.09)	0.0%	0.0%
4	Total Bill	1,055	47.9650	1,054	47.9232	(0.92)	-0.1%	-0.1%
5	Sales Service Impact					(0.92)	-0.1%	-0.1%
6	Bundled-T (Direct Purchase) Impact					(0.92)	-0.1%	-0.1%
	<u>Small Rate 10</u>							
7	Delivery Charges	4,874	8.1226	4,863	8.1042	(11)	-0.2%	-0.2%
8	Cap-and-Trade Charges	2,005	3.3421	2,005	3.3421	-	0.0%	0.0%
9	Gas Supply Charges (4)	12,998	21.6632	12,996	21.6599	(2)	0.0%	0.0%
10	Total Bill	19,877	33.1279	19,864	33.1062	(13)	-0.1%	-0.1%
11	Sales Service Impact					(13)	-0.1%	-0.1%
12	Bundled-T (Direct Purchase) Impact					(13)	-0.1%	-0.1%
	<u>Large Rate 10</u>							
13	Delivery Charges	16,084	6.4337	16,053	6.4212	(31)	-0.2%	-0.2%
14	Cap-and-Trade Charges	8,355	3.3421	8,355	3.3421	-	0.0%	0.0%
15	Gas Supply Charges (4)	54,158	21.6632	54,150	21.6599	(8)	0.0%	0.0%
16	Total Bill	78,598	31.4390	78,558	31.4232	(40)	-0.1%	-0.1%
17	Sales Service Impact					(40)	-0.1%	-0.1%
18	Bundled-T (Direct Purchase) Impact					(39)	-0.1%	-0.1%
	<u>Small Rate 20</u>							
19	Delivery Charges	74,672	2.4891	74,464	2.4821	(208)	-0.3%	-0.3%
20	Cap-and-Trade Charges	100,263	3.3421	100,263	3.3421	-	0.0%	0.0%
21	Gas Supply Charges (4)	545,711	18.1904	545,670	18.1890	(41)	0.0%	0.0%
22	Total Bill	720,646	24.0215	720,396	24.0132	(250)	0.0%	0.0%
23	Sales Service Impact					(250)	0.0%	0.0%
24	Bundled-T (Direct Purchase) Impact					(247)	-0.1%	-0.1%
	<u>Large Rate 20</u>							
25	Delivery Charges	290,304	1.9354	289,626	1.9308	(678)	-0.2%	-0.2%
26	Cap-and-Trade Charges	501,315	3.3421	501,315	3.3421	-	0.0%	0.0%
27	Gas Supply Charges (4)	2,628,781	17.5252	2,628,601	17.5240	(180)	0.0%	0.0%
28	Total Bill	3,420,400	22.8027	3,419,542	22.7969	(858)	0.0%	0.0%
29	Sales Service Impact					(858)	0.0%	0.0%
30	Bundled-T (Direct Purchase) Impact					(843)	-0.1%	-0.1%

Notes:

- (1) Reflects approved rates per 2018 Rates (EB-2017-0087), Appendix A.
- (2) Bill impacts including Cap-and-Trade Customer-Related charge are applicable to customers for whom Union is required to fulfill Cap-and-Trade obligations.
- (3) Bill impacts excludes Cap-and-Trade Customer-Related charge of 3.3181 cents/m³.
- (4) Gas Supply charges based on Union North East Zone.

UNION GAS LIMITED
Calculation of 2021 Sales Service and Direct Purchase Bill Impacts for Typical Small and Large Customers - Union North

Line No.	Particulars	Approved - EB-2017-0087 (1)		Proposed - EB-2018-0013			Bill Impact	
		Total Bill (\$)	Unit Rate (cents/m ³)	Total Bill (\$)	Unit Rate (cents/m ³)	Total Bill Change (\$)	Including Customer-Related Cap-and-Trade (%) (2)	Excluding Customer-Related Cap-and-Trade (%) (3)
		(a)	(b)	(c)	(d)	(e) = (c - a)	(f) = (e / a)	(g)
	<u>Average Rate 25</u>							
1	Delivery Charges	61,501	2.7033	61,363	2.6973	(138)	-0.2%	-0.2%
2	Cap-and-Trade Charges	76,033	3.3421	76,033	3.3421	-	0.0%	0.0%
3	Gas Supply Charges (4)	343,791	15.1117	343,784	15.1114	(7)	0.0%	0.0%
4	Total Bill	481,325	21.1571	481,180	21.1508	(145)	0.0%	0.0%
5	Sales Service Impact					(145)	0.0%	0.0%
6	T-Service (Direct Purchase) Impact					(138)	-0.1%	-0.2%
	<u>Small Rate 100</u>							
7	Delivery Charges	256,549	0.9502	256,084	0.9485	(465)	-0.2%	-0.2%
8	Cap-and-Trade Charges	902,367	3.3421	902,367	3.3421	-	0.0%	0.0%
9	Gas Supply Charges (4)	6,592,612	24.4171	6,592,585	24.4170	(27)	0.0%	0.0%
10	Total Bill	7,751,529	28.7094	7,751,036	28.7075	(492)	0.0%	0.0%
11	Sales Service Impact					(492)	0.0%	0.0%
12	T-Service (Direct Purchase) Impact					(465)	0.0%	-0.2%
	<u>Large Rate 100</u>							
13	Delivery Charges	2,083,042	0.8679	2,079,625	0.8665	(3,417)	-0.2%	-0.2%
14	Cap-and-Trade Charges	8,021,040	3.3421	8,021,040	3.3421	-	0.0%	0.0%
15	Gas Supply Charges (4)	57,458,295	23.9410	57,458,055	23.9409	(240)	0.0%	0.0%
16	Total Bill	67,562,378	28.1510	67,558,720	28.1495	(3,657)	0.0%	0.0%
17	Sales Service Impact					(3,657)	0.0%	0.0%
18	T-Service (Direct Purchase) Impact					(3,417)	0.0%	-0.2%

Notes:

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- (3) Bill impacts excludes Cap-and-Trade Customer-Related charge of 3.3181 cents/m³.
- (4) Gas Supply charges based on Union North East Zone.

UNION GAS LIMITED
Calculation of 2021 Sales Service and Direct Purchase Bill Impacts for Typical Small and Large Customers - Union South

Line No.	Particulars	Approved - EB-2017-0087 (1)		Proposed - EB-2018-0013			Bill Impact	
		Total Bill (\$)	Unit Rate (cents/m ³)	Total Bill (\$)	Unit Rate (cents/m ³)	Total Bill Change (\$)	Including Customer-Related Cap-and-Trade (%) (2)	Excluding Customer-Related Cap-and-Trade (%) (3)
		(a)	(b)	(c)	(d)	(e) = (c - a)	(f) = (e / a)	(g)
	<u>Small Rate M1</u>							
1	Delivery Charges	374	17.0068	376	17.1105	2.28	0.6%	0.6%
2	Cap-and-Trade Charges	74	3.3427	74	3.3427	-	0.0%	0.0%
3	Gas Supply Charges	300	13.6245	300	13.6245	-	0.0%	0.0%
4	Total Bill	<u>747</u>	<u>33.9741</u>	<u>750</u>	<u>34.0777</u>	<u>2.28</u>	<u>0.3%</u>	<u>0.3%</u>
5	Sales Service Impact					2.28	0.3%	0.3%
6	Direct Purchase Impact					2.28	0.5%	0.6%
	<u>Small Rate M2</u>							
7	Delivery Charges	4,203	7.0050	4,266	7.1103	63	1.5%	1.5%
8	Cap-and-Trade Charges	2,005	3.3421	2,005	3.3421	-	0.0%	0.0%
9	Gas Supply Charges	8,175	13.6251	8,175	13.6250	(0)	0.0%	0.0%
10	Total Bill	<u>14,383</u>	<u>23.9722</u>	<u>14,446</u>	<u>24.0774</u>	<u>63</u>	<u>0.4%</u>	<u>0.5%</u>
11	Sales Service Impact					63	0.4%	0.5%
12	Direct Purchase Impact					63	1.0%	1.5%
	<u>Large Rate M2</u>							
13	Delivery Charges	14,295	5.7181	14,552	5.8206	256	1.8%	1.8%
14	Cap-and-Trade Charges	8,355	3.3421	8,355	3.3421	-	0.0%	0.0%
15	Gas Supply Charges	34,063	13.6251	34,063	13.6250	(0)	0.0%	0.0%
16	Total Bill	<u>56,713</u>	<u>22.6853</u>	<u>56,969</u>	<u>22.7877</u>	<u>256</u>	<u>0.5%</u>	<u>0.5%</u>
17	Sales Service Impact					256	0.5%	0.5%
18	Direct Purchase Impact					256	1.1%	1.8%
	<u>Small Rate M4</u>							
19	Delivery Charges	49,207	5.6237	51,384	5.8725	2,177	4.4%	4.4%
20	Cap-and-Trade Charges	29,243	3.3421	29,243	3.3421	-	0.0%	0.0%
21	Gas Supply Charges	119,220	13.6251	119,219	13.6250	(1)	0.0%	0.0%
22	Total Bill	<u>197,670</u>	<u>22.5909</u>	<u>199,846</u>	<u>22.8396</u>	<u>2,176</u>	<u>1.1%</u>	<u>1.3%</u>
23	Sales Service Impact					2,176	1.1%	1.3%
24	Direct Purchase Impact					2,177	2.8%	4.4%
	<u>Large Rate M4</u>							
25	Delivery Charges	376,133	3.1344	394,179	3.2848	18,046	4.8%	4.8%
26	Cap-and-Trade Charges	401,052	3.3421	401,052	3.3421	-	0.0%	0.0%
27	Gas Supply Charges	1,635,012	13.6251	1,635,000	13.6250	(12)	0.0%	0.0%
28	Total Bill	<u>2,412,197</u>	<u>20.1016</u>	<u>2,430,231</u>	<u>20.2519</u>	<u>18,034</u>	<u>0.7%</u>	<u>0.9%</u>
29	Sales Service Impact					18,034	0.7%	0.9%
30	Direct Purchase Impact					18,046	2.3%	4.8%

Notes:

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UNION GAS LIMITED
Calculation of 2021 Sales Service and Direct Purchase Bill Impacts for Typical Small and Large Customers - Union South

Line No.	Particulars	Approved - EB-2017-0087 (1)		Proposed - EB-2018-0013			Bill Impact	
		Total Bill	Unit Rate	Total Bill	Unit Rate	Total Bill Change	Including Customer-Related Cap-and-Trade	Excluding Customer-Related Cap-and-Trade
		(\$)	(cents/m ³)	(\$)	(cents/m ³)	(\$)	(%) (2)	(%) (3)
		(a)	(b)	(c)	(d)	(e) = (c - a)	(f) = (e / a)	(g)
	<u>Small Rate M5</u>							
1	Delivery Charges	32,782	3.9735	32,720	3.9661	(61)	-0.2%	-0.2%
2	Cap-and-Trade Charges	27,572	3.3421	27,572	3.3421	-	0.0%	0.0%
3	Gas Supply Charges	112,407	13.6251	112,406	13.6250	(1)	0.0%	0.0%
4	Total Bill	172,761	20.9407	172,699	20.9332	(62)	0.0%	0.0%
5	Sales Service Impact					(62)	0.0%	0.0%
6	Direct Purchase Impact					(61)	-0.1%	-0.2%
	<u>Large Rate M5</u>							
7	Delivery Charges	189,095	2.9092	188,778	2.9043	(317)	-0.2%	-0.2%
8	Cap-and-Trade Charges	217,237	3.3421	217,237	3.3421	-	0.0%	0.0%
9	Gas Supply Charges	885,632	13.6251	885,625	13.6250	(7)	0.0%	0.0%
10	Total Bill	1,291,963	19.8764	1,291,640	19.8714	(323)	0.0%	0.0%
11	Sales Service Impact					(323)	0.0%	0.0%
12	Direct Purchase Impact					(317)	-0.1%	-0.2%
	<u>Small Rate M7</u>							
13	Delivery Charges	813,508	2.2597	867,837	2.4107	54,329	6.7%	6.7%
14	Cap-and-Trade Charges	1,203,156	3.3421	1,203,156	3.3421	-	0.0%	0.0%
15	Gas Supply Charges	4,905,036	13.6251	4,905,000	13.6250	(36)	0.0%	0.0%
16	Total Bill	6,921,700	19.2269	6,975,993	19.3778	54,293	0.8%	0.9%
17	Sales Service Impact					54,293	0.8%	0.9%
18	Direct Purchase Impact					54,329	2.7%	6.6%
	<u>Large Rate M7</u>							
19	Delivery Charges	3,177,935	6.1114	3,415,008	6.5673	237,073	7.5%	7.5%
20	Cap-and-Trade Charges	1,737,892	3.3421	1,737,892	3.3421	-	0.0%	0.0%
21	Gas Supply Charges	7,085,052	13.6251	7,085,000	13.6250	(52)	0.0%	0.0%
22	Total Bill	12,000,879	23.0786	12,237,900	23.5344	237,021	2.0%	2.3%
23	Sales Service Impact					237,021	2.0%	2.3%
24	Direct Purchase Impact					237,073	4.8%	7.4%

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UNION GAS LIMITED
Calculation of 2021 Sales Service and Direct Purchase Bill Impacts for Typical Small and Large Customers - Union South

Line No.	Particulars	Approved - EB-2017-0087 (1)		Proposed - EB-2018-0013			Bill Impact	
		Total Bill (\$)	Unit Rate (cents/m ³)	Total Bill (\$)	Unit Rate (cents/m ³)	Total Bill Change (\$)	Including Customer-Related Cap-and-Trade (%) (2)	Excluding Customer-Related Cap-and-Trade (%) (3)
		(a)	(b)	(c)	(d)	(e) = (c - a)	(f) = (e / a)	(g)
	<u>Small Rate M9 (4)</u>							
1	Delivery Charges	171,423	2.4665	178,778	2.5723	7,355	4.3%	4.3%
2	Cap-and-Trade Charges	1,668	0.0240	1,668	0.0240	-	0.0%	0.0%
3	Gas Supply Charges	946,944	13.6251	946,938	13.6250	(7)	0.0%	0.0%
4	Total Bill	1,120,035	16.1156	1,127,383	16.2213	7,348	0.7%	0.7%
5	Sales Service Impact					7,348	0.7%	0.7%
6	Direct Purchase Impact					7,355	4.2%	4.2%
	<u>Large Rate M9 (4)</u>							
7	Delivery Charges	509,672	2.5259	531,579	2.6344	21,907	4.3%	4.3%
8	Cap-and-Trade Charges	4,843	0.0240	4,843	0.0240	-	0.0%	0.0%
9	Gas Supply Charges	2,749,273	13.6251	2,749,253	13.6250	(20)	0.0%	0.0%
10	Total Bill	3,263,787	16.1750	3,285,674	16.2834	21,887	0.7%	0.7%
11	Sales Service Impact					21,887	0.7%	0.7%
12	Direct Purchase Impact					21,907	4.3%	4.3%
	<u>Average Rate M10 (4)</u>							
13	Delivery Charges	6,778	7.1728	7,415	7.8461	636	9.4%	9.4%
14	Cap-and-Trade Charges	23	0.0240	23	0.0240	-	0.0%	0.0%
15	Gas Supply Charges	12,876	13.6251	12,876	13.6250	(0)	0.0%	0.0%
16	Total Bill	19,677	20.8219	20,313	21.4951	636	3.2%	3.2%
17	Sales Service Impact					636	3.2%	3.2%
18	Direct Purchase Impact					636	9.4%	9.4%
	<u>Small Rate T1</u>							
19	Delivery Charges	156,543	2.0770	161,075	2.1371	4,532	2.9%	2.9%
20	Cap-and-Trade Charges	251,894	3.3421	251,894	3.3421	-	0.0%	0.0%
21	Gas Supply Charges	1,026,924	13.6251	1,026,916	13.6250	(8)	0.0%	0.0%
22	Total Bill	1,435,361	19.0442	1,439,886	19.1042	4,524	0.3%	0.4%
23	Sales Service Impact					4,524	0.3%	0.4%
24	Direct Purchase Impact					4,532	1.1%	2.9%
	<u>Average Rate T1</u>							
25	Delivery Charges	242,028	2.0926	249,511	2.1573	7,483	3.1%	3.1%
26	Cap-and-Trade Charges	386,545	3.3421	386,545	3.3421	-	0.0%	0.0%
27	Gas Supply Charges	1,575,871	13.6251	1,575,859	13.6250	(12)	0.0%	0.0%
28	Total Bill	2,204,444	19.0598	2,211,916	19.1244	7,472	0.3%	0.4%
29	Sales Service Impact					7,472	0.3%	0.4%
30	Direct Purchase Impact					7,483	1.2%	3.1%

Notes:

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- (4) The customer-related Cap-and-Trade rates are not applicable to Rate M9, Rate M10, and Rate T3 as there are no customers in these rate classes covered by Union's compliance obligation.

UNION GAS LIMITED
Calculation of 2021 Sales Service and Direct Purchase Bill Impacts for Typical Small and Large Customers - Union South

Line No.	Particulars	Approved - EB-2017-0087 (1)		Proposed - EB-2018-0013		Bill Impact		
		Total Bill	Unit Rate	Total Bill	Unit Rate	Total Bill Change	Including Customer-Related Cap-and-Trade	Excluding Customer-Related Cap-and-Trade
		(\$)	(cents/m ³)	(\$)	(cents/m ³)	(\$)	(%) (2)	(%) (3)
		(a)	(b)	(c)	(d)	(e) = (c - a)	(f) = (e / a)	(g)
	<u>Large Rate T1</u>							
1	Delivery Charges	541,148	2.1119	558,961	2.1814	17,813	3.3%	3.3%
2	Cap-and-Trade Charges	856,382	3.3421	856,382	3.3421	-	0.0%	0.0%
3	Gas Supply Charges	3,491,307	13.6251	3,491,281	13.6250	(26)	0.0%	0.0%
4	Total Bill	4,888,837	19.0791	4,906,624	19.1485	17,787	0.4%	0.4%
5	Sales Service Impact					17,787	0.4%	0.4%
6	Direct Purchase Impact					17,813	1.3%	3.3%
	<u>Small Rate T2</u>							
7	Delivery Charges	722,181	1.2187	756,321	1.2764	34,139	4.7%	4.7%
8	Cap-and-Trade Charges	1,980,395	3.3421	1,980,395	3.3421	-	0.0%	0.0%
9	Gas Supply Charges	8,073,689	13.6251	8,073,630	13.6250	(59)	0.0%	0.0%
10	Total Bill	10,776,265	18.1859	10,810,346	18.2435	34,080	0.3%	0.4%
11	Sales Service Impact					34,080	0.3%	0.4%
12	Direct Purchase Impact					34,139	1.3%	4.6%
	<u>Average Rate T2</u>							
13	Delivery Charges	1,732,564	0.8760	1,819,057	0.9197	86,492	5.0%	5.0%
14	Cap-and-Trade Charges	6,610,335	3.3421	6,610,335	3.3421	-	0.0%	0.0%
15	Gas Supply Charges	26,949,065	13.6251	26,948,867	13.6250	(198)	0.0%	0.0%
16	Total Bill	35,291,964	17.8432	35,378,258	17.8868	86,294	0.2%	0.3%
17	Sales Service Impact					86,294	0.2%	0.3%
18	Direct Purchase Impact					86,492	1.0%	4.9%
	<u>Large Rate T2</u>							
19	Delivery Charges	2,857,615	0.7721	3,002,144	0.8112	144,528	5.1%	5.1%
20	Cap-and-Trade Charges	12,368,744	3.3421	12,368,744	3.3421	-	0.0%	0.0%
21	Gas Supply Charges	50,424,996	13.6251	50,424,626	13.6250	(370)	0.0%	0.0%
22	Total Bill	65,651,356	17.7393	65,795,514	17.7783	144,158	0.2%	0.3%
23	Sales Service Impact					144,158	0.2%	0.3%
24	Direct Purchase Impact					144,528	0.9%	4.9%
	<u>Large Rate T3 (4)</u>							
25	Delivery Charges	5,493,150	2.0143	5,798,221	2.1261	305,070	5.6%	5.6%
26	Cap-and-Trade Charges	65,451	0.0240	65,451	0.0240	-	0.0%	0.0%
27	Gas Supply Charges	37,157,283	13.6251	37,157,010	13.6250	(273)	0.0%	0.0%
28	Total Bill	42,715,884	15.6634	43,020,681	15.7751	304,798	0.7%	0.7%
29	Sales Service Impact					304,798	0.7%	0.7%
30	Direct Purchase Impact					305,070	5.5%	5.5%

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- (4) The customer-related Cap-and-Trade rates are not applicable to Rate M9, Rate M10, and Rate T3 as there are no customers in these rate classes covered by Union's compliance obligation.

UNION GAS LIMITED
Calculation of 2028 Sales Service and Direct Purchase Bill Impacts for Typical Small and Large Customers - Union North

Line No.	Particulars	Approved - EB-2017-0087 (1)		Proposed - EB-2018-0013		Total Bill Change (\$) (e) = (c - a)	Bill Impact	
		Total Bill	Unit Rate	Total Bill	Unit Rate		Including Customer-Related Cap-and-Trade	Excluding Customer-Related Cap-and-Trade
		(\$)	(cents/m ³)	(\$)	(cents/m ³)		(%) (2)	(%) (3)
		(a)	(b)	(c)	(d)		(f) = (e / a)	(g)
	<u>Small Rate 01</u>							
1	Delivery Charges	455	20.6873	455	20.6736	(0.30)	-0.1%	-0.1%
2	Cap-and-Trade Charges	74	3.3418	74	3.3418	-	0.0%	0.0%
3	Gas Supply Charges (4)	527	23.9359	527	23.9355	(0.01)	0.0%	0.0%
4	Total Bill	1,055	47.9650	1,055	47.9509	(0.31)	0.0%	0.0%
5	Sales Service Impact					(0.31)	0.0%	0.0%
6	Bundled-T (Direct Purchase) Impact					(0.31)	0.0%	0.0%
	<u>Small Rate 10</u>							
7	Delivery Charges	4,874	8.1226	4,870	8.1168	(4)	-0.1%	-0.1%
8	Cap-and-Trade Charges	2,005	3.3421	2,005	3.3421	-	0.0%	0.0%
9	Gas Supply Charges (4)	12,998	21.6632	12,998	21.6625	(0)	0.0%	0.0%
10	Total Bill	19,877	33.1279	19,873	33.1214	(4)	0.0%	0.0%
11	Sales Service Impact					(4)	0.0%	0.0%
12	Bundled-T (Direct Purchase) Impact					(4)	0.0%	0.0%
	<u>Large Rate 10</u>							
13	Delivery Charges	16,084	6.4337	16,075	6.4300	(9)	-0.1%	-0.1%
14	Cap-and-Trade Charges	8,355	3.3421	8,355	3.3421	-	0.0%	0.0%
15	Gas Supply Charges (4)	54,158	21.6632	54,156	21.6625	(2)	0.0%	0.0%
16	Total Bill	78,598	31.4390	78,586	31.4346	(11)	0.0%	0.0%
17	Sales Service Impact					(11)	0.0%	0.0%
18	Bundled-T (Direct Purchase) Impact					(11)	0.0%	0.0%
	<u>Small Rate 20</u>							
19	Delivery Charges	74,672	2.4891	74,612	2.4871	(60)	-0.1%	-0.1%
20	Cap-and-Trade Charges	100,263	3.3421	100,263	3.3421	-	0.0%	0.0%
21	Gas Supply Charges (4)	545,711	18.1904	545,703	18.1901	(8)	0.0%	0.0%
22	Total Bill	720,646	24.0215	720,578	24.0193	(68)	0.0%	0.0%
23	Sales Service Impact					(68)	0.0%	0.0%
24	Bundled-T (Direct Purchase) Impact					(68)	0.0%	0.0%
	<u>Large Rate 20</u>							
25	Delivery Charges	290,304	1.9354	290,140	1.9343	(164)	-0.1%	-0.1%
26	Cap-and-Trade Charges	501,315	3.3421	501,315	3.3421	-	0.0%	0.0%
27	Gas Supply Charges (4)	2,628,781	17.5252	2,628,745	17.5250	(35)	0.0%	0.0%
28	Total Bill	3,420,400	22.8027	3,420,201	22.8013	(199)	0.0%	0.0%
29	Sales Service Impact					(199)	0.0%	0.0%
30	Bundled-T (Direct Purchase) Impact					(199)	0.0%	0.0%

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- (4) Gas Supply charges based on Union North East Zone.

UNION GAS LIMITED
Calculation of 2028 Sales Service and Direct Purchase Bill Impacts for Typical Small and Large Customers - Union North

		Approved - EB-2017-0087 (1)		Proposed - EB-2018-0013			Bill Impact	
Line		Total	Unit Rate	Total	Unit Rate	Total Bill	Including	Excluding
No.	Particulars	Bill		Bill		Change	Customer-Related	Customer-Related
		(\$)	(cents/m ³)	(\$)	(cents/m ³)	(\$)	Cap-and-Trade	Cap-and-Trade
		(a)	(b)	(c)	(d)	(e) = (c - a)	(f) = (e / a)	(g)
	<u>Average Rate 25</u>							
1	Delivery Charges	61,501	2.7033	61,464	2.7017	(37)	-0.1%	-0.1%
2	Cap-and-Trade Charges	76,033	3.3421	76,033	3.3421	-	0.0%	0.0%
3	Gas Supply Charges (4)	343,791	15.1117	343,789	15.1116	(2)	0.0%	0.0%
4	Total Bill	481,325	21.1571	481,286	21.1554	(39)	0.0%	0.0%
5	Sales Service Impact					(39)	0.0%	0.0%
6	T-Service (Direct Purchase) Impact					(37)	0.0%	-0.1%
	<u>Small Rate 100</u>							
7	Delivery Charges	256,549	0.9502	256,417	0.9497	(132)	-0.1%	-0.1%
8	Cap-and-Trade Charges	902,367	3.3421	902,367	3.3421	-	0.0%	0.0%
9	Gas Supply Charges (4)	6,592,612	24.4171	6,592,612	24.4171	-	0.0%	0.0%
10	Total Bill	7,751,529	28.7094	7,751,397	28.7089	(132)	0.0%	0.0%
11	Sales Service Impact					(132)	0.0%	0.0%
12	T-Service (Direct Purchase) Impact					(132)	0.0%	-0.1%
	<u>Large Rate 100</u>							
13	Delivery Charges	2,083,042	0.8679	2,082,175	0.8676	(867)	0.0%	0.0%
14	Cap-and-Trade Charges	8,021,040	3.3421	8,021,040	3.3421	-	0.0%	0.0%
15	Gas Supply Charges (4)	57,458,295	23.9410	57,458,295	23.9410	-	0.0%	0.0%
16	Total Bill	67,562,378	28.1510	67,561,511	28.1506	(867)	0.0%	0.0%
17	Sales Service Impact					(867)	0.0%	0.0%
18	T-Service (Direct Purchase) Impact					(867)	0.0%	0.0%

Notes:
(1) Reflects approved rates per 2018 Rates (EB-2017-0087), Appendix A.
(2) Bill impacts including Cap-and-Trade Customer-Related charge are applicable to customers for whom Union is required to fulfill Cap-and-Trade obligations.
(3) Bill impacts excludes Cap-and-Trade Customer-Related charge of 3.3181 cents/m³.
(4) Gas Supply charges based on Union North East Zone.

UNION GAS LIMITED
Calculation of 2028 Sales Service and Direct Purchase Bill Impacts for Typical Small and Large Customers - Union South

Line No.	Particulars	Approved - EB-2017-0087 (1)		Proposed - EB-2018-0013			Bill Impact	
		Total Bill	Unit Rate	Total Bill	Unit Rate	Total Bill Change	Including Customer-Related Cap-and-Trade	Excluding Customer-Related Cap-and-Trade
		(\$)	(cents/m ³)	(\$)	(cents/m ³)	(\$)	(%) (2)	(%) (3)
		(a)	(b)	(c)	(d)	(e) = (c - a)	(f) = (e / a)	(g)
	<u>Small Rate M1</u>							
1	Delivery Charges	374	17.0068	375	17.0645	1.27	0.3%	0.3%
2	Cap-and-Trade Charges	74	3.3427	74	3.3427	-	0.0%	0.0%
3	Gas Supply Charges	300	13.6245	300	13.6245	-	0.0%	0.0%
4	Total Bill	747	33.9741	749	34.0318	1.27	0.2%	0.2%
5	Sales Service Impact					1.27	0.2%	0.2%
6	Direct Purchase Impact					1.27	0.3%	0.3%
	<u>Small Rate M2</u>							
7	Delivery Charges	4,203	7.0050	4,237	7.0616	34	0.8%	0.8%
8	Cap-and-Trade Charges	2,005	3.3421	2,005	3.3421	-	0.0%	0.0%
9	Gas Supply Charges	8,175	13.6251	8,175	13.6251	-	0.0%	0.0%
10	Total Bill	14,383	23.9722	14,417	24.0288	34	0.2%	0.3%
11	Sales Service Impact					34	0.2%	0.3%
12	Direct Purchase Impact					34	0.5%	0.8%
	<u>Large Rate M2</u>							
13	Delivery Charges	14,295	5.7181	14,432	5.7729	137	1.0%	1.0%
14	Cap-and-Trade Charges	8,355	3.3421	8,355	3.3421	-	0.0%	0.0%
15	Gas Supply Charges	34,063	13.6251	34,063	13.6251	-	0.0%	0.0%
16	Total Bill	56,713	22.6853	56,850	22.7401	137	0.2%	0.3%
17	Sales Service Impact					137	0.2%	0.3%
18	Direct Purchase Impact					137	0.6%	1.0%
	<u>Small Rate M4</u>							
19	Delivery Charges	49,207	5.6237	52,031	5.9465	2,824	5.7%	5.7%
20	Cap-and-Trade Charges	29,243	3.3421	29,243	3.3421	-	0.0%	0.0%
21	Gas Supply Charges	119,220	13.6251	119,220	13.6251	-	0.0%	0.0%
22	Total Bill	197,670	22.5909	200,494	22.9137	2,824	1.4%	1.7%
23	Sales Service Impact					2,824	1.4%	1.7%
24	Direct Purchase Impact					2,824	3.6%	5.7%
	<u>Large Rate M4</u>							
25	Delivery Charges	376,133	3.1344	399,545	3.3295	23,412	6.2%	6.2%
26	Cap-and-Trade Charges	401,052	3.3421	401,052	3.3421	-	0.0%	0.0%
27	Gas Supply Charges	1,635,012	13.6251	1,635,012	13.6251	-	0.0%	0.0%
28	Total Bill	2,412,197	20.1016	2,435,609	20.2967	23,412	1.0%	1.2%
29	Sales Service Impact					23,412	1.0%	1.2%
30	Direct Purchase Impact					23,412	3.0%	6.2%

Notes:
(1) Reflects approved rates per 2018 Rates (EB-2017-0087), Appendix A.
(2) Bill impacts including Cap-and-Trade Customer-Related charge are applicable to customers for whom Union is required to fulfill Cap-and-Trade obligations.
(3) Bill impacts excludes Cap-and-Trade Customer-Related charge of 3.3181 cents/m³.

UNION GAS LIMITED
Calculation of 2028 Sales Service and Direct Purchase Bill Impacts for Typical Small and Large Customers - Union South

Line No.	Particulars	Approved - EB-2017-0087 (1)		Proposed - EB-2018-0013			Bill Impact	
		Total Bill	Unit Rate	Total Bill	Unit Rate	Total Bill Change	Including Customer-Related Cap-and-Trade	Excluding Customer-Related Cap-and-Trade
		(\$)	(cents/m ³)	(\$)	(cents/m ³)	(\$)	(%) (2)	(%) (3)
		(a)	(b)	(c)	(d)	(e) = (c - a)	(f) = (e / a)	(g)
	<u>Small Rate M5</u>							
1	Delivery Charges	32,782	3.9735	32,760	3.9710	(21)	-0.1%	-0.1%
2	Cap-and-Trade Charges	27,572	3.3421	27,572	3.3421	-	0.0%	0.0%
3	Gas Supply Charges	112,407	13.6251	112,407	13.6251	-	0.0%	0.0%
4	Total Bill	172,761	20.9407	172,740	20.9382	(21)	0.0%	0.0%
5	Sales Service Impact					(21)	0.0%	0.0%
6	Direct Purchase Impact					(21)	0.0%	-0.1%
	<u>Large Rate M5</u>							
7	Delivery Charges	189,095	2.9092	189,006	2.9078	(89)	0.0%	0.0%
8	Cap-and-Trade Charges	217,237	3.3421	217,237	3.3421	-	0.0%	0.0%
9	Gas Supply Charges	885,632	13.6251	885,632	13.6251	-	0.0%	0.0%
10	Total Bill	1,291,963	19.8764	1,291,874	19.8750	(89)	0.0%	0.0%
11	Sales Service Impact					(89)	0.0%	0.0%
12	Direct Purchase Impact					(89)	0.0%	0.0%
	<u>Small Rate M7</u>							
13	Delivery Charges	813,508	2.2597	890,371	2.4733	76,864	9.4%	9.4%
14	Cap-and-Trade Charges	1,203,156	3.3421	1,203,156	3.3421	-	0.0%	0.0%
15	Gas Supply Charges	4,905,036	13.6251	4,905,036	13.6251	-	0.0%	0.0%
16	Total Bill	6,921,700	19.2269	6,998,563	19.4405	76,864	1.1%	1.3%
17	Sales Service Impact					76,864	1.1%	1.3%
18	Direct Purchase Impact					76,864	3.8%	9.3%
	<u>Large Rate M7</u>							
19	Delivery Charges	3,177,935	6.1114	3,513,340	6.7564	335,405	10.6%	10.6%
20	Cap-and-Trade Charges	1,737,892	3.3421	1,737,892	3.3421	-	0.0%	0.0%
21	Gas Supply Charges	7,085,052	13.6251	7,085,052	13.6251	-	0.0%	0.0%
22	Total Bill	12,000,879	23.0786	12,336,284	23.7236	335,405	2.8%	3.3%
23	Sales Service Impact					335,405	2.8%	3.3%
24	Direct Purchase Impact					335,405	6.8%	10.5%

Notes:
(1) Reflects approved rates per 2018 Rates (EB-2017-0087), Appendix A.
(2) Bill impacts including Cap-and-Trade Customer-Related charge are applicable to customers for whom Union is required to fulfill Cap-and-Trade obligations.
(3) Bill impacts excludes Cap-and-Trade Customer-Related charge of 3.3181 cents/m³.

UNION GAS LIMITED
Calculation of 2028 Sales Service and Direct Purchase Bill Impacts for Typical Small and Large Customers - Union South

Line No.	Particulars	Approved - EB-2017-0087 (1)		Proposed - EB-2018-0013			Bill Impact	
		Total Bill	Unit Rate	Total Bill	Unit Rate	Total Bill Change	Including Customer-Related Cap-and-Trade	Excluding Customer-Related Cap-and-Trade
		(\$)	(cents/m ³)	(\$)	(cents/m ³)	(\$)	(%) (2)	(%) (3)
		(a)	(b)	(c)	(d)	(e) = (c - a)	(f) = (e / a)	(g)
	<u>Small Rate M9 (4)</u>							
1	Delivery Charges	171,423	2.4665	175,075	2.5191	3,652	2.1%	2.1%
2	Cap-and-Trade Charges	1,668	0.0240	1,668	0.0240	-	0.0%	0.0%
3	Gas Supply Charges	946,944	13.6251	946,944	13.6251	-	0.0%	0.0%
4	Total Bill	<u>1,120,035</u>	<u>16.1156</u>	<u>1,123,687</u>	<u>16.1682</u>	<u>3,652</u>	<u>0.3%</u>	<u>0.3%</u>
5	Sales Service Impact					3,652	0.3%	0.3%
6	Direct Purchase Impact					3,652	2.1%	2.1%
	<u>Large Rate M9 (4)</u>							
7	Delivery Charges	509,672	2.5259	520,549	2.5798	10,877	2.1%	2.1%
8	Cap-and-Trade Charges	4,843	0.0240	4,843	0.0240	-	0.0%	0.0%
9	Gas Supply Charges	2,749,273	13.6251	2,749,273	13.6251	-	0.0%	0.0%
10	Total Bill	<u>3,263,787</u>	<u>16.1750</u>	<u>3,274,664</u>	<u>16.2289</u>	<u>10,877</u>	<u>0.3%</u>	<u>0.3%</u>
11	Sales Service Impact					10,877	0.3%	0.3%
12	Direct Purchase Impact					10,877	2.1%	2.1%
	<u>Average Rate M10 (4)</u>							
13	Delivery Charges	6,778	7.1728	7,090	7.5025	312	4.6%	4.6%
14	Cap-and-Trade Charges	23	0.0240	23	0.0240	-	0.0%	0.0%
15	Gas Supply Charges	12,876	13.6251	12,876	13.6251	-	0.0%	0.0%
16	Total Bill	<u>19,677</u>	<u>20.8219</u>	<u>19,988</u>	<u>21.1516</u>	<u>312</u>	<u>1.6%</u>	<u>1.6%</u>
17	Sales Service Impact					312	1.6%	1.6%
18	Direct Purchase Impact					312	4.6%	4.6%
	<u>Small Rate T1</u>							
19	Delivery Charges	156,543	2.0770	158,803	2.1070	2,259	1.4%	1.4%
20	Cap-and-Trade Charges	251,894	3.3421	251,894	3.3421	-	0.0%	0.0%
21	Gas Supply Charges	1,026,924	13.6251	1,026,924	13.6251	-	0.0%	0.0%
22	Total Bill	<u>1,435,361</u>	<u>19.0442</u>	<u>1,437,621</u>	<u>19.0742</u>	<u>2,259</u>	<u>0.2%</u>	<u>0.2%</u>
23	Sales Service Impact					2,259	0.2%	0.2%
24	Direct Purchase Impact					2,259	0.6%	1.4%
	<u>Average Rate T1</u>							
25	Delivery Charges	242,028	2.0926	245,757	2.1248	3,729	1.5%	1.5%
26	Cap-and-Trade Charges	386,545	3.3421	386,545	3.3421	-	0.0%	0.0%
27	Gas Supply Charges	1,575,871	13.6251	1,575,871	13.6251	-	0.0%	0.0%
28	Total Bill	<u>2,204,444</u>	<u>19.0598</u>	<u>2,208,173</u>	<u>19.0920</u>	<u>3,729</u>	<u>0.2%</u>	<u>0.2%</u>
29	Sales Service Impact					3,729	0.2%	0.2%
30	Direct Purchase Impact					3,729	0.6%	1.5%

Notes:

- (1) Reflects approved rates per 2018 Rates (EB-2017-0087), Appendix A.
- (2) Bill impacts including Cap-and-Trade Customer-Related charge are applicable to customers for whom Union is required to fulfill Cap-and-Trade obligations.
- (3) Bill impacts excludes Cap-and-Trade Customer-Related charge of 3.3181 cents/m³.
- (4) The customer-related Cap-and-Trade rates are not applicable to Rate M9, Rate M10, and Rate T3 as there are no customers in these rate classes covered by Union's compliance obligation.

UNION GAS LIMITED
Calculation of 2028 Sales Service and Direct Purchase Bill Impacts for Typical Small and Large Customers - Union South

Line No.	Particulars	Approved - EB-2017-0087 (1)		Proposed - EB-2018-0013			Bill Impact	
		Total Bill	Unit Rate	Total Bill	Unit Rate	Total Bill Change	Including Customer-Related Cap-and-Trade	Excluding Customer-Related Cap-and-Trade
		(\$)	(cents/m ³)	(\$)	(cents/m ³)	(\$)	(%) (2)	(%) (3)
		(a)	(b)	(c)	(d)	(e) = (c - a)	(f) = (e / a)	(g)
	<u>Large Rate T1</u>							
1	Delivery Charges	541,148	2.1119	550,022	2.1465	8,873	1.6%	1.6%
2	Cap-and-Trade Charges	856,382	3.3421	856,382	3.3421	-	0.0%	0.0%
3	Gas Supply Charges	3,491,307	13.6251	3,491,307	13.6251	-	0.0%	0.0%
4	Total Bill	4,888,837	19.0791	4,897,711	19.1137	8,873	0.2%	0.2%
5	Sales Service Impact					8,873	0.2%	0.2%
6	Direct Purchase Impact					8,873	0.6%	1.6%
	<u>Small Rate T2</u>							
7	Delivery Charges	722,181	1.2187	739,079	1.2473	16,898	2.3%	2.3%
8	Cap-and-Trade Charges	1,980,395	3.3421	1,980,395	3.3421	-	0.0%	0.0%
9	Gas Supply Charges	8,073,689	13.6251	8,073,689	13.6251	-	0.0%	0.0%
10	Total Bill	10,776,265	18.1859	10,793,163	18.2145	16,898	0.2%	0.2%
11	Sales Service Impact					16,898	0.2%	0.2%
12	Direct Purchase Impact					16,898	0.6%	2.3%
	<u>Average Rate T2</u>							
13	Delivery Charges	1,732,564	0.8760	1,775,282	0.8976	42,718	2.5%	2.5%
14	Cap-and-Trade Charges	6,610,335	3.3421	6,610,335	3.3421	-	0.0%	0.0%
15	Gas Supply Charges	26,949,065	13.6251	26,949,065	13.6251	-	0.0%	0.0%
16	Total Bill	35,291,964	17.8432	35,334,681	17.8648	42,718	0.1%	0.1%
17	Sales Service Impact					42,718	0.1%	0.1%
18	Direct Purchase Impact					42,718	0.5%	2.4%
	<u>Large Rate T2</u>							
19	Delivery Charges	2,857,615	0.7721	2,928,956	0.7914	71,341	2.5%	2.5%
20	Cap-and-Trade Charges	12,368,744	3.3421	12,368,744	3.3421	-	0.0%	0.0%
21	Gas Supply Charges	50,424,996	13.6251	50,424,996	13.6251	-	0.0%	0.0%
22	Total Bill	65,651,356	17.7393	65,722,697	17.7586	71,341	0.1%	0.1%
23	Sales Service Impact					71,341	0.1%	0.1%
24	Direct Purchase Impact					71,341	0.5%	2.4%
	<u>Large Rate T3 (4)</u>							
25	Delivery Charges	5,493,150	2.0143	5,643,774	2.0695	150,624	2.7%	2.7%
26	Cap-and-Trade Charges	65,451	0.0240	65,451	0.0240	-	0.0%	0.0%
27	Gas Supply Charges	37,157,283	13.6251	37,157,283	13.6251	-	0.0%	0.0%
28	Total Bill	42,715,884	15.6634	42,866,508	15.7186	150,624	0.4%	0.4%
29	Sales Service Impact					150,624	0.4%	0.4%
30	Direct Purchase Impact					150,624	2.7%	2.7%

Notes:

- (1) Reflects approved rates per 2018 Rates (EB-2017-0087), Appendix A.
- (2) Bill impacts including Cap-and-Trade Customer-Related charge are applicable to customers for whom Union is required to fulfill Cap-and-Trade obligations.
- (3) Bill impacts excludes Cap-and-Trade Customer-Related charge of 3.3181 cents/m³.
- (4) The customer-related Cap-and-Trade rates are not applicable to Rate M9, Rate M10, and Rate T3 as there are no customers in these rate classes covered by Union's compliance obligation.

UNION GAS LIMITED
Kingsville Transmission Reinforcement Project Net Revenue Requirement by Rate Class

Line No.	Particulars (\$000's)	2019 (a)	Variance (b) = (c-a)	2020 (c)	Variance (d) = (e-c)	2021 (e)	Variance (f) = (g-e)	2022 (g)	Variance (h) = (i-g)	2023 (i)	Variance (j) = (k-i)	2024 (k)	Variance (l) = (m-k)	2025 (m)	Variance (n) = (o-m)	2026 (o)	Variance (p) = (q-o)	2027 (q)	Variance (r) = (s-q)	2028 (s)
1	Rate M1	62	2,873	2,935	(132)	2,803	(345)	2,458	(258)	2,200	(266)	1,934	(222)	1,711	(105)	1,606	(14)	1,592	(11)	1,581
2	Rate M2	144	1,019	1,163	(61)	1,102	(136)	966	(105)	861	(105)	756	(89)	667	(48)	619	(16)	603	(14)	590
3	Rate M4	235	386	622	116	738	39	777	95	871	90	961	32	994	(22)	972	(8)	964	(7)	957
4	Rate M5	(20)	(1)	(20)	3	(17)	2	(15)	2	(13)	2	(11)	2	(9)	2	(7)	2	(6)	2	(4)
5	Rate M7	20	181	201	189	390	85	475	40	516	39	554	14	568	(9)	559	(4)	555	(3)	552
6	Rate M9	7	39	46	(3)	43	(6)	38	(4)	33	(4)	29	(4)	25	(2)	23	(1)	22	(1)	22
7	Rate M10	0	1	1	(0)	1	(0)	1	(0)	1	(0)	1	(0)	1	(0)	1	(0)	1	(0)	1
8	Rate T1	50	282	332	(21)	311	(41)	270	(32)	238	(32)	207	(27)	179	(14)	165	(5)	160	(4)	156
9	Rate T2	416	2,097	2,513	(163)	2,350	(308)	2,042	(242)	1,800	(241)	1,559	(206)	1,352	(108)	1,244	(43)	1,201	(37)	1,164
10	Rate T3	53	269	322	(21)	302	(40)	262	(31)	231	(31)	200	(27)	173	(14)	160	(5)	154	(5)	149
11	Subtotal - Union South	967	7,148	8,115	(93)	8,022	(748)	7,274	(535)	6,739	(550)	6,189	(528)	5,661	(320)	5,341	(94)	5,247	(80)	5,167
12	Excess Utility Space	(10)	(3)	(13)	1	(12)	1	(10)	1	(9)	1	(8)	1	(7)	1	(6)	1	(5)	1	(4)
13	Rate C1	(2)	(1)	(3)	0	(3)	0	(2)	0	(2)	0	(2)	0	(1)	0	(1)	0	(1)	0	(1)
14	Rate M12	(337)	(30)	(367)	54	(313)	53	(260)	47	(213)	41	(172)	37	(136)	33	(103)	29	(73)	26	(47)
15	Rate M13	1	(2)	(1)	(0)	(1)	(0)	(1)	(0)	(1)	(0)	(1)	(0)	(1)	(0)	(1)	(0)	(1)	(0)	(2)
16	Rate M16	(0)	(0)	(0)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)
17	Subtotal - Ex-franchise	(347)	(37)	(384)	56	(328)	55	(274)	48	(226)	43	(183)	38	(145)	34	(111)	30	(81)	27	(53)
18	Rate 01	(305)	(101)	(406)	46	(360)	47	(313)	41	(272)	37	(235)	33	(202)	30	(173)	27	(146)	24	(122)
19	Rate 10	(46)	(12)	(58)	7	(51)	7	(44)	6	(37)	6	(32)	5	(27)	4	(22)	4	(18)	4	(15)
20	Rate 20	(30)	(9)	(39)	5	(34)	5	(29)	4	(25)	4	(21)	4	(17)	3	(14)	3	(11)	3	(8)
21	Rate 100	(23)	(7)	(30)	4	(26)	4	(22)	3	(19)	3	(16)	3	(13)	2	(11)	2	(8)	2	(6)
22	Rate 25	(8)	(3)	(11)	1	(10)	1	(8)	1	(7)	1	(6)	1	(5)	1	(4)	1	(3)	1	(3)
23	Subtotal - Union North	(412)	(132)	(545)	64	(481)	64	(417)	57	(360)	51	(310)	45	(264)	41	(224)	37	(187)	33	(154)
24	In-franchise	554	7,015	7,570	(29)	7,540	(684)	6,857	(478)	6,379	(499)	5,880	(483)	5,397	(280)	5,118	(57)	5,060	(47)	5,013
25	Ex-franchise	(347)	(37)	(384)	56	(328)	55	(274)	48	(226)	43	(183)	38	(145)	34	(111)	30	(81)	27	(53)
26	Total	207	6,979	7,186	26	7,212	(629)	6,583	(430)	6,153	(456)	5,697	(445)	5,252	(246)	5,006	(27)	4,979	(20)	4,960

DRAFT

Filed: 2018-01-25

EB-2018-0013

Exhibit A

Tab 10

Schedule 8

UNION GAS LIMITED

Accounting Entries for Kingsville Transmission Reinforcement Project Costs Deferral Account No. 179-157

Account numbers are from the Uniform System of Accounts for Gas Utilities, Class A prescribed under the Ontario Energy Board Act.

Debit	-	Account No.179-157 Other Deferred Charges – Kingsville Transmission Reinforcement Project Costs
Credit	-	Account No. 579 Miscellaneous Operating Revenue

To record, as a debit (credit) in Deferral Account No. 179-157, the difference between the actual net revenue requirement related to the costs for the Kingsville Transmission Reinforcement Project and the net revenue requirement included in rates as approved by the Board.

Debit	-	Account No.179-157 Other Deferred Charges – Kingsville Transmission Reinforcement Project Costs
Credit	-	Account No. 323 Other Interest Expense

To record, as a debit (credit) in Deferral Account No. 179-157, interest on the balance in Deferral Account No. 179-157. Simple interest will be computed monthly on the opening balance in the said account in accordance with the methodology approved by the Board in EB-2006-0117.

ENGINEERING AND CONSTRUCTION

Proposed Facilities

Union is proposing to reinforce the Panhandle System by constructing approximately 19 kilometres of NPS 20 pipeline from Union's NPS 20 Panhandle Line in the Town of Lakeshore to a new station in the Town of Kingsville in the County of Essex ("the Project").

Project Schedule

Exhibit A, Tab 11, Schedule 1 provides the overall Project and construction schedule. Construction of the Project will begin in the spring of 2019. The construction schedule takes advantage of the drier summer months thereby minimizing the impact of construction on agricultural lands and other features such as watercourses.

Design

All of the design, installation and testing of the proposed pipeline and station modifications will be completed in accordance with the requirements of Ontario Regulation 210/01, Oil and Gas Pipeline Systems under the Technical Standards and Safety Act 2000. This regulation governs the installation of pipelines in the Province of Ontario. The design meets or exceeds the requirements of current CSA Z662-15 Standard in accordance with the Code Adoption document under the Ontario Regulations.

The pipe design depends on which Class Location the pipeline is located within and what features the pipeline is crossing (i.e. railway and road). To determine Class Location, CSA Z662-15 uses a system that takes into account land use and population density. The classifications are as follows:

- 1) Class 1 areas consist of 10 or fewer dwellings;
- 2) Class 2 areas consist of 11 to 45 dwellings, or a building occupied by 20 or more persons during normal use such as playgrounds, recreational areas, or other places of public assembly as well as industrial installations;
- 3) Class 3 areas consist of 46 or more dwellings; and,
- 4) Class 4 contains a prevalence of buildings intended for human occupancy with 4 or more stories above ground.

The Class Location boundaries are determined by a sliding boundary 1.6 kilometres long by 400 metres wide centered over the proposed pipeline. This method covers existing development. This is supplemented with information for future development through discussions with landowners and municipalities. The proposed pipeline may be designed to accommodate a higher Class Location to be compatible with future development.

There is currently a combination of Class 1 and Class 2 locations along the proposed pipeline route.

As per CSA Z662, the appropriate location factors are applied in each of the Class Locations, as well as a design factor of 0.8 used for all Class Locations. The temperature and joint factors are 1.0 in all locations. Class 1 general locations require the location factor not to exceed 1.0. The Class 2 general location factor of 0.9 was used for both Class 1 and 2 locations with the following exceptions where a location factor of 0.625 was used:

- 1) when crossing any public right of ways including roads, highways, public streets, railways and major rivers;
- 2) for any fabrications such as stations or valve sites; and
- 3) for pipeline undercrossings.

Pipeline Specifications

Minimum pipe specifications are shown in Figure 9-1. The Project will use NPS 20 pipe which has an outside diameter of 508 mm. Union's internal design guidelines specify the recommended minimum wall thickness for a new NPS 20 pipeline as 6.4mm. Pipe with a location factor of 0.9 and above using 6.4mm wall thickness requires a specified minimum grade of 359 MPa. Pipe with a location factor of 0.625 requires 7.5mm minimum wall thickness and a specified minimum grade of 414 MPa.

As per CSA code, the pipe will be manufactured to CSA Z245.1 (2014). The pipe is designed to provide the required maximum operating pressure ("MOP") of 6040 kPa using the various location factors.

The rating of all valves, flanges and fittings will be PN 100 rated for 9930 kPa.

Based on the pipe specifications provided above, the hoop stress of the piping is listed in Figure 9-1. The pipeline design will be suitable for Class 3 (both general and crossings) and Class 2 crossings (7.5mm wall thickness) and Class 2 general (6.4mm wall thickness) developments.

Minimum depth of cover required will be 1.0 metre from top of the pipe to final grade. Where required, additional cover will be used to accommodate planned or existing underground facilities (i.e. roads, railway and watercourse crossings). In agricultural areas the minimum depth of cover will be 1.2 metres, except where bedrock is encountered at a depth less than 1.2 metres, in which case the pipe will be installed with the same cover as the bedrock, but not less than 1.0 metre below grade.

Figure 11-1
Minimum Design and Pipe Parameters

NPS 20	Class 2 General	Class 2 Other (roads/railways)
Location Factor	0.9	0.625
Design Factor	0.8	0.8
Maximum Operating Pressure	6040 kPa	6040 kPa
Mainline Test Medium	water	water
Mainline Test Duration	4 hour strength, 20 hour leak	4 hour strength, 20 hour leak
Mainline Minimum Test Pressure	MOP x 1.25 (7550 kPa)	MOP x 1.25 (7550 kPa)
Grade	359 MPa	414 MPa
Wall thickness	6.4mm	7.5mm
% SMYS	67% SMYS	49.4% SMYS
Category	II	II
Coating	FBE	FBE

Proposed Stations

The Project requires the construction of one new valve site and one new station. The valve site, located at the point of initiation from the existing NPS 20 Panhandle Line, will feature a valve nest, telemetry and inline inspection tool launching facilities.

A second station will be installed at the terminus of the pipeline and will provide filtration, flow measurement, pressure control, telemetry, over pressure protection, and inline inspection tool receiving

1 facilities. This station is required in order to reduce the gas pressure prior to entering into the
2 distribution system.

3
4 ***Pipeline Construction***

5 Exhibit A, Tab 11, Schedule 2 describes the general techniques and methods of construction that Union
6 will employ for the construction of the Project. It details such activities as clearing, grading, stringing
7 of pipe, trenching, welding, backfill, tile repair and clean-up.

8
9 The proposed location of the new NPS 20 pipeline is primarily on agricultural lands within private
10 easement. The facilities will then be installed using construction techniques employed for a typical
11 right-of-way ("ROW"). Installation will primarily be completed by open trench methods as described
12 in Schedule 2 (general techniques and methods of construction). Where open trench is not a viable
13 option due to specific feature crossing requirements, geotechnical investigations will be completed to
14 reveal subsurface conditions which will allow a technical evaluation of the suitability of an HDD
15 installation technique.

16
17 Wherever traffic is impacted, traffic control plans will be developed for review and approval by the
18 owning road authority prior to construction.

19
20 Rock may be encountered during construction of the Project. Any rock that is found will be removed
21 by mechanical methods such as excavators using a rock bucket or hoe-ram, as required.

1 The proposed pipeline will be tested hydrostatically with water for a period of 24 hours as per Union's
2 specification. Testing will adhere to the requirements of CSA Z662-15 Oil and Gas Pipeline Systems
3 Section 8. Fabrication tests that are fully exposed or are above ground will require at a minimum, a
4 one-hour pressure test. Locations for hydrostatic testing water sources have not yet been determined
5 and will be developed in conjunction with the Pipeline Contractor closer to the start of construction.
6 Union will work with the Pipeline Contractor to locate a water source that is the most economical and
7 creates the least environmental impact.

8
9 After the test water is removed, the line will be dried. A caliper tool will be run to check for dents or
10 ovality. Cathodic protection will be applied to the completed pipeline.

11
12 Union anticipates no issues obtaining material for the pipeline component of this Project within the
13 proposed timelines. Union also anticipates no problem in obtaining a Pipeline Contractor to complete
14 the proposed construction.

15
16 Union will construct the proposed pipeline in compliance with its current construction procedures,
17 environmental mitigation identified in the Environmental Report (see Exhibit A, Tab 12, Schedule 1),
18 permit conditions and commitments to Regulators and landowners. Union continuously updates and
19 refines its construction procedures to minimize potential impacts to lands and has since seen many
20 improvements as a result of better construction practices. Union will consult with each municipality in
21 order to obtain the required permits and/or approvals for the Project and to comply with the intent of
22 local municipal by-laws where required. Union's Landowner Relations Agent ("LRA") will contact

1 each landowner along the route prior to construction to obtain site specific requirements such as
2 livestock fencing and access points. This information is included in the construction contract so that
3 the Pipeline Contractor is contractually obligated to fulfill all commitments made to the landowner.
4 The visit also provides an informal opportunity to answer questions and discuss construction plans.

5
6 Pre-construction tiling will be completed if timing and soil conditions permit. This is done to minimize
7 disruption to field drainage systems and farm operations that may result from pipeline construction.
8 Union retains a qualified drainage consultant to determine if a property that contains a field drainage
9 system could benefit from pre-construction tiling. Union's drainage consultant will be contacting the
10 landowners to discuss their tile needs. Landowner approval is required for tiling work conducted
11 outside of the easement. The drainage consultant will prepare a tiling plan and provide a copy of the
12 plan to both Union and the landowner.

13
14 For trees removed within the proposed easement and temporary working space, Union has a
15 reforestation plan that consists of replanting twice the woodlot area cleared for construction.
16 Coniferous and deciduous seedlings native to Ontario are planted on the landowner's property if
17 requested, and maintained up to a period of five years or until the trees reach a free-to-grow status
18 defined by a height of one metre and free of adjacent brush competition. Replanting must be done in
19 accordance with Union's policies regarding tree planting so that the easement is left open for access to
20 the pipeline and aerial patrol.

21

1 All necessary permits, approvals and authorizations will be obtained. Union expects to receive all
2 approvals prior to construction.
3
4 Union will also provide inspection staff to ensure that contractual obligations between Union and the
5 Pipeline Contractor, Provincial Ministries, Municipal governments and landowners are complied with.

KINGSVILLE TRANSMISSION REINFORCEMENT PROJECT

[illegible]

GENERAL TECHNIQUES AND METHODS OF CONSTRUCTION

1. Pipeline construction is divided into several crews that create a mobile assembly line. Each crew performs a different function, with a finished product left behind when the last crew has completed its work.
2. Union Gas will provide its own inspection staff to ensure the contractor meets its contractual obligations.
3. Where possible, trees are cleared in the winter before construction to avoid avian nesting concerns. If the land cannot be accessed in the winter due to incomplete easement negotiations or other reason, an ornithologist will inspect the site and direct any avian mitigation needed. Logs are stacked at the side of the easement for landowner use, if requested.
4. The contractor's clearing crew braces and cuts all fences crossing the easement and installs any required temporary gates. This crew clears small brush and crops on the easement and temporary working areas.
5. The grading crew constructs approaches through road, highway, and railway ditches to allow equipment onto the working side of the easement. This crew also builds roads through wet areas to allow heavy equipment operation. The grading crew strips a certain width of topsoil with bulldozers and graders so that it will not be mixed with the subsoil later removed from the trench. In hilly terrain, the grade is leveled to provide a stable working surface.
6. The contractor erects safety barricades around excavations adjacent to roads. Flagmen and signs are used for traffic control. The easement is fenced nightly at all access points.
7. The stringing crew then lays pipe on wooden skids on the working side of the easement adjacent to the proposed trench area. Wherever possible, the stringing trucks hauling the pipe travel down the centre of the proposed trench to minimize soil compaction effects.
8. The contractor, by use of a trenching machine or hoe excavator, will excavate a trench approximately 1.1 metre in width for the pipeline, depending on ground conditions at the time.

Accesses across the easement including laneways are left unexcavated where requested by the landowner. All tile cut during trench excavation is flagged at the trench and easement limits to signify to the tile repair crew that a repair is required. All utilities that will be crossed or paralleled closely by the pipeline will be located prior to trenching.

9. Bedrock will be removed by mechanical means such as a "hoe ram".
10. Concurrent to trenching, the contractor will have separate crews to install the pipe at road, railway and large watercourse crossings. This operation will be accomplished by either Jack and Bore (auger) or Horizontal Directional Drill (HDD). These are trenchless technology techniques that do not disrupt the surface features at the crossing site.
11. Next, the pipe between roads, accesses, laneways, and streams is welded into one continuous length. All welds are ultrasonically and/or radiographically inspected and then coated and lowered into the trench. After sections of pipe are lowered into the trench, subsoil is backfilled by a, bulldozer or backhoe. If the excavated material contains too much rock for direct backfilling, it may be sifted to separate the fine parts from the rock. If such separation is not possible due to the consistency of the material or if a large quantity of rock remains, the unsuitable materials will be hauled away and sand brought in for backfilling.
12. The tie-in crew is responsible for the installation of pipe across accesses and laneways to minimize the length of time that these accesses are out of service to the landowner. The tie-in crew is also responsible for the pipeline installation at most river and stream crossings.
13. The pipe is filled with water and hydrostatically tested to prove its integrity. After the test water is removed and the line dried, an electronic sizing tool is run through the pipeline to check for ovality and dents. Cathodic protection is applied to the completed pipeline.
14. After the trench is backfilled, any cut cross-easement tile is repaired. Unless otherwise specified by the landowner or municipality, tile repairs are made by excavating back into the bank along the tile run a minimum distance of 1.2 metres and placing clear stone as a foundation for a high density or perforated steel drainage pipe. The new drainage pipe is cut to the appropriate length and installed between the two exposed tile ends. Prior to actual setting of the support pipe, the existing tile run is checked to ensure that it is clear and undamaged

within the limits of the easement. If it is not, further tile is excavated and the damaged tile is replaced to the edge of the easement. The area is then backfilled to the degree necessary to hold the tile and secure the support pipe. The landowner or municipal representative is asked to inspect each tile repair prior to backfill completion. Union undertakes that it is responsible for the tile repair resulting from construction and will stand good for the tile repairs at any further date after construction of the pipeline. Union retains the services of a tile consultant to determine if it is better to repair individual tiles crossing the easement or install a header system. Where a header system is used, additional tiles running parallel to the pipeline on the easement are installed during final clean-up activities.

15. The clean-up crew is the last crew on the property. On farmland, it prepares the subsoil on the stripped portion of the easement by subsoiling or deep chisel ploughing to break up compaction and picking all stones down to 100 millimetres in diameter. The trench line is crowned with enough subsoil to allow for trench settlement. Excess subsoil is removed to an acceptable location on the landowner's property or hauled to a disposal site. Topsoil is then replaced using a backhoe and small bulldozers to minimize compaction. The working side of the easement is then chisel ploughed and stone picked. The clean-up crew will also repair fences, pick up debris, replace sod in landscaped areas and reseed sensitive areas such as woodlots, ditch banks and stream crossings.
16. When the clean-up is completed, the landowner is asked by a Company representative to sign a clean-up acknowledgement form if satisfied with the clean-up. This form, when signed, allows release of payment for the clean-up to the contractor. This form in no way releases the Company from its obligation for tile repairs, compensation for damages and/or further clean-up as required due to erosion or subsidence directly related to pipeline construction.

ENVIRONMENTAL MATTERS

An Environmental Report (“ER”) for the Project was completed in 2017 by Stantec Consulting Limited. The ER determined the preferred route for the pipeline and identified potential impacts and related mitigation measures for construction of the proposed NPS 20 pipeline. See Exhibit A, Tab 12, Schedule 1 for a copy of the ER.

The ER was forwarded for review to the Ontario Pipeline Coordination Committee (“OPCC”) on December 21, 2017. Copies of the ER were also sent to all affected municipalities, conservation authorities and various Indigenous Nations. The OPCC comments received to date can be found at Exhibit A, Tab 12, Schedule 2.

To inform the public and solicit input from landowners, tenants and the general public with respect to the Project, two public Information Sessions were held in August, 2017 that showed route alternatives and two additional public Information Sessions were held in October, 2017 to identify the preliminary preferred route.

The purpose of the Information Sessions was to provide an opportunity for the public to view information boards about the Project and ask questions and comment on Project specifics such as the route selection process, environmental and agricultural land use mitigation measures and the overall Project planning process. Notification of the Information Sessions was completed through newspaper notices and letters to individual landowners.

1 The ER identifies various mitigation measures to minimize the impacts to the environment as a result
2 of the proposed pipeline. Union believes that by following its standard construction practices and
3 adhering to the recommendations and mitigation identified in the ER that the construction and
4 operation of the Proposed Pipeline will have negligible impacts on the environment. The cumulative
5 effects assessment completed as part of the ER indicates that no significant cumulative effects are
6 anticipated from the development of the proposed pipeline.

7
8 Union will comply with all mitigation measures recommended in the ER.

9
10 The estimated environmental protection costs associated with the Project can be found in Exhibit A,
11 Tab 12, Schedule 3.

12
13 Union will obtain all necessary environmental permits and approvals prior to construction.

14
15 The following provides information on some of the more pertinent aspects of the ER:

16
17 ***Species at Risk***

18 A number of species at risk are known to or potentially inhabit lands and watercourses along the
19 pipeline route. Union's consultants have and will continue to assess the pipeline route for species at
20 risk and will work with the Ministry of Natural Resources and Forestry to develop appropriate
21 mitigation measures to protect species at risk and obtain all required permits and approvals.

1 ***Agricultural Lands***

2 Measures to be implemented by Union to minimize impacts to soil and agricultural land along the
3 pipeline route will include:

- 4 • Union's wet soil shut down practice
- 5 • Topsoil stripping
- 6 • Maintaining proper separation between subsoil and topsoil
- 7 • A pre tiling program to maintain and redirect drainage tile around the permanent easement
8 prior to the initiation of construction on tiled agricultural lands
- 9 • Flagging and repairing broken tiles
- 10 • Retaining a qualified soils expert/inspector
- 11 • Union's post construction cover crop program

12
13 ***Archaeology***

14 An archaeological assessment will be completed by a licensed archeological firm along the pipeline
15 route, as recommended in the ER. Union proposes to complete the majority of the archaeological
16 assessment during the 2018 field season.

17
18 ***Watercourse/Municipal Drain Crossings***

19 The pipeline route crosses a number of watercourses and municipal drains as noted in the ER. All
20 permits required to complete the crossings will be obtained from Fisheries and Oceans Canada,
21 Ministry of Natural Resources and Forestry, Essex Region Conservation Authority and relevant
22 Municipalities prior to construction.

1 ***Ground Water***

2 Union will retain a qualified hydrogeologist to review the existing groundwater conditions along the
3 pipeline route and inventory the existing wells. The hydrogeologist will then develop and implement a
4 program for monitoring all wells that could be affected by construction. Union will also follow the
5 recommendations pertaining to ground water as outlined in the ER and environmental permits.

Summary of Comments

TO BE FILED WHEN RECEIVED

TOTAL ESTIMATED ENVIRONMENTAL COSTS
Kingsville Transmission Reinforcement Project

Pre-Construction

Environmental Assessment	\$	285,000	
Archaeology	\$	300,000	
Aquatic and Terrestrial Surveys	\$	55,000	
Permits	\$	220,000	
OEB regulatory support	\$	20,000	
Total Pre-Construction			\$ 880,000

Construction

General support (well monitoring, fish outs etc)	\$	160,000	
Agricultural/Soil Inspection	\$	300,000	
Total Construction			\$ 460,000

Post Construction

OEB reports	\$	15,000	
Tree replant	\$	50,000	
Total Post Construction			\$ 65,000

Total Estimated Environmental Costs	\$	<u>1,405,000</u>	
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LAND MATTERS

Land Rights for Pipeline Project

The Project involves the construction of approximately 19 kilometres of new NPS 20 pipeline. Union will be required to obtain approximately 93 acres of new permanent easement ("PE").

A map showing the proposed pipeline location is provided at Exhibit A, Tab 13, Schedule 1.

Union will also require approximately 82 acres of Temporary Land Use ("TLU") area for construction and top soil storage purposes.

Negotiation of Land Rights

In total, there are 51 PEs, 51 TLU areas and two fee simple land rights required for the Project. To date, Union has acquired options for 41 PEs, 42 TLU areas and the two fee simple purchases. Union continues to meet with all of the directly affected landowners from whom either PE or TLU rights are required and will continue to meet with the directly affected landowners to acquire the necessary land rights.

Proposed Pipeline Easement Requirements - Form of Easement and TLU

A list of the properties and the approximate dimensions of the PE and TLU rights required for the proposed pipeline is outlined in Exhibit A, Tab 13, Schedule 2.

For those landowners from whom a new PE is required for the proposed pipeline, Union's Form of Easement is attached at Exhibit A, Tab 13, Schedule 3. This agreement covers the installation,

operation, and maintenance of one pipeline. This form of easement was approved by the Board in EB-2017-0186.

The TLU agreements are in the form used by Union in the past on similar pipeline projects. These agreements are usually for a period of two years, beginning in the year of construction. This also allows Union an opportunity to return in the year following construction to perform further clean-up work as required.

Landowner Issues

Union implemented a consultation outreach plan to provide landowners, tenants and other interested parties with information regarding the proposed pipeline. Information regarding the Project was previously distributed through correspondence and meetings with the public. Where formal public meetings were held, in conjunction with the Environmental Report (Exhibit A, Tab 12, Schedule 1), directly-affected landowners and agencies were invited by letter while notification to the general public was made through newspaper advertisements.

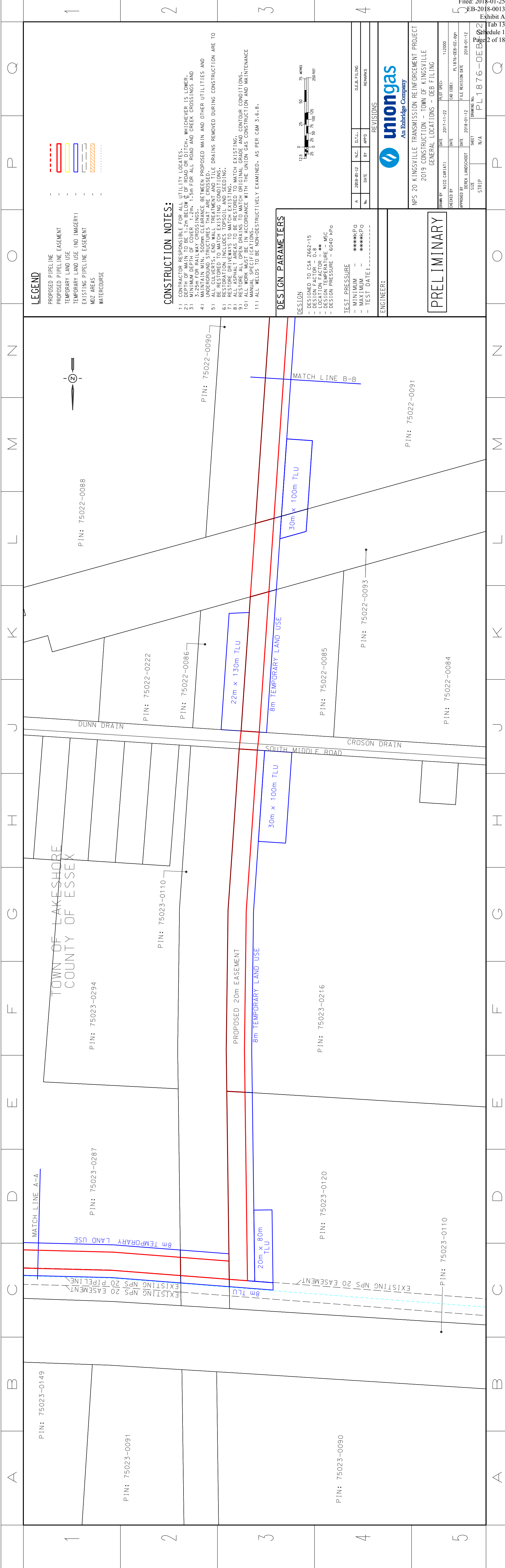
Proposed Stations

In addition to requiring additional PE and TLU rights for the Project, Union will be purchasing two new station sites in fee simple. One site is located at the north end tie-in into Union's existing NPS 20 Panhandle Pipeline, that area being 75 m x 75 m (5628 m² or 1.4 acres). The other site is located at the southern-most point, that area being 80 m x 100 m (8000 m² or 2.0 acres).

1 ***Construction Monitoring and Commitment Follow-up for Proposed Pipeline***

2 Union has in place a comprehensive Landowner Relations Program which has proven successful on
3 other projects. The key elements of this program include a Complaint Tracking System and the
4 assignment of a Landowner Relations Agent (“LRA”) whose mandate is to ensure that commitments
5 made to landowners are fulfilled, to address questions and concerns of the landowners, and to serve as
6 a liaison between landowners, the contractor and Union’s engineering personnel. Union’s Complaint
7 Resolution System will be used to record, monitor, and ensure follow-up on any complaint or issue
8 received by Union related to the construction. This process assists in resolving complaints and tracking
9 the fulfillment of commitments. A process chart and explanatory notes that describe the Complaint
10 Resolution System are found in Exhibit A, Tab 13, Schedule 4. In addition to the LRA’s duties during
11 construction, the person assigned to this position will conduct post-construction interviews to capture
12 any outstanding concerns, including damages, so that they can be resolved; and capture comments so
13 that they may be considered in the planning of future projects.

14
15 When clean-up is completed, the landowner will be asked by a Union representative to sign a Clean-up
16 Acknowledgement Form if satisfied with the clean-up. This form, when signed, releases the contractor
17 allowing payment for the clean-up on the property. This form in no way releases Union from its
18 obligation for tile repairs, compensation for damages and/or further clean-up as required due to erosion
19 or subsidence directly related to pipeline construction.



LEGEND

- PROPOSED PIPELINE EASEMENT
- TEMPORARY LAND USE
- TEMPORARY LAND USE (NO IMAGERY)
- EXISTING PIPELINE EASEMENT
- MZ AREAS
- WATERCOURSE

-
-
-
-
-
-

CONSTRUCTION NOTES:

- 1) CONTRACTOR RESPONSIBLE FOR ALL UTILITY LOCATES.
- 2) DEPTH OF MAIN TO BE 1.2m BELOW ϕ OF ROAD OR DITCH, WHICHEVER IS LOWER.
- 3) MINIMUM DEPTH OF COVER 1.2m, 1.5m FOR ALL ROAD AND CREEK CROSSINGS AND 3.25m FOR RAILWAY CROSSINGS.
- 4) MAINTAIN MIN. 500mm CLEARANCE BETWEEN PROPOSED MAIN AND OTHER UTILITIES AND UNDERGROUND STRUCTURES THAT ARE CROSSED.
- 5) ALL CULVERTS, END WALL TREATMENT AND TILE DRAINS REMOVED DURING CONSTRUCTION ARE TO BE RESTORED TO MATCH EXISTING CONDITIONS.
- 6) RESTORATION INCLUDES TOPSOIL AND SEEDING.
- 7) RESTORE ALL DRAINAGE TO MATCH EXISTING.
- 8) ALL OPEN DRAINS TO BE RESTORED TO MATCH EXISTING.
- 9) RESTORE ALL OPEN DRAINS TO MATCH ORIGINAL GRADE AND CONTOUR CONDITIONS.
- 10) ALL WORK MUST BE IN ACCORDANCE WITH THE UNION GAS CONSTRUCTION AND MAINTENANCE MANUAL SPECIFICATIONS.
- 11) ALL WELDS TO BE NON-DESTRUCTIVELY EXAMINED, AS PER C&M 3.6.8.

DESIGN PARAMETERS

- DESIGN
- DESIGNED TO CSA Z662-15
 - DESIGN FACTOR - 0.8
 - LOCATION FACTOR - **
 - DESIGN TEMPERATURE - M5C
 - DESIGN PRESSURE - 6040 kPa

- TEST PRESSURE
- MINIMUM - ****kPa
 - MAXIMUM - ****kPa
 - TEST DATE: -----

ENGINEER:



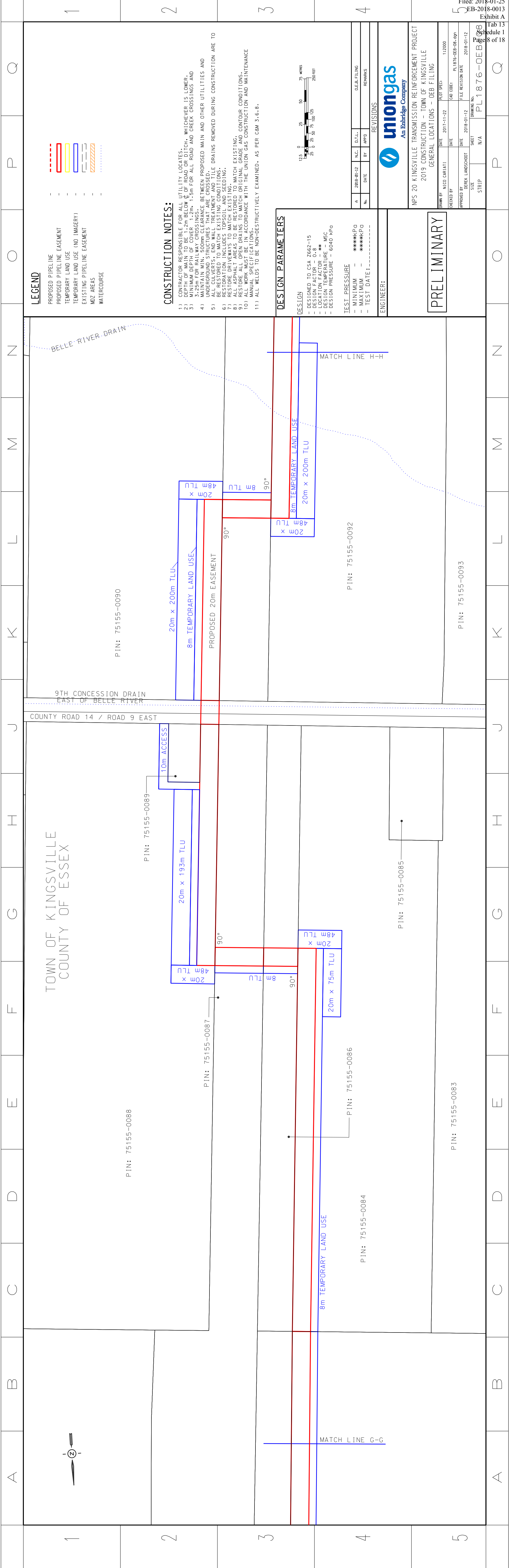
REVISIONS

No.	2018-01-12	N.C.	BY	APD	D.T.L.	O.E.B. FILING
A	DATE					REMARKS

PRELIMINARY

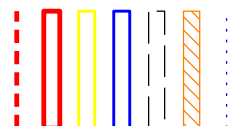
NPS 20 KINGSVILLE TRANSMISSION REINFORCEMENT PROJECT
2019 CONSTRUCTION - TOWN OF KINGSVILLE
GENERAL LOCATIONS - OEB FILING

DRAWN BY	NICO CARIATI	DATE	2017-11-22	PLOT SPEC	1:2000
CHECKED BY		DATE		CAD CODE	PL1876-OEB-02.dgn
APPROVED BY	DEREK LANDSCHOOT	DATE	2018-01-12	FILE REVISION DATE	2018-01-12
SIZE	STRIP	SHEET	N/A	DRAWING No.	PL1876-OEB-02



LEGEND

- PROPOSED PIPELINE
- PROPOSED PIPELINE EASEMENT
- TEMPORARY LAND USE
- TEMPORARY LAND USE (NO IMAGERY)
- EXISTING PIPELINE EASEMENT
- MOZ AREAS
- WATERCOURSE



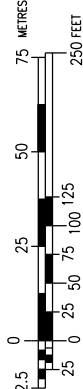
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- 4) MAINTAIN MIN. 500mm CLEARANCE BETWEEN PROPOSED MAIN AND OTHER UTILITIES AND UNDERGROUND STRUCTURES THAT ARE CROSSED.
- 5) ALL CULVERTS, END WALL TREATMENT AND TILE DRAINS REMOVED DURING CONSTRUCTION ARE TO BE RESTORED TO MATCH EXISTING CONDITIONS.
- 6) RESTORATION INCLUDES TOPSOIL AND SEEDING.
- 7) RESTORE ALL AREAS TO BE RESTORED TO MATCH EXISTING.
- 8) ALL OPEN DRAINS TO BE RESTORED TO MATCH ORIGINAL GRADE AND CONTOUR CONDITIONS.
- 9) RESTORE ALL OPEN DRAINS TO MATCH ORIGINAL GRADE AND CONTOUR CONDITIONS.
- 10) ALL WORK MUST BE IN ACCORDANCE WITH THE UNION GAS CONSTRUCTION AND MAINTENANCE MANUAL SPECIFICATIONS.
- 11) ALL WELDS TO BE NON-DESTRUCTIVELY EXAMINED, AS PER C&M 3.6.8.

DESIGN PARAMETERS

- DESIGN
- DESIGNED TO CSA Z662-15
 - DESIGN FACTOR - 0.8
 - LOCATION FACTOR - **
 - DESIGN TEMPERATURE - M5C
 - DESIGN PRESSURE - 6040 kPa

- TEST PRESSURE
- MINIMUM - ****kPa
 - MAXIMUM - ****kPa
 - TEST DATE: -----



REVISIONS

No.	DATE	BY	APPD	N.C.	D.T.L.	DE.B. FILING
A	2018-01-12					

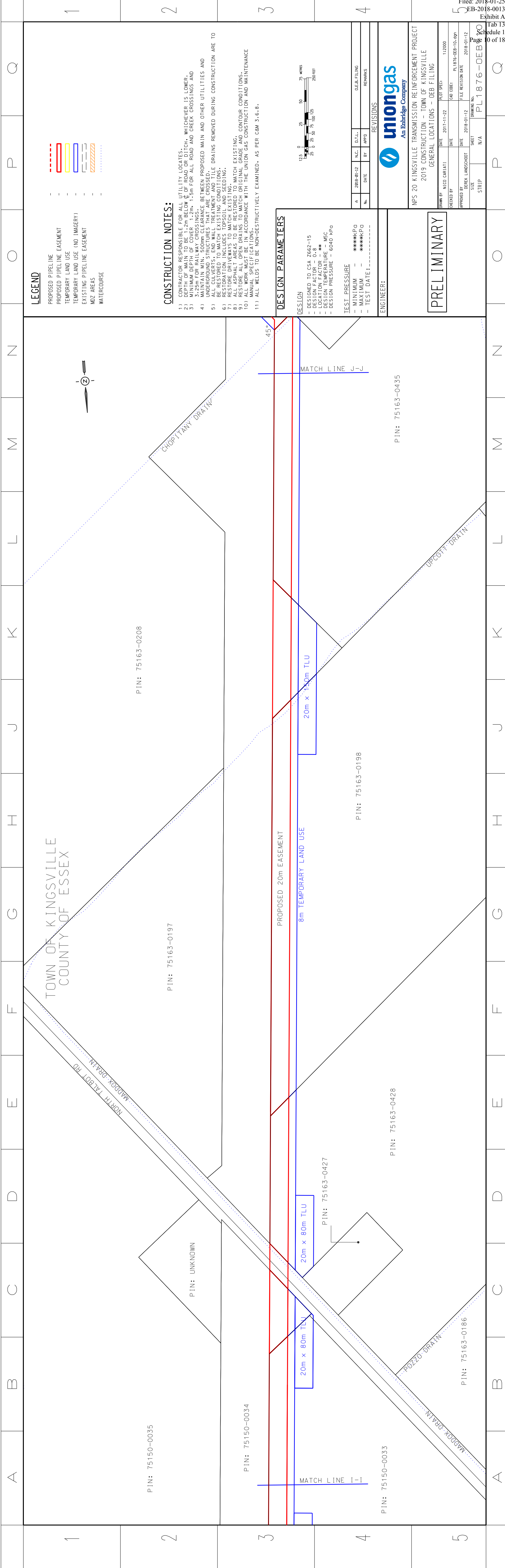
ENGINEER:

PRELIMINARY

NPS 20 KINGSVILLE TRANSMISSION REINFORCEMENT PROJECT
2019 CONSTRUCTION - TOWN OF KINGSVILLE
GENERAL LOCATIONS - DEB FILING

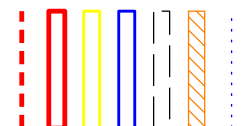
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CHECKED BY		DATE		CAD CODE:	PL1876-DEB-08.dgn
APPROVED BY	DEREK LANDSCHOOT	DATE	2018-01-12	FILE REVISION DATE	2018-01-12
SIZE	SHEET	DRAWING No.			
STRIP	N/A				

	A	B	C	D	E	F	G	H	J	K	L	M	N	O	P	Q	
1	<div>TOWN OF KINGSVILLE COUNTY OF ESSEX</div> <div>PIN: 75155-0096</div>																<div>LEGEND</div> <div><div>-</div>PROPOSED PIPELINE</div> <div><div>-</div>PROPOSED PIPELINE EASEMENT</div> <div><div>-</div>TEMPORARY LAND USE</div> <div><div>-</div>TEMPORARY LAND USE (NO IMAGERY)</div> <div><div>-</div>EXISTING PIPELINE EASEMENT</div> <div><div>-</div>MOZ AREAS</div> <div><div>-</div>WATERCOURSE</div>



LEGEND

- PROPOSED PIPELINE
- PROPOSED PIPELINE EASEMENT
- TEMPORARY LAND USE
- TEMPORARY LAND USE (NO IMAGERY)
- EXISTING PIPELINE EASEMENT
- MDZ AREAS
- WATERCOURSE

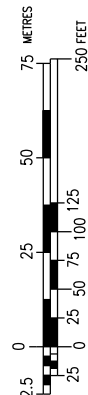


CONSTRUCTION NOTES:

- 1) CONTRACTOR RESPONSIBLE FOR ALL UTILITY LOCATES.
- 2) DEPTH OF MAIN TO BE 1.2m BELOW ϕ OF ROAD OR DITCH, WHICHEVER IS LOWER.
- 3) MINIMUM DEPTH OF COVER 1.2m, 1.5m FOR ALL ROAD AND CREEK CROSSINGS AND 3.25m FOR RAILWAY CROSSINGS.
- 4) MAINTAIN MIN. 500mm CLEARANCE BETWEEN PROPOSED MAIN AND OTHER UTILITIES AND UNDERGROUND STRUCTURES THAT ARE CROSSED.
- 5) ALL CULVERTS, END WALL TREATMENT AND TILE DRAINS REMOVED DURING CONSTRUCTION ARE TO BE RESTORED TO MATCH EXISTING CONDITIONS.
- 6) RESTORATION INCLUDES TOPSOIL AND SEEDING.
- 7) RESTORATION INCLUDES TOPSOIL AND SEEDING.
- 8) ALL OPEN DRAINS TO BE RESTORED TO MATCH EXISTING.
- 9) RESTORE ALL OPEN DRAINS TO MATCH ORIGINAL GRADE AND CONTOUR CONDITIONS.
- 10) ALL WORK MUST BE IN ACCORDANCE WITH THE UNION GAS CONSTRUCTION AND MAINTENANCE MANUAL SPECIFICATIONS.
- 11) ALL WELDS TO BE NON-DESTRUCTIVELY EXAMINED, AS PER C&M 3.6.8.

DESIGN PARAMETERS

- DESIGN
- DESIGNED TO CSA Z662-15
 - DESIGN FACTOR - 0.8
 - LOCATION FACTOR - **
 - DESIGN TEMPERATURE - M5C
 - DESIGN PRESSURE - 6040 kPa
- TEST PRESSURE
- MINIMUM - ****kPa
 - MAXIMUM - ****kPa
 - TEST DATE: -----



REVISIONS

No.	DATE	BY	APPD	D.T.L.	N.C.	2018-01-12	DATE	BY	APPD	D.T.L.	N.C.	2018-01-12
A												
REMARKS												

ENGINEER:

PRELIMINARY

NPS 20 KINGSVILLE TRANSMISSION REINFORCEMENT PROJECT
2019 CONSTRUCTION - TOWN OF KINGSVILLE
GENERAL LOCATIONS - OEB FILING

DRAWN BY	NICO CARIATI	DATE	2017-11-22	PLOT SPEC	1:2000
CHECKED BY		DATE		CAD CODE	PL1876-OEB-10.dgn
APPROVED BY	DEREK LANDSCHOOT	DATE	2018-01-12	FILE REVISION DATE	2018-01-12
SHEET	N/A	DRAWING No.			
STRIP					

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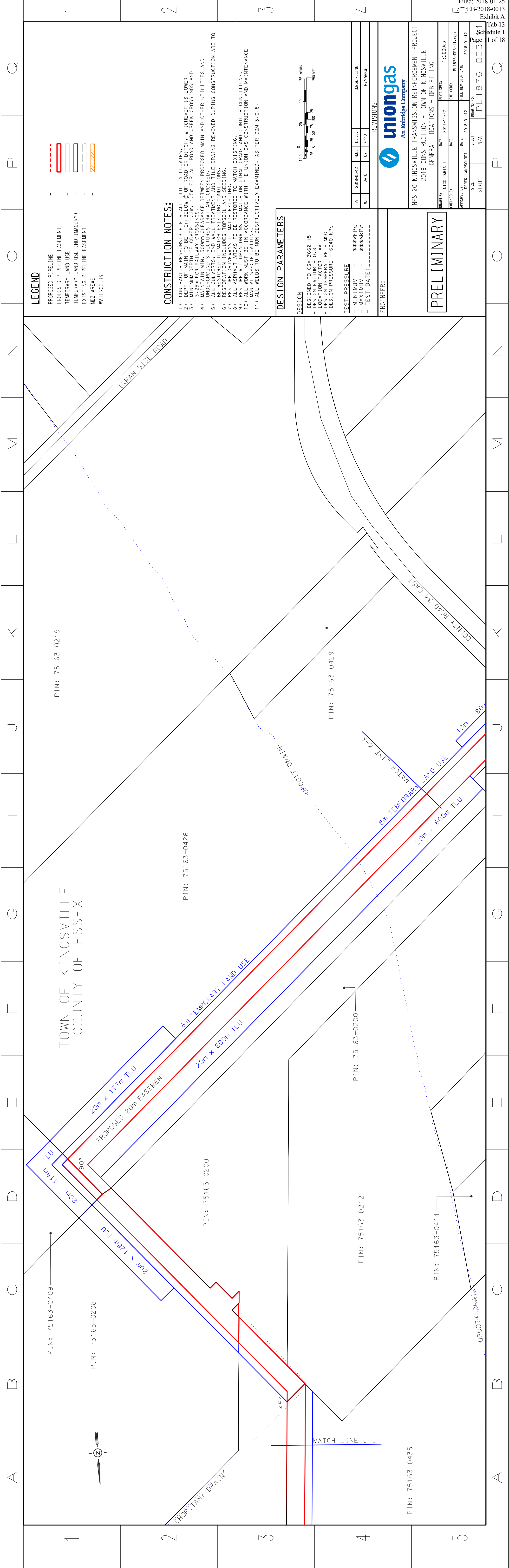
PIN: 75163-0428

PIN: 75163-0198

PIN: 75163-0427

PIN: 75150-0034

PIN: 75163-0186



LEGEND

- PROPOSED PIPELINE
- PROPOSED PIPELINE EASEMENT
- TEMPORARY LAND USE
- TEMPORARY LAND USE (NO IMAGERY)
- EXISTING PIPELINE EASEMENT
- MZ AREAS
- WATERCOURSE

CONSTRUCTION NOTES:

- 1) CONTRACTOR RESPONSIBLE FOR ALL UTILITY LOCATES.
- 2) DEPTH OF MAIN TO BE 1.2m BELOW ϕ OF ROAD OR DITCH, WHICHEVER IS LOWER.
- 3) MINIMUM DEPTH OF COVER 1.2m, 1.5m FOR ALL ROAD AND CREEK CROSSINGS AND 3.25m FOR RAILWAY CROSSINGS.
- 4) MAINTAIN MIN. 500mm CLEARANCE BETWEEN PROPOSED MAIN AND OTHER UTILITIES AND UNDERGROUND STRUCTURES THAT ARE CROSSED.
- 5) ALL CULVERTS, END WALL TREATMENT AND TILE DRAINS REMOVED DURING CONSTRUCTION ARE TO BE RESTORED TO MATCH EXISTING CONDITIONS.
- 6) RESTORATION INCLUDES TOPSOIL AND SEEDING.
- 7) ALL OPEN DRAINS TO BE RESTORED TO MATCH EXISTING CONDITIONS.
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DESIGN PARAMETERS

- DESIGN
- DESIGNED TO CSA Z662-15
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 - LOCATION FACTOR - **
 - DESIGN TEMPERATURE - M5C
 - DESIGN PRESSURE - 6040 kPa
- TEST PRESSURE
- MINIMUM - ****kPa
 - MAXIMUM - ****kPa
 - TEST DATE: -----



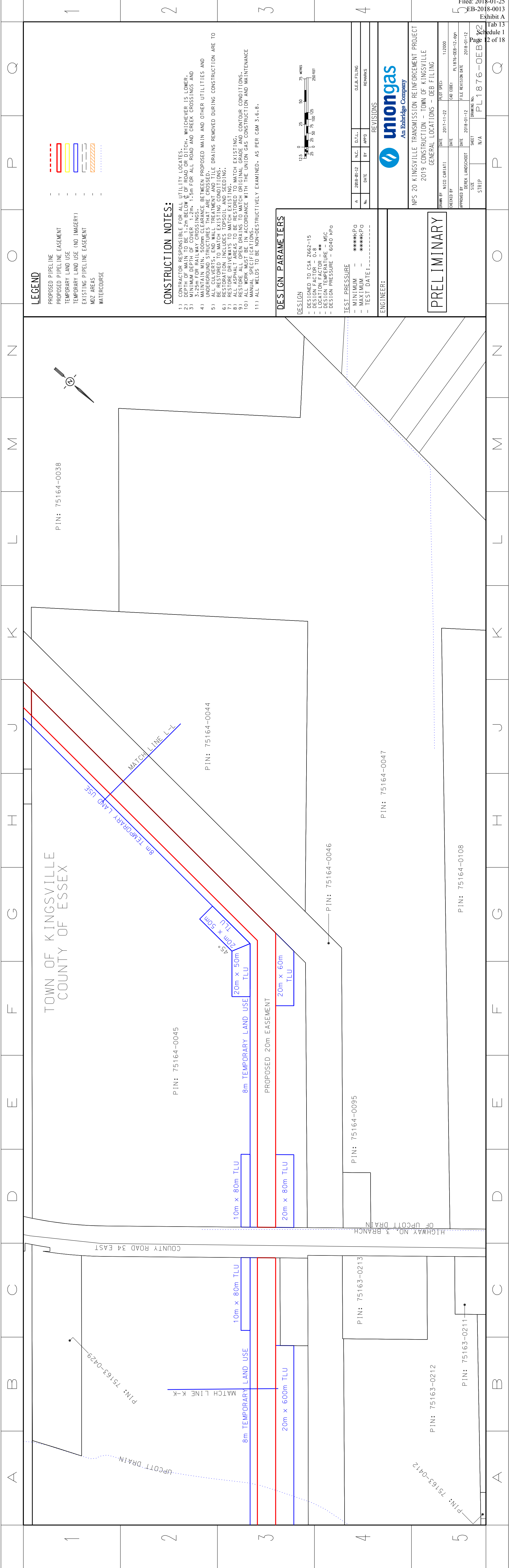
REVISIONS

No.	DATE	BY	APPD	D.T.L.	REMARKS
A	2018-01-12	NC			DE.F.FILING

PRELIMINARY

NPS 20 KINGSVILLE TRANSMISSION REINFORCEMENT PROJECT
2019 CONSTRUCTION - TOWN OF KINGSVILLE
GENERAL LOCATIONS - DEB FILING

DRAWN BY	NICO CARIATI	DATE	2017-11-22	PLOT SPEC	1:200000
CHECKED BY		DATE		CAD CODE	PL1876-DEB-11.dgn
APPROVED BY	DEREK LANDSCHOOT	DATE	2018-01-12	FILE REVISION DATE	2018-01-12
SIZE	STRIP	SHEET	N/A	DRAWING No.	PL1876-0EBE811



LEGEND

- PROPOSED PIPELINE
- PROPOSED PIPELINE EASEMENT
- TEMPORARY LAND USE
- TEMPORARY LAND USE (NO IMAGERY)
- EXISTING PIPELINE EASEMENT
- MOZ AREAS
- WATERCOURSE

CONSTRUCTION NOTES:

- 1) CONTRACTOR RESPONSIBLE FOR ALL UTILITY LOCATES.
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- 5) ALL CULVERTS, END WALL TREATMENT AND TILE DRAINS REMOVED DURING CONSTRUCTION ARE TO BE RESTORED TO MATCH EXISTING CONDITIONS.
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DESIGN PARAMETERS

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 - TEST DATE: -----

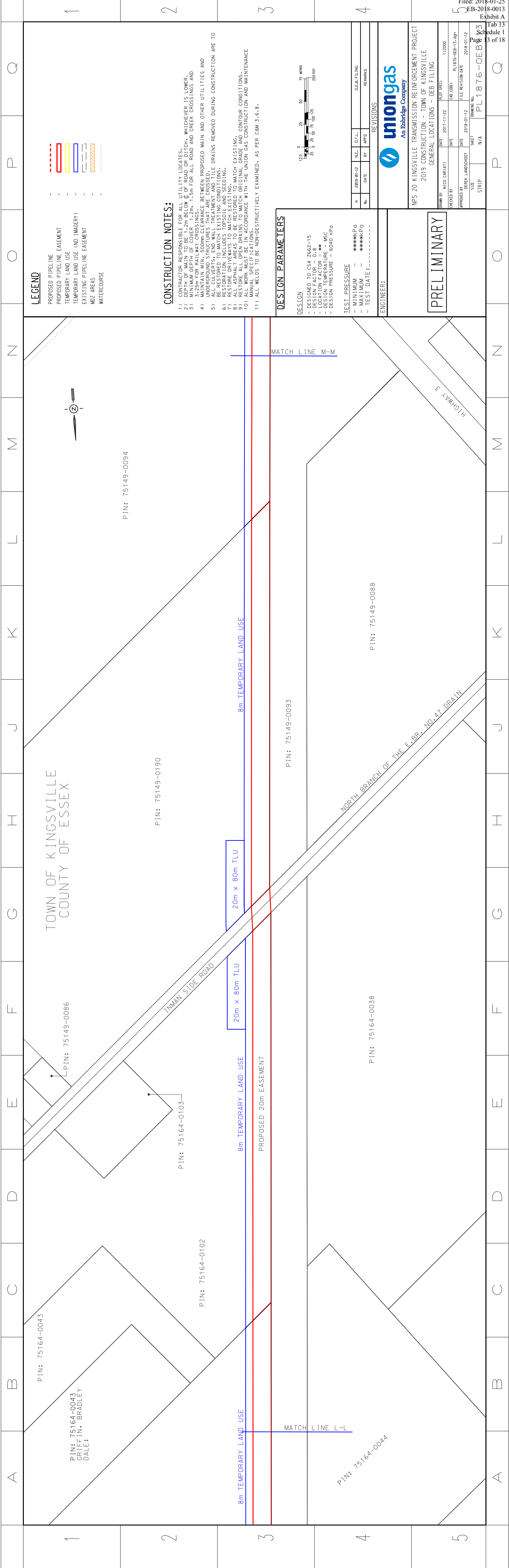
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NPS 20 KINGSVILLE TRANSMISSION REINFORCEMENT PROJECT
2019 CONSTRUCTION - TOWN OF KINGSVILLE
GENERAL LOCATIONS - DEB FILING

PRELIMINARY

DRAWN BY	NICO CARIATI	DATE	2017-11-22	PLOT SPEC:	1:2000
CHECKED BY		DATE		CAD CODE:	PL1876-DEB-12.dgn
APPROVED BY	DEREK LANDSCHOOT	DATE	2018-01-12	FILE REVISION DATE	2018-01-12
SIZE	STRIP	SHEET	N/A	DRAWING No.	PL1876-0EBB



LEGEND

- PROPOSED PIPELINE
- PROPOSED PIPELINE EASEMENT
- TEMPORARY LAND USE
- TEMPORARY LAND USE (NO IMAGERY)
- EXISTING PIPELINE EASEMENT
- MDZ AREAS
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- 5) ALL CULVERTS, END WALL TREATMENT AND TILE DRAINS REMOVED DURING CONSTRUCTION ARE TO BE RESTORED TO MATCH EXISTING CONDITIONS.
- 6) RESTORATION INCLUDES TOPSOIL AND SEEDING.
- 7) RESTORE ALL AREAS TO BE RESTORED TO MATCH EXISTING.
- 8) ALL ASPHALT AREAS TO BE RESTORED TO MATCH EXISTING.
- 9) RESTORE ALL OPEN DRAINS TO MATCH ORIGINAL GRADE AND CONTOUR CONDITIONS.
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DESIGN PARAMETERS

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 - DESIGN FACTOR - 0.8
 - LOCATION FACTOR - **
 - DESIGN TEMPERATURE - M5C
 - DESIGN PRESSURE - 6040 kPa

- TEST PRESSURE
- MINIMUM - *****kPa
 - MAXIMUM - *****kPa
 - TEST DATE: -----

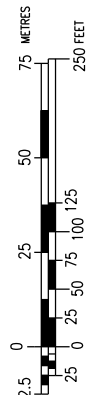
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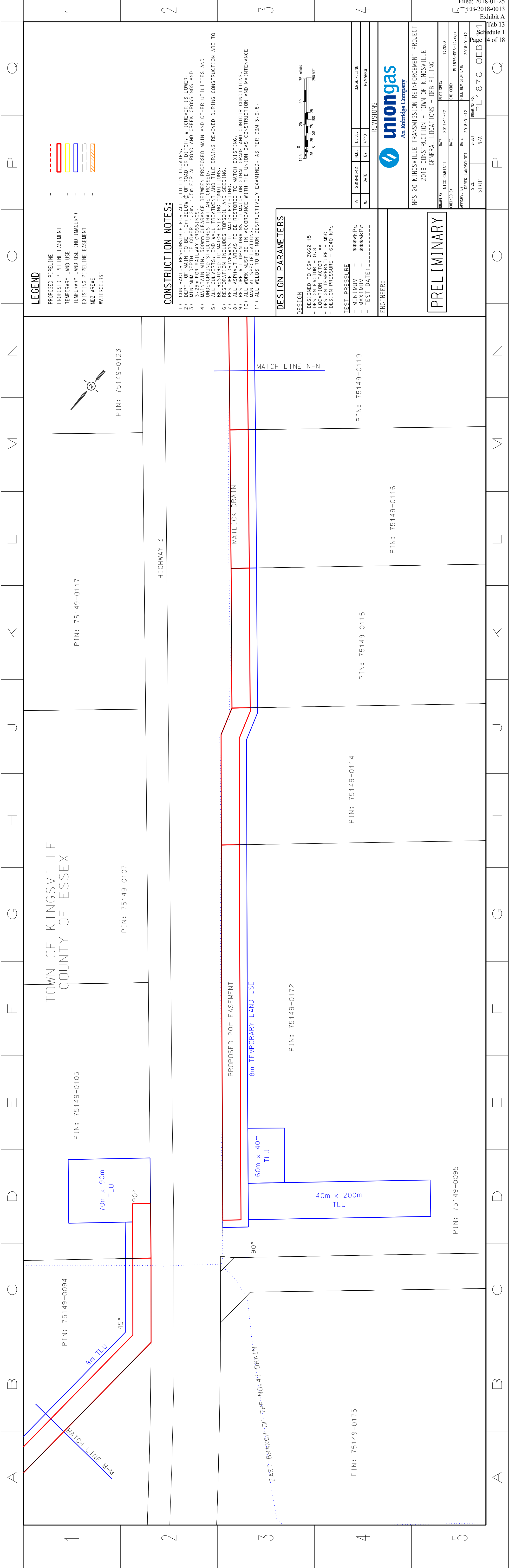


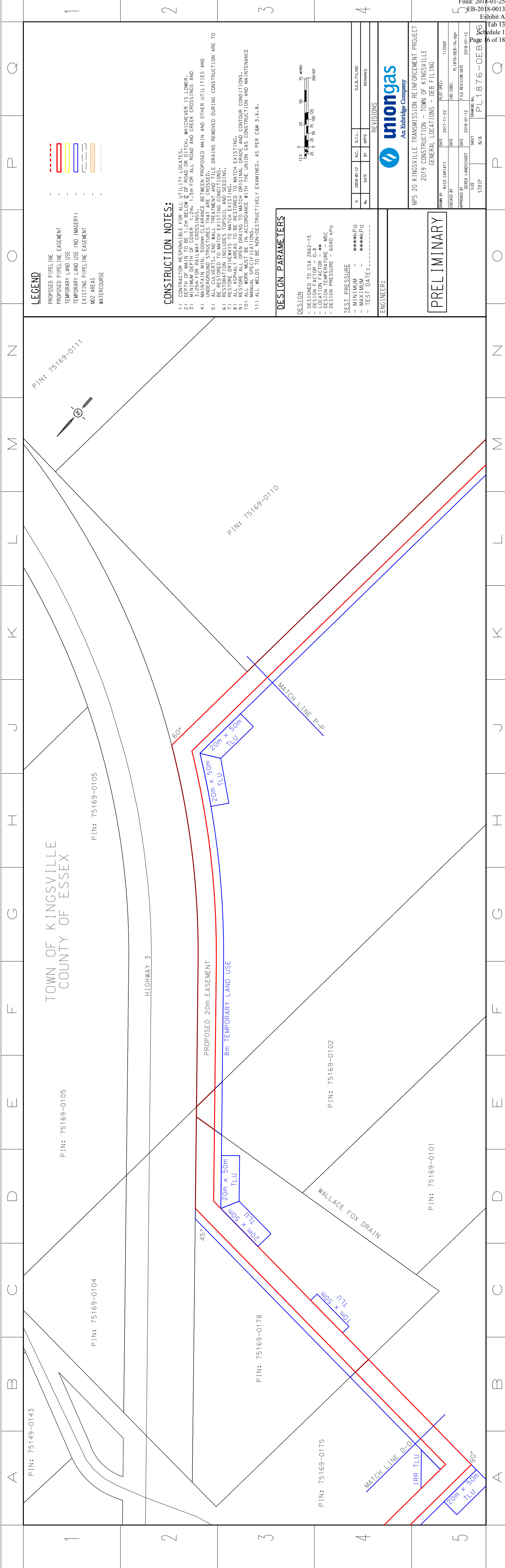
NPS 20 KINGSVILLE TRANSMISSION REINFORCEMENT PROJECT
2019 CONSTRUCTION - TOWN OF KINGSVILLE
GENERAL LOCATIONS - OEB FILLING

PRELIMINARY

DRAWN BY	NICO CARIATI	DATE	2017-11-22	PLOT SPEC:	1:2000
CHECKED BY		DATE		CAD CODE:	PL1876-OEB-13.dgn
APPROVED BY	DEREK LANDSCHOOT	DATE	2018-01-12	FILE REVISION DATE	2018-01-12
SIZE	STRIP	SHEET	N/A	DRAWING No.	PL1876-OEB-13







LEGEND

- PROPOSED PIPELINE
- PROPOSED PIPELINE EASEMENT
- TEMPORARY LAND USE
- TEMPORARY LAND USE (NO IMAGERY)
- EXISTING PIPELINE EASEMENT
- MZ AREAS
- WATERCOURSE

CONSTRUCTION NOTES:

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DESIGN PARAMETERS

- DESIGN
- DESIGNED TO CSA Z662-15
 - DESIGN FACTOR - 0.8
 - LOCATION FACTOR - **
 - DESIGN TEMPERATURE - M5C
 - DESIGN PRESSURE - 6040 kPa

- TEST PRESSURE
- MINIMUM - *****kPa
 - MAXIMUM - *****kPa
 - TEST DATE: -----

ENGINEER:



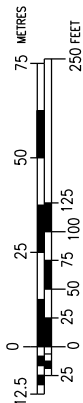
NPS 20 KINGSVILLE TRANSMISSION REINFORCEMENT PROJECT
2019 CONSTRUCTION - TOWN OF KINGSVILLE
GENERAL LOCATIONS - DEB FILING

DRAWN BY	NICO CARIATI	DATE	2017-11-22	PLOT SPEC:	1:2000
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APPROVED BY	DEREK LANDSCHOOT	DATE	2018-01-12	FILE REVISION DATE	2018-01-12
SIZE	STRIP	SHEET	N/A	DRAWING No.	PL1876-0EBB-16






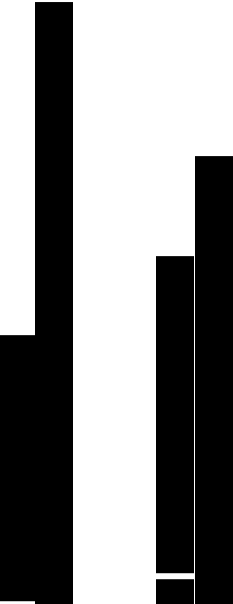


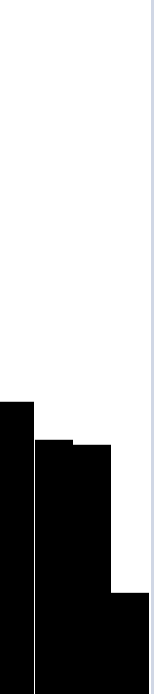
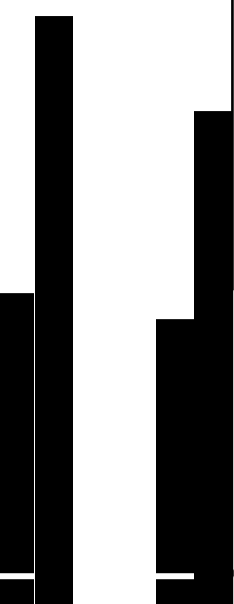



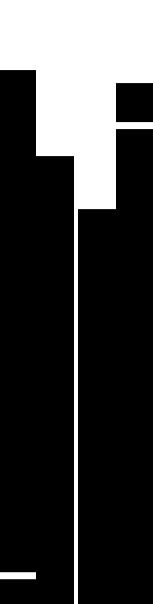

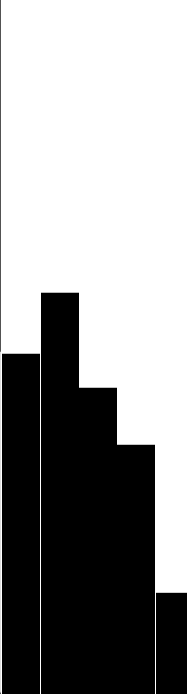

PRELIMINARY

REVISIONS

No.	DATE	BY	APPD	D.T.L.	DEB FILING	REMARKS
A	2018-01-12	N.C.				



5 **South Middle Road**

LIEN/LEASE &/OR ENCUMBRANCES									
Parcel	File #	PIN	NAME & ADDRESS	PROPERTY DESCRIPTION	Dimensions (Metres) Area W x L Hectares	Dimensions (Metres) Area W x L Hectares	Dimensions (Metres) Area W x L Hectares	LIEN/LEASE &/OR ENCUMBRANCES	
7 K6		75022-0086	LT 	PT LT 25 CON 1 EBR ROCHESTER PT 1 R626397, R626400; LAKESHORE			22 x 130 0.284		
8 K7		75022-0093	LT 	PT LT 25 CON 1 EBR ROCHESTER AS IN RO1238, RO1491 & RO1492; LAKESHORE	20 x 81 0.162		8 x 81 0.065		
9 K8		75022-0091	LT 	PT LT 25 CON 1 EBR ROCHESTER AS IN R1254557 EXCEPT E OF 12R723; T/W THE RIGHT IN R1254557; LAKESHORE	20 x 282 0.558		30 x 25 0.071 8 x 275 0.219		
10 K9		75022-0094	LT 	PT LT 26 CON 1 EBR ROCHESTER AS IN R1495581 W OF 12R723 TOGETHER WITH AN EASEMENT AS IN R576147 TOWN OF LAKESHORE	20 x 308 0.616		30 x 85 0.227 8 x 308 0.247		
11 K10		75022-0097	LT 	PT LT 26 CON 1 EBR ROCHESTER AS IN R960819 W OF 12R723; T/W THE RIGHT IN R960819; LAKESHORE	20 x 309 0.618		8 x 309 0.247		
12 K11		75022-0101	LT 	PT LT 27 CON 1 EBR ROCHESTER AS IN R879193 (FIRSTLY) EXCEPT 12R735; T/W THE RIGHT IN R879193; LAKESHORE	20 x 597 1.194		8 x 597 0.477		
13 K12		75022-0107	LT 	PT LT 28 CON 1 EBR ROCHESTER AS PT 5 12R20974 T/W RIGHT IN R1335099, LAKESHORE	20 x 154 0.308		8 X 154 0.123		
					IRR X IRR 0.026		8 X 84 0.064		
							30 X 107 0.287		
14 K13		75022-0090	LT 	PT LT 25-29 CON 1 EBR ROCHESTER, PT 1 TO 7 12R723, PT 1, 2 12R724, PT 1 TO 9 12R735; S/T THE RIGHT IN R581642, R569696, R576147, R581643; R582165, R584007; LAKESHORE	20 X 150 0.275		8 X 73 0.056		
15 K14		75022-0119	LT 	PT LT 28 CON 1 EBR ROCHESTER PT 1 12R7559 EXCEPT PT 1 TO 6 12R13553 & PT 1 TO 4 12R15330; LAKESHORE	20 X 303 0.605		30 X 66 0.163 8 X 303 0.242		

Parcel	File #	PIN	NAME & ADDRESS	PROPERTY DESCRIPTION	Dimensions (Metres) Area W x L Hectares	Dimensions (Metres) Area W x L Hectares	LIEN/LEASE &/OR ENCUMBRANCES
						30 X 60 0.18	
16	K15	75022-0250	LT	PT LT 29, CON 1 EBR ROCHESTER BEING PT 1, 12R26962; TOWN OF LAKESHORE	20 X 337 0.673	8 X 337 0.269	
17	K16	75022-0249	LT	PT LTS 29 AND 30, CON 1 EBR ROCHESTER BEING PTS 2 AND 9, 12R26962; S/T 1461099 TOWN OF LAKESHORE	20 X 271 0.541	8 X 271 0.216	
18	K17	75022-0248	LT	PT LT 30 CON 1 EBR ROCHESTER BEING PTS 3, 4, 5, 6, 7 AND 8, PLAN 12R26962; S/T R1461099, RO13944; TOWN OF LAKESHORE	20 X 190 0.381	8 X 190 0.152	
						20 X 80	
19	County Road 8						
20	K18	75154-0067	LT	PT LT 15 CON 11 GOSFIELD AS IN R574067; KINGSVILLE	20 X 574 1.149	8 X 574 0.457	
21	K19	75154-0076	LT	PT LT 15 CON 11 GOSFIELD AS IN R1325028 S/T SPOUSAL INTEREST IN R1323364; KINGSVILLE	20 X 575 1.15	20 X 80 0.16 20 X 575 0.46 20 X 80 0.16 20 X 80 0.16	
22	Road 11						
23	K20	75154-0110	LT	PT LT 15 CON 10 GOSFIELD PT 1, 12R11894; KINGSVILLE	20 X 91 0.183	8 X 91 0.073	
24	K21	75154-0112	LT	PT LT 15 CON 10 GOSFIELD AS IN R1189935 EXCEPT PT 1, 12R11894; S/T EXECUTION 01-00643, IF ENFORCEABLE; KINGSVILLE	20 x 1300 2.599	8 x 1300 1.039 50 x 242 0.759	

Parcel	File #	PIN	NAME & ADDRESS	PROPERTY DESCRIPTION	Dimensions (Metres) Area W x L Hectares	Dimensions (Metres) Area W x L Hectares	LIEN/LEASE &/OR ENCUMBRANCES
43 K36		75163-0200	LT	PT LT 265-266 CON NTR GOSFIELD PT 1TO 12, 12R746 & PT 1 TO 3, 5, 7, 8 & 9 12R759; S/T R579277, R581645, R586303, R593516 & R597151; T/W R593516 EXCEPT R777199; KINGSVILLE	20 x 152 0.265	8 x 112 0.084	
					20 x 103 0.189	20 x 96 0.152	
					IRR x IRR 0.006	8 x 75 0.06	
44 K37		75163-0435	LT	PART OF LOT 265 CON NTR GOSFIELD DESIGNATED AS PART 1, 12R-9623; SAVE & EXCEPT PART 1, 12R-13985; PART OF LOT 265 CON NTR GOSFIELD DESIGNATED AS PART 1, 12R-26665; TOWN OF KINGSVILLE	20 x 314 0.589	8 x 314 0.251	
45 K38		75163-0208	LT	PT LT 265 CON NTR GOSFIELD AS IN R1449321; S/T R593516; KINGSVILLE	IRR x IRR 0.459	8 x 229 0.18	
46 K38a		75163-0409	LT	PT LT 264 CON NTR GOSFIELD DESIGNATED AS PT 1 PL 12R11794; KINGSVILLE	9 x 54 0.047	20 x 128 0.256	
47 K39		75163-0426	LT	PT LT 264, CON NTR GOSFIELD AS IN R1295629, SAVE AND EXCEPT PT 1 12R17069, PT 1 12R23045 & PT 1 12R26200 TOWN OF KINGSVILLE	20 IF x 707 1.454	20 x 119 0.199	
						8 x 707 0.565	
						20 x 600 1.199	
						20 x 178 0.355	
						10 x 80 0.08	
48	County Road 34 East						
49 K40		75164-0045	LT	PT N1/2 LT 264 CON STR GOSFIELD AS IN *R1124622 E OF 12R737; T/W R590580; *, S/T EXECUTION 96-03120, IF ENFORCEABLE; KINGSVILLE *TYPO AMENDED, S/T INTEREST REMOVED 2004/03/17 BY LAND REGISTRAR #99	20 x 702 1.368	8 x 665 0.527	
						20 x 58 0.108	
						20 x 58 0.108	
						20 x 80 IRR 0.14	
						20 x 80 0.16	
						10 x 80 0.08	
50 K41		75164-0102	LT	PART N1/2 LOT 264 CON STR GOSFIELD AS IN R414074 LYING E OF 12R737 EXCEPT PART 1 PL 12R10688 & PARTS 4 & 5 PL 12R22757; KINGSVILLE	20 x 428 0.857	8 x 428 0.343	
						20 x 100 0.18	
51	Inman Sideroad						
52 K42		75149-0190	LT	PT N1/2 LT 263 CON STR GOSFIELD PT 3, 4, 5, 6, 7, 8, 9 & 10 12R19722; EXCEPT PTS 1-7 12R26336; S/T R1504910; S/T R553470; KINGSVILLE	20 x 425 0.85	8 x 425 0.34	(e) Bell Canada

Parcel	File #	PIN	NAME & ADDRESS	PROPERTY DESCRIPTION	Dimensions (Metres) Area		Dimensions (Metres) Area		LIEN/LEASE &/OR ENCUMBRANCES				
					W	X	L	Hectares	W	X	L	Hectares	
									20	x	100	0.09	
53	K43	75149-0094	LT	PT N1/2 LT 263 CON STR GOSFIELD AS IN R721049; S/T GS14541, *R553471; KINGSVILLE; *R553470 AMENDED TO R553471 2004/08/24 BY LAND REGISTRAR #99	20	x	394	0.782	8	x	394	0.315	
54	K44	75149-0105	LT	PT LT 262 CON STR GOSFIELD AS IN GS17910 EXCEPT R884237 & PTS 11 &12 RD200; KINGSVILLE	20	x	60	0.12	8	x	40	0.032	
									70	x	90	0.591	
55	Highway 3												
56	K45	75149-0172	LT	PT LT 262, CON STR GOSFIELD DESIGNATED AS PT 2, PL 12R3694; EXCEPT PTS 1 TO 9 ON PL 12R17923; EXCEPT PTS 1,2 AND 3 ON PL 12R19490; S/T GS14866 TOWN OF KINGSVILLE	20	x	412	0.825	8	x	448	0.352	
									40	x	60	0.241	
									40	x	200	0.801	
57	K46	75149-0114	LT	PT LT 262 CON STR GOSFIELD AS IN R943640; S/T GS14697; KINGSVILLE	20	x	153	0.306	8	x	153	0.123	
58	K47	75149-0115	LT	PT LT 261 CON STR GOSFIELD AS IN R593490; S/T GS14698; TOWN OF KINGSVILLE	20	x	154	0.307	8	x	154	0.123	
59	K48	75149-0116	LT	PT LT 261 CON STR GOSFIELD AS IN R441536; S/T GS14698; KINGSVILLE	20	x	152	0.304	8	x	153	0.121	
60	K49	75149-0119	LT	PT LT 261 CON STR GOSFIELD AS IN R1477214; S/T GS14555; KINGSVILLE	20	x	295	0.59	8	x	295	0.236	
									20	x	80	0.16	

Parcel	File #	PIN	NAME & ADDRESS	PROPERTY DESCRIPTION	Dimensions (Metres) Area W x L Hectares		Dimensions (Metres) Area W x L Hectares		LIEN/LEASE &/OR ENCUMBRANCES	
67	K54	75169-0106	LT	PT LT 5-6 CON 3 EASTERN DIVISION GOSFIELD AS IN R278134 & PT 4, 5 & 8 RD189; KINGSVILLE	20 x	1190	2.341	8 x 1152	0.915	
								20 x 50	0.112	
								20 x 50	0.112	
68	Road 3 East									
69	K55	75169-0099	LT	PT LT 5 CON 2 EASTERN DIVISION GOSFIELD AS IN R555169 EXCEPT PT 1 12R3591; KINGSVILLE	20 x	20	0.0397	8 x 56	0.039	
								20 x 80	0.16	
								28 x 52	0.144	
70	K56	75169-0170	LT	PT LT 6 CON 2 EASTERN DIVISION GOSFIELD AS IN R149701 SAVE & EXCEPT PT1, PL 12R22723; KINGSVILLE	20 x	247	0.494	8 x 247	0.197	
					20 x	147	0.293	20 x 80	0.16	
								20 x 40	0.08	
								10 x 144	0.124	
								8 x 147	0.118	
								20 x 117	0.233	
								30 x 162	0.487	
71	K57	75169-0169	LT	PT LT 6 CON 2 EASTERN DIVISION DESIGNATED AS PT 1, PL 12R22723; KINGSVILLE	20 x	45	0.09			
72	K58	75169-0114	LT	PT LT 6 CON 2 EASTERN DIVISION GOSFIELD AS IN R356843 & R170486 EXCEPT PT 2 12R8279 & PT 3 12R18587; KINGSVILLE	20 x	70	0.14	150 x 170 IRR	1.871	
					80 x	106	0.845 fee			



OPTION FOR EASEMENT

(hereinafter called the "Option")

Between

(hereinafter called the "Transferor")

and

UNION GAS LIMITED

(hereinafter called the "Transferee")

WHEREAS the Transferor is the registered owner in fee simple of the lands hereinafter referred to as:

PIN: LT

Legal Description:

which lands are required by the Transferee;

1. In consideration of the sum of Five Thousand And 00/100 Dollars (\$5,000.00) (hereinafter called the "Option Price") payable by the Transferee to the Transferor within thirty (30) days of signing of this Option, the Transferor hereby grants to the Transferee an irrevocable option to purchase, an unencumbered easement ("Easement") in perpetuity for itself, its successors and assigns, to construct, maintain, replace and operate one natural gas pipeline, on, over, in, under and/or through a tract of land 15 metres in width outlined on the sketch attached hereto as **Appendix "A"** across the lands of the Transferor (hereinafter called the "Lands of Transferor") described in the attached **Appendix "B"** together with the right to construct, maintain and operate the necessary sub-surface appliances, equipment and appurtenant facilities, all in accordance with the specimen Easement Agreement ("Easement") attached hereto, and marked **Appendix "C"**.
2. The consideration (hereinafter referred to as "the Consideration") to be paid for the Easement shall be (\$0.00) per acre of the Easement, the area of which shall be calculated by a plan of survey prepared by an Ontario Land Surveyor at the Transferee's expense. The final adjustment will be made on the Closing Date, (as hereinafter defined) in accordance with the area set out in the Plan of Survey and such determined Easement purchase price shall be set out in Appendix "C" the Easement Agreement. The consideration shall be paid by cheque of lawful money of Canada as follows:
 - a) Five Thousand And 00/100 Dollars (\$5,000.00) now paid as the Option Price which is a non-refundable deposit on account of the Easement purchase price, the receipt of which is hereby acknowledged by the Transferor;
 - b) a further deposit of Zero And 00/100 Dollars (\$0.00) to be paid on account of the Easement purchase price by the Transferee upon delivery of the notice referred to in Clause 6 of this Option, and;
 - c) the balance of the Easement purchase price shall be paid by the Transferee on the Closing Date.
3. The Transferor hereby authorizes the Transferee to prepare and register a reference plan of survey of the Easement. The Transferor and the Transferee agree that if and when such survey has been prepared such legal description based on such survey shall conclusively be deemed to constitute the full, true and accurate description of the Easement and such description will be substituted for the description or the sketch of the Easement contained in this Agreement and Appendix "C".
4. The Transferor hereby agrees that the Transferee's surveyors, engineers, consultants and servants may enter on the Lands of the Transferor forthwith and at any time while this Option remains in effect for the purpose of performing soil tests, surveys, and archaeological investigations. The Transferor further hereby agrees that immediately following the giving by the Transferee of the

notice referred to in Clause 6 hereof, that the Transferee shall have the immediate right in accordance with the Easement Agreement to enter and bring its equipment and equipment of its servants, agents and contractors upon the Easement to construct, maintain and operate its pipeline. It is understood and agreed that the Transferee shall be responsible for any physical damages caused to the Transferor's Lands, including but not limited to, crops, pasture, land, livestock or other property as a direct result of the exercise of the rights granted herein. **The Transferee shall make to the Transferor (or the person or persons entitled thereto) due compensation for any damages resulting from the exercise of the Transferee's rights granted herein and, if the compensation is not agreed upon, it shall be determined in the manner prescribed by the Expropriations Act, R.S.O. 1990, Chapter E-26 or any Act passed in amendment thereof of substitution therefor.**

5. The option contained in this Agreement shall be exercisable by the Transferee on or before 11:59 p.m. on the 30th day of June 2017(hereinafter called the "Expiry Date").
6. (a) This Option may be exercised by the Transferee by letter addressed to the Transferor at which letter may be delivered to the Transferor by hand or forwarded by registered mail or delivered by courier at any time on or before, but not after the Expiry Date;

(b) The Option will be deemed exercised on the date ("Exercise Date") such notice is personally served on the Transferor, **delivered by courier, or five business days from the date it is deposited in the post office.**

(c) The closing Date shall be no later than 60 days following the Exercise Date ("Closing Date").
7. On the Closing Date, this Option shall, without further act or formality, operate as a grant, conveyance, sale, assignment and transfer to the Transferee as of the Closing Date of the Easement and of all of the rights and interest therein intended to be conveyed hereby all without the necessity of any further action, notice, or documentation. Transferor covenants with the Transferee that the Transferor will execute such further and other assurances and documents of title in respect of the Easement as may be reasonably required by the Transferee. **The Transferee agrees that it shall be responsible to pay any and all costs associated with the transfer of the Easement, including, but not limited to, costs of registration and costs related to the removal, remedy or satisfaction of encumbrances as required by Clause 8 below, in the event the Transferee requests the same.**
8. The Transferor covenants, represents and warrants that title to the Easement will, on the Closing Date, be good and free from all encumbrances. If prior to the Closing Date, any valid objection to title or to the fact that the proposed use of the Easement by the Transferee may not lawfully be undertaken is made in writing to the Transferor and which the Transferor is unable to remove, remedy or satisfy and which the Transferee will not waive, all monies to be paid pursuant to Clause 2(c) shall be held back by the Transferee and the Transferor shall not receive said payment until title to the Easement is transferred to the Transferee by a registered transfer of Easement free and clear of all encumbrances.
9. The Transferor covenants with the Transferee that he has the right to convey the Easement to the Transferee notwithstanding any act of the Transferor and that the Transferee shall have quiet possession of the Easement free from all encumbrances from and after the Closing Date.
10. If the Transferor is not at the date hereof the sole owner of the Lands of Transferor this Option shall nevertheless bind the Transferor to the full extent of the Transferor's interest therein and if the Transferor shall later acquire a greater or the entire interest in the Lands of Transferor, this Option shall likewise bind all such after-acquired interests.
11. The Transferor shall deliver on Closing registrable evidence of compliance of this transaction with the Family Law Act (Ontario).
12. This Option, including all the covenants and conditions herein contained, shall extend to, be binding upon and inure to the benefit of the heirs, executors, administrators, successors and assigns of the undersigned and the Transferee respectively; and wherever the singular or masculine is used, it shall be construed as if the plural or the feminine or the neuter, as the case may be, had been used, where the context or the party or parties hereto so require and the rest of the sentence shall be construed as if the grammatical and terminological changes thereby rendered necessary had been made.

13. (a) The Transferee represents that it is registered for the purposes of the Harmonized Goods and Services Tax (hereinafter called “HST”) in accordance with the applicable provisions in that regard and pursuant to the Excise Tax Act, (R.S.C., 1985, c. E-15), (hereinafter called “Excise Tax Act”), as amended.

(b) The Transferee covenants to deliver a Statutory Declaration, Undertaking and Indemnity confirming its HST registration number, which shall be conclusive evidence of such HST registration, and shall preclude the Transferor from collection of HST from the Transferee.

(c) The Transferee shall undertake to self-assess the HST payable in respect of this transaction pursuant to subparagraphs 221(2) and 228(4) of the Excise Tax Act, and to remit and file a return in respect of HST owing as required under the said Act for the reporting period in which the HST in this transaction became payable.

(d) The Transferee shall indemnify and save harmless the Transferor from and against any and all claims, liabilities, penalties, interest, costs and other legal expenses incurred, directly or indirectly, in connection with the assessment of HST payable in respect of the transaction contemplated by this Option. The Transferee’s obligations under this Clause shall survive this Option.

14. It is further agreed that the Transferee shall assume all liability and obligations for any and all loss, damage or injury, (including death) to persons or property that would not have happened but for this Option or anything done or maintained by the Transferee hereunder or intended so to be and the Transferee shall at all times indemnify and save harmless the Transferor from and against all such loss, damage or injury and all actions, suits, proceedings, costs, charges, damages, expenses, claims or demands arising therefrom or connected therewith provided that the Transferee shall not be liable under the Clause to the extent to which such loss, damage or injury is caused or contributed to by the gross negligence or wilful misconduct of the Transferor.

DATED this ____ day of _____ 20__.

Signature (Transferor)

Print Name(s) (and position held if applicable)

Address (Transferor)

Signature (Transferor)

Print Name(s) (and position held if applicable)

Address (Transferor)

UNION GAS LIMITED

Signature (Transferee)

Mervyn Weishar, Senior Land Specialist
Name & Title (Union Gas Limited)

I have authority to bind the Corporation.

519-436-4673
Telephone Number (Union Gas Limited)

Additional Information: (if applicable)

Solicitor: _____

Telephone: _____

Tenant Farmer Information: (if applicable)

Name:

Address:

Telephone:

APPENDIX “A”
SKETCH

APPENDIX “B”
LANDS OF TRANSFEROR

APPENDIX “C”

Pipeline Easement



PIPELINE EASEMENT

(hereinafter called the "Easement")

Between

(hereinafter called the "Transferor")

and

UNION GAS LIMITED

(hereinafter called the "Transferee")

This is an Easement in Gross.

WHEREAS the Transferor is the owner in fee simple of those lands and premises more particularly described as:

PIN: LT

Legal Description:

(hereinafter called the "Transferor's Lands").

The Transferor does hereby GRANT, CONVEY, TRANSFER AND CONFIRM unto the Transferee, its successors and assigns, to be used and enjoyed as appurtenant to all or any part of the lands, the right, liberty, privilege and easement on, over, in, under and/or through a strip of the Transferor's Lands more particularly described as:

BEING THE PIN/PART OF THE PIN: LT

Legal Description: designated as Part(s) on Plan R-

(hereinafter called the "Lands") to survey, lay, construct, maintain, brush, clear trees and vegetation, inspect, patrol, alter, remove, replace, reconstruct, repair, move, keep, use and/or operate one pipeline for the transmission of Pipeline quality natural gas as defined in The Ontario Energy Board Act S.O. 1998 (hereinafter called the "Pipeline") including therewith all such buried attachments, equipment and appliances for cathodic protection which the Transferee may deem necessary or convenient thereto, together with the right of ingress and egress at any and all times over and upon the Lands for its servants, agents, employees, those engaged in its business, contractors and subcontractors on foot and/or with vehicles, supplies, machinery and equipment for all purposes necessary or incidental to the exercise and enjoyment of the rights, liberty, privileges and easement hereby granted. The Parties hereto mutually covenant and agree each with the other as follows:

1. In Consideration of the sum of (\$0.00) (hereinafter called the "Consideration"), which sum is payment in full for the rights and interest hereby granted and for the rights and interest, if any, acquired by the Transferee by expropriation, including in either or both cases payment in full for all such matters as injurious affection to remaining lands and the effect, if any, of registration on title of this document and where applicable, of the expropriation documents, subject to Clause 12 hereof to be paid by the Transferee to the Transferor within 90 days from the date of these presents or prior to the exercise by the Transferee of any of its rights hereunder other than the right to survey (whichever may be the earlier date), the rights, privileges and easement hereby granted shall continue in perpetuity or until the Transferee, with the express written consent of the Transferor, shall execute and deliver a surrender thereof. Prior to such surrender, the Transferee shall remove all debris as may have resulted from the Transferee's use of the Lands from the Lands and in all respects restore the Lands to its previous productivity and fertility so far as is reasonably possible , save and except for items in respect of which compensation is due under Clause 2, hereof. As part of the Transferee's obligation to restore the Lands upon surrender of its easement, the Transferee agrees at the option of the Transferor to remove the Pipeline from the Lands. The Transferee and the Transferor shall surrender the Easement and the Transferee shall remove the Pipeline at the Transferor's option where the Pipeline has been abandoned. The Pipeline shall be deemed to be abandoned where: (a) corrosion protection is no longer applied to the Pipeline, or, (b) the Pipeline becomes unfit for service in accordance with Ontario standards. The Transferee shall, within 60 days of either of these events occurring, provide the Transferor with notice of the event. Upon removal of the Pipeline and restoration of the Lands as required by this agreement, the Transferor shall release the Transferee from further obligations in respect of restoration.

2. The Transferee shall make to the Transferor (or the person or persons entitled thereto) due compensation for any damages to the Lands resulting from the exercise of any of the rights herein granted, and if the compensation is not agreed upon by the Transferee and the Transferor, it shall be determined by arbitration in the manner prescribed by the Expropriations Act, R.S.O. 1990, Chapter E-26 or any Act passed in amendment thereof or substitution thereof. Any gates, fences and tile drains curbs, gutters, asphalt paving, lockstone, patio tiles interfered with by the Transferee shall be restored by the Transferee at its expense as closely as reasonably possible to the condition and function in which they existed immediately prior to such interference by the Transferee and in the case of tile drains, such restoration shall be performed in accordance with good drainage practice and applicable government regulations.
3. The Pipeline (including attachments, equipment and appliances for cathodic protection but excluding valves, take-offs and fencing installed under Clause 9 hereof) shall be laid to such a depth that upon completion of installation it will not obstruct the natural surface run-off from the Lands nor ordinary cultivation of the Lands nor any tile drainage system existing in the Lands at the time of installation of the Pipeline nor any planned tile drainage system to be laid in the Lands in accordance with standard drainage practice, if the Transferee is given at least thirty (30) days notice of such planned system prior to the installation of the Pipeline. The Transferee agrees to make reasonable efforts to accommodate the planning and installation of future tile drainage systems following installation of the Pipeline so as not to obstruct or interfere with such tile installation. In the event there is a change in the use of all, or a portion of the Transferor Lands adjacent to the Lands which results in the pipeline no longer being in compliance with the pipeline design class location requirements, then the Transferee shall be responsible for any costs associated with any changes to the Pipeline required to ensure compliance with the class location requirements.
4. As soon as reasonably possible after the construction of the Pipeline, the Transferee shall level the Lands and unless otherwise agreed to by the Transferor, shall remove all debris as may have resulted from the Transferee's use of the Lands therefrom and in all respects restore the Lands to its previous productivity and fertility so far as is reasonably possible, save and except for items in respect of which compensation is due under Clause 2 hereof.
5. It is further agreed that the Transferee shall assume all liability and obligations for any and all loss, damage or injury, (including death) to persons or property that would not have happened but for this Easement or anything done or maintained by the Transferee hereunder or intended so to be and the Transferee shall at all times indemnify and save harmless the Transferor from and against all such loss, damage or injury and all actions, suits, proceedings, costs, charges, damages, expenses, claims or demands arising therefrom or connected therewith provided that the Transferee shall not be liable under the clause to the extent to which such loss, damage or injury is caused or contributed to by the gross negligence or wilful misconduct of the Transferor.
6. In the event that the Transferee fails to comply with any of the requirements set out in Clauses 2, 3, or 4 hereof within a reasonable time of the receipt of notice in writing from the Transferor setting forth the failure complained of, the Transferee shall compensate the Transferor (or the person or persons entitled thereto) for any damage, if any, necessarily resulting from such failure and the reasonable costs if any, incurred in the recovery of those damages.
7. Except in case of emergency, the Transferee shall not enter upon any of the Transferor's Lands, other than the Lands, without the consent of the Transferor. In case of emergency the right of entry upon the Transferor's Lands for ingress and egress to and from the Lands is hereby granted. The determination of what circumstances constitute an emergency, for purposes of this paragraph is within the absolute discretion of the Transferee, but is a situation in which the Transferee has a need to access the Pipeline in the public interest without notice to the Transferor, subject to the provisions of Clause 2 herein. The Transferee will, within 72 hours of entry upon such lands, advise the Transferor of the said emergency circumstances and thereafter provide a written report to Transferor with respect to the resolution of the emergency situation The Transferee shall restore the lands of the Transferor at its expense as closely as reasonably practicable to the condition in which they existed immediately prior to such interference by the Transferee and in the case of tile drains, such restoration shall be performed in accordance with good drainage practice.
8. The Transferor shall have the right to fully use and enjoy the Lands except for planting trees over the lesser of the Lands or a six (6) meter strip centered over the Pipeline, and except as may be necessary for any of the purposes hereby granted to the Transferee, provided that the Transferor shall not excavate, drill, install, erect or permit to be excavated, drilled, installed or erected in, on, over or through the Lands any pit, well, foundation, building, mobile homes or other structure or installation and the Transferor shall not deposit or store any flammable material, solid or liquid spoil,

refuse, waste or effluent on the Lands. Notwithstanding the foregoing the Transferee upon request shall consent to the Transferor erecting or repairing fences, hedges, pavement, lockstone constructing or repairing tile drains and domestic sewer pipes, water pipes, and utility pipes and constructing or repairing lanes, roads, driveways, pathways, and walks across, on and in the Lands or any portion or portions thereof, provided that before commencing any of the work referred to in this sentence the Transferor shall (a) give the Transferee at least (30) clear days notice in writing describing the work desired so as to enable the Transferee to evaluate and comment on the work proposed and to have a representative inspect the site and/or be present at any time or times during the performance of the work, (b) shall follow the instructions of such representative as to the performance of such work without damage to the Pipeline, (c) shall exercise a high degree of care in carrying out any such work and, (d) shall perform any such work in such a manner as not to endanger or damage the Pipeline as may be required by the Transferee.

9. The rights, privileges and easement herein granted shall include the right to install, keep, use, operate, service, maintain, repair, remove and/or replace in, on and above the Lands any valves and/or take-offs subject to additional agreements and to fence in such valves and/or take-offs and to keep same fenced in, but for this right the Transferee shall pay to the Transferor (or the person or persons entitled thereto) such additional compensation as may be agreed upon and in default of agreement as may be settled by arbitration under the provisions of The Ontario Energy Board Act, S.O. 1998, or any Act passed in amendment thereof or substitution therefore. The Transferee shall keep down weeds on any lands removed from cultivation by reason of locating any valves and/or take-offs in the Lands.
10. Notwithstanding any rule of law or equity and even though the Pipeline and its appurtenances may become annexed or affixed to the realty, title thereto shall nevertheless remain in the Transferee.
11. Neither this Agreement nor anything herein contained nor anything done hereunder shall affect or prejudice the Transferee's rights to acquire the Lands or any other portion or portions of the Transferor's lands under the provisions of The Ontario Energy Board Act, S.O. 1998, or any other laws, which rights the Transferee may exercise at its discretion in the event of the Transferor being unable or unwilling for any reason to perform this Agreement or give to the Transferee a clear and unencumbered title to the easement herein granted.
12. The Transferor covenants that he has the right to convey this Easement notwithstanding any act on his part, that he will execute such further assurances of this Easement as may be requisite and which the Transferee may at its expense prepare and that the Transferee, performing and observing the covenants and conditions on its part to be performed, shall have quiet possession and enjoyment of the rights, privileges and easement hereby granted. If it shall appear that at the date hereof the Transferor is not the sole owner of the Lands, this Easement shall nevertheless bind the Transferor to the full extent of his interest therein and shall also extend to any after-acquired interest, but all moneys payable hereunder shall be paid to the Transferor only in the proportion that his interest in the Lands bears to the entire interest therein.
13. In the event that the Transferee fails to pay the Consideration as hereinbefore provided, the Transferor shall have the right to declare this Easement cancelled after the expiration of 15 days from personal service upon the Manager, Land Services of the Transferee at its Executive Head Office in Chatham, Ontario, (or at such other point in Ontario as the Transferee may from time to time specify by notice in writing to the Transferor) of notice in writing of such default, unless during such 15 day period the Transferee shall pay the Consideration; upon failing to pay as aforesaid, the Transferee shall forthwith after the expiration of 15 days from the service of such notice execute and deliver to the Transferor at the expense of the Transferee, a valid and registrable release and discharge of this Easement.
14. All payments under these presents may be made either in cash or by cheque of the Transferee and may be made to the Transferor (or person or persons entitled thereto) either personally or by mail. All notices and mail sent pursuant to these presents shall be addressed to:

the Transferor at:

and to the Transferee at: Union Gas Limited
P.O. Box 2001
50 Keil Drive North
Chatham, Ontario N7M 5M1
Attention: Manager, Land Services

or to such other address in either case as the Transferor or the Transferee respectively may from time to time appoint in writing.

15. The rights, privileges and easement hereby granted are and shall be of the same force and effect as a covenant running with the Transferor’s Land and this Easement, including all the covenants and conditions herein contained, shall extend to, be binding upon and inure to the benefit of the heirs, executors, administrators, successors and assigns of the Parties hereto respectively; and, wherever the singular or masculine is used it shall, where necessary, be construed as if the plural, or feminine or neuter had been used, as the case may be.
16. (a) The Transferee represents that it is registered for the purposes of the Harmonized Goods and Services Tax (hereinafter called “HST”) in accordance with the applicable provisions in that regard and pursuant to the Excise Tax Act, (R.S.C., 1985, c. E-15), (hereinafter called “Excise Tax Act”), as amended.
- (b) The Transferee covenants to deliver a Statutory Declaration, Undertaking and Indemnity confirming its HST registration number, which shall be conclusive evidence of such HST registration, and shall preclude the Transferor from collection of HST from the Transferee.
- (c) The Transferee shall undertake to self-assess the HST payable in respect of this transaction pursuant to subparagraphs 221(2) and 228(4) of the Excise Tax Act, and to remit and file a return in respect of HST owing as required under the said Act for the reporting period in which the HST in this transaction became payable.
- (d) The Transferee shall indemnify and save harmless the Transferor from and against any and all claims, liabilities, penalties, interest, costs and other legal expenses incurred, directly or indirectly, in connection with the assessment of HST payable in respect of the transaction contemplated by this Easement. The Transferee’s obligations under this Clause shall survive this Easement.

17. The Transferor hereby acknowledges that this Easement will be registered electronically.

Dated this _____ day of _____ 20__.

Signature (Transferor)

Print Name(s) (and position held if applicable)

Address (Transferor)

Signature (Transferor)

Print Name(s) (and position held if applicable)

Address (Transferor)

UNION GAS LIMITED

Signature (Transferee)

Meryn Weishar, Senior Land Specialist
Name & Title (Union Gas Limited)

I have authority to bind the Corporation.

519-436-4673
Telephone Number (Union Gas Limited)

Additional Information: (if applicable):

Property Address:

HST Registration Number:

Municipality of Chatham-Kent

Province of Ontario

DECLARATION REQUIRED UNDER
SECTION 50 (3) OF THE PLANNING
ACT, R.S.O. 1990, as amended

I, Mervyn Weishar, of the Municipality of Chatham-Kent, in the Province of Ontario;

DO SOLEMNLY DECLARE THAT:

- 1. I am a Senior Land Specialist, Lands Department of Union Gas Limited, the Transferee in the attached Grant of Easement and as such have knowledge of the matters herein deposed to.
- 2. The use of or right in the land described in the said Grant of Easement being **Part of the PIN: LT Legal Description:**

acquired by Union Gas Limited for the purpose of a hydrocarbon line within the meaning of Part VI of the Ontario Energy Board Act, 1998.

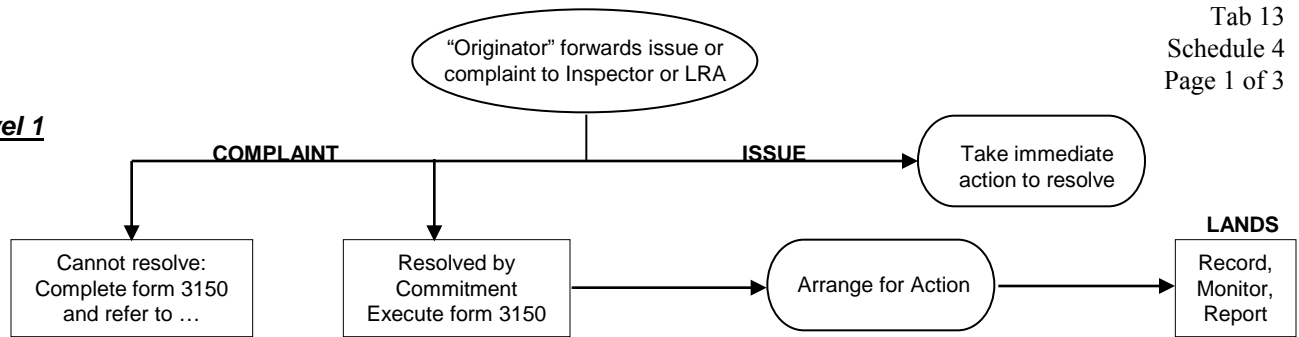
AND I make this solemn declaration conscientiously believing it to be true and knowing that it is of the same force and effect as if made under oath, and by virtue of The Canada Evidence Act.

DECLARED before me at the)
)
_____)
)
in the Province of Ontario)
)
this ____day of _____ 20__)

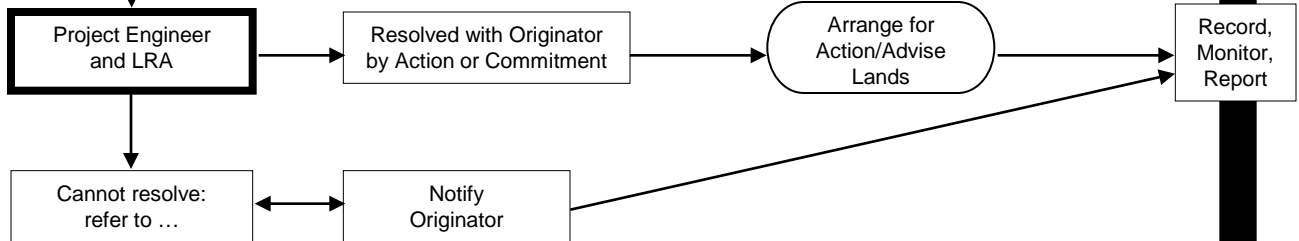
A Commissioner, etc.

Process Chart: Landowner Complaint Resolution System

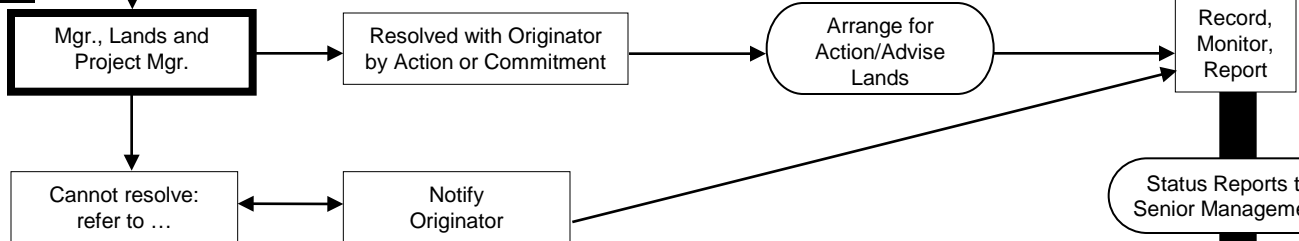
Level 1



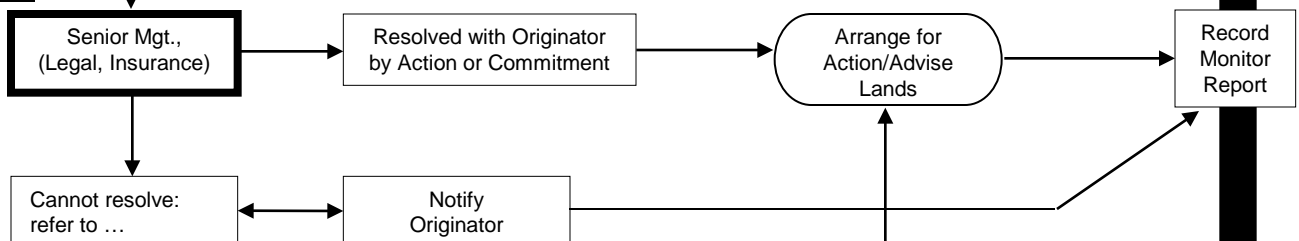
Level 2



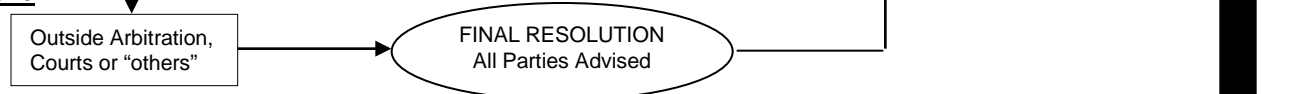
Level 3



Level 4



Level 5



Notes:

1. “Originator” of complaint or issue may be landowner or company representative.
2. Parties indicated in heavy outlined boxes shall assume responsibility for actions subsequently required in the resolution process. Parties identified in brackets may only be required for resolution or specific technical concerns.
3. “L.R.A.” refers to Landowner Relations Agent.
4. “Outside Arbitration” includes the Board of Negotiation, O.M.B. and O.E.B. “Others” refers to other regulatory bodies and tribunals.

FINAL REPORTS TO O.E.B.

LANDOWNER COMPLAINT RESOLUTION SYSTEM EXPLANATION OF PROCESS CHART

Key Definitions

Originator – The originator of a complaint or issue is the landowner or Union Gas personnel who initiates a complaint or issue by making it known to the Landowner Relations Agent or a company inspector.

Landowner Relations Agent (LRA) – A person assigned on a full time or part time basis to record, monitor, and ensure follow-up on any complaint or issue received by Union related to construction, to address questions and concerns of the landowners, and to act as a liaison between landowners and the contractor and engineering personnel.

Issue – A concern of a landowner which can be resolved within three (3) working days. Immediate action is taken to resolve such matters.

Complaint – A concern of a landowner which cannot be resolved within three (3) working days.

Commitment – If an issue or complaint is resolved at any level of the Complaint Resolution system through the efforts and liaison activities of the Landowner Relations Agent or other personnel, the resolution is recorded to ensure proper future follow-up.

Outside Arbitration – includes the Board of Negotiation, O.M.B., and O.E.B.

Others – refers to other regulatory bodies and tribunals

Levels of the Complaint Resolution System

Level 1: The LRA or company inspector receives issues or complaints, and the following can happen:

- a) Immediate action could be arranged by the LRA or inspector to resolve the issue or complaint; or
- b) A complaint can be resolved by a commitment in which case the LRA is responsible for arranging for the committed action and having the commitment recorded in the Complaint Resolution system; or
- c) If a complaint cannot be resolved through the efforts of the LRA or inspector, the applicable form (Form 3150) is completed and then recorded, and the complaint is referred to **Level 2**.

Level 2: The LRA and the Construction Supervisor work together to develop a resolution for the complaint, and the following can happen:

- a) the complaint may be resolved with the originator by action or commitment and the action or commitment is recorded in the Complaint Resolution System; or
- b) if the complaint cannot be resolved, the originator is notified, the non-resolution is recorded, and the complaint is referred to **Level 3**.

Level 3: The Manager, Lands and the Project Manager work together to develop a resolution for the complaint, and the following can happen:

- a) complaint may be resolved with the originator by action or commitment and the action or commitment is recorded in the Complaint Resolution System; or
- b) if the complaint cannot be resolved, the originator is notified, the non-resolution is recorded, and the complaint is referred to **Level 4**;

When complaints reach this level, status reports are generated through the Complaint Resolution System and are forwarded to Senior Management.

Level 4: Senior Management (with possible input from the Legal and Risk and Claims Departments) attempts to develop a resolution to the complaint, and the following can happen:

- a) the complaint may be resolved with the originator by action or commitment and the action or commitment is recorded in the Complaint Resolution System; or
- b) if the complaint cannot be resolved, the originator is notified, the non-resolution is recorded, and the complaint is referred to **Level 5**;

Level 5: Involves the resolution of a complaint by outside arbitration or others, and the following will happen:

A final resolution will occur, all parties will be advised, and any action required will be arranged by the LRA or other Lands Department personnel.

Note: the Complaint Resolution System is used to generate final reports to the Ontario Energy Board

INDIGENOUS AND MÉTIS NATIONS CONSULTATIONS

Union has a long standing practice of consulting with Indigenous People and the Métis Nation during the planning and construction of proposed projects. Union has programs in place whereby it works to ensure Indigenous People and the Métis Nation are aware of Union's projects and have the opportunity to participate in both the planning and construction phases of the Project.

Union has an extensive database and knowledge of Indigenous and Métis Nation organizations in Ontario and consults with the Tribal organizations as well as the data bases of the Ministry of Natural Resource and Forestry, Ministry of Indigenous Affairs and Reconciliation and Indigenous Affairs and Northern Development Canada to ensure consultation is carried out with the most appropriate groups.

Union has signed a General Relationship Agreement with the Métis Nation of Ontario which describes Union's commitments to the Métis Nation when planning and constructing pipeline projects.

In the 7th Edition of the Ontario Energy Board's Environmental Guidelines for the Location, Construction and Operation of Hydrocarbon Pipelines and Facilities in Ontario, the requirements for Indigenous and Métis Consultation were enhanced.

1 The Board, working closely with the Ministry of Energy, revised the Indigenous consultation
2 requirements to streamline and clarify the roles and obligations of the Ministry of Energy, the
3 Board and Union.

4
5 Included in the Indigenous Consultation Report is a letter from Union to the Ministry of Energy
6 providing the Ministry of Energy with a Project description and requesting that the Ministry of
7 Energy identify any Indigenous communities who may be impacted by the Project.

8
9 Included in the Indigenous Consultation Report is a letter from the Ministry of Energy to Union
10 identifying which Indigenous communities will be impacted by the Project and formally
11 delegating to Union the responsibility to conduct consultation activities.

12
13 Attached at Exhibit A, Tab 14, Schedule 1 is a copy of Union's Indigenous Consultation Report
14 for the Project. This report has been sent to the Ministry of Energy for its review and
15 confirmation. The Indigenous Consultation Report includes:

- 16 • A summary of all meetings with Indigenous communities;
- 17 • A summary of the concerns that were identified by the Indigenous communities and how
18 the concerns were addressed and/or accommodated; and
- 19 • A complete record of all consultation activities.

20
21 Exhibit A, Tab 14, Schedule 2 provides a copy of Ministry of Energy's review and confirmation
22 of adequacy of Union's Indigenous Consultation Report.

1 After filing this Application for the Project with the Board, Union will continue to meet and
2 consult with the Indigenous and the Métis Nation organizations identified in the Indigenous
3 Consultation Report.

4
5 The Indigenous Consultation Report will be updated to reflect Union's ongoing consultation
6 practices.

7
8 During construction, Union has staff in the field available to meet with Indigenous and Métis
9 Nation organizations to discuss and review any issues that may arise during construction.

10
11 When Union completes the necessary archaeological assessments for the Project, Union will
12 consult with and provide the result of the surveys to any Indigenous or Métis Nation upon their
13 request.

Indigenous Consultation Report **Union Gas Kingsville Transmission Reinforcement Project**

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Indigenous Consultation Report

Kingsville Transmission Reinforcement Project

1. Project Description

To increase capacity and accommodate additional demand for natural gas on the Panhandle Pipeline System, Union Gas is proposing to construct the Kingsville Transmission Reinforcement Project ("proposed pipeline"). The proposed pipeline will meet the growing residential, commercial, and industrial market demand for natural gas in the Windsor-Essex, Chatham-Kent and surrounding areas.

The proposed pipeline will be approximately 19 km in length of NPS 20 pipe and will begin at Union Gas' existing NPS 20 Panhandle Pipeline, at Lot 2 Concession SMR, former Township of Rochester, Town of Lakeshore. The proposed pipeline will end at a new valve site located at Lot 6 Concession 2 eastern division Gosfield Township in the Town of Kingsville, Essex County. Please see Schedule 4-A for a map of the general area.

A preferred route for the proposed pipeline has been determined and can be found in the Environmental Report which was sent to Shereen Smithanik at the Ministry of Energy ("MOE") on December 21, 2017 as part of the Ontario Pipeline Coordinating Committee review for this project.

2. First Nation and Métis Communities Consulted

Consistent with the 7th Edition of the Ontario Energy Board's *Environmental Guidelines for the Location, Construction and Operation of Hydrocarbon Pipelines and Facilities in Ontario*, 2016 Union Gas was delegated the procedural aspects of the consultation from the MOE. A copy of the Union Gas letter informing the MOE of the Kingsville project is attached as Schedule 4-B. The following communities were listed by the MOE in the delegation letter (see Schedule 4-C):

Aamjiwnaang First Nation	Chief Joanne Rogers Sharilyn Johnson, Environment Coordinator
Bkejwanong (Wapole Island First Nation)	Chief Dan Miskokomon Dr. Dean Jacobs, Consultation Manager Janet Macbeth, Project Review Coordinator Ed Gilbert, Consultation Business Development Officer Rex Issac, Employment Councillor Kammy White-eye, Intern
Caldwell First Nation	Chief Louise Hillier Allen Deleary, Director of Operations
Chippewas of the Thames First Nation	Chief Myeengun Henry Chief Leslie White-Eye (former) Kelly Riley, Acting Lands & Environment Director Fallon Burch, Consultations Coordinator Rochelle Smith, A/Consultation Coordinator
Oneida Nation of the Thames	Chief Randall Phillips

3. Consultation Activities

Aamjiwnaang First Nation				
Date	Activity	Issues raises	Outcome	Doc Location
June 20/17	Letter of notification of project sent from Union Gas via email to Chief Rogers, Sharilyn Johnson	No response received		Pg. 22
July 9/17	Follow up via email to Chief Rogers and Sharilyn Johnson	Chief responded on July 10 indicating she will leave up to Sharilyn to follow up with, if needed		Pg. 22
July 14/17	Letter from Union Gas notifying of Information Sessions dates and environmental study information sent to Chief and Sharilyn Johnson	Dates of Info sessions: Aug 1-2 in Kingsville and Woodslee	No community members attended.	Pg. 23
Oct 6/17	Letter from Union Gas notifying of Information Sessions dates and environmental study information	Dates of Information Session: Oct 25-26 in Kingsville and Woodslee	No community members attended.	Pg. 27
Nov 2/17	Email received from Christine Rogers, Environmental Consultation Worker	Environmental Committee would like a presentation on Kingsville Project.	Ken McCorkle will present on December 5, 2017 at the Band Administration Building	Pg. 31
Nov 23/17	Email received from Courtney Jackson, Environmental Worker	Meeting with the Environmental Committee has been postponed until December 12, 2017 at 5pm.		Pg. 31
Dec 12/17	Meeting with Lands Consultation Committee Attendees: Dalynn Williams Ernie Gray Marina Plain Ralph Nehmabin Beverly Fisher Courtney Jackson Sharilyn Johnston Ken McCorkle, Manager, Indigenous Affairs, Union Gas Dave Wessenger, Project Manager, Stantec	Dave Wessenger presented slide deck on the project. He provided details on: Project overview Regulatory overview of the OEB, Environmental study process Regulatory steps for Union Gas to go through with the OEB Permits and Approvals Environmental Commitments Timeline of the project Monitoring and Rehabilitation Sharilyn Johnston asked if Archeology monitors could be involved on the project. Sharilyn Johnston also asked for	Provided assurance that monitors will be onsite for environmental process and if/when the project is approved by the OEB. Provided assurance that both	Pg. 32

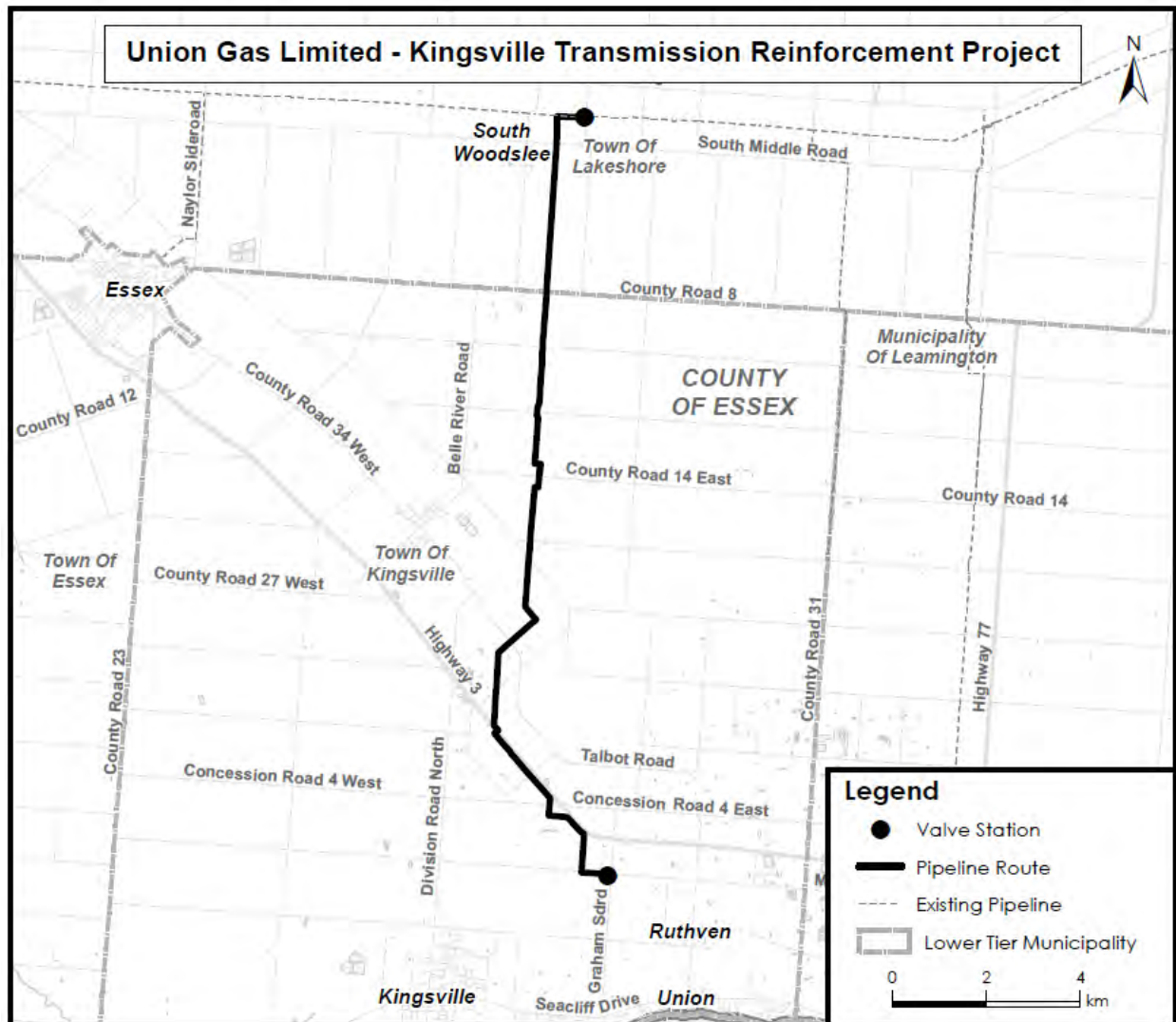
		copies of the work plan and the Environmental Assessment. Union Gas and the community agreed to ongoing consultation and will meet in the New Year to continue talking through the project.	will be provided to her when complete. Meeting to be set in the new year.	
Dec 21/17	Letter from Union Gas notifying of and providing the Environmental Report (ER)	Asked community to provide any comments by March 01, 2018.		Pg. 41
Bkejwanong (Walpole Island) First Nation				
Date	Activity	Issues raises	Outcome	Doc Location
June 20/17	Letter of notification of project sent from Union Gas via email to Chief Dan Miskokomon, Dr. Dean Jacobs and Janet Macbeth	No response received		Pg. 43
July 9/17	Follow up via email to Chief Dan Miskokomon, Dr. Dean Jacobs and Janet Macbeth	No response received		Pg. 43
July 14/17	Letter notifying of Information Sessions dates and environmental study information sent to Chief	Dates of Info sessions: Aug 1-2 in Kingsville and Woodslee	No community members attended.	Pg. 44
Oct 6/17	Letter from Union Gas notifying of Information Sessions dates and environmental study information	Dates of Information Session: Oct 25-26 in Kingsville and Woodslee	No community members attended.	Pg. 48
Nov 5/17	Meeting at Bkejwanong (Walpole Island) First Nation with community members: Janet Macbeth, Project Review Coordinator Ed Gilbert, Consultation Business Development Officer Rex Issac, Employment Councillor Kammy White-eye, Intern	Discussed the details and scope of the Kingsville Project. Union Gas provided project overview handout. General questions were asked about start date, length of project and who would be leading project. Ms. Macbeth requested information on the environmental surveys and would like monitors on the project.	Will set up another meeting in the new year to discuss environmental surveys. Union Gas will set up a meeting with Tony Vadlja, Lead Environmental Planner Union Gas, to discuss the environmental and technical aspects of the project.	Schedule D
Dec 21/17	Letter from Union Gas notifying of and providing the Environmental Report (ER)	Asked community to provide any comments by March 01, 2018.		Pg. 54
Caldwell First Nation				
Date	Activity	Issues raises	Outcome	Doc Location
June 20/17	Letter of notification of project sent from Union Gas via email to Chief Louise Hillier	No response received		Pg. 57

July 9/17	Follow up via email to Chief Hillier	No response received		Pg. 57
July 14/17	Letter notifying of Information Sessions dates and environmental study information sent to Chief	Dates of Info sessions: Aug 1-2 in Kingsville and Woodslee	No community members attended.	Pg. 58
Oct 6/17	Letter from Union Gas notifying of Information Sessions dates and environmental study information	Dates of Information Session: Oct 25-26 in Kingsville and Woodslee	No community members attended.	Pg. 60
Nov 7/17	Phone call to Allen Deleary to follow up on emails to Chief Hillier	Meeting set up for Nov 9/17		
Nov 9/17	Meeting with Allen Deleary, Director of Operations	Ken McCorkle provided project overview hand out and discussed details and scope of the Kingsville Project. Mr. Deleary had no issues or concerns with the project. General questions were asked about start date, length of project and who would be leading project. Mr. Deleary and his council requested a tour of the construction site once the project begins. Mr. Deleary requested Union Gas contact Mr. Duckworth, Mangers, Land Consultation, to ensure monitors are on site for archeology and environmental studies.	Ken McCorkle will arrange for a date for a tour that work with Mr. Deleary and Council as well as ensuring that monitors are on site. Union Gas will reach out to Mr. Duckworth.	Schedule D
Dec 21/17	Letter from Union Gas notifying of and providing the Environmental Report (ER)	Asked community to provide any comments by March 01, 2018.		Pg. 62
Chippewa of the Thames First Nation				
Date	Activity	Issues raises	Outcome	Doc Location
June 20/17	Letter of notification of project sent from Union Gas via email to Chief L. White-Eye and Kelly Riley	No response received		Pg. 64
July 4/17	Letter received via email with response		Email response from K. McCorkle (Union Gas) on July 5/17 advising that Union Gas would be in contact regarding Archeology monitors and provide a completed environmental report.	Pg. 64
July 14/17	Letter notifying of Information Sessions dates and environmental	Dates of Info sessions:	No community members	Pg. 67

	study information sent to Chief	Aug 1-2 in Kingsville and Woodslee	attended.	
Aug 4/17	Letter received at Union Gas from Chippewa of the Thames dated August 4, 2017.	Advised that a representative was unable to attend information session and requested the information shared. Question if resources would be made available for monitoring	K. McCorkle followed up on August 8 via email to provide the information presented at the Open House. Advised would be in touch regarding Arch monitors.	Pg. 70 Schedule D
Oct 6/17	Letter from Union Gas notifying of Information Sessions dates and environmental study information	Dates of Information Session: Oct 25-26 in Kingsville and Woodslee	No community members attended.	Pg. 75
Nov 14/17	Email and letter received via email	Letter states that they have no concerns the project, based on the information provided by Union Gas. They would like to have monitors participate if an archeological assessment is completed	Union Gas to contact regarding monitors.	Pg. 79
Dec 21/17	Letter from Union Gas notifying of and providing the Environmental Report (ER)	Asked community to provide any comments by March 01, 2018.		Pg. 81
Oneida Nation of the Thames				
Date	Activity	Issues raises	Outcome	Doc Location
June 20/17	Letter of notification of project sent from Union Gas via email to Chief Randall Phillips			Pg. 84
July 9/17	Follow up via email to Chief Randall Phillips			Pg. 84
July 14/17	Letter notifying of Information Sessions dates and environmental study information sent to Chief	Dates of Info sessions: Aug 1-2 in Kingsville and Woodslee	No community members attended.	Pg. 86
Oct 6/17	Letter from Union Gas notifying of Information Sessions dates and environmental study information	Dates of Information Session: Oct 25-26 in Kingsville and Woodslee	No community members attended.	Pg. 88
Nov 9/17	Voicemail left for Chief Phillips regarding email sent.	No response		
Dec 21/17	Letter from Union Gas notifying of and providing the Environmental Report (ER)	Asked community to provide any comments by March 01, 2018.		Pg. 90

4. Supporting Documentation

Schedule A - Kingsville Transmission Reinforcement Project Location map



Schedule B - Letter to Ministry of Energy notifying of Kingsville Project



April 18, 2017

Ms. Michelle Schlag
Senior Advisor Aboriginal Energy Policy
Ministry of Energy
77 Grenville Street, 6th Floor
Toronto, ON M7A 2C1

Dear Ms. Schlag:

Re: Kingsville Expansion Project

Enclosed please find Union's Report to the Ministry of Energy to determine the Indigenous Consultation required for the above noted project.

In the event that you have any questions on the above or would like to discuss in more detail, please do not hesitate to contact me.

Yours truly,

Ken McCorkle

Ken McCorkle
Manager, First Nations and Métis Affairs
Union Gas Limited
50 Keil Drive North
Chatham, ON N7M 5M1
Phone: 519-436-4600 ext. 5002243
Email: kmccorkle@uniongas.com

Union Gas Limited Pipeline Project **Kingsville Expansion Project – Summary for Ministry of Energy**

1. Introduction

This Summary Report has been prepared to provide the Ministry of Energy ("MOE") with an overview of the Kingsville Expansion Project ("Project") to support the preparation of a contact list of indigenous communities that may have an interest in the Project.

1.1 Project Overview

To increase capacity and accommodate additional demand for natural gas in the Leamington and Kingsville area to support the greenhouse industry, Union Gas Limited ("Union") is proposing to construct an up to NPS 20 inch natural gas pipeline approximately 17.0 km in length between Union's existing NPS 20 inch Panhandle Pipeline, with a tie-in between Belle River Road/County Road 27 and French Line Road/County Road 31, proceeding south to a new station near the corner of Graham Side Rd. and Mersea Rd. 3. The project is located entirely within Essex County with a map indicating the proposed location shown in **Figure 1**.

The following co-ordinates define the approximate start points and end points of the project:

	Latitude	Longitude
Panhandle NPS 20 Natural Gas Pipeline – Belle River Road/County Road 27	42.20785	-82.710625
Panhandle NPS 20 Natural Gas Pipeline – French Line Road/County Road 31	42.205863	-82.641766
Transmission Station Mersea Rd. 3	42.062978	-82.693575

2. Regulatory Requirements and Approvals

Ontario Energy Board ("OEB") review and approval is required before this project can proceed. As part of that application, an Environmental Report (ER) will be prepared in accordance with the OEB *Environmental Guidelines for the Location, Construction and Operation of Hydrocarbon Pipelines and Facilities in Ontario (2016)*. The ER for this Project is anticipated to be completed and submitted to the OEB as early as the summer of 2017. Construction of the expansion project is planned to begin as early as Spring/Summer 2019 with an in-service date 6 months after construction start.

Other permits and authorizations for the project will be determined and may be necessary at the Federal, Provincial, and Municipal levels.

3. Environmental Planning Process

Union has retained Stantec to prepare an Environmental Report for the proposed project. The environmental planning process for the Project will be initiated in the spring of 2017, with support provided throughout the process by Stantec's archaeologists, cultural heritage specialists, biologists, and other environmental specialists.

The following provides a general overview of the environmental planning process for the Project:

- **Complete an Environmental Report (ER)**
 - Describe the proposed work necessary for the Project;
 - Complete a Route Evaluation Study
 - Describe the procedures that will be followed during construction of the facilities;
 - Identify potential environmental impacts and recommend measures to minimize those impacts; and
 - Describe the consultation opportunities.
- **Complete all necessary studies and assessments**
 - An Archaeological Assessment will be conducted by a licensed archaeologist in accordance with the Ministry of Tourism, Culture and Sport (MTCS) guidelines to identify known or potential archaeological resources within the Project area and will develop an appropriate mitigation plan if required.
 - A heritage specialist will review the running line for potential cultural heritage landscapes and built heritage resources and will develop an appropriate mitigation plan if required.
 - A trained biologist will review the running line for potential species at risk and determine if any species will be impacted by construction activities and will develop an appropriate mitigation plan if required.
- **Obtain all necessary environmental permits and approvals**
 - Union Gas will obtain permits from the Essex Region Conservation Authority to work within regulated areas.
 - Union Gas will work with all other relevant governing agencies (i.e. the Ministry of Natural Resources and Forestry) to obtain any permit and/or approval should it be necessary.

4. Consultation

Consultation is an important part of the environmental planning process and will include discussions with the relevant federal and provincial agencies and authorities (such as the Essex Region Conservation Authority), municipalities, interested and potentially affected landowners, and interest groups, as well as First Nations and Metis Nations as identified by the MOE.

5. Project Activities

A route evaluation study will be completed to determine the preliminary preferred route for the proposed pipeline. The majority of the running line is expected to be installed using Union standard construction practices include grading the site, digging the trench, installing the welded pipeline in the trench, testing the pipeline, and restoring the area to its original condition. The crossing methods used for the watercourse crossings along the selected route will be determined during detailed design and will be based on site specific conditions and the results of geotechnical investigations.

6. Summary and Conclusion

The purpose of this report is to provide MOE with preliminary information regarding for the Project and acquire a list of Indigenous communities that may be interested in providing feedback during the project planning process. Field work and data collection will be undertaken to determine the potential impacts of this Project during the construction and operation phases. Mitigation measures to manage and minimize these potential effects will be identified and will include proposed monitoring and contingency plans.

Schedule C Letter of Delegation of Authority to Union Gas

Ministry of Energy

77 Grenville Street
6th Floor
Toronto ON M7A 2G1

Tel: (416) 314-2599

Ministère de l'Énergie

77 rue Grenville
6^e étage
Toronto ON M7A 2G1

Tél: (416) 314-2599



Indigenous Energy Policy

VIA EMAIL

June 15, 2017

Ken McCorkle
Manager, First Nations and Métis Affairs
Union Gas Limited
50 Keil Drive North
Chatham, ON N7M 5M1

Re: Kingsville Pipeline Project

Dear Mr. McCorkle:

Thank you for your email dated April 18, 2017, notifying the Ministry of Energy of Union Gas Limited's (Union Gas) intention to apply for Leave to Construct for the Kingsville Expansion Pipeline Project and requesting clarification on Duty to Consult requirements.

I understand that Union Gas is planning the project to accommodate additional demand for natural gas in the Leamington and Kingsville area to support the greenhouse industry. Union Gas is proposing to construct up to NPS 20 inch natural gas pipeline, approximately 18km, in length between Union Gas' existing NPS 20 inch Panhandle Pipeline, with a tie-in between Belle River/County Road 27 and French Line/County Road 31, proceeding south to a new station near the corner of Graham side road and Mersea Rd 3.

The Ministry has reviewed the information provided relative to its current understanding of the interests of First Nation and Métis communities in the area and has determined that it may have the potential to affect First Nation and Métis communities who hold or claim Aboriginal or treaty rights protected under Section 35 of Canada's *Constitution Act* 1902.

As you are aware, the Government of Ontario (the "Crown") has a constitutional duty to consult and accommodate First Nation and Métis communities when Crown project approvals may lead to an appreciable adverse impact on established or asserted Aboriginal or treaty rights. While the legal duty to consult falls on the Crown, the Crown

may delegate the day-to-day, procedural aspects of consultation to project proponents. The Ministry of the Energy is delegating the procedural aspects of consultation to Union Gas through this letter.

Based on the Crown's preliminary assessment of First Nation and Métis community rights and project impacts, the following Aboriginal communities should be consulted on the basis that they have or may have constitutionally protected Aboriginal or treaty rights that may be adversely affected by the Project:

Community	Mailing Address
Aamjiwnaang First Nation	978 Tashmoo Avenue Sarnia, ON N7T 7H5
Bkejwanong (Walpole Island First Nation)	RR3 Walpole Island, ON N8K 4K9
Caldwell First Nation	14 Orange Street Leamington, ON N8H 1P5
Chippewas of the Thames First Nation	RR1 Muncey ON N0L 1Y0
Oneida Nation of the Thames	RR2 Southwold, ON N0L 2G0

This rights-based consultation list is based on information that is subject to change. First Nation and Métis communities may make new rights assertions at any time, and other developments (e.g. the discovery of Aboriginal archaeological sites) can occur that may require additional First Nation and/or Métis communities to be notified and/or consulted. If you become aware of potential rights impacts on communities that are not listed above at any stage of the consultation and approval process, kindly bring this to the attention of the Ministry with any supporting information regarding the claim. The Ministry will then assess whether it is necessary to include the community on the rights-based consultation list above.

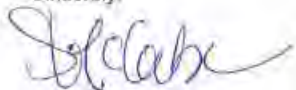
The Ministry relies on consultation conducted by proponents when it assesses the Crown's obligations and directs proponents during the regulatory process. Union Gas's responsibilities for procedural aspects of consultation include:

- Providing the First Nation and Métis communities with timely notice of the project for the purposes of considering possible impacts on their Aboriginal and/or treaty rights;
- Providing First Nation and Métis communities with information about the project including anticipated impacts, and information on project timelines;
- Following up with First Nation and Métis communities to ensure they have received project information and that they are aware of the opportunity to express comments and concerns about the project;
- Explaining the regulatory and approval processes that apply to the project;

- Gathering information about how the project may adversely impact the relevant Aboriginal and/or treaty rights (for example, hunting, fishing) or sites of cultural significance (for example, burial grounds, archaeological sites);
- Considering the comments and concerns raised by First Nation and Métis communities and providing responses;
- Where appropriate, discussing accommodation, including mitigation or other measures to address potential adverse impacts on Aboriginal and/or treaty rights;
- Where appropriate, developing and discussing with the Crown appropriate accommodation measures;
- Taking reasonable steps to foster positive relationships with the First Nation and Métis communities;
- Bearing the reasonable costs associated with these procedural aspects of consultation; and
- Maintaining records of activities in relation to carrying out the delegated procedural aspects of consultation and providing information to the Ministry.

If you have any questions about this letter or require any additional information please contact Michelle Schlag, Senior Advisor at 416-327-7158 or michelle.schlag@ontario.ca

Sincerely,



Shannon McCabe
A/Manager
Indigenous Energy Policy

Schedule D – Information Session handout



Welcome

to the

**Kingsville Transmission Reinforcement
Project**

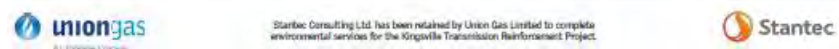
Information Session #1

A Union Gas Pipeline Project



We invite you to view the display boards, speak to members of Union Gas or Stantec, and complete a questionnaire providing your feedback on the alternative corridors.

Please sign up at the front desk to receive future updates.



Project Overview

The proposed pipeline will be in the order of 15-20 km in length depending on the final location of the pipeline, and will be up to 20 inches in diameter. The proposed pipeline will begin at Union Gas' existing 20-inch Panhandle Pipeline between Belle River Road/County Road 27 and French Line Road/County Road 31 in the Town of Lakeshore.

The proposed pipeline will end at a new valve site located at the southwest corner of Concession Road 3 East and Graham Side Road, or at an existing valve site located at the northwest corner of Concession Road 2 East and Graham Side Road, both in the Town of Kingsville.

If approved by the Ontario Energy Board, construction of the proposed expansion project is planned to begin as early as Spring/Summer 2019 with an in-service date six months after construction begins.



Why is Union Gas Undertaking this Project?

Union Gas is undertaking the proposed project to:

- Meet the growing residential, commercial, and industrial market demand for natural gas in the Windsor-Essex, Chatham-Kent, and surrounding areas; and
- Provide natural gas to the fast-growing greenhouse market in Kingsville and Leamington.



Environmental Study Process

Kingsville Transmission Reinforcement Project
 Information Session

The environmental study and subsequent Environmental Report for the project will be completed as per the Ontario Energy Board's (OEB) "Environmental Guidelines for the Location, Construction and Operation of Hydrocarbon Pipelines and Facilities in Ontario (2011)."



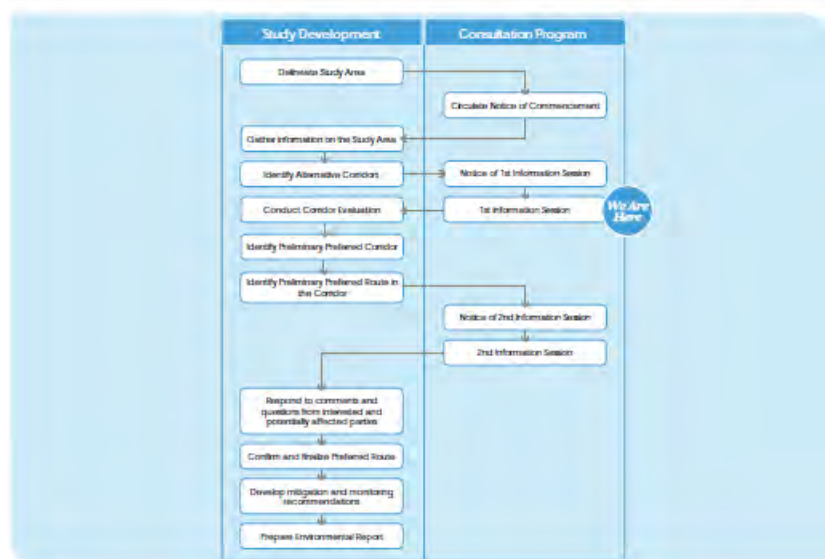
The study will:

- ▶ Undertake consultation to understand the views of interested and potentially affected parties
- ▶ Consult with Indigenous Communities to understand interests and potential impacts
- ▶ Be conducted during the earliest phase of the project
- ▶ Identify potential impacts
- ▶ Develop mitigation and protective measures to avoid or minimize potential impacts
- ▶ Develop an appropriate inspection, monitoring and follow-up program



Environmental Study Process

Kingsville Transmission Reinforcement Project
 Information Session



Kingsville Transmission Reinforcement Project
Information Session

Ontario Energy Board Review and Approval Process

The Ontario Energy Board (OEB) is the body that regulates the natural gas industry in Ontario, in the public interest.

Union Gas plans to submit an application for this project to the OEB. This application will include comprehensive information on the project including:

- ▶ The need for the project
- ▶ Facility alternatives
- ▶ Project costs and economics
- ▶ Pipeline design and construction
- ▶ Environmental mitigation measures
- ▶ Land requirements
- ▶ Consultation with Indigenous Communities

The OEB will then hold a public hearing to review the project.

If after this review the OEB determines that the project is in the public interest it will approve construction of the project.

Additional information about the OEB process can be found on the project newsletter and at:
www.ontarioenergyboard.ca

Submit application Public hearing Approval Construction



Kingsville Transmission Reinforcement Project
Information Session

The Corridor and Route Selection Process

The Preferred Corridor, and the Preferred Route within that corridor, will be selected through a five-step process:

Step 1	Develop Routing Parameters a. Establish a Study Area b. Establish Routing Objectives i. Follow a reasonably direct path between start and end points ii. Avoid sensitive environmental and socio-economic features iii. Use existing linear features iv. Follow existing lot and property lines c. Create an inventory of Environmental and Socio-Economic Constraints and Opportunities
Step 2	Identify Alternative Corridors in the Study Area Identify reasonable and feasible corridors within the Study Area in consideration of the routing objectives and environmental and socio-economic opportunities and constraints.
Step 3	Corridor and Route Evaluation An evaluation of the Alternative Corridors will be conducted based on: a. A quantitative comparative evaluation of impacts to environmental and socio-economic features b. A qualitative comparative evaluation Once complete, a Preliminary Preferred Corridor will be determined. A Preliminary Preferred Route will be identified within that corridor.
Step 4	Input on the Preliminary Preferred Corridor and Route Gather input on the Preliminary Preferred Corridor, and the Preliminary Preferred Route within that corridor.
Step 5	Confirmation of the Preferred Route A Preferred Route will be confirmed following consultation. The location of the Preferred Route may be refined as the project moves forward based on the results of pre-construction field investigations, landowner requests and/or engineering considerations.

We Are Here



Alternative Corridors



Existing Features in the Study Area

Data on existing features has been used to generate alternative corridors.

Environmental and socio-economic features within the study area, relevant to the corridor selection process, are:

- ▶ Residential homes
- ▶ Agricultural facilities
- ▶ Heritage resources
- ▶ Wind energy facilities
- ▶ Existing linear infrastructure
- ▶ Wooded areas



Existing Features along the Alternative Corridors



Access and Land Requirements

After a preferred route is selected, Union Gas will begin discussions with landowners for the appropriate land rights. Union Gas is committed to working with all directly affected landowners in anticipation of negotiating early access agreements in order to gather essential information, including but not limited to land survey data, environmental, archaeological, and property site features, along with acquiring the necessary land rights. These land rights consist of permanent easements where required and temporary land use requirements. The temporary land use areas are only required during construction activities.

Union Gas will ensure that a Land Relations Agent is available during pipeline construction. The Agent will keep all landowners informed of the project progress and assist with any concerns that may arise, as a result of the construction activities.



Agricultural Soils

Union Gas has established and tested measures to preserve the integrity of agricultural soils throughout the construction phase:

- ▶ Topsoil will be stripped from the right-of-way and other work areas and stockpiled along the pipeline right-of-way. A separation between topsoil and subsoil will be maintained.
- ▶ A third-party soils specialist will determine topsoil depth prior to stripping so that the proper depth of topsoil is removed and replaced and will supervise during topsoil stripping.
- ▶ Union Gas will implement a wet soil shutdown protocol to minimize soil structure damage through rutting or compaction due to wet soil conditions on agricultural land.
- ▶ The subsoil on the stripped portion of the right of way will be chisel ploughed or sub-soiled during the cleanup to alleviate compaction. Travel on the right-of-way after chisel ploughing will be minimized.
- ▶ A sampling program for Soybean Cyst Nematodes will be implemented where appropriate.
- ▶ A post-construction cover crop program will be available to landowners.



Maintaining Agricultural Drainage Systems

- ▶ A drainage contractor/consultant will be retained.
- ▶ Landowners will be contacted prior to construction to confirm the location and type of existing drains. Any future drainage plans will also be discussed with the landowner.
- ▶ Tile will be temporarily re-routed where required to ensure proper drainage during construction.
- ▶ Damaged and severed drains will be repaired following construction. After repair and prior to backfilling, landowners will be invited to inspect and approve the repair. Any on-going concerns with tile repair will be addressed by Union Gas.



Project Schedule

Serving more than 400 communities in Ontario, we consider ourselves strong community partners who believe in and are committed to public consultation.

During the planning stages for this project, we have consulted and will continue to consult with local landowners, Indigenous Communities, government agencies and other interested parties that could be impacted by the project.

KEY MILESTONES:



Next Steps

- Summarize and respond to 1st Information Session feedback
- Confirm results of background reviews based on comments received
- Conduct Route Evaluation
- Identify a Preliminary Preferred Route
- Prepare for 2nd Information Session



Correspondence - Aamjwnaang First Nation

You forwarded this message on 09/07/2017 12:23 PM.

From: Ken McCorkle
To: chief@aamjwnaang.ca; Sharilyn Johnston
Cc:
Subject: Kingsville Pipeline Project
Sent: Tue 20/06/2017 8:17 PM

Message | Figure 1 Kingsville Project.docx

Dear Chief Rodgers & Sharilyn:

To increase capacity and accommodate additional demand for natural gas, Union Gas is proposing to construct up to a 20-inch natural gas pipeline. The proposed pipeline will meet the growing residential, commercial, and industrial market demand for natural gas in the Windsor-Essex, Chatham-Kent and surrounding areas.

The proposed pipeline will be approximately 17 km in length and will begin at Union Gas' existing 20-inch Panhandle Pipeline, with a new valve site and tie-in between Belle River Road/County Road 27 and French Line Road/County Road 31 in the Town of Lakeshore, Essex County. The proposed pipeline will end at a new valve site located at the southwest corner of Concession Road 3 East and Graham Side Road, or at an existing valve site located at the northwest corner of Concession Road 2 East and Graham Side Road, both in the Town of Kingsville, Essex County. Please see the attached map of the general area (Figure 1).

A preferred route for the proposed pipeline has not been determined at this time.

As an integral part of this project, Union Gas has hired Stantec Consulting Ltd. to undertake an environmental study of the construction and operation of the proposed pipeline and related facilities. The environmental study will fulfill the requirements of the Ontario Energy Boards' (OEB) *Environmental Guidelines for the Location, Construction and Operation of Hydrocarbon Pipelines and Facilities in Ontario (2016)*.

The environmental study process will include consultation and engagement with landowners, municipalities, agencies, Indigenous Peoples, and other interested parties through notices and mailouts, meetings, and Open Houses, the first of which is being planned for the summer of 2017. A Stantec-authored Environmental Report will accompany the Union Gas application to the OEB, whose review and approval is needed before the project can proceed. If approved, construction could begin as early as Spring/Summer 2019.

If you have questions or comments regarding the project or the environmental study process, please contact:

Ken McCorkle
Manager, Indigenous Affairs
Union Gas Ltd.
Phone: 519-436-4600 Ext.5002243
Cell: 519-365-0584

From: Ken McCorkle
To: chief@aamjwnaang.ca; Sharilyn Johnston
Cc:
Subject: FW: Kingsville Pipeline Project
Sent: Sun 09/07/2017 12:23 PM

Message | Figure 1 Kingsville Project.docx

Hello Chief Rodgers & Sharilyn:

I am following up on the previous email (below) to ask if you require any further information or follow up on this project. Please do not hesitate to contact me if you have any issues or concerns.

Miigwetch,
Ken

Ken McCorkle
Manager, Indigenous Affairs
Union Gas Ltd.
Phone: 519-436-4600 Ext.5002243
Cell: 519-365-0584
Toll Free: 877-293-6215
Fax: 519-436-5392
Email: kmccorkle@uniongas.com
We can't change the past, but we can influence our future

You replied to this message on 10/07/2017 8:49 AM.

From: Chief Rogers <chief@aamjwnaang.ca>
To: Ken McCorkle; Chief Rogers; Sharilyn Johnston
Cc:
Subject: RE: Kingsville Pipeline Project
Sent: Mon 10/07/2017 8:45 AM

Mr. McCorkle:
I will leave this to Sharilyn to follow up with, if needed.
Mii Gwetch
Chief Rogers



July 14th, 2017

Aamjiwnaang First Nation
978 Tashmoo Ave., Sarnia ON N7T 7H5

Attention: Chief Joanne Rogers,

Dear Chief Joanne Rogers,

Reference: Union Gas Pipeline Project – Notification of Information Sessions
Kingsville Transmission Reinforcement Project

To increase capacity and accommodate additional demand for natural gas, Union Gas is proposing to construct a natural gas pipeline in the Leamington and Kingsville areas. The proposed pipeline (up to 20 inches in diameter) will meet the growing residential, commercial, and industrial market demand for natural gas in the Windsor-Essex, Chatham-Kent, and surrounding areas, including the fast-growing greenhouse market.

The proposed pipeline will be approximately 17 km in length and will begin at Union Gas' existing 20-inch Panhandle Pipeline between Belle River Road/County Road 27 and French Line Road/County Road 31 in the Town of Lakeshore, Essex County. The proposed pipeline will end at a new valve site located at the southwest corner of Concession Road 3 East and Graham Side Road, or at an existing valve site located at the northwest corner of Concession Road 2 East and Graham Side Road, both in the Town of Kingsville, Essex County.

As an integral part of this project, Union Gas has hired Stantec Consulting Ltd. to undertake an environmental study of the construction and operation of the proposed pipeline and related facilities. The environmental study will fulfill the requirements of the Ontario Energy Boards' (OEB) *Environmental Guidelines for the Location, Construction and Operation of Hydrocarbon Pipelines and Facilities in Ontario (2016)*.

The environmental study process includes consultation and engagement with landowners, municipalities, agencies, Indigenous communities, and other interested parties through notices, mailouts, meetings, and Information Sessions.

Two Information Sessions are planned to seek feedback on the project in general and the alternative corridors within which a preferred pipeline route will be determined. The Information Sessions will be conducted as drop-in centres, and representatives from both Union Gas and Stantec Consulting Ltd. will be available to answer questions.

The Information Sessions will be held as follows:

Tuesday August 1, 2017
4:00 pm to 8:00 pm
Kingsville Arena
1741 Jasperson Drive
Kingsville, ON

Wednesday August 2, 2017
4:00 pm to 8:00 pm
Libro Community Centre
1925 South Middle Road
Woodslee, ON

A preferred route for the proposed pipeline has not been determined at this time. A route selection process is currently being conducted to evaluate several alternative corridors. Further information sessions are planned later this year once a preferred pipeline route has been determined.

Aamjiwnaang First Nation is invited to attend the Information Sessions and provide comments regarding the proposed project. Specifically, Stantec is seeking information about any adverse impacts that the project may have on constitutionally protected aboriginal or treaty rights and any measures for mitigating those adverse impacts. Stantec is also seeking background environmental and socio-economic information that may be useful in compiling an inventory.

If you cannot attend the Information Sessions but would like to provide feedback or learn more about the project, please contact the undersigned.

Sincerely,

Ken McCorkle

Ken McCorkle
Manager, Indigenous Affairs
Union Gas Limited
50 Keil Drive North
Chatham, ON N7M 5M1
Phone: 519-436-4600 ext. 5002243
Email: kmccorkle@uniongas.com

Attachment: Map of Alternative Corridors

c. Mark Knight, Stantec Consulting Ltd.



July 14th, 2017

Aamjiwnaang First Nation
979 Tashmoo Ave., Sarnia ON N7T 7H6

Attention: Environmental Coordinator Sharilyn Johnston,

Dear Environmental Coordinator Sharilyn Johnston,

Reference: Union Gas Pipeline Project – Notification of Information Sessions
Kingsville Transmission Reinforcement Project

To increase capacity and accommodate additional demand for natural gas, Union Gas is proposing to construct a natural gas pipeline in the Leamington and Kingsville areas. The proposed pipeline (up to 20 inches in diameter) will meet the growing residential, commercial, and industrial market demand for natural gas in the Windsor-Essex, Chatham-Kent, and surrounding areas, including the fast-growing greenhouse market.

The proposed pipeline will be approximately 17 km in length and will begin at Union Gas' existing 20-inch Panhandle Pipeline between Belle River Road/County Road 27 and French Line Road/County Road 31 in the Town of Lakeshore, Essex County. The proposed pipeline will end at a new valve site located at the southwest corner of Concession Road 3 East and Graham Side Road, or at an existing valve site located at the northwest corner of Concession Road 2 East and Graham Side Road, both in the Town of Kingsville, Essex County.

As an integral part of this project, Union Gas has hired Stantec Consulting Ltd. to undertake an environmental study of the construction and operation of the proposed pipeline and related facilities. The environmental study will fulfill the requirements of the Ontario Energy Boards' (OEB) *Environmental Guidelines for the Location, Construction and Operation of Hydrocarbon Pipelines and Facilities in Ontario (2016)*.

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Sincerely,

Ken McCorkle

Ken McCorkle
Manager, Indigenous Affairs
Union Gas Limited
50 Keil Drive North
Chatham, ON N7M 5M1
Phone: 519-436-4600 ext. 5002243
Email: kmccorkle@uniongas.com

Attachment: Map of Alternative Corridors

c. Mark Knight, Stantec Consulting Ltd.



October 6, 2017

Aamjiwnaang First Nation
978 Tashmoo Ave.
Sarnia ON N7T 7H5

Attention: Chief Joanne Rogers

Dear Chief Joanne Rogers,

**Reference: Union Gas Proposed Pipeline Project – Notification of Information Sessions
Kingsville Transmission Reinforcement Project**

To increase capacity and accommodate additional demand for natural gas, Union Gas is proposing to construct a natural gas pipeline in the Lakeshore and Kingsville areas. The proposed pipeline will meet the growing residential, commercial, and industrial market demand for natural gas in the Windsor-Essex, Chatham-Kent, and surrounding areas, including the fast-growing greenhouse market.

A Corridor and Route Selection Process is being conducted to determine the best location for the proposed pipeline. Alternative Corridors were presented during Information Sessions held on August 1st and 2nd, 2017. Feedback on the Alternative Corridors was taken into consideration during a qualitative and quantitative evaluation. The evaluation resulted in the selection of a Preferred Corridor. Subsequently, a Preliminary Preferred Route for the proposed pipeline within the selected Corridor has also been determined.

The proposed pipeline will be up to 20 inches in diameter and 19 km in length. The Preliminary Preferred Route for the proposed pipeline will begin at Union Gas' existing 20-inch Panhandle Pipeline in the Town of Lakeshore, and will travel beside a hydro corridor and Highway 3 between Belle River Road/County Road 27 and Graham Side Road. The proposed pipeline will end at a new valve site located at the intersection of Concession Road 3 East and Graham Side Road in the Town of Kingsville.

As an integral part of this project, Union Gas has hired Stantec Consulting Ltd. to undertake an environmental study of the construction and operation of the proposed pipeline and related facilities. The environmental study will fulfill the requirements of the ON Energy Boards' (OEB) *Environmental Guidelines for the Location, Construction and Operation of Hydrocarbon Pipelines and Facilities in ON (2016)*. The environmental study process includes consultation and engagement with landowners, municipalities, agencies, Indigenous communities, and other interested parties through notices, mailouts, meetings, and Information Sessions.

An Environmental Report, summarizing the results of the environmental study, will accompany Union Gas' application to the OEB, whose review and approval is required before the proposed project can proceed. The Environmental Report for the proposed project is anticipated to be completed and submitted to the OEB as early as Fall 2017. If approved by the OEB, construction of the proposed expansion project is planned to begin as early as Spring/Summer 2019 with an in-service date six months after construction begins.

Information Sessions are planned to seek feedback on the project in general and on the Preliminary Preferred Route. Information on the Corridor and Route Selection process, access and land requirements, pre-construction studies, and construction activities will also be available. The Information Sessions will be conducted as drop-in centres, and representatives from both Union Gas and Stantec Consulting Ltd. will be available to answer any questions you may have.

The Information Sessions will be held on the following two dates:

Wednesday October 25, 2017
4:00 pm to 8:00 pm
Kingsville Arena – Auditorium A
1741 Jasperson Drive
Kingsville, ON

Thursday October 26, 2017
4:00 pm to 8:00 pm
Libro Community Centre
1925 South Middle Road
South Woodlee, ON

Aamjiwnaang First Nation is invited to attend the Information Sessions and provide comments regarding the proposed project. Specifically, Stantec is seeking information about any adverse impacts that the project may have on constitutionally protected aboriginal or treaty rights and any measures for mitigating those adverse impacts. Stantec is also seeking background environmental and socio-economic information that may be useful in compiling an inventory.

If you cannot attend one of the Information Sessions, the detailed design drawings showing the proposed route are available for you to view at: uniongas.com/Kingsville-Reinforcement. Further, if you cannot attend but would like to provide feedback or learn more about the project, please contact the undersigned.

Sincerely,

Ken McCorkle

Ken McCorkle
Manager, Indigenous Affairs
Union Gas Limited
50 Keil Drive North
Chatham, ON N7M 5M1
Phone: 519-436-4600 ext. 5002243
Email: kmccorkle@uniongas.com

Attachment: Notice of Information Sessions

c. Mark Knight, Stantec Consulting Ltd.



October 6, 2017

Aamjiwnaang First Nation
979 Tashmoo Ave.
Sarnia ON N7T 7H6

Attention: Sharilyn Johnston, Environmental Coordinator

Dear Sharilyn Johnston,

**Reference: Union Gas Proposed Pipeline Project – Notification of Information Sessions
Kingsville Transmission Reinforcement Project**

To increase capacity and accommodate additional demand for natural gas, Union Gas is proposing to construct a natural gas pipeline in the Lakeshore and Kingsville areas. The proposed pipeline will meet the growing residential, commercial, and industrial market demand for natural gas in the Windsor-Essex, Chatham-Kent, and surrounding areas, including the fast-growing greenhouse market.

A Corridor and Route Selection Process is being conducted to determine the best location for the proposed pipeline. Alternative Corridors were presented during Information Sessions held on August 1st and 2nd, 2017. Feedback on the Alternative Corridors was taken into consideration during a qualitative and quantitative evaluation. The evaluation resulted in the selection of a Preferred Corridor. Subsequently, a Preliminary Preferred Route for the proposed pipeline within the selected Corridor has also been determined.

The proposed pipeline will be up to 20 inches in diameter and 19 km in length. The Preliminary Preferred Route for the proposed pipeline will begin at Union Gas' existing 20-inch Panhandle Pipeline in the Town of Lakeshore, and will travel beside a hydro corridor and Highway 3 between Belle River Road/County Road 27 and Graham Side Road. The proposed pipeline will end at a new valve site located at the intersection of Concession Road 3 East and Graham Side Road in the Town of Kingsville.

As an integral part of this project, Union Gas has hired Stantec Consulting Ltd. to undertake an environmental study of the construction and operation of the proposed pipeline and related facilities. The environmental study will fulfill the requirements of the ON Energy Boards' (OEB) *Environmental Guidelines for the Location, Construction and Operation of Hydrocarbon Pipelines and Facilities in ON (2016)*. The environmental study process includes consultation and engagement with landowners, municipalities, agencies, Indigenous communities, and other interested parties through notices, mailouts, meetings, and Information Sessions.

An Environmental Report, summarizing the results of the environmental study, will accompany Union Gas' application to the OEB, whose review and approval is required before the proposed project can proceed. The Environmental Report for the proposed project is anticipated to be completed and submitted to the OEB as early as Fall 2017. If approved by the OEB, construction of the proposed expansion project is planned to begin as early as Spring/Summer 2019 with an in-service date six months after construction begins.

Information Sessions are planned to seek feedback on the project in general and on the Preliminary Preferred Route. Information on the Corridor and Route Selection process, access and land requirements, pre-construction studies, and construction activities will also be available. The Information Sessions will be conducted as drop-in centres, and representatives from both Union Gas and Stantec Consulting Ltd. will be available to answer any questions you may have.

The Information Sessions will be held on the following two dates:

Wednesday October 25, 2017	Thursday October 26, 2017
4:00 pm to 8:00 pm	4:00 pm to 8:00 pm
Kingsville Arena - Auditorium A	Libro Community Centre
1741 Jasperson Drive	1925 South Middle Road
Kingsville, ON	South Woodslee, ON

Aamjiwnaang First Nation is invited to attend the Information Sessions and provide comments regarding the proposed project. Specifically, Stantec is seeking information about any adverse impacts that the project may have on constitutionally protected aboriginal or treaty rights and any measures for mitigating those adverse impacts. Stantec is also seeking background environmental and socio-economic information that may be useful in compiling an inventory.

If you cannot attend one of the Information Sessions, the detailed design drawings showing the proposed route are available for you to view at: uniongas.com/Kingsville-Reinforcement. Further, if you cannot attend but would like to provide feedback or learn more about the project, please contact the undersigned.

Sincerely,

Ken McCorkle

Ken McCorkle
Manager, Indigenous Affairs
Union Gas Limited
50 Keil Drive North
Chatham, ON N7M 5M1
Phone: 519-436-4600 ext. 5002243
Email: kmccorkle@uniongas.com

Attachment: Notice of Information Sessions

c. Mark Knight, Stantec Consulting Ltd.

From: Courtney Jackson [<mailto:cjackson@aamjiwnaang.ca>]
Sent: November-07-17 1:22 PM
To: Ken McCorkle
Cc: Christine Rogers
Subject: RE: RE: [External] RE: Bickford Storage Pool

Good afternoon Ken,

I have scheduled Union Gas on December 5, 2017 at 5:00 - 5:30 p.m. at the Band Administration Building (978 Tashmoo Avenue, Sarnia, ON N7T 7H5). Please have a seat in lobby and i will come get you once we're ready. The committee request all presentations prior to meeting for review. Please send me an electronic copy of presentation no later than Wednesday, November 29, 2017 by 3:00 pm.

If you have any questions. please contact me.

Thank you
Courtney Jackson

Courtney Jackson

Environment Worker
Aamjiwnaang First Nation
978 Tashmoo Ave.
Sarnia, ON
N7T 7H5
(519) 336-8410 tel
(519) 336-0382 fax
<https://www.facebook.com/AamjiwnaangEnvironment>

From: Courtney Jackson [<mailto:cjackson@aamjiwnaang.ca>]
Sent: November-23-17 10:21 AM
To: Ken McCorkle
Cc: Christine Rogers
Subject: RE: RE: [External] RE: Bickford Storage Pool

Good Morning Ken,

We have to postpone our meeting that was scheduled on December 5, 2017 to **December 12, 2017**. Are you available to meet with the Environment Committee on December 12 at 5:00 pm?

Thank you,
Courtney

From: Ken McCorkle
To: Courtney Jackson
Cc: Christine Rogers; Lauren Whitwham
Subject: RE: RE: [External] RE: Bickford Storage Pool
Sent: Fri 24/11/2017 10:50 AM

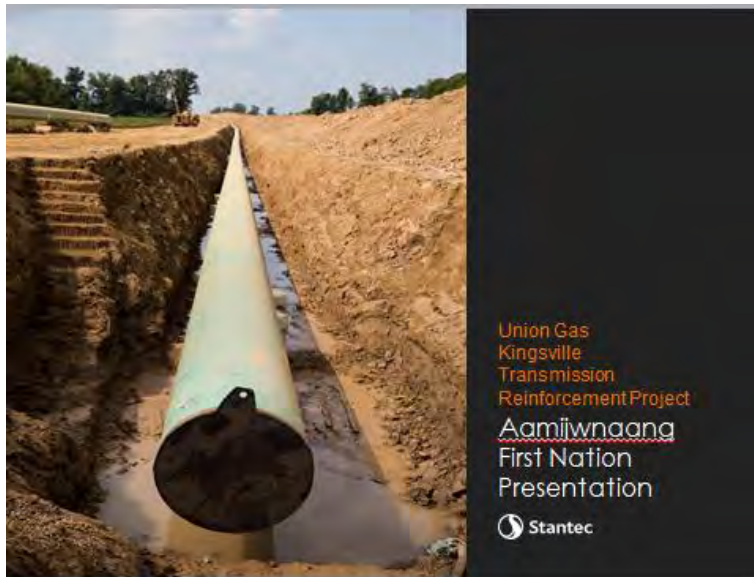
Hello Courtney:
Thank you for the follow up regarding our meeting. Yes the 12th will work for Union. We will present the Bickford Project and the Kingsville project on the 12th. Again thank you for arranging this time.

Miigwetch,
Ken

Ken McCorkle

Manager, Indigenous Affairs
Union Gas Ltd.
Phone: 519-436-4600 Ext.5002243
Cell: 519-365-0584
Toll Free: 877-293-6215
Fax: 519-436-5392
Email: kmccorkle@uniongas.com
We can't change the past, but we can influence our future

Presentation from December 12, 2017 meeting with Consultation Committee



Project Overview

The proposed pipeline will be approximately 19 km in length and will be 20 inches in diameter. The proposed pipeline will begin at Union Gas' existing 20-inch Panhandle Pipeline in the Town of Lakeshore, and will travel beside a hydro corridor and Highway 3 between Belle River Road/County Road 27 and Graham Side Road.

The proposed pipeline will end at a new valve site located at the intersection of Concession Road 3 East and Graham Side Road in the Town of Kingsville.

The Project will:

- Meet the growing residential, commercial, and industrial market demand for natural gas in the Windsor-Essex, Chatham-Kent, and surrounding areas; and
- Provide natural gas to the fast-growing greenhouse market in Kingsville and Leamington



Regulatory Overview

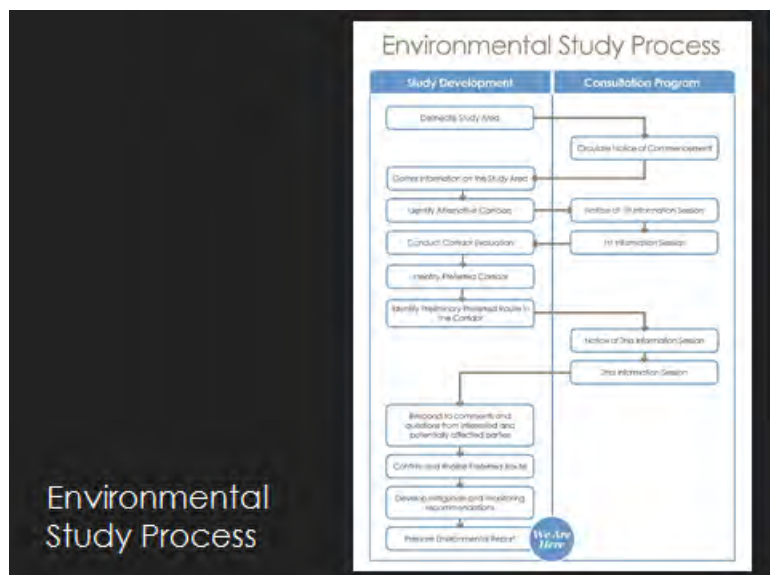
The Ontario Energy Board (OEB) is the body that regulates the natural gas industry in Ontario.

The OEB's *Environmental Guidelines for the Location, Construction, and Operation of Hydrocarbon Pipelines and Facilities in Ontario* (2011) requires an Environmental Study and subsequent Environmental Report to be completed



The Study:

- | | |
|--|---|
| <ul style="list-style-type: none"> • Undertook consultation to understand the view of interested and potentially affected parties • Engaged with Indigenous Communities to understand interests and potential impacts • Took place during the earliest phase of the project | <ul style="list-style-type: none"> • Identified a route for the pipeline • Identified potential impacts of the project • Developed mitigation and protective measures to avoid or minimize potential impacts • Developed an appropriate inspection, monitoring, and follow-up program |
|--|---|



Regulatory Overview

Union Gas has submitted an application for the project to the OEB

The application includes comprehensive information on the project including:

- The need for the Project
- Facility Alternatives
- Project costs and economics
- Pipeline design and construction
- Environmental mitigation measures
- Land requirements
- Consultation with Indigenous Communities

Submit application → Public hearing → Approval → Construction

The OEB will hold a public hearing to review the project. This will include the opportunity for the general public to ask questions, a formal hearing, and a written decision.

If after this review the OEB finds the project is in the public interest, it will approve construction, normally with conditions.

Additional information about the OEB process can be found on the project newsletter at: www.ontarioenergyboard.ca





Permits and Approvals

In addition to the Ontario Energy Board:

Federal Permits:

- *Fisheries Act* (1985) – watercourse crossings, if SAR are found, DFO authorization is required
- *Species at Risk Act* (2002) – Permit required for handling of Protected Fish and Mussels
- *Migratory Bird Convention Act* (1994) – Environment Canada specifications for Breeding Bird nests.

Provincial Permits

- Infrastructure Ontario – Approval of Class EA
- ERCA *Conservation Authority Act* (1990) – Permit for work within Regulated Areas
- MOECC *Ontario Water Resources Act* (1990) – Permit to Take Water and EASR for dewatering
- MNRF *Endangered Species Act* (2007) – Permit and registration for activities impacting protected species
- MTCS *Ontario Heritage Act* (1990) – Stage 1-2 Assessment potentially leading to Stage 3 or 4 as required
- MTCS Built Heritage and Cultural Landscape – Heritage Overview with potential for a Heritage Impact Assessment

Municipal Permits:

- Town of Kingsville Noise By-Law 60-2003 and Noise By-Law Amendment 28-2006
- Town of Lakeshore Noise By-Law 106-2007

Environmental Commitments

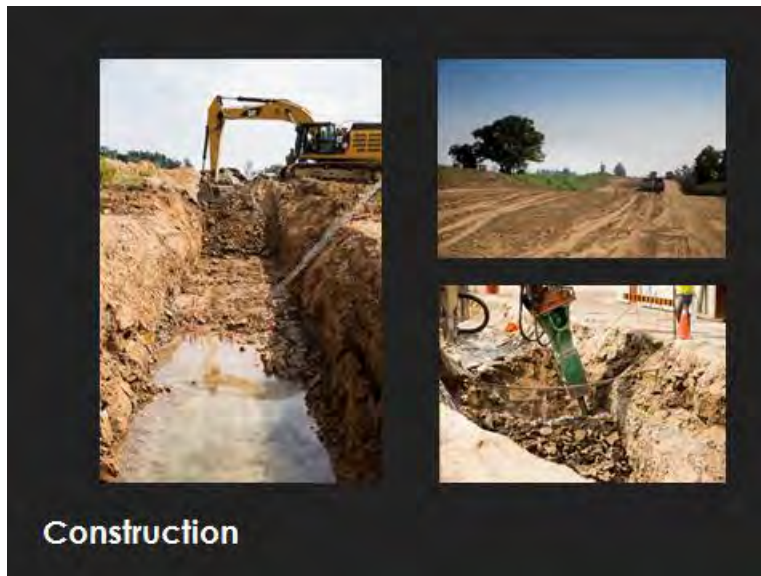
Union Gas will prepare an Environmental Protection Plan to gather all commitments of the Environmental Report and subsequent Permits and Approvals.

An Environmental Inspector will be on site during construction to monitor that commitments are implemented.



KEY MILESTONES:







Monitoring and Rehabilitation

Monitoring and Rehabilitation are in place to make sure that mitigation and protective measures are being implemented to measure the impacts of all activities associated with construction on environmental and socio-economic features.

Monitoring Activities identified for the Project are:

- Exposed soils
- Water wells
- Watercourse Crossings
- Vegetation and Wetlands
- Species at Risk
- Cultural Heritage Resources
- Residents and Businesses
- Municipal Roads



A walking inspection of the pipeline will be done approximately 1 year after construction to identify any areas that require rehabilitation. The rehabilitation measures will be completed as necessary, and followed-up with any additional monitoring required.





December 21, 2017

Aamjiwnaang First Nation
978 Tashmoo Avenue
Sarnia ON N7T 7H5

Attention: Chief Joanne Rogers,

Dear Chief Joanne Rogers,

**Reference: Union Gas Pipeline Project Environmental Report
Kingsville Transmission Reinforcement Project**

To increase capacity and accommodate additional demand for natural gas, Union Gas is proposing to construct a natural gas pipeline in the Lakeshore and Kingsville areas. The proposed pipeline will meet the growing residential, commercial, and industrial market demand for natural gas in the Windsor-Essex, Chatham-Kent, and surrounding areas, including the fast-growing greenhouse market.

The proposed pipeline will be 20 inches in diameter and approximately 19 km in length. The proposed pipeline will begin at a new valve site along Union Gas' existing 20-inch Panhandle Pipeline in the Town of Lakeshore, and will travel beside a hydro corridor and Highway 3 between Belle River Road/County Road 27 and Graham Side Road. The proposed pipeline will end at a new valve site located near the intersection of Concession Road 3 East and Graham Side Road in the Town of Kingsville. If approved by the Ontario Energy Board (OEB), construction is planned to begin as early as Spring/Summer 2019 with an in-service date six months after construction begins. Following the approval of the pipeline, a Permit to take Water (PTTW) may be required from the Ministry of the Environment and Climate Change (MOECC) before construction begins.

Union Gas retained Stantec Consulting Ltd. to undertake an environmental study of the construction and operation of the proposed pipeline and related facilities. The environmental study is intended to fulfill the requirements of the OEB's *Environmental Guidelines for the Location, Construction and Operation of Hydrocarbon Pipelines and Facilities in Ontario*, 6th Edition (2011). An Environmental Report (ER), summarizing the results of the environmental study, is enclosed for your review. If you wish to receive a hardcopy of the ER, please feel free to contact the undersigned.

Please forward any comments you may have regarding the ER and project to the undersigned. Your comments would be appreciated by March 01, 2018.

Sincerely,

Ken McCorkle

Ken McCorkle
Manager, Indigenous Affairs
Union Gas Limited
Phone: 519-436-4600 ext. 5002243
Email: kmccorkle@uniongas.com

Attachment: Kingsville Transmission Reinforcement Project Environmental Report

c. Tony Vadjla, Union Gas; Mark Knight, Stantec Consulting Ltd.

P.O. Box 2001, 50 Keil Drive North, Chatham, ON, N7M 5M1 www.uniongas.com
Union Gas Limited



December 21, 2017

Aamjiwnaang First Nation
978 Tashmoo Avenue
Sarnia ON N7T 7H5

Attention: Ms. Sharilyn Johnston, Environment Coordinator

Dear Ms. Sharilyn Johnston,

Reference: Union Gas Pipeline Project Environmental Report
Kingsville Transmission Reinforcement Project

To increase capacity and accommodate additional demand for natural gas, Union Gas is proposing to construct a natural gas pipeline in the Lakeshore and Kingsville areas. The proposed pipeline will meet the growing residential, commercial, and industrial market demand for natural gas in the Windsor-Essex, Chatham-Kent, and surrounding areas, including the fast-growing greenhouse market.

The proposed pipeline will be 20 inches in diameter and approximately 19 km in length. The proposed pipeline will begin at a new valve site along Union Gas' existing 20-inch Panhandle Pipeline in the Town of Lakeshore, and will travel beside a hydro corridor and Highway 3 between Belle River Road/County Road 27 and Graham Side Road. The proposed pipeline will end at a new valve site located near the intersection of Concession Road 3 East and Graham Side Road in the Town of Kingsville. If approved by the Ontario Energy Board (OEB), construction is planned to begin as early as Spring/Summer 2019 with an in-service date six months after construction begins. Following the approval of the pipeline, a Permit to take Water (PTTW) may be required from the Ministry of the Environment and Climate Change (MOECC) before construction begins.

Union Gas retained Stantec Consulting Ltd. to undertake an environmental study of the construction and operation of the proposed pipeline and related facilities. The environmental study is intended to fulfill the requirements of the OEB's *Environmental Guidelines for the Location, Construction and Operation of Hydrocarbon Pipelines and Facilities in Ontario, 6th Edition* (2011). An Environmental Report (ER), summarizing the results of the environmental study, is enclosed for your review. If you wish to receive a hardcopy of the ER, please feel free to contact the undersigned.

Please forward any comments you may have regarding the ER and project to the undersigned. Your comments would be appreciated by March 01, 2018.

Sincerely,

Ken McCorkle

Ken McCorkle
Manager, Indigenous Affairs
Union Gas Limited
Phone: 519-436-4600 ext. 5002243
Email: kmccorkle@uniongas.com


Attachment: Kingsville Transmission Reinforcement Project Environmental Report

c. Tony Vadjia, Union Gas; Mark Knight, Stantec Consulting Ltd.

P.O. Box 2001, 50 Keil Drive North, Chatham, ON, N7M 5M1 www.uniongas.com
Union Gas Limited

Correspondence - Bkejwanong (Walpole Island) First Nation

From: Ken McCorkle
To: dan.miskokomon@wifn.org; Dean Jacobs; Janet Macbeth
Cc:
Subject: Kingsville Pipeline Project
Sent: Tue 20/06/2017 8:21 PM

Message  Figure 1 Kingsville Project.docx

Dear Chief Miskokomon, Dr Jacobs & Janet:

To increase capacity and accommodate additional demand for natural gas, Union Gas is proposing to construct up to a 20-inch natural gas pipeline. The proposed pipeline will meet the growing residential, commercial, and industrial market demand for natural gas in the Windsor-Essex, Chatham-Kent and surrounding areas.

The proposed pipeline will be approximately 17 km in length and will begin at Union Gas' existing 20-inch Panhandle Pipeline, with a new valve site and tie-in between Belle River Road/County Road 27 and French Line Road/County Road 31 in the Town of Lakeshore, Essex County. The proposed pipeline will end at a new valve site located at the southwest corner of Concession Road 3 East and Graham Side Road, or at an existing valve site located at the northwest corner of Concession Road 2 East and Graham Side Road, both in the Town of Kingsville, Essex County. Please see the attached map of the general area (Figure 1).

A preferred route for the proposed pipeline has not been determined at this time.


As an integral part of this project, Union Gas has hired Stantec Consulting Ltd. to undertake an environmental study of the construction and operation of the proposed pipeline and related facilities. The environmental study will fulfill the requirements of the Ontario Energy Boards' (OEB) *Environmental Guidelines for the Location, Construction and Operation of Hydrocarbon Pipelines and Facilities in Ontario (2016)*.

The environmental study process will include consultation and engagement with landowners, municipalities, agencies, Indigenous Peoples, and other interested parties through notices and mailouts, meetings, and Open Houses, the first of which is being planned for the summer of 2017. A Stantec-authored Environmental Report will accompany the Union Gas application to the OEB, whose review and approval is needed before the project can proceed. If approved, construction could begin as early as Spring/Summer 2019.

If you have questions or comments regarding the project or the environmental study process, please contact:

Ken McCorkle
Manager, Indigenous Affairs
Union Gas Ltd.
Phone: 519-436-4600 Ext.5002243
Cell: 519-365-0584

From: Ken McCorkle
To: dan.miskokomon@wifn.org; Dean Jacobs; Janet Macbeth
Cc:
Subject: FW: Kingsville Pipeline Project
Sent: Sun 09/07/2017 12:22 PM

Message  Figure 1 Kingsville Project.docx

Hello Chief Miskokomon, Dr. Jacobs & Janet:

I am following up on the previous email (below) to ask if you require any further information or follow up on this project. Please do not hesitate to contact me if you have any issues or concerns.

Miigwetch,
Ken

Ken McCorkle
Manager, Indigenous Affairs
Union Gas Ltd.
Phone: 519-436-4600 Ext.5002243
Cell: 519-365-0584
Toll Free: 877-293-6215
Fax: 519-436-5392
Email: kmccorkle@uniongas.com
We can't change the past, but we can influence our future



July 14th, 2017

Walpole Island First Nation
RR # 3 Stn Main, Wallaceburg ON N8A 4K9

Attention: Chief Dan Miskokomon,

Dear Chief Dan Miskokomon,

Reference: Union Gas Pipeline Project – Notification of Information Sessions
Kingsville Transmission Reinforcement Project

To increase capacity and accommodate additional demand for natural gas, Union Gas is proposing to construct a natural gas pipeline in the Leamington and Kingsville areas. The proposed pipeline (up to 20 inches in diameter) will meet the growing residential, commercial, and industrial market demand for natural gas in the Windsor-Essex, Chatham-Kent, and surrounding areas, including the fast-growing greenhouse market.

The proposed pipeline will be approximately 17 km in length and will begin at Union Gas' existing 20-inch Panhandle Pipeline between Belle River Road/County Road 27 and French Line Road/County Road 31 in the Town of Lakeshore, Essex County. The proposed pipeline will end at a new valve site located at the southwest corner of Concession Road 3 East and Graham Side Road, or at an existing valve site located at the northwest corner of Concession Road 2 East and Graham Side Road, both in the Town of Kingsville, Essex County.

As an integral part of this project, Union Gas has hired Stantec Consulting Ltd. to undertake an environmental study of the construction and operation of the proposed pipeline and related facilities. The environmental study will fulfill the requirements of the Ontario Energy Boards' (OEB) *Environmental Guidelines for the Location, Construction and Operation of Hydrocarbon Pipelines and Facilities in Ontario (2016)*.

The environmental study process includes consultation and engagement with landowners, municipalities, agencies, Indigenous communities, and other interested parties through notices, mailouts, meetings, and Information Sessions.

Two Information Sessions are planned to seek feedback on the project in general and the alternative corridors within which a preferred pipeline route will be determined. The Information Sessions will be conducted as drop-in centres, and representatives from both Union Gas and Stantec Consulting Ltd. will be available to answer questions.

The Information Sessions will be held as follows:

Tuesday August 1, 2017
4:00 pm to 8:00 pm
Kingsville Arena
1741 Jasperson Drive
Kingsville, ON

Wednesday August 2, 2017
4:00 pm to 8:00 pm
Libro Community Centre
1925 South Middle Road
Woodslee, ON

A preferred route for the proposed pipeline has not been determined at this time. A route selection process is currently being conducted to evaluate several alternative corridors. Further information sessions are planned later this year once a preferred pipeline route has been determined.

Walpole Island First Nation is invited to attend the Information Sessions and provide comments regarding the proposed project. Specifically, Stantec is seeking information about any adverse impacts that the project may have on constitutionally protected aboriginal or treaty rights and any measures for mitigating those adverse impacts. Stantec is also seeking background environmental and socio-economic information that may be useful in compiling an inventory.

If you cannot attend the Information Sessions but would like to provide feedback or learn more about the project, please contact the undersigned.

Sincerely,

Ken McCorkle

Ken McCorkle
Manager, Indigenous Affairs
Union Gas Limited
50 Keil Drive North
Chatham, ON N7M 5M1
Phone: 519-436-4600 ext. 5002243
Email: kmccorkle@uniongas.com

Attachment: Map of Alternative Corridors

c. Mark Knight, Stantec Consulting Ltd.



July 14th, 2017

**Walpole Island First Nation
RR # 3 Stn Main, Wallaceburg ON N8A 4K9**

Attention: Consultation Manager Dean Jacobs,

Dear Consultation Manager Dean Jacobs,

**Reference: Union Gas Pipeline Project – Notification of Information Sessions
Kingsville Transmission Reinforcement Project**

To increase capacity and accommodate additional demand for natural gas, Union Gas is proposing to construct a natural gas pipeline in the Leamington and Kingsville areas. The proposed pipeline (up to 20 inches in diameter) will meet the growing residential, commercial, and industrial market demand for natural gas in the Windsor-Essex, Chatham-Kent, and surrounding areas, including the fast-growing greenhouse market.

The proposed pipeline will be approximately 17 km in length and will begin at Union Gas' existing 20-inch Panhandle Pipeline between Belle River Road/County Road 27 and French Line Road/County Road 31 in the Town of Lakeshore, Essex County. The proposed pipeline will end at a new valve site located at the southwest corner of Concession Road 3 East and Graham Side Road, or at an existing valve site located at the northwest corner of Concession Road 2 East and Graham Side Road, both in the Town of Kingsville, Essex County.

As an integral part of this project, Union Gas has hired Stantec Consulting Ltd. to undertake an environmental study of the construction and operation of the proposed pipeline and related facilities. The environmental study will fulfill the requirements of the Ontario Energy Boards' (OEB) *Environmental Guidelines for the Location, Construction and Operation of Hydrocarbon Pipelines and Facilities in Ontario (2016)*.

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Sincerely,

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Manager, Indigenous Affairs
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50 Keil Drive North
Chatham, ON N7M 5M1
Phone: 519-436-4600 ext. 5002243
Email: kmccorkle@uniongas.com

Attachment: Map of Alternative Corridors

c. Mark Knight, Stantec Consulting Ltd.



October 6, 2017

Walpole Island First Nation
RR # 3 Stn Main
Wallaceburg ON N8A 4K9

Attention: Chief Dan Miskokomon

Dear Chief Dan Miskokomon,

**Reference: Union Gas Proposed Pipeline Project – Notification of Information Sessions
Kingsville Transmission Reinforcement Project**

To increase capacity and accommodate additional demand for natural gas, Union Gas is proposing to construct a natural gas pipeline in the Lakeshore and Kingsville areas. The proposed pipeline will meet the growing residential, commercial, and industrial market demand for natural gas in the Windsor-Essex, Chatham-Kent, and surrounding areas, including the fast-growing greenhouse market.

A Corridor and Route Selection Process is being conducted to determine the best location for the proposed pipeline. Alternative Corridors were presented during Information Sessions held on August 1st and 2nd, 2017. Feedback on the Alternative Corridors was taken into consideration during a qualitative and quantitative evaluation. The evaluation resulted in the selection of a Preferred Corridor. Subsequently, a Preliminary Preferred Route for the proposed pipeline within the selected Corridor has also been determined.

The proposed pipeline will be up to 20 inches in diameter and 19 km in length. The Preliminary Preferred Route for the proposed pipeline will begin at Union Gas' existing 20-inch Panhandle Pipeline in the Town of Lakeshore, and will travel beside a hydro corridor and Highway 3 between Belle River Road/County Road 27 and Graham Side Road. The proposed pipeline will end at a new valve site located at the intersection of Concession Road 3 East and Graham Side Road in the Town of Kingsville.

As an integral part of this project, Union Gas has hired Stantec Consulting Ltd. to undertake an environmental study of the construction and operation of the proposed pipeline and related facilities. The environmental study will fulfill the requirements of the ON Energy Boards' (OEB) *Environmental Guidelines for the Location, Construction and Operation of Hydrocarbon Pipelines and Facilities in ON (2016)*. The environmental study process includes consultation and engagement with landowners, municipalities, agencies, Indigenous communities, and other interested parties through notices, mailouts, meetings, and Information Sessions.

An Environmental Report, summarizing the results of the environmental study, will accompany Union Gas' application to the OEB, whose review and approval is required before the proposed project can proceed. The Environmental Report for the proposed project is anticipated to be completed and submitted to the OEB as early as Fall 2017. If approved by the OEB, construction of the proposed expansion project is planned to begin as early as Spring/Summer 2019 with an in-service date six months after construction begins.

Information Sessions are planned to seek feedback on the project in general and on the Preliminary Preferred Route. Information on the Corridor and Route Selection process, access and land requirements, pre-construction studies, and construction activities will also be available. The Information Sessions will be conducted as drop-in centres, and representatives from both Union Gas and Stantec Consulting Ltd. will be available to answer any questions you may have.

The Information Sessions will be held on the following two dates:

Wednesday October 25, 2017	Thursday October 26, 2017
4:00 pm to 8:00 pm	4:00 pm to 8:00 pm
Kingsville Arena – Auditorium A	Libro Community Centre
1741 Jasperson Drive	1925 South Middle Road
Kingsville, ON	South Woodslee, ON

Walpole Island First Nation is invited to attend the Information Sessions and provide comments regarding the proposed project. Specifically, Stantec is seeking information about any adverse impacts that the project may have on constitutionally protected aboriginal or treaty rights and any measures for mitigating those adverse impacts. Stantec is also seeking background environmental and socio-economic information that may be useful in compiling an inventory.

If you cannot attend one of the Information Sessions, the detailed design drawings showing the proposed route are available for you to view at: uniongas.com/Kingsville-Reinforcement. Further, if you cannot attend but would like to provide feedback or learn more about the project, please contact the undersigned.

Sincerely,

Ken McCorkle

Ken McCorkle
Manager, Indigenous Affairs
Union Gas Limited
50 Keil Drive North
Chatham, ON N7M 5M1
Phone: 519-436-4600 ext. 5002243
Email: kmccorkle@uniongas.com

Attachment: Notice of Information Sessions

c. Mark Knight, Stantec Consulting Ltd.



October 6, 2017

Walpole Island First Nation
RR # 3 Stn Main
Wallaceburg ON N8A 4K9

Attention: Dean Jacobs, Consultation Manager

Dear Dean Jacobs,

Reference: Union Gas Proposed Pipeline Project – Notification of Information
Sessions
Kingsville Transmission Reinforcement Project

To increase capacity and accommodate additional demand for natural gas, Union Gas is proposing to construct a natural gas pipeline in the Lakeshore and Kingsville areas. The proposed pipeline will meet the growing residential, commercial, and industrial market demand for natural gas in the Windsor-Essex, Chatham-Kent, and surrounding areas, including the fast-growing greenhouse market.

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The proposed pipeline will be up to 20 inches in diameter and 19 km in length. The Preliminary Preferred Route for the proposed pipeline will begin at Union Gas' existing 20-inch Panhandle Pipeline in the Town of Lakeshore, and will travel beside a hydro corridor and Highway 3 between Belle River Road/County Road 27 and Graham Side Road. The proposed pipeline will end at a new valve site located at the intersection of Concession Road 3 East and Graham Side Road in the Town of Kingsville.

As an integral part of this project, Union Gas has hired Stantec Consulting Ltd. to undertake an environmental study of the construction and operation of the proposed pipeline and related facilities. The environmental study will fulfill the requirements of the ON Energy Boards' (OEB) *Environmental Guidelines for the Location, Construction and Operation of Hydrocarbon Pipelines and Facilities in ON (2016)*. The environmental study process includes consultation and engagement with landowners, municipalities, agencies, Indigenous communities, and other interested parties through notices, mailouts, meetings, and Information Sessions.

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Walpole Island First Nation is invited to attend the Information Sessions and provide comments regarding the proposed project. Specifically, Stantec is seeking information about any adverse impacts that the project may have on constitutionally protected aboriginal or treaty rights and any measures for mitigating those adverse impacts. Stantec is also seeking background environmental and socio-economic information that may be useful in compiling an inventory.

If you cannot attend one of the Information Sessions, the detailed design drawings showing the proposed route are available for you to view at: uniongas.com/Kingsville-Reinforcement. Further, if you cannot attend but would like to provide feedback or learn more about the project, please contact the undersigned.

Sincerely,

Ken McCorkle

Ken McCorkle
Manager, Indigenous Affairs
Union Gas Limited
50 Keil Drive North
Chatham, ON N7M 5M1
Phone: 519-436-4600 ext. 5002243
Email: kmccorkle@uniongas.com

Attachment: Notice of Information Sessions

c. Mark Knight, Stantec Consulting Ltd.



October 6, 2017

Walpole Island First Nation
RR # 3 Stn Main
Wallaceburg ON N8A 4K9

Attention: Janet Macbeth, Project Review Coordinator

Dear Janet Macbeth,

**Reference: Union Gas Proposed Pipeline Project – Notification of Information Sessions
Kingsville Transmission Reinforcement Project**

To increase capacity and accommodate additional demand for natural gas, Union Gas is proposing to construct a natural gas pipeline in the Lakeshore and Kingsville areas. The proposed pipeline will meet the growing residential, commercial, and industrial market demand for natural gas in the Windsor-Essex, Chatham-Kent, and surrounding areas, including the fast-growing greenhouse market.

A Corridor and Route Selection Process is being conducted to determine the best location for the proposed pipeline. Alternative Corridors were presented during Information Sessions held on August 1st and 2nd, 2017. Feedback on the Alternative Corridors was taken into consideration during a qualitative and quantitative evaluation. The evaluation resulted in the selection of a Preferred Corridor. Subsequently, a Preliminary Preferred Route for the proposed pipeline within the selected Corridor has also been determined.

The proposed pipeline will be up to 20 inches in diameter and 19 km in length. The Preliminary Preferred Route for the proposed pipeline will begin at Union Gas' existing 20-inch Panhandle Pipeline in the Town of Lakeshore, and will travel beside a hydro corridor and Highway 3 between Belle River Road/County Road 27 and Graham Side Road. The proposed pipeline will end at a new valve site located at the intersection of Concession Road 3 East and Graham Side Road in the Town of Kingsville.

As an integral part of this project, Union Gas has hired Stantec Consulting Ltd. to undertake an environmental study of the construction and operation of the proposed pipeline and related facilities. The environmental study will fulfill the requirements of the ON Energy Boards' (OEB) *Environmental Guidelines for the Location, Construction and Operation of Hydrocarbon Pipelines and Facilities in ON (2016)*. The environmental study process includes consultation and engagement with landowners, municipalities, agencies, Indigenous communities, and other interested parties through notices, mailouts, meetings, and Information Sessions.

An Environmental Report, summarizing the results of the environmental study, will accompany Union Gas' application to the OEB, whose review and approval is required before the proposed project can proceed. The Environmental Report for the proposed project is anticipated to be completed and submitted to the OEB as early as Fall 2017. If approved by the OEB, construction of the proposed expansion project is planned to begin as early as Spring/Summer 2019 with an in-service date six months after construction begins.

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Sincerely,

Ken McCorkle

Ken McCorkle
Manager, Indigenous Affairs
Union Gas Limited
50 Keil Drive North
Chatham, ON N7M 5M1
Phone: 519-436-4600 ext. 5002243
Email: kmccorkle@uniongas.com

Attachment: Notice of Information Sessions

c. Mark Knight, Stantec Consulting Ltd.



December 21, 2017

Bkejwanong First Nation (Walpole Island First Nation)
117 Tahgahoning, R.R. 3
Wallaceburg ON N8A 4K9

Attention: Chief Daniel Miskokomon.

Dear Chief Daniel Miskokomon,

Reference: Union Gas Pipeline Project Environmental Report
Kingsville Transmission Reinforcement Project

To increase capacity and accommodate additional demand for natural gas, Union Gas is proposing to construct a natural gas pipeline in the Lakeshore and Kingsville areas. The proposed pipeline will meet the growing residential, commercial, and industrial market demand for natural gas in the Windsor-Essex, Chatham-Kent, and surrounding areas, including the fast-growing greenhouse market.

The proposed pipeline will be 20 inches in diameter and approximately 19 km in length. The proposed pipeline will begin at a new valve site along Union Gas' existing 20-inch Panhandle Pipeline in the Town of Lakeshore, and will travel beside a hydro corridor and Highway 3 between Belle River Road/County Road 27 and Graham Side Road. The proposed pipeline will end at a new valve site located near the intersection of Concession Road 3 East and Graham Side Road in the Town of Kingsville. If approved by the Ontario Energy Board (OEB), construction is planned to begin as early as Spring/Summer 2019 with an in-service date six months after construction begins. Following the approval of the pipeline, a Permit to take Water (PTTW) may be required from the Ministry of the Environment and Climate Change (MOECC) before construction begins.

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Please forward any comments you may have regarding the ER and project to the undersigned. Your comments would be appreciated by March 01, 2018.

Sincerely,

Ken McCorkle

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Manager, Indigenous Affairs
Union Gas Limited
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Email: kmccorkle@uniongas.com

Attachment: Kingsville Transmission Reinforcement Project Environmental Report

c. Tony Vadija, Union Gas; Mark Knight, Stantec Consulting Ltd.

P.O. Box 2001, 50 Keil Drive North, Chatham, ON, N7M 5M1 www.uniongas.com
Union Gas Limited



December 21, 2017

Bkejwanong First Nation (Walpole Island First Nation)
117 Tahgahoning, R.R. 3
Wallaceburg ON N8A 4K9

Attention: Dr. Dean Jacobs, Consultation Manager

Dear Dr. Dean Jacobs,

**Reference: Union Gas Pipeline Project Environmental Report
Kingsville Transmission Reinforcement Project**

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c. Tony Vadlja, Union Gas; Mark Knight, Stantec Consulting Ltd.

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Union Gas Limited



December 21, 2017

Bkejwanong First Nation (Walpole Island First Nation)
117 Tahgahoning, R.R. 3
Wallaceburg ON N8A 4K9

Attention: Ms. Janet Macbeth, Project Review Coordinator

Dear Ms. Janet Macbeth,

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Kingsville Transmission Reinforcement Project**

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c. Tony Vadlja, Union Gas; Mark Knight, Stantec Consulting Ltd.

P.O. Box 2001, 50 Keil Drive North, Chatham, ON, N7M 5M1 www.uniongas.com
Union Gas Limited

Correspondence - Caldwell First Nation

From: Ken McCorkle
To: Louise Hillier
Cc:
Subject: Kingsville Pipeline Project
Sent: Tue 20/06/2017 8:11 PM

Message Figure 1 Kingsville Project.docx

Dear: Chief Hillier

To increase capacity and accommodate additional demand for natural gas, Union Gas is proposing to construct up to a 20-inch natural gas pipeline. The proposed pipeline will meet the growing residential, commercial, and industrial market demand for natural gas in the Windsor-Essex, Chatham-Kent and surrounding areas.

The proposed pipeline will be approximately 17 km in length and will begin at Union Gas' existing 20-inch Panhandle Pipeline, with a new valve site and tie-in between Belle River Road/County Road 27 and French Line Road/County Road 31 in the Town of Lakeshore, Essex County. The proposed pipeline will end at a new valve site located at the southwest corner of Concession Road 3 East and Graham Side Road, or at an existing valve site located at the northwest corner of Concession Road 2 East and Graham Side Road, both in the Town of Kingsville, Essex County. Please see the attached map of the general area (Figure 1).

A preferred route for the proposed pipeline has not been determined at this time.

As an integral part of this project, Union Gas has hired Stantec Consulting Ltd. to undertake an environmental study of the construction and operation of the proposed pipeline and related facilities. The environmental study will fulfill the requirements of the Ontario Energy Boards' (OEB) *Environmental Guidelines for the Location, Construction and Operation of Hydrocarbon Pipelines and Facilities in Ontario (2016)*.

The environmental study process will include consultation and engagement with landowners, municipalities, agencies, Indigenous Peoples, and other interested parties through notices and mailouts, meetings, and Open Houses, the first of which is being planned for the summer of 2017. A Stantec-authored Environmental Report will accompany the Union Gas application to the OEB, whose review and approval is needed before the project can proceed. If approved, construction could begin as early as Spring/Summer 2019.

If you have questions or comments regarding the project or the environmental study process, please contact:

Ken McCorkle
Manager, Indigenous Affairs
Union Gas Ltd.
Phone: 519-436-4600 Ext.5002243
Cell: 519-365-0584

From: Ken McCorkle
To: Louise Hillier
Cc:
Subject: FW: Kingsville Pipeline Project
Sent: Sun 09/07/2017 12:30 PM

Message Figure 1 Kingsville Project.docx

Hello Chief Hillier:

I am following up on the previous email (below) to ask if you require any further information or follow up on this project. Please do not hesitate to contact me if you have any issues or concerns.

Miigwetch,
Ken

Ken McCorkle
Manager, Indigenous Affairs
Union Gas Ltd.
Phone: 519-436-4600 Ext.5002243
Cell: 519-365-0584
Toll Free: 877-293-6215
Fax: 519-436-5392
Email: kmccorkle@uniongas.com
We can't change the past, but we can influence our future



July 14th, 2017

Caldwell First Nation
14 Orange Street, Leamington ON N8H1P5

Attention: Chief Louise Hillier,

Dear Chief Louise Hillier,

Reference: Union Gas Pipeline Project – Notification of Information Sessions
Kingsville Transmission Reinforcement Project

To increase capacity and accommodate additional demand for natural gas, Union Gas is proposing to construct a natural gas pipeline in the Leamington and Kingsville areas. The proposed pipeline (up to 20 inches in diameter) will meet the growing residential, commercial, and industrial market demand for natural gas in the Windsor-Essex, Chatham-Kent, and surrounding areas, including the fast-growing greenhouse market.

The proposed pipeline will be approximately 17 km in length and will begin at Union Gas' existing 20-inch Panhandle Pipeline between Belle River Road/County Road 27 and French Line Road/County Road 31 in the Town of Lakeshore, Essex County. The proposed pipeline will end at a new valve site located at the southwest corner of Concession Road 3 East and Graham Side Road, or at an existing valve site located at the northwest corner of Concession Road 2 East and Graham Side Road, both in the Town of Kingsville, Essex County.

As an integral part of this project, Union Gas has hired Stantec Consulting Ltd. to undertake an environmental study of the construction and operation of the proposed pipeline and related facilities. The environmental study will fulfill the requirements of the Ontario Energy Boards' (OEB) *Environmental Guidelines for the Location, Construction and Operation of Hydrocarbon Pipelines and Facilities in Ontario (2016)*.

The environmental study process includes consultation and engagement with landowners, municipalities, agencies, Indigenous communities, and other interested parties through notices, mailouts, meetings, and Information Sessions.

Two Information Sessions are planned to seek feedback on the project in general and the alternative corridors within which a preferred pipeline route will be determined. The Information Sessions will be conducted as drop-in centres, and representatives from both Union Gas and Stantec Consulting Ltd. will be available to answer questions.

The Information Sessions will be held as follows:

Tuesday August 1, 2017
4:00 pm to 8:00 pm
Kingsville Arena
1741 Jasperson Drive
Kingsville, ON

Wednesday August 2, 2017
4:00 pm to 8:00 pm
Libro Community Centre
1925 South Middle Road
Woodslee, ON

A preferred route for the proposed pipeline has not been determined at this time. A route selection process is currently being conducted to evaluate several alternative corridors. Further information sessions are planned later this year once a preferred pipeline route has been determined.

Caldwell First Nation is invited to attend the Information Sessions and provide comments regarding the proposed project. Specifically, Stantec is seeking information about any adverse impacts that the project may have on constitutionally protected aboriginal or treaty rights and any measures for mitigating those adverse impacts. Stantec is also seeking background environmental and socio-economic information that may be useful in compiling an inventory.

If you cannot attend the Information Sessions but would like to provide feedback or learn more about the project, please contact the undersigned.

Sincerely,

Ken McCorkle

Ken McCorkle
Manager, Indigenous Affairs
Union Gas Limited
50 Keil Drive North
Chatham, ON N7M 5M1
Phone: 519-436-4600 ext. 5002243
Email: kmccorkle@uniongas.com

Attachment: Map of Alternative Corridors

c. Mark Knight, Stantec Consulting Ltd.



October 6, 2017

Caldwell First Nation
14 Orange Street
Leamington ON N8H1P5

Attention: Chief Louise Hillier

Dear Chief Louise Hillier,

**Reference: Union Gas Proposed Pipeline Project – Notification of Information Sessions
Kingsville Transmission Reinforcement Project**

To increase capacity and accommodate additional demand for natural gas, Union Gas is proposing to construct a natural gas pipeline in the Lakeshore and Kingsville areas. The proposed pipeline will meet the growing residential, commercial, and industrial market demand for natural gas in the Windsor-Essex, Chatham-Kent, and surrounding areas, including the fast-growing greenhouse market.

A Corridor and Route Selection Process is being conducted to determine the best location for the proposed pipeline. Alternative Corridors were presented during Information Sessions held on August 1st and 2nd, 2017. Feedback on the Alternative Corridors was taken into consideration during a qualitative and quantitative evaluation. The evaluation resulted in the selection of a Preferred Corridor. Subsequently, a Preliminary Preferred Route for the proposed pipeline within the selected Corridor has also been determined.

The proposed pipeline will be up to 20 inches in diameter and 19 km in length. The Preliminary Preferred Route for the proposed pipeline will begin at Union Gas' existing 20-inch Panhandle Pipeline in the Town of Lakeshore, and will travel beside a hydro corridor and Highway 3 between Belle River Road/County Road 27 and Graham Side Road. The proposed pipeline will end at a new valve site located at the intersection of Concession Road 3 East and Graham Side Road in the Town of Kingsville.

As an integral part of this project, Union Gas has hired Stantec Consulting Ltd. to undertake an environmental study of the construction and operation of the proposed pipeline and related facilities. The environmental study will fulfill the requirements of the ON Energy Boards' (OEB) *Environmental Guidelines for the Location, Construction and Operation of Hydrocarbon Pipelines and Facilities in ON (2016)*. The environmental study process includes consultation and engagement with landowners, municipalities, agencies, Indigenous communities, and other interested parties through notices, mailouts, meetings, and Information Sessions.

An Environmental Report, summarizing the results of the environmental study, will accompany Union Gas' application to the OEB, whose review and approval is required before the proposed project can proceed. The Environmental Report for the proposed project is anticipated to be completed and submitted to the OEB as early as Fall 2017. If approved by the OEB, construction of the proposed expansion project is planned to begin as early as Spring/Summer 2019 with an in-service date six months after construction begins.

Information Sessions are planned to seek feedback on the project in general and on the Preliminary Preferred Route. Information on the Corridor and Route Selection process, access and land requirements, pre-construction studies, and construction activities will also be available. The Information Sessions will be conducted as drop-in centres, and representatives from both Union Gas and Stantec Consulting Ltd. will be available to answer any questions you may have.

The Information Sessions will be held on the following two dates:

Wednesday October 25, 2017	Thursday October 26, 2017
4:00 pm to 8:00 pm	4:00 pm to 8:00 pm
Kingsville Arena - Auditorium A	Libro Community Centre
1741 Jasperson Drive	1925 South Middle Road
Kingsville, ON	South Woodslee, ON

Caldwell First Nation is invited to attend the Information Sessions and provide comments regarding the proposed project. Specifically, Stantec is seeking information about any adverse impacts that the project may have on constitutionally protected aboriginal or treaty rights and any measures for mitigating those adverse impacts. Stantec is also seeking background environmental and socio-economic information that may be useful in compiling an inventory.

If you cannot attend one of the Information Sessions, the detailed design drawings showing the proposed route are available for you to view at: uniongas.com/Kingsville-Reinforcement. Further, if you cannot attend but would like to provide feedback or learn more about the project, please contact the undersigned.

Sincerely,

Ken McCorkle

Ken McCorkle
Manager, Indigenous Affairs
Union Gas Limited
50 Keil Drive North
Chatham, ON N7M 5M1
Phone: 519-436-4600 ext. 5002243
Email: kmccorkle@uniongas.com

Attachment: Notice of Information Sessions

c. Mark Knight, Stantec Consulting Ltd.



December 21, 2017

Caldwell First Nation
14 Orange Street
Leamington ON N8H 1P5

Attention: Louise Hillier

Dear Louise Hillier,

**Reference: Union Gas Pipeline Project Environmental Report
Kingsville Transmission Reinforcement Project**

To increase capacity and accommodate additional demand for natural gas, Union Gas is proposing to construct a natural gas pipeline in the Lakeshore and Kingsville areas. The proposed pipeline will meet the growing residential, commercial, and industrial market demand for natural gas in the Windsor-Essex, Chatham-Kent, and surrounding areas, including the fast-growing greenhouse market.

The proposed pipeline will be 20 inches in diameter and approximately 19 km in length. The proposed pipeline will begin at a new valve site along Union Gas' existing 20-inch Panhandle Pipeline in the Town of Lakeshore, and will travel beside a hydro corridor and Highway 3 between Belle River Road/County Road 27 and Graham Side Road. The proposed pipeline will end at a new valve site located near the intersection of Concession Road 3 East and Graham Side Road in the Town of Kingsville. If approved by the Ontario Energy Board (OEB), construction is planned to begin as early as Spring/Summer 2019 with an in-service date six months after construction begins. Following the approval of the pipeline, a Permit to take Water (PTTW) may be required from the Ministry of the Environment and Climate Change (MOECC) before construction begins.

Union Gas retained Stantec Consulting Ltd. to undertake an environmental study of the construction and operation of the proposed pipeline and related facilities. The environmental study is intended to fulfill the requirements of the OEB's *Environmental Guidelines for the Location, Construction and Operation of Hydrocarbon Pipelines and Facilities in Ontario, 6th Edition* (2011). An Environmental Report (ER), summarizing the results of the environmental study, is enclosed for your review. If you wish to receive a hardcopy of the ER, please feel free to contact the undersigned.

Please forward any comments you may have regarding the ER and project to the undersigned. Your comments would be appreciated by March 01, 2018.

Sincerely,

Ken McCorkle

Ken McCorkle
Manager, Indigenous Affairs
Union Gas Limited
Phone: 519-436-4600 ext. 5002243
Email: kmccorkle@uniongas.com

Attachment: Kingsville Transmission Reinforcement Project Environmental Report

c. Tony Vadlja, Union Gas; Mark Knight, Stantec Consulting Ltd.

P.O. Box 2001, 50 Keil Drive North, Chatham, ON, N7M 5M1 www.uniongas.com
Union Gas Limited



December 21, 2017

Caldwell First Nation
14 Orange Street
Leamington ON N8H 1P5

Attention: Mr. Allen Deleary, Director of Operations

Dear Mr. Allen Deleary,

**Reference: Union Gas Pipeline Project Environmental Report
Kingsville Transmission Reinforcement Project**

To increase capacity and accommodate additional demand for natural gas, Union Gas is proposing to construct a natural gas pipeline in the Lakeshore and Kingsville areas. The proposed pipeline will meet the growing residential, commercial, and industrial market demand for natural gas in the Windsor-Essex, Chatham-Kent, and surrounding areas, including the fast-growing greenhouse market.

The proposed pipeline will be 20 inches in diameter and approximately 19 km in length. The proposed pipeline will begin at a new valve site along Union Gas' existing 20-inch Panhandle Pipeline in the Town of Lakeshore, and will travel beside a hydro corridor and Highway 3 between Belle River Road/County Road 27 and Graham Side Road. The proposed pipeline will end at a new valve site located near the intersection of Concession Road 3 East and Graham Side Road in the Town of Kingsville. If approved by the Ontario Energy Board (OEB), construction is planned to begin as early as Spring/Summer 2019 with an in-service date six months after construction begins. Following the approval of the pipeline, a Permit to take Water (PTTW) may be required from the Ministry of the Environment and Climate Change (MOECC) before construction begins.

Union Gas retained Stantec Consulting Ltd. to undertake an environmental study of the construction and operation of the proposed pipeline and related facilities. The environmental study is intended to fulfill the requirements of the OEB's *Environmental Guidelines for the Location, Construction and Operation of Hydrocarbon Pipelines and Facilities in Ontario, 6th Edition* (2011). An Environmental Report (ER), summarizing the results of the environmental study, is enclosed for your review. If you wish to receive a hardcopy of the ER, please feel free to contact the undersigned.

Please forward any comments you may have regarding the ER and project to the undersigned. Your comments would be appreciated by March 01, 2018.

Sincerely,

Ken McCorkle

Ken McCorkle
Manager, Indigenous Affairs
Union Gas Limited
Phone: 519-436-4600 ext. 5002243
Email: kmccorkle@uniongas.com

Attachment: Kingsville Transmission Reinforcement Project Environmental Report

c. Tony Vadija, Union Gas; Mark Knight, Stantec Consulting Ltd.

P.O. Box 2001, 50 Keil Drive North, Chatham, ON, N7M 5M1 www.uniongas.com
Union Gas Limited

Correspondence - Chippewa of the Thames First Nation

From: Ken McCorkle
To: Chief LWhite-Eye; kriley@cottfn.com
Cc:
Subject: Kingsville Pipeline Project
Sent: Tue 20/06/2017 8:25 PM

Message: [Figure 1 Kingsville Project.docx](#)

Dear Chief White-eye & Kelly:

To increase capacity and accommodate additional demand for natural gas, Union Gas is proposing to construct up to a 20-inch natural gas pipeline. The proposed pipeline will meet the growing residential, commercial, and industrial market demand for natural gas in the Windsor-Essex, Chatham-Kent and surrounding areas.

The proposed pipeline will be approximately 17 km in length and will begin at Union Gas' existing 20-inch Panhandle Pipeline, with a new valve site and tie-in between Belle River Road/County Road 27 and French Line Road/County Road 31 in the Town of Lakeshore, Essex County. The proposed pipeline will end at a new valve site located at the southwest corner of Concession Road 3 East and Graham Side Road, or at an existing valve site located at the northwest corner of Concession Road 2 East and Graham Side Road, both in the Town of Kingsville, Essex County. Please see the attached map of the general area (Figure 1).

A preferred route for the proposed pipeline has not been determined at this time.

As an integral part of this project, Union Gas has hired Stantec Consulting Ltd. to undertake an environmental study of the construction and operation of the proposed pipeline and related facilities. The environmental study will fulfill the requirements of the Ontario Energy Boards' (OEB) *Environmental Guidelines for the Location, Construction and Operation of Hydrocarbon Pipelines and Facilities in Ontario (2016)*.

The environmental study process will include consultation and engagement with landowners, municipalities, agencies, Indigenous Peoples, and other interested parties through notices and mailouts, meetings, and Open Houses, the first of which is being planned for the summer of 2017. A Stantec-authored Environmental Report will accompany the Union Gas application to the OEB, whose review and approval is needed before the project can proceed. If approved, construction could begin as early as Spring/Summer 2019.

If you have questions or comments regarding the project or the environmental study process, please contact:

Ken McCorkle
Manager, Indigenous Affairs
Union Gas Ltd.
Phone: 519-436-4600 Ext.5002243
Cell: 519-365-0584

From: Fallon Burch [<mailto:fburch@cottfn.com>]
Sent: July-05-17 3:46 PM
To: McCorkle, Ken
Cc: mark.knight@stantec.com
Subject: Kingsville Transmission Reinforcement Project

Ken,

I have attached a response on behalf of Chippewas of the Thames First Nation. If you have any questions, please feel free to contact me.

Thanks,



Fallon Burch
Consultations Coordinator
Chippewas of the Thames First Nation
320 Chippewa Road, Muncey, ON N0L 1Y0
519-289-2662 ext. 213

This email or documents accompanying this email contain information belonging to the Chippewas of the Thames First Nation, which may be confidential and/or legally privileged. The information is intended only for the addressed recipient(s). If you are not an intended recipient, you are hereby notified that any disclosure, copying, distribution, or the taking of any action in reliance on the contents of this email is strictly prohibited. If you have received this email in error, please advise my office and delete it from your system.



CHIPPEWAS OF THE THAMES FIRST NATION

July 5, 2017

Ken McCorkle
Manager, Indigenous Affairs
Union Gas Limited
50 Keil Drive North
Chatham, ON N7M 5M1

RE: Kingsville Transmission Reinforcement Project

Dear Ken,

We have recently received information concerning the above-mentioned project, dated June 23, 2017.

This project does fall within the McKee Treaty area to which Chippewas of the Thames is a signatory, our Traditional Territory and the Big Bear Creek Additions to Reserve Land Selection Area.

We presently do not have any concerns with the information that you have presented to us. However, we do prefer that if there is an archaeology assessment conducted, we would like to be notified and given the opportunity to actively participate by sending First Nations monitors on behalf of this First Nation.

I would also like to request a copy of the completed Environmental Study to review and provide feedback if necessary.

We encourage all project proponents to exercise due diligence in the area of respecting our Aboriginal and Treaty Rights, and any Consultation and Accommodation, and we look forward to future engagement on this topic.

If you have any questions, please contact me directly.

Sincerely,

A handwritten signature in blue ink, appearing to read "Fallon Burch".

Fallon Burch
Consultation Coordinator
Chippewas of the Thames First Nation
(519) 289-2662 Ext. 213

c: Mark Knight, Senior Environmental Planner, Stantec Consulting Ltd.

320 Chippewa Road, Muncey, ON, N0L 1Y0
Ph. 519-289-5555 Fax. 519-289-2230
info@cottfn.com www.cottfn.com

From: Ken McCorkle
 To: Fallon Burch
 Cc: mark.knight@stantec.com; Doug Schmidt
 Subject: RE: Kingsville Transmission Reinforcement Project

Sent: Wed 05/07/2017 3:57 PM

Hello Fallon:

Thank you very much for your response. We will be in contact regarding Archeology monitors and will provide a completed Environmental report. In the event of any changes to the project as we have described we will notify you immediately.

Miigwetch,
 Ken

Ken McCorkle

Manager, Indigenous Affairs
 Union Gas Ltd.

Phone: 519-436-4600 Ext.5002243

Cell: 519-365-0584

Toll Free: 877-293-6215

Fax: 519-436-5392

Email: kmccorkle@uniongas.com

We can't change the past, but we can influence our future



July 14th, 2017

Chippewa of the Thames First Nation
320 Chippewa Rd. Muncey ON N0L 1Y0

Attention: Chief Leslee Whiteye,

Dear Chief Leslee Whiteye,

Reference: Union Gas Pipeline Project – Notification of Information Sessions
Kingsville Transmission Reinforcement Project

To increase capacity and accommodate additional demand for natural gas, Union Gas is proposing to construct a natural gas pipeline in the Leamington and Kingsville areas. The proposed pipeline (up to 20 inches in diameter) will meet the growing residential, commercial, and industrial market demand for natural gas in the Windsor-Essex, Chatham-Kent, and surrounding areas, including the fast-growing greenhouse market.

The proposed pipeline will be approximately 17 km in length and will begin at Union Gas' existing 20-inch Panhandle Pipeline between Belle River Road/County Road 27 and French Line Road/County Road 31 in the Town of Lakeshore, Essex County. The proposed pipeline will end at a new valve site located at the southwest corner of Concession Road 3 East and Graham Side Road, or at an existing valve site located at the northwest corner of Concession Road 2 East and Graham Side Road, both in the Town of Kingsville, Essex County.

As an integral part of this project, Union Gas has hired Stantec Consulting Ltd. to undertake an environmental study of the construction and operation of the proposed pipeline and related facilities. The environmental study will fulfill the requirements of the Ontario Energy Boards' (OEB) *Environmental Guidelines for the Location, Construction and Operation of Hydrocarbon Pipelines and Facilities in Ontario (2016)*.

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Two Information Sessions are planned to seek feedback on the project in general and the alternative corridors within which a preferred pipeline route will be determined. The Information Sessions will be conducted as drop-in centres, and representatives from both Union Gas and Stantec Consulting Ltd. will be available to answer questions.

The Information Sessions will be held as follows:

Tuesday August 1, 2017
4:00 pm to 8:00 pm
Kingsville Arena
1741 Jasperson Drive
Kingsville, ON

Wednesday August 2, 2017
4:00 pm to 8:00 pm
Libro Community Centre
1925 South Middle Road
Woodslee, ON

A preferred route for the proposed pipeline has not been determined at this time. A route selection process is currently being conducted to evaluate several alternative corridors. Further information sessions are planned later this year once a preferred pipeline route has been determined.

Chippewa of the Thames First Nation is invited to attend the Information Sessions and provide comments regarding the proposed project. Specifically, Stantec is seeking information about any adverse impacts that the project may have on constitutionally protected aboriginal or treaty rights and any measures for mitigating those adverse impacts. Stantec is also seeking background environmental and socio-economic information that may be useful in compiling an inventory.

If you cannot attend the Information Sessions but would like to provide feedback or learn more about the project, please contact the undersigned.

Sincerely,

Ken McCorkle

Ken McCorkle
Manager, Indigenous Affairs
Union Gas Limited
50 Keil Drive North
Chatham, ON N7M 5M1
Phone: 519-436-4600 ext. 5002243
Email: kmccorkle@uniongas.com

Attachment: Map of Alternative Corridors

c. Mark Knight, Stantec Consulting Ltd.



July 14th, 2017

Chippewa of the Thames First Nation
320 Chippewa Rd, Muncey ON N0L 1Y0

Attention: Consultation Manager Kelly Riley,

Dear Consultation Manager Kelly Riley,

**Reference: Union Gas Pipeline Project – Notification of Information Sessions
Kingsville Transmission Reinforcement Project**

To increase capacity and accommodate additional demand for natural gas, Union Gas is proposing to construct a natural gas pipeline in the Leamington and Kingsville areas. The proposed pipeline (up to 20 inches in diameter) will meet the growing residential, commercial, and industrial market demand for natural gas in the Windsor-Essex, Chatham-Kent, and surrounding areas, including the fast-growing greenhouse market.

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Chippewa of the Thames First Nation is invited to attend the Information Sessions and provide comments regarding the proposed project. Specifically, Stantec is seeking information about any adverse impacts that the project may have on constitutionally protected aboriginal or treaty rights and any measures for mitigating those adverse impacts. Stantec is also seeking background environmental and socio-economic information that may be useful in compiling an inventory.

If you cannot attend the Information Sessions but would like to provide feedback or learn more about the project, please contact the undersigned.

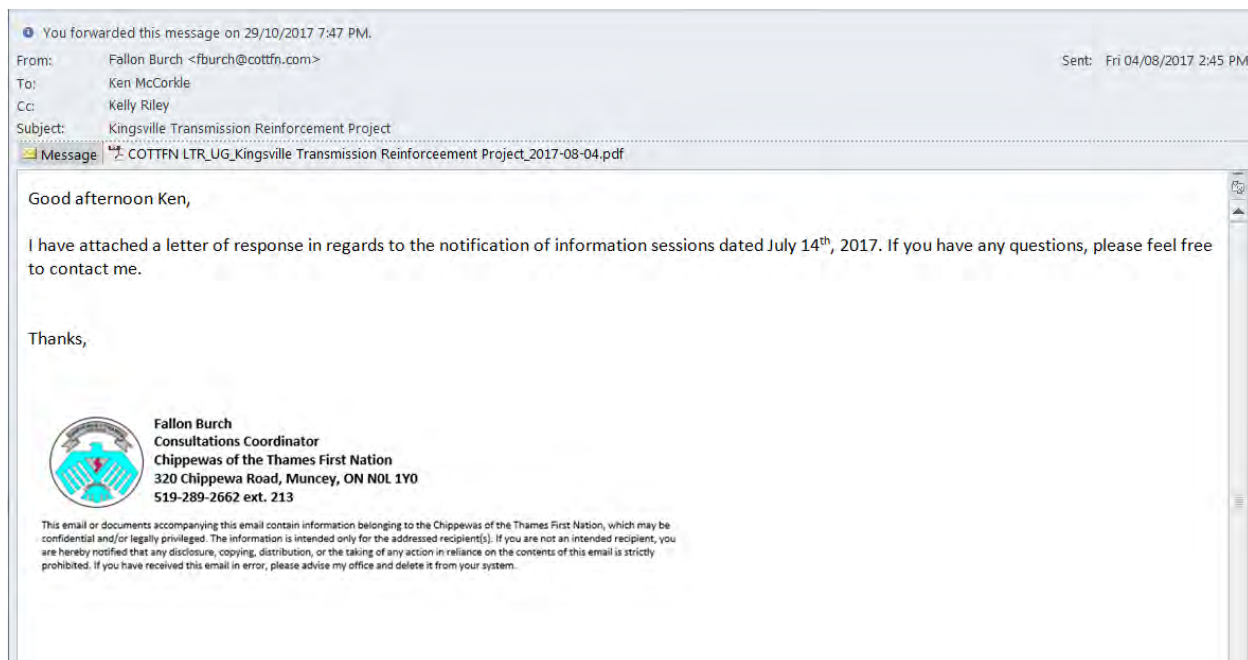
Sincerely,

Ken McCorkle

Ken McCorkle
Manager, Indigenous Affairs
Union Gas Limited
50 Keil Drive North
Chatham, ON N7M 5M1
Phone: 519-436-4600 ext. 5002243
Email: kmccorkle@uniongas.com

Attachment: Map of Alternative Corridors

c. Mark Knight, Stantec Consulting Ltd.





CHIPPEWAS OF THE THAMES FIRST NATION

August 4, 2017

Ken McCordle
Manager, Indigenous Affairs
Union Gas Limited
Keil Drive North
Chatham, ON N7M 5M1

RE: Kingsville Transmission Reinforcement Project
Notification of Information Session

Dear Ken,

We have recently received information concerning the above-mentioned project, dated July 14th 2017.

This project does fall within our McKee Treaty Territory, Traditional Territory as well as our Big Bear Creek additions to reserve land selection area.

Unfortunately, a representative from our First Nation was unable to attend the information sessions that were scheduled for your project. Can you please forward any information that was shared at these sessions? You can forward to my e-mail fburch@cottfn.com.

If there are resources to be made available that would be available to assist us in making any further determination of impacts, then please contact our offices directly at (519) 289-2662 ext. 213, or fburch@cottfn.com.

Thank you for notifying Chippewas of the Thames First Nation. I look forward to continuing this open line of communication.

Sincerely,

A handwritten signature in black ink, appearing to read "Fallon Burch".

Fallon Burch
Consultation Coordinator
Chippewas of the Thames First Nation
(519) 289-2662 Ext. 213

320 Chippewa Road, Muncey, ON, N0L 1Y0
Ph: 519-289-5555 Fax: 519-289-2230
info@cottfn.com www.cottfn.com

From:

Ken McCorkle

To:

Fallon Burch

Cc:

Kelly Riley

Subject:

RE: Kingsville Transmission Reinforcement Project

Sent: Tue 08/08/2017 10:25 AM

Message

160961211_Union-Gas-Boards_OH1_20170720v3.pdf

CommunityRelationBoards.pdf

Hello Fallon:

Please see the two attachments that contain all the information presented at the Open House for the Kingsville project. If you have any questions please let me know.

I will be in touch with you regarding your previous letter stating that if Archeology monitors are required we would follow up with you.

Miigwetch,

Ken

Ken McCorkle

Manager, Indigenous Affairs
Union Gas Ltd.
Phone: 519-436-4600 Ext.5002243
Cell; 519-365-0584
Toll Free: 877-293-6215
Fax; 519-436-5392
Email: kmccorkle@uniongas.com
We can't change the past, but we can influence our future



October 6, 2017

Chippewa of the Thames First Nation
320 Chippewa Rd
Muncey ON N0L 1Y0

Attention: Chief Leslee Whiteye

Dear Chief Leslee Whiteye,

**Reference: Union Gas Proposed Pipeline Project – Notification of Information Sessions
Kingsville Transmission Reinforcement Project**

To increase capacity and accommodate additional demand for natural gas, Union Gas is proposing to construct a natural gas pipeline in the Lakeshore and Kingsville areas. The proposed pipeline will meet the growing residential, commercial, and industrial market demand for natural gas in the Windsor-Essex, Chatham-Kent, and surrounding areas, including the fast-growing greenhouse market.

A Corridor and Route Selection Process is being conducted to determine the best location for the proposed pipeline. Alternative Corridors were presented during Information Sessions held on August 1st and 2nd, 2017. Feedback on the Alternative Corridors was taken into consideration during a qualitative and quantitative evaluation. The evaluation resulted in the selection of a Preferred Corridor. Subsequently, a Preliminary Preferred Route for the proposed pipeline within the selected Corridor has also been determined.

The proposed pipeline will be up to 20 inches in diameter and 19 km in length. The Preliminary Preferred Route for the proposed pipeline will begin at Union Gas' existing 20-inch Panhandle Pipeline in the Town of Lakeshore, and will travel beside a hydro corridor and Highway 3 between Belle River Road/County Road 27 and Graham Side Road. The proposed pipeline will end at a new valve site located at the intersection of Concession Road 3 East and Graham Side Road in the Town of Kingsville.

As an integral part of this project, Union Gas has hired Stantec Consulting Ltd. to undertake an environmental study of the construction and operation of the proposed pipeline and related facilities. The environmental study will fulfill the requirements of the ON Energy Boards' (OEB) *Environmental Guidelines for the Location, Construction and Operation of Hydrocarbon Pipelines and Facilities in ON (2016)*. The environmental study process includes consultation and engagement with landowners, municipalities, agencies, Indigenous communities, and other interested parties through notices, mailouts, meetings, and Information Sessions.

An Environmental Report, summarizing the results of the environmental study, will accompany Union Gas' application to the OEB, whose review and approval is required before the proposed project can proceed. The Environmental Report for the proposed project is anticipated to be completed and submitted to the OEB as early as Fall 2017. If approved by the OEB, construction of the proposed expansion project is planned to begin as early as Spring/Summer 2019 with an in-service date six months after construction begins.

Information Sessions are planned to seek feedback on the project in general and on the Preliminary Preferred Route. Information on the Corridor and Route Selection process, access and land requirements, pre-construction studies, and construction activities will also be available. The Information Sessions will be conducted as drop-in centres, and representatives from both Union Gas and Stantec Consulting Ltd. will be available to answer any questions you may have.

The Information Sessions will be held on the following two dates:

Wednesday October 25, 2017	Thursday October 26, 2017
4:00 pm to 8:00 pm	4:00 pm to 8:00 pm
Kingsville Arena – Auditorium A	Libro Community Centre
1741 Jasperson Drive	1925 South Middle Road
Kingsville, ON	South Woodlee, ON

Chippewa of the Thames First Nation is invited to attend the Information Sessions and provide comments regarding the proposed project. Specifically, Stantec is seeking information about any adverse impacts that the project may have on constitutionally protected aboriginal or treaty rights and any measures for mitigating those adverse impacts. Stantec is also seeking background environmental and socio-economic information that may be useful in compiling an inventory.

If you cannot attend one of the Information Sessions, the detailed design drawings showing the proposed route are available for you to view at: uniongas.com/Kingsville-Reinforcement. Further, if you cannot attend but would like to provide feedback or learn more about the project, please contact the undersigned.

Sincerely,

Ken McCorkle

Ken McCorkle
Manager, Indigenous Affairs
Union Gas Limited
50 Keil Drive North
Chatham, ON N7M 5M1
Phone: 519-436-4600 ext. 5002243
Email: kmccorkle@uniongas.com

Attachment: Notice of Information Sessions

c. Mark Knight, Stantec Consulting Ltd.



October 6, 2017

Chippewa of the Thames First Nation
320 Chippewa Rd
Muncey ON N0L 1Y0

Attention: Fallon Burch, Consultations Coordinator

Dear Fallon Burch,

**Reference: Union Gas Proposed Pipeline Project – Notification of Information Sessions
Kingsville Transmission Reinforcement Project**

To increase capacity and accommodate additional demand for natural gas, Union Gas is proposing to construct a natural gas pipeline in the Lakeshore and Kingsville areas. The proposed pipeline will meet the growing residential, commercial, and industrial market demand for natural gas in the Windsor-Essex, Chatham-Kent, and surrounding areas, including the fast-growing greenhouse market.

A Corridor and Route Selection Process is being conducted to determine the best location for the proposed pipeline. Alternative Corridors were presented during Information Sessions held on August 1st and 2nd, 2017. Feedback on the Alternative Corridors was taken into consideration during a qualitative and quantitative evaluation. The evaluation resulted in the selection of a Preferred Corridor. Subsequently, a Preliminary Preferred Route for the proposed pipeline within the selected Corridor has also been determined.

The proposed pipeline will be up to 20 inches in diameter and 19 km in length. The Preliminary Preferred Route for the proposed pipeline will begin at Union Gas' existing 20-inch Panhandle Pipeline in the Town of Lakeshore, and will travel beside a hydro corridor and Highway 3 between Belle River Road/County Road 27 and Graham Side Road. The proposed pipeline will end at a new valve site located at the intersection of Concession Road 3 East and Graham Side Road in the Town of Kingsville.

As an integral part of this project, Union Gas has hired Stantec Consulting Ltd. to undertake an environmental study of the construction and operation of the proposed pipeline and related facilities. The environmental study will fulfill the requirements of the ON Energy Boards' (OEB) *Environmental Guidelines for the Location, Construction and Operation of Hydrocarbon Pipelines and Facilities in ON (2016)*. The environmental study process includes consultation and engagement with landowners, municipalities, agencies, Indigenous communities, and other interested parties through notices, mailouts, meetings, and Information Sessions.

An Environmental Report, summarizing the results of the environmental study, will accompany Union Gas' application to the OEB, whose review and approval is required before the proposed project can proceed. The Environmental Report for the proposed project is anticipated to be completed and submitted to the OEB as early as Fall 2017. If approved by the OEB, construction of the proposed expansion project is planned to begin as early as Spring/Summer 2019 with an in-service date six months after construction begins.

Information Sessions are planned to seek feedback on the project in general and on the Preliminary Preferred Route. Information on the Corridor and Route Selection process, access and land requirements, pre-construction studies, and construction activities will also be available. The Information Sessions will be conducted as drop-in centres, and representatives from both Union Gas and Stantec Consulting Ltd. will be available to answer any questions you may have.

The Information Sessions will be held on the following two dates:

Wednesday October 25, 2017	Thursday October 26, 2017
4:00 pm to 8:00 pm	4:00 pm to 8:00 pm
Kingsville Arena - Auditorium A	Libro Community Centre
1741 Jasperson Drive	1925 South Middle Road
Kingsville, ON	South Woodslee, ON

Chippewa of the Thames First Nation is invited to attend the Information Sessions and provide comments regarding the proposed project. Specifically, Stantec is seeking information about any adverse impacts that the project may have on constitutionally protected aboriginal or treaty rights and any measures for mitigating those adverse impacts. Stantec is also seeking background environmental and socio-economic information that may be useful in compiling an inventory.

If you cannot attend one of the Information Sessions, the detailed design drawings showing the proposed route are available for you to view at: uniongas.com/Kingsville-Reinforcement. Further, if you cannot attend but would like to provide feedback or learn more about the project, please contact the undersigned.

Sincerely,

Ken McCorkle

Ken McCorkle
Manager, Indigenous Affairs
Union Gas Limited
50 Keil Drive North
Chatham, ON N7M 5M1
Phone: 519-436-4600 ext. 5002243
Email: kmccorkle@uniongas.com

Attachment: Notice of Information Sessions

c. Mark Knight, Stantec Consulting Ltd.



October 6, 2017

Chippewa of the Thames First Nation
320 Chippewa Rd
Muncey ON N0L 1Y0

Attention: Kelly Riley, Consultation Manager

Dear Kelly Riley,

**Reference: Union Gas Proposed Pipeline Project – Notification of Information
Sessions
Kingsville Transmission Reinforcement Project**

To increase capacity and accommodate additional demand for natural gas, Union Gas is proposing to construct a natural gas pipeline in the Lakeshore and Kingsville areas. The proposed pipeline will meet the growing residential, commercial, and industrial market demand for natural gas in the Windsor-Essex, Chatham-Kent, and surrounding areas, including the fast-growing greenhouse market.

A Corridor and Route Selection Process is being conducted to determine the best location for the proposed pipeline. Alternative Corridors were presented during Information Sessions held on August 1st and 2nd, 2017. Feedback on the Alternative Corridors was taken into consideration during a qualitative and quantitative evaluation. The evaluation resulted in the selection of a Preferred Corridor. Subsequently, a Preliminary Preferred Route for the proposed pipeline within the selected Corridor has also been determined.

The proposed pipeline will be up to 20 inches in diameter and 19 km in length. The Preliminary Preferred Route for the proposed pipeline will begin at Union Gas' existing 20-inch Panhandle Pipeline in the Town of Lakeshore, and will travel beside a hydro corridor and Highway 3 between Belle River Road/County Road 27 and Graham Side Road. The proposed pipeline will end at a new valve site located at the intersection of Concession Road 3 East and Graham Side Road in the Town of Kingsville.

As an integral part of this project, Union Gas has hired Stantec Consulting Ltd. to undertake an environmental study of the construction and operation of the proposed pipeline and related facilities. The environmental study will fulfill the requirements of the ON Energy Boards' (OEB) *Environmental Guidelines for the Location, Construction and Operation of Hydrocarbon Pipelines and Facilities in ON (2016)*. The environmental study process includes consultation and engagement with landowners, municipalities, agencies, Indigenous communities, and other interested parties through notices, mailouts, meetings, and Information Sessions.

An Environmental Report, summarizing the results of the environmental study, will accompany Union Gas' application to the OEB, whose review and approval is required before the proposed project can proceed. The Environmental Report for the proposed project is anticipated to be completed and submitted to the OEB as early as Fall 2017. If approved by the OEB, construction of the proposed expansion project is planned to begin as early as Spring/Summer 2019 with an in-service date six months after construction begins.

Information Sessions are planned to seek feedback on the project in general and on the Preliminary Preferred Route. Information on the Corridor and Route Selection process, access and land requirements, pre-construction studies, and construction activities will also be available. The Information Sessions will be conducted as drop-in centres, and representatives from both Union Gas and Stantec Consulting Ltd. will be available to answer any questions you may have.

The Information Sessions will be held on the following two dates:

Wednesday October 25, 2017	Thursday October 26, 2017
4:00 pm to 8:00 pm	4:00 pm to 8:00 pm
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1741 Jasperson Drive	1925 South Middle Road
Kingsville, ON	South Woodslee, ON

Chippewa of the Thames First Nation is invited to attend the Information Sessions and provide comments regarding the proposed project. Specifically, Stantec is seeking information about any adverse impacts that the project may have on constitutionally protected aboriginal or treaty rights and any measures for mitigating those adverse impacts. Stantec is also seeking background environmental and socio-economic information that may be useful in compiling an inventory.

If you cannot attend one of the Information Sessions, the detailed design drawings showing the proposed route are available for you to view at: uniongas.com/Kingsville-Reinforcement. Further, if you cannot attend but would like to provide feedback or learn more about the project, please contact the undersigned.

Sincerely,

Ken McCorkle

Ken McCorkle
Manager, Indigenous Affairs
Union Gas Limited
50 Keil Drive North
Chatham, ON N7M 5M1
Phone: 519-436-4600 ext. 5002243
Email: kmccorkle@uniongas.com

Attachment: Notice of Information Sessions

c. Mark Knight, Stantec Consulting Ltd.

From: Rochelle Smith [<mailto:rsmith@cottfn.com>]
Sent: November-14-17 12:36 PM
To: Ken McCorkle
Cc: mark.knight@stantec.com
Subject: [External] Kingsville Transmission Reinforcement Project

Good afternoon Mr. McCorkle,

I have attached the letter that was mailed out today in response to your letter that was sent out October 6, 2017.

If you have any question, please feel free to contact me.

Kind regards,
Rochelle Smith



Rochelle Smith
A/ Consultation Coordinator
Chippewas of the Thames First Nation
320 Chippewa Road, Muncey, ON N0L 1Y0
519-289-2662 ext. 213

This email or documents accompanying this email contain information belonging to the Chippewas of the Thames First Nation, which may be confidential and/or legally privileged. The information is intended only for the addressed recipient(s). If you are not an intended recipient, you are hereby notified that any disclosure, copying, distribution, or the taking of any action in reliance on the contents of this email is strictly prohibited. If you have received this email in error, please advise my office and delete it from your system.



CHIPPEWAS OF THE THAMES FIRST NATION

November 14, 2017

Ken McCorkle
Manager, Indigenous Affairs
Union Gas Limited
50 Keil Drive North
Chatham, ON N7M 5M1

RE: Kingsville Transmission Reinforcement Project

Mr. McCorkle,

We have received information concerning the abovementioned project, dated October 6, 2017. The proposed work will be conducted within the McKee Treaty (1790) area to which Chippewas of the Thames First Nation (COTTFN) is a signatory. The proposed work is also located within the Big Bear Creek Additions to Reserve (ATR) land selection area, as well as COTTFN Traditional territory.

Unfortunately, a representative from our First Nation was unable to attend the information sessions that were scheduled for your project. Please forward any information that was shared at these sessions to my email rsmith@cottfn.com.

At this time, with the information that has been provided to us, we do not have any concerns with this project. However, if there is an Archaeological Assessment conducted, we require notification and the opportunity to actively participate by sending First Nation monitors on behalf of this First Nation.

We look forward to continuing this open line of communication. To implement meaningful consultation, COTTFN has developed its own protocols — a document and a process that will guide positive working relationships. We would be happy to meet with you to review COTTFN's Consultation Protocols.

Sincerely,

Rochelle Smith
A/Consultation Coordinator
Chippewa of the Thames First Nation
(519) 289-2662 Ext. 213
rsmith@cottfn.com

c: Mark Knight, Senior Environmental Planner, Stantec Consulting Ltd.

320 Chippewa Road, Muncey, ON, N0L 1Y0
Ph. 519-289-5555 Fax. 519-289-2230
info@cottfn.ca www.cottfn.com



December 21, 2017

Chippewas of the Thames First Nation
320 Chippewa Road, R.R. 1
Muncey ON N0L 1Y0

Attention: Chief Henry Myeengun,

Dear Chief Henry Myeengun,

Reference: Union Gas Pipeline Project Environmental Report
Kingsville Transmission Reinforcement Project

To increase capacity and accommodate additional demand for natural gas, Union Gas is proposing to construct a natural gas pipeline in the Lakeshore and Kingsville areas. The proposed pipeline will meet the growing residential, commercial, and industrial market demand for natural gas in the Windsor-Essex, Chatham-Kent, and surrounding areas, including the fast-growing greenhouse market.

The proposed pipeline will be 20 inches in diameter and approximately 19 km in length. The proposed pipeline will begin at a new valve site along Union Gas' existing 20-inch Panhandle Pipeline in the Town of Lakeshore, and will travel beside a hydro corridor and Highway 3 between Belle River Road/County Road 27 and Graham Side Road. The proposed pipeline will end at a new valve site located near the intersection of Concession Road 3 East and Graham Side Road in the Town of Kingsville. If approved by the Ontario Energy Board (OEB), construction is planned to begin as early as Spring/Summer 2019 with an in-service date six months after construction begins. Following the approval of the pipeline, a Permit to take Water (PTTW) may be required from the Ministry of the Environment and Climate Change (MOECC) before construction begins.

Union Gas retained Stantec Consulting Ltd. to undertake an environmental study of the construction and operation of the proposed pipeline and related facilities. The environmental study is intended to fulfill the requirements of the OEB's *Environmental Guidelines for the Location, Construction and Operation of Hydrocarbon Pipelines and Facilities in Ontario, 6th Edition* (2011). An Environmental Report (ER), summarizing the results of the environmental study, is enclosed for your review. If you wish to receive a hardcopy of the ER, please feel free to contact the undersigned.

Please forward any comments you may have regarding the ER and project to the undersigned. Your comments would be appreciated by March 01, 2018.

Sincerely,

Ken McCorkle

Ken McCorkle
Manager, Indigenous Affairs
Union Gas Limited
Phone: 519-436-4600 ext. 5002243
Email: kmccorkle@uniongas.com

Attachment: Kingsville Transmission Reinforcement Project Environmental Report

c. Tony Vadija, Union Gas; Mark Knight, Stantec Consulting Ltd.

P.O. Box 2001, 50 Keil Drive North, Chatham, ON, N7M 5M1 www.uniongas.com
Union Gas Limited



December 21, 2017

Chippewas of the Thames First Nation
320 Chippewa Road, R.R. 1
Muncey ON N0L 1Y0

Attention: Leslee Whiteye

Dear Leslee Whiteye,

Reference: Union Gas Pipeline Project Environmental Report
Kingsville Transmission Reinforcement Project

To increase capacity and accommodate additional demand for natural gas, Union Gas is proposing to construct a natural gas pipeline in the Lakeshore and Kingsville areas. The proposed pipeline will meet the growing residential, commercial, and industrial market demand for natural gas in the Windsor-Essex, Chatham-Kent, and surrounding areas, including the fast-growing greenhouse market.

The proposed pipeline will be 20 inches in diameter and approximately 19 km in length. The proposed pipeline will begin at a new valve site along Union Gas' existing 20-inch Panhandle Pipeline in the Town of Lakeshore, and will travel beside a hydro corridor and Highway 3 between Belle River Road/County Road 27 and Graham Side Road. The proposed pipeline will end at a new valve site located near the intersection of Concession Road 3 East and Graham Side Road in the Town of Kingsville. If approved by the Ontario Energy Board (OEB), construction is planned to begin as early as Spring/Summer 2019 with an in-service date six months after construction begins. Following the approval of the pipeline, a Permit to take Water (PTTW) may be required from the Ministry of the Environment and Climate Change (MOECC) before construction begins.

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Please forward any comments you may have regarding the ER and project to the undersigned. Your comments would be appreciated by March 01, 2018.

Sincerely,

Ken McCorkle

Ken McCorkle
Manager, Indigenous Affairs
Union Gas Limited
Phone: 519-436-4600 ext. 5002243
Email: kmccorkle@uniongas.com

Attachment: Kingsville Transmission Reinforcement Project Environmental Report

c. Tony Vadlaja, Union Gas; Mark Knight, Stantec Consulting Ltd.

P.O. Box 2001, 50 Keil Drive North, Chatham, ON, N7M 5M1 www.uniongas.com
Union Gas Limited



December 21, 2017

Chippewas of the Thames First Nation
320 Chippewa Road, R.R. 1
Muncey ON N0L 1Y0

Attention: Ms. Kelly Riley, Acting Director

Dear Ms. Kelly Riley,

**Reference: Union Gas Pipeline Project Environmental Report
Kingsville Transmission Reinforcement Project**

To increase capacity and accommodate additional demand for natural gas, Union Gas is proposing to construct a natural gas pipeline in the Lakeshore and Kingsville areas. The proposed pipeline will meet the growing residential, commercial, and industrial market demand for natural gas in the Windsor-Essex, Chatham-Kent, and surrounding areas, including the fast-growing greenhouse market.

The proposed pipeline will be 20 inches in diameter and approximately 19 km in length. The proposed pipeline will begin at a new valve site along Union Gas' existing 20-inch Panhandle Pipeline in the Town of Lakeshore, and will travel beside a hydro corridor and Highway 3 between Belle River Road/County Road 27 and Graham Side Road. The proposed pipeline will end at a new valve site located near the intersection of Concession Road 3 East and Graham Side Road in the Town of Kingsville. If approved by the Ontario Energy Board (OEB), construction is planned to begin as early as Spring/Summer 2019 with an in-service date six months after construction begins. Following the approval of the pipeline, a Permit to take Water (PTTW) may be required from the Ministry of the Environment and Climate Change (MOECC) before construction begins.

Union Gas retained Stantec Consulting Ltd. to undertake an environmental study of the construction and operation of the proposed pipeline and related facilities. The environmental study is intended to fulfill the requirements of the OEB's *Environmental Guidelines for the Location, Construction and Operation of Hydrocarbon Pipelines and Facilities in Ontario, 6th Edition (2011)*. An Environmental Report (ER), summarizing the results of the environmental study, is enclosed for your review. If you wish to receive a hardcopy of the ER, please feel free to contact the undersigned.

Please forward any comments you may have regarding the ER and project to the undersigned. Your comments would be appreciated by March 01, 2018.

Sincerely,

Ken McCorkle

Ken McCorkle
Manager, Indigenous Affairs
Union Gas Limited
Phone: 519-436-4600 ext. 5002243
Email: kmccorkle@uniongas.com

Attachment: Kingsville Transmission Reinforcement Project Environmental Report

c. Tony Vadja, Union Gas; Mark Knight, Stantec Consulting Ltd.

P.O. Box 2001, 50 Keil Drive North, Chatham, ON, N7M 5M1 www.uniongas.com
Union Gas Limited



December 21, 2017

Chippewas of the Thames First Nation
77 Anishinaabeg Drive
Muncey ON N0L 1Y0

Attention: Ms. Fallon Burch, Consultation Coordinator

Dear Ms. Fallon Burch,

Reference: Union Gas Pipeline Project Environmental Report
Kingsville Transmission Reinforcement Project

To increase capacity and accommodate additional demand for natural gas, Union Gas is proposing to construct a natural gas pipeline in the Lakeshore and Kingsville areas. The proposed pipeline will meet the growing residential, commercial, and industrial market demand for natural gas in the Windsor-Essex, Chatham-Kent, and surrounding areas, including the fast-growing greenhouse market.

The proposed pipeline will be 20 inches in diameter and approximately 19 km in length. The proposed pipeline will begin at a new valve site along Union Gas' existing 20-inch Panhandle Pipeline in the Town of Lakeshore, and will travel beside a hydro corridor and Highway 3 between Belle River Road/County Road 27 and Graham Side Road. The proposed pipeline will end at a new valve site located near the intersection of Concession Road 3 East and Graham Side Road in the Town of Kingsville. If approved by the Ontario Energy Board (OEB), construction is planned to begin as early as Spring/Summer 2019 with an in-service date six months after construction begins. Following the approval of the pipeline, a Permit to take Water (PTTW) may be required from the Ministry of the Environment and Climate Change (MOECC) before construction begins.

Union Gas retained Stantec Consulting Ltd. to undertake an environmental study of the construction and operation of the proposed pipeline and related facilities. The environmental study is intended to fulfill the requirements of the OEB's *Environmental Guidelines for the Location, Construction and Operation of Hydrocarbon Pipelines and Facilities in Ontario, 6th Edition* (2011). An Environmental Report (ER), summarizing the results of the environmental study, is enclosed for your review. If you wish to receive a hardcopy of the ER, please feel free to contact the undersigned.

Please forward any comments you may have regarding the ER and project to the undersigned. Your comments would be appreciated by March 01, 2018.

Sincerely,

Ken McCorkle

Ken McCorkle
Manager, Indigenous Affairs
Union Gas Limited
Phone: 519-436-4600 ext. 5002243
Email: kmccorkle@uniongas.com

Attachment: Kingsville Transmission Reinforcement Project Environmental Report

c. Tony Vadlja, Union Gas; Mark Knight, Stantec Consulting Ltd.

P.O. Box 2001, 50 Keil Drive North, Chatham, ON, N7M 5M1 www.uniongas.com
Union Gas Limited

Correspondence - Oneida First Nation

From: Ken McCorkle
To: Chief Randall Phillips (randall.phillips@oneida.on.ca)
Cc:
Subject: Kingsville Pipeline Project
Sent: Tue 20/06/2017 8:31 PM

Message Figure 1 Kingsville Project.docx

Dear Chief Phillips:

To increase capacity and accommodate additional demand for natural gas, Union Gas is proposing to construct up to a 20-inch natural gas pipeline. The proposed pipeline will meet the growing residential, commercial, and industrial market demand for natural gas in the Windsor-Essex, Chatham-Kent and surrounding areas.

The proposed pipeline will be approximately 17 km in length and will begin at Union Gas' existing 20-inch Panhandle Pipeline, with a new valve site and tie-in between Belle River Road/County Road 27 and French Line Road/County Road 31 in the Town of Lakeshore, Essex County. The proposed pipeline will end at a new valve site located at the southwest corner of Concession Road 3 East and Graham Side Road, or at an existing valve site located at the northwest corner of Concession Road 2 East and Graham Side Road, both in the Town of Kingsville, Essex County. Please see the attached map of the general area (Figure 1).

A preferred route for the proposed pipeline has not been determined at this time.

As an integral part of this project, Union Gas has hired Stantec Consulting Ltd. to undertake an environmental study of the construction and operation of the proposed pipeline and related facilities. The environmental study will fulfill the requirements of the Ontario Energy Boards' (OEB) *Environmental Guidelines for the Location, Construction and Operation of Hydrocarbon Pipelines and Facilities in Ontario (2016)*.

The environmental study process will include consultation and engagement with landowners, municipalities, agencies, Indigenous Peoples, and other interested parties through notices and mailouts, meetings, and Open Houses, the first of which is being planned for the summer of 2017. A Stantec-authored Environmental Report will accompany the Union Gas application to the OEB, whose review and approval is needed before the project can proceed. If approved, construction could begin as early as Spring/Summer 2019.

If you have questions or comments regarding the project or the environmental study process, please contact:

Ken McCorkle
Manager, Indigenous Affairs
Union Gas Ltd.
Phone: 519-436-4600 Ext.5002243

From: Ken McCorkle
To: Chief Randall Phillips (randall.phillips@oneida.on.ca)
Cc:
Subject: FW: Kingsville Pipeline Project
Sent: Sun 09/07/2017 12:19 PM

Message Figure 1 Kingsville Project.docx

Hello Chief Phillips:

I am following up on the previous email (below) to ask if you require any further information or follow up on this project. Please do not hesitate to contact me if you have any issues or concerns.

Miigwetch,
Ken

Ken McCorkle
Manager, Indigenous Affairs
Union Gas Ltd.
Phone: 519-436-4600 Ext.5002243
Cell: 519-365-0584
Toll Free: 877-293-6215
Fax: 519-436-5392
Email: kmccorkle@uniongas.com
We can't change the past, but we can influence our future



July 14th, 2017

Oneida First Nation
2212 Elm Ave., Southwold ON N0L 2G0

Attention: Chief Randall Phillips,

Dear Chief Randall Phillips,

**Reference: Union Gas Pipeline Project – Notification of Information Sessions
Kingsville Transmission Reinforcement Project**

To increase capacity and accommodate additional demand for natural gas, Union Gas is proposing to construct a natural gas pipeline in the Leamington and Kingsville areas. The proposed pipeline (up to 20 inches in diameter) will meet the growing residential, commercial, and industrial market demand for natural gas in the Windsor-Essex, Chatham-Kent, and surrounding areas, including the fast-growing greenhouse market.

The proposed pipeline will be approximately 17 km in length and will begin at Union Gas' existing 20-inch Panhandle Pipeline between Belle River Road/County Road 27 and French Line Road/County Road 31 in the Town of Lakeshore, Essex County. The proposed pipeline will end at a new valve site located at the southwest corner of Concession Road 3 East and Graham Side Road, or at an existing valve site located at the northwest corner of Concession Road 2 East and Graham Side Road, both in the Town of Kingsville, Essex County.

As an integral part of this project, Union Gas has hired Stantec Consulting Ltd. to undertake an environmental study of the construction and operation of the proposed pipeline and related facilities. The environmental study will fulfill the requirements of the Ontario Energy Boards' (OEB) *Environmental Guidelines for the Location, Construction and Operation of Hydrocarbon Pipelines and Facilities in Ontario (2016)*.

The environmental study process includes consultation and engagement with landowners, municipalities, agencies, Indigenous communities, and other interested parties through notices, mailouts, meetings, and Information Sessions.

Two Information Sessions are planned to seek feedback on the project in general and the alternative corridors within which a preferred pipeline route will be determined. The Information Sessions will be conducted as drop-in centres, and representatives from both Union Gas and Stantec Consulting Ltd. will be available to answer questions.

The Information Sessions will be held as follows:

Tuesday August 1, 2017
4:00 pm to 8:00 pm
Kingsville Arena
1741 Jasperson Drive
Kingsville, ON

Wednesday August 2, 2017
4:00 pm to 8:00 pm
Libro Community Centre
1925 South Middle Road
Woodslee, ON

A preferred route for the proposed pipeline has not been determined at this time. A route selection process is currently being conducted to evaluate several alternative corridors. Further information sessions are planned later this year once a preferred pipeline route has been determined.

Chippewa of the Thames First Nation is invited to attend the Information Sessions and provide comments regarding the proposed project. Specifically, Stantec is seeking information about any adverse impacts that the project may have on constitutionally protected aboriginal or treaty rights and any measures for mitigating those adverse impacts. Stantec is also seeking background environmental and socio-economic information that may be useful in compiling an inventory.

If you cannot attend the Information Sessions but would like to provide feedback or learn more about the project, please contact the undersigned.

Sincerely,

Ken McCorkle

Ken McCorkle
Manager, Indigenous Affairs
Union Gas Limited
50 Keil Drive North
Chatham, ON N7M 5M1
Phone: 519-436-4600 ext. 5002243
Email: kmccorkle@uniongas.com

Attachment: Map of Alternative Corridors

c. Mark Knight, Stantec Consulting Ltd.



October 6, 2017

Oneida First Nation
2212 Elm Ave.
Southwold ON N0L 2G0

Attention: Chief Randall Phillips

Dear Chief Randall Phillips,

**Reference: Union Gas Proposed Pipeline Project – Notification of Information Sessions
Kingsville Transmission Reinforcement Project**

To increase capacity and accommodate additional demand for natural gas, Union Gas is proposing to construct a natural gas pipeline in the Lakeshore and Kingsville areas. The proposed pipeline will meet the growing residential, commercial, and industrial market demand for natural gas in the Windsor-Essex, Chatham-Kent, and surrounding areas, including the fast-growing greenhouse market.

A Corridor and Route Selection Process is being conducted to determine the best location for the proposed pipeline. Alternative Corridors were presented during Information Sessions held on August 1st and 2nd, 2017. Feedback on the Alternative Corridors was taken into consideration during a qualitative and quantitative evaluation. The evaluation resulted in the selection of a Preferred Corridor. Subsequently, a Preliminary Preferred Route for the proposed pipeline within the selected Corridor has also been determined.

The proposed pipeline will be up to 20 inches in diameter and 19 km in length. The Preliminary Preferred Route for the proposed pipeline will begin at Union Gas' existing 20-inch Panhandle Pipeline in the Town of Lakeshore, and will travel beside a hydro corridor and Highway 3 between Belle River Road/County Road 27 and Graham Side Road. The proposed pipeline will end at a new valve site located at the intersection of Concession Road 3 East and Graham Side Road in the Town of Kingsville.

As an integral part of this project, Union Gas has hired Stantec Consulting Ltd. to undertake an environmental study of the construction and operation of the proposed pipeline and related facilities. The environmental study will fulfill the requirements of the ON Energy Boards' (OEB) *Environmental Guidelines for the Location, Construction and Operation of Hydrocarbon Pipelines and Facilities in ON (2016)*. The environmental study process includes consultation and engagement with landowners, municipalities, agencies, Indigenous communities, and other interested parties through notices, mailouts, meetings, and Information Sessions.

An Environmental Report, summarizing the results of the environmental study, will accompany Union Gas' application to the OEB, whose review and approval is required before the proposed project can proceed. The Environmental Report for the proposed project is anticipated to be completed and submitted to the OEB as early as Fall 2017. If approved by the OEB, construction of the proposed expansion project is planned to begin as early as Spring/Summer 2019 with an in-service date six months after construction begins.

Information Sessions are planned to seek feedback on the project in general and on the Preliminary Preferred Route. Information on the Corridor and Route Selection process, access and land requirements, pre-construction studies, and construction activities will also be available. The Information Sessions will be conducted as drop-in centres, and representatives from both Union Gas and Stantec Consulting Ltd. will be available to answer any questions you may have.

The Information Sessions will be held on the following two dates:

Wednesday October 25, 2017	Thursday October 26, 2017
4:00 pm to 8:00 pm	4:00 pm to 8:00 pm
Kingsville Arena – Auditorium A	Libro Community Centre
1741 Jasperson Drive	1925 South Middle Road
Kingsville, ON	South Woodslee, ON

Oneida First Nation is invited to attend the Information Sessions and provide comments regarding the proposed project. Specifically, Stantec is seeking information about any adverse impacts that the project may have on constitutionally protected aboriginal or treaty rights and any measures for mitigating those adverse impacts. Stantec is also seeking background environmental and socio-economic information that may be useful in compiling an inventory.

If you cannot attend one of the Information Sessions, the detailed design drawings showing the proposed route are available for you to view at: uniongas.com/Kingsville-Reinforcement. Further, if you cannot attend but would like to provide feedback or learn more about the project, please contact the undersigned.

Sincerely,

Ken McCorkle

Ken McCorkle
Manager, Indigenous Affairs
Union Gas Limited
50 Keil Drive North
Chatham, ON N7M 5M1
Phone: 519-436-4600 ext. 5002243
Email: kmccorkle@uniongas.com

Attachment: Notice of Information Sessions

c. Mark Knight, Stantec Consulting Ltd.



December 21, 2017

Oneida Nation of the Thames ONYOTA'A:KA
2212 Elm Avenue
Southwold ON N0L 2G0

Attention: Chief Randall Phillips,

Dear Chief Randall Phillips,

**Reference: Union Gas Pipeline Project Environmental Report
Kingsville Transmission Reinforcement Project**

To increase capacity and accommodate additional demand for natural gas, Union Gas is proposing to construct a natural gas pipeline in the Lakeshore and Kingsville areas. The proposed pipeline will meet the growing residential, commercial, and industrial market demand for natural gas in the Windsor-Essex, Chatham-Kent, and surrounding areas, including the fast-growing greenhouse market.

The proposed pipeline will be 20 inches in diameter and approximately 19 km in length. The proposed pipeline will begin at a new valve site along Union Gas' existing 20-inch Panhandle Pipeline in the Town of Lakeshore, and will travel beside a hydro corridor and Highway 3 between Belle River Road/County Road 27 and Graham Side Road. The proposed pipeline will end at a new valve site located near the intersection of Concession Road 3 East and Graham Side Road in the Town of Kingsville. If approved by the Ontario Energy Board (OEB), construction is planned to begin as early as Spring/Summer 2019 with an in-service date six months after construction begins. Following the approval of the pipeline, a Permit to take Water (PTTW) may be required from the Ministry of the Environment and Climate Change (MOECC) before construction begins.

Union Gas retained Stantec Consulting Ltd. to undertake an environmental study of the construction and operation of the proposed pipeline and related facilities. The environmental study is intended to fulfill the requirements of the OEB's *Environmental Guidelines for the Location, Construction and Operation of Hydrocarbon Pipelines and Facilities in Ontario, 6th Edition* (2011). An Environmental Report (ER), summarizing the results of the environmental study, is enclosed for your review. If you wish to receive a hardcopy of the ER, please feel free to contact the undersigned.

Please forward any comments you may have regarding the ER and project to the undersigned. Your comments would be appreciated by March 01, 2018.

Sincerely,

Ken McCorkle

Ken McCorkle
Manager, Indigenous Affairs
Union Gas Limited
Phone: 519-436-4600 ext. 5002243
Email: kmccorkle@uniongas.com

Attachment: Kingsville Transmission Reinforcement Project Environmental Report

c. Tony Vadlja, Union Gas; Mark Knight, Stantec Consulting Ltd.

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MOE's Review and Confirmation

TO BE FILED WHEN RECEIVED