uniongas
A Spectra Energy Company

October 11, 2016

BY COURIER & RESS

Ms. Kirsten Walli
Board Secretary
Ontario Energy Board
Suite 2700, 2300 Yonge Street
Toronto, Ontario
M4P 1E4

Dear Ms. Walli:

RE: Union Gas Limited ("Union") - EB-2016-0186 Panhandle Reinforcement Project
Updated Interrogatory Responses

Please find attached Union's updated responses to the interrogatories received in the above proceeding.

Specifically, Union has included updates to:

- Exhibit B.LPMA.17 Attachment 1, plus related updates to Exhibit B. Staff 4; and
- Exhibit B.FRPO 9c),

as presented in Union's EB-2016-0186 Technical Conference on October 4, 2016.

The updated interrogatories will be filed in the RESS and copies sent to the Board.

If you have any questions with respect to this submission please contact me at (519) 436-5473.

Yours truly,

[original signed by]

Karen Hockin
Manager, Regulatory Initiatives

Encl.

c.c.: C. Keizer, Torys
EB-2016-0186 Intervenors

uniongas
A Spectra Energy Company

September 19, 2016

BY COURIER & RESS

Ms. Kirsten Walli
Board Secretary
Ontario Energy Board
Suite 2700, 2300 Yonge Street
Toronto, Ontario
M4P 1E4

Dear Ms. Walli:

RE: Union Gas Limited ("Union") - EB-2016-0186 Panhandle Reinforcement Project Interrogatory Responses

Please find attached Union's responses to the interrogatories received in the above-noted proceeding. These were filed in RESS and copies were sent to the Board.

With respect to the response to Exhibit B.CAEPLA-PLC.5, Union is filing a redacted version of the letter sent to CAEPLA (dated July 19, 2016). An un-redacted form of this response is being filed in confidence with the Board. In addition, a live excel spreadsheet as requested at Exhibit B.SEC.5 has been provided to the requesting party via email, copying the Board. Other parties who wish to receive a copy of the excel document can contact Union directly.

Union would also like to take this opportunity to reiterate the importance of the timing of the Board's decision in this proceeding. Given there is a lack of available firm capacity on the Panhandle System to serve customers immediate and forecasted demands for natural gas service Union respectfully requests the Board issue its approval no later than mid-March, 2017. Not only will this timing facilitate efficient project development but it will also allow Union to meet it proposed November 1, 2017 in-service date.

Further, should this application proceed to an oral hearing, Union respectfully requests the Board hold the hearing in the Project's market area (i.e., Leamington, Windsor or Chatham). Holding the oral hearing in the Project market area would make it easier for stakeholders directly affected by the Project to more actively participate and would be consistent with the Board's efforts to encourage stakeholder engagement.

P.O. Box 2001, 50 Keil Drive North, Chatham, ON, N7M 5M1 www.uniongas.com
Union Gas Limited

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,

Karen Hockin
Manager, Regulatory Initiatives

Encl.

c.c.: C. Keizer, Torys
EB-2016-0186 Intervenors

UNION GAS LIMITED

Answer to Interrogatory from
Board Staff

Reference: Exhibit A, Tab 3, p.4, lines 12-14

The Application by Union is brought in response to the immediate need and forecasted market demands and lack of available firm capacity on the Panhandle System.

a) When did Union determine that it needs to reinforce the Panhandle System in order to meet the additional market demand?

Response:

a) Prior to and at the time of the Leamington Expansion Projects (EB-2012-0431 and EB-2016-0013), Union had identified the need for reinforcement of the upstream portion of the Panhandle System to meet continued growth. Both the timing and need were finalized once the Expression of Interest for EB-2016-0013 closed on August 21, 2015, however, the scope of the facilities (size and length) was determined in late 2015.

UNION GAS LIMITED

Answer to Interrogatory from
Board Staff

Reference: Exhibit A, Tab 3, p. 5-6

Union has referred to the government's Cap and Trade Program and the introduction of the 5 year Climate Change Action Plan (CCAP). Union notes that the details of the CCAP appear to include putting restrictions on the use of natural gas in Ontario in the next 15 to 35 years.

a) Has Union contacted its large and commercial customers that have requested additional capacity on the Panhandle System after the government's introduction of the CCAP?

b) Have these large customers expressed any uncertainty as a result of the introduction of the CCAP?

c) Have any of the customers revised their natural gas needs or expansion plans as a result of the CCAP? Please provide a detailed response.

d) How are the greenhouse operators going to be impacted as a result of the CCAP? Does Union expect a reduction in demand from greenhouse operators as a result of the CCAP in the next 10 to 15 years?

Response:

a) Union continues to have discussions with customers as to the impact of the Cap and Trade program and the Climate Change Action Plan ("CCAP"). Union has had customer meetings for all large industrial and commercial customers where CCAP was discussed. Customers were provided the financial impacts expected based on the required actions that the utility has to take to implement this program. These meetings included the customers who requested incremental firm capacity on the Panhandle System. The presentations from those meetings can be found below.

https://www.uniongas.com/~/media/business/communication-centre/training/May%202016%20Large%20Industrial%20Update/Cap_and_Trade.pdf?la=en

https://www.uniongas.com/~/media/business/communication-centre/training/June%202016%20Customer%20Meeting%20Presentations/Cap%20and%20Trade.pdf?la=en

b) Some customers have expressed uncertainty about the CCAP. Union has communicated the expected impact to their natural gas costs. However, in spite of the uncertainty surrounding CCAP and incremental costs associated with Cap and Trade, customers are requesting more firm service and see the economic value of natural gas.

c) Some customers have indicated a revision to their natural gas needs or expansion plans as a result of Cap and Trade and the CCAP. None of the items below were in Union's forecast, and none of these impact the Panhandle System. One customer is in Northern Ontario and the others are all in Sarnia:

- Customer 1 indicated they would not have invested in another Ontario plant had they known about Cap and Trade and the additional cost of feedstock. Additional capacity that was being considered is no longer being considered.
- Customer 2 has postponed on site co-generation.
- Customer 3 had postponed on site co-generation.
- Customer 4 has plant viability concerns post 2019 and Cap and Trade does not help.
- Customer 5 has put DSM projects on hold awaiting CCAP details.
- Customer 6 put on hold micro turbine projects to generate electricity for electric vehicles ("EV") charging stations.
- Customer 7 wants to expand in Ontario but high electricity prices are a barrier and believe costs will get higher with Cap and Trade and CCAP.

d) The CCAP has identified programs that target the greenhouse sector and should customers avail themselves of these programs, there is an expected reduction in GHG emissions for those customers. The specific details as to what these programs provide are still being developed.

However, the greenhouse sector continues to grow and request additional natural gas as a result of more acreage being developed by greenhouse operators. In the Ontario Greenhouse Vegetable Growers letter of support (Exhibit A, Tab 5, Schedule 2, p.5) for the Panhandle Reinforcement Project, the association states: *"We expect this growth will continue into the future 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. In order for this growth and development to be realized sufficient access to natural gas infrastructure will be required."*

Please see the response at Exhibit B.Staff.4 c).

UNION GAS LIMITED

Answer to Interrogatory from
Board Staff

Reference: Application Cover Letter, June 10, 2016, p.2, Paragraph 3; Exhibit A, Tab 3, p. 7, lines 13-18; Exhibit A, Tab 6, p. 1-6

Union expressed concerns over the significant uncertainty as a result of the introduction of the CCAP.

a) What other short term alternatives has Union considered compared to making significant investments in capacity enhancements that may not be required in the future? Please provide a detailed response.

b) If natural gas demand was to decline significantly after 2030 as a result of changes under the Province's CCAP, who would assume the risk of decline in capacity on the Panhandle System?

c) Under what conditions of deteriorating demand would Union's proposed asset fail to be used and useful?

d) Please provide in a matrix format a comparative assessment of all alternatives considered. For each alternative provide: incremental capacity, cost, in-service date, and any other assessment criteria used in the evaluation. Please include the short-term alternatives described in Union's response to the interrogatory #3 a).

Response:

a) As with any proposed facilities project, Union considered alternatives to infrastructure investment. The short-term commercial alternatives reviewed are insufficient to meet the forecasted demands expected by November 1, 2017.

   As referenced at Exhibit A, Tab 6, pp.7-13, no commercial alternatives delivering incremental supply at Ojibway can meet the forecasted growth on a stand alone basis. Incremental facilities would also be required to meet the forecasted growth for November 2017 and beyond. Commercial alternatives delivering incremental supply at Ojibway would be provided either through firm transportation held by Union on the PEPL system or through contracted third party natural gas deliveries underpinned by firm transportation on the PEPL system. A combination of gas delivered to Ojibway from the PEPL system and new Union Panhandle System facilities has a similar 20 year NPV to the Proposed Pipeline recognizing costs over the first five years but would present significantly higher 20 year NPV costs with additional facilities in year six and beyond. In some cases, incremental deliveries at Ojibway would drive different facilities than the Proposed Pipeline which would not be available for service by November 1, 2017. As discussed in more detail below and as referenced at Exhibit A, Tab 6, pp.10-11, contracted deliveries at Ojibway are subject to availability, price and term uncertainty. In fact, Union was not able to secure incremental firm transportation on the PEPL system for November 1, 2017, as contemplated at Exhibit A, Tab 6, pp.7-9, limiting Union's delivered supply at Ojibway to 58 TJ/d at November 1, 2017. Please see response at Exhibit B.LPMA.11 a).

Purchasing natural gas supply in the limited market at Ojibway is also not a viable long term commercial option. Natural gas purchases at Ojibway will be subject to significant price and availability risk. Ojibway is not a liquid trading point. Ojibway is a trans-shipment point between two pipeline systems (PEPL in the United States and Union in Canada) with a limited number of counterparties holding transportation to and from Ojibway.

As identified in EB-2014-0182, Exhibit A, Tab 3, p.2 (Burlington Oakville Pipeline Project), Union generally looks to reduce the reliance on the secondary market to meet long term customer demands since it poses significant risk with respect to availability and price. Please see response at Exhibit B.BOMA.6 a).

Once the Project is in service, should the incremental demand not materialize as forecast, Union can reduce its reliance on gas supply deliveries to Ojibway from PEPL and replace those volumes with deliveries from Dawn. This would result in a higher utilization of the Proposed Pipeline and an efficient use of the asset.

Below is a summary of the commercial alternatives that were considered to both maintain existing firm requirements and meet incremental needs. Please see Attachment 1 for a table that outlines firm deliveries to Ojibway (C1 Ojibway to Dawn transportation contracted capacity, Union's Firm PEPL tranportation capacity and third party services delivered to Ojibway) as filed in evidence and as understood now, both effective November 1, 2017.

1. **Secure the portion of the 60 TJ/d of firm PEPL transportation contracts for which Union identified as not having renewal rights**

   Union recently participated in a PEPL transportation open season on July 13, 2016 and requested 22,000 MMBtu/d (23 TJ/d) of firm transportation capacity from the PEPL Field Zone to Ojibway for the term of November 1, 2017 to October 31, 2022 to include a right of first refusal ("ROFR") provision. This was in an effort to replace the firm transportation contracts that are expiring on PEPL and PEPL/Trunkline without ROFR rights. Union's bid for transportation capacity was not accepted by PEPL. PEPL indicated that sufficient capacity was not available at the Ojibway interconnect during the timeframe that Union requested the capacity. Please see Attachment 2 for correspondence with PEPL regarding this open season.

As a result, Union no longer has 60 TJ/d of firm PEPL transportation capacity to Ojibway effective November 1, 2017. Union now has only 37 TJ/d of firm PEPL transportation capacity to Ojibway effective November 1, 2017 (which includes renewal through ROFR rights). Exercising the ROFR will require Union to match any other offers to PEPL for the transportation capacity that Union is attempting to renew (as stated at Exhibit A, Tab 6, pp. 10-11). Accordingly, with respect to Exhibit A, Tab 6, p.9, line 6, neither the 23 TJ/d of firm transportation capacity discussed above is available on the PEPL system nor the 34 TJ/d of targeted incremental capacity.

Union has continued discussions with PEPL to attempt to secure additional firm transportation to Ojibway. These discussions have included the availability of a winter-only firm transportation service and the availability of annual firm transportation service. However, Union understands that PEPL has committed all remaining firm transportation capacity to Ojibway to the Rover Pipeline. At this point Union does not expect to be able to reach an agreement with PEPL on any additional firm transportation capacity to Ojibway. Please see response at Exhibit B.FRPO.7 a).

2. **Procure delivered firm supply from a third party at Ojibway and/or Dawn (must deliver utilizing firm transportation on PEPL)**

   Union issued an RFP on May 26, 2016 to secure incremental firm long-term transportation capacity on PEPL or to secure firm delivered supply at Ojibway through the PEPL system. The RFP was issued to a broad range of market participants, including current pipeline capacity holders, marketers and PEPL. Please see Attachment 3 for RFP details. Union received no interest from market participants in providing incremental firm long-term transportation on the PEPL system to Ojibway. Only one market participant responded to the RFP to provide a firm delivered service at Ojibway. This is not surprising given the number of counterparties holding transportation capacity to Ojibway on the PEPL system. On June 14, 2016, Union contracted for 20,000 MMBtu/d (21 TJ/d) of non-renewable firm incremental supply at Ojibway for the period November 1, 2016 to October 31, 2019. Therefore, effective November 1, 2017, the total amount of firm supply controlled by Union at Ojibway is 58 TJ/d (37 TJ/d + 21 TJ/d) with this number reducing to 37 TJ/d effective November 1, 2019. This total quantity (58 TJ/d) is similar to the original total quantity of PEPL transportation that Union held (60 TJ/d).

3. **Seek to reduce in-franchise firm obligations along Union's Panhandle System**

   i. Union conducted a reverse open season on May 11, 2016 that targeted in-franchise customers who hold firm capacity along Union's Panhandle System that were interested in: i) reducing or eliminating firm contract demand; or ii) converting firm contract demand to interruptible contract demand. This would allow Union to attach additional firm contract demand without incremental facilities. However, Union did not receive any reverse open season responses.

ii. Union has held discussions with in-franchise power customers located in the Windsor area that are served off of the Panhandle System to determine interest in reducing annual firm transportation demand or reducing firm transportation demand during peak days. Union has not been able to realize any incremental capacity as a result of these discussions but expects any quantity available to be much less than the 106 TJ/d required to meet the forecasted demand to 2021.

4. Union evaluated other commercial alternatives including:

i. Seeking an amendment to the existing firm C1 transportation contract still in effect at November 1, 2017 to obligate deliveries at Ojibway by negotiating a "must nominate" service - This is not currently a condition of Union's C1 firm transportation service. As a result of the RFP described above, Union secured 21 TJ/d of Ojibway deliveries from the sole remaining holder of firm C1 Ojibway to Dawn transportation capacity at November 1, 2017. Please see response at Exhibit B.APPrO.3 a).

ii. Seek a firm Ojibway to Dawn exchange service - This service would have Union receive natural gas at Ojibway when nominated and provide the counterparty the same amount of natural gas at Dawn. As a result of the RFP described above, Union secured 21 TJ/d of Ojibway deliveries from the sole remaining holder of firm C1 Ojibway to Dawn transportation capacity post November 1, 2017.

Union has entertained all of the above alternatives on a short-term basis. However, none of these alternatives will satisfy the five (5) year forecast growth of 106 TJ/d on the Panhandle System.

b) This will depend on the regulatory mechanism in place at the time for ratemaking, and the ability of rates to be charged and collected from customers in the future that recover costs.

Under the current framework losses in revenue as a result of decline in use per customer in the general service market are deferred and recovered from the ratepayer. Revenue lost as a result of the loss of customers or contract demand will reduce the return to the shareholder until rates are reset. Union in not adequately compensated through the current allowed return on equity, its current equity thickness or the period over which it recovers its investment to cover the uncertainty associated with Cap and Trade and the CCAP. In Union's view, it should not be exposed to any risk related to investments prudently incurred to meet the needs of customers.

c) Union submits the question should be worded to ask under what conditions of deteriorating demand would Union's proposed asset fail to be used **or** useful, rather than used and useful. Assets settle to rate base and are included in rates when they are used or useful. An asset does not have to be used to be included in rates.

The proposed asset is expected to be useful for more than 50 years with normal operations and maintenance. The proposed asset would no longer be used if customers leave the system opting to eliminate natural gas from their energy portfolio.
Given that Union has 58 TJ/d of transportation capacity to (and/or delivered supply at) Ojibway, Union could reduce the reliance on these supplies and replace them with supplies at Dawn, therefore increasing the utilization of the proposed facilities. Therefore demands would have to drop by more than 58 TJ/d just to reduce the usage of the pipe below 100%, let alone a level where the facilities were significantly underutilized.

d) Please see Attachment 4 as well as the discussion of short-term alternatives in the responses above.

Firm Contracted Deliveries to Ojibway effective November 1, 2017 (TJ/d)

Line		*As Filed in Evidence*	*Current*
	Gas Supply Contracted Capacity		
1	PEPL - Non Renewable (1)	23	0
2	PEPL - Renewable	37	37
3	Third Party Deliveries	0	21
4	*Total Gas Supply*	*60*	*58*
	C1 Shipper Contracted Capacity		
5	C1 Ojibway to Dawn	*21*	*21*
6	**Grand Total**	**102**	**79**

Note (1) Please see response at Exhibit B.BOMA.6 a) re corrected figure.

From: Colton, Joey [mailto:Joey.Colton@energytransfer.com]
Sent: July-19-16 12:40 PM
To: McClacherty, Shawn
Cc: Newbury, Cheryl; Liberty, Erin; Hill, Bryan D.
Subject: Re: Energy Transfer - Non-Critical Notice

Shawn – This is to confirm that sufficient point capacity at the Union Ojibway interconnect is not available for the timeframe Union requested. Accordingly, we were unable to accept your bid.

Thanks,

Joey

On Jul 19, 2016, at 8:33 AM, McClacherty, Shawn <smcclacherty@uniongas.com> wrote:

Joey,

Since Union's bid was binding can you reply to this email to provide me written confirmation that Union's bid was rejected by Panhandle Eastern Pipe Line Company, LP for my records.

As per our conversation Panhandle Eastern Pipe Line Company, LP does not have any capacity at the Union Ojibway point for the timeframe Union is requesting.

Thanks,

Shawn McClacherty | Buyer, Gas Supply Transportation
Union Gas Limited, A Spectra Energy Company
50 Keil Drive North, Chatham, ON N7M 5M1
smcclacherty@uniongas.com
Office: 519-436-4515
Mobile: 519-365-8945
AOL IM: smcclacherty

From: McClacherty, Shawn
Sent: July-13-16 12:11 PM
To: 'Joey.colton@energytransfer.com'
Cc: Newbury, Cheryl; Liberty, Erin; Bryan D. Hill (bryan.hill@energytransfer.com); McClacherty, Shawn
Subject: RE: Energy Transfer - Non-Critical Notice

Joey,

Please find Union Gas's bid for the Panhandle Eastern Pipe Line Company, LP open season that closes today.

Please respond to this email to confirm receipt for my records.

If you have any questions or if there is an issue with the bid please let me know,

Panhandle Eastern Pipe Line Company

Binding Bid Sheet for Available Firm Capacity

Bidder Name & Address (print or type): Union Gas Limited

Contact Name: Cheryl Newbury

Contact Email: CNewbury@uniongas.com

Contact Phone: 519 436 4534

Contact Fax:

Primary Receipt Pt	Primary Delivery Pt	Volume (MMBtu/d)	Reservation Rate ($/MMBtu/d)	Term
PEPL Field Zone (Specific Meter TBD)	**Union Ojibway (UNION)**	**22,000 MMBTU/d**	**MAX Tariff with ROFR rights**	**November 1, 2017 to October 31, 2022**

Reservation rate is applicable only to Primary Receipt Point(s) and Primary Delivery Point(s) referenced above.

Is Shipper willing to accept a pro-rata share of capacity? **yes**

The deadline to submit bids is 12:00 PM CST, Wednesday July 13, 2016.

Fax or email bids to Joey Colton at 713-989-1191 or Joey.colton@energytransfer.com

Thank you,

Shawn McClacherty | Buyer, Gas Supply Transportation
Union Gas Limited, A Spectra Energy Company
50 Keil Drive North, Chatham, ON N7M 5M1
smcclacherty@uniongas.com
Office: 519-436-4515
Mobile: 519-365-8945
AOL IM: smcclacherty

From: noreply@energytransfer.com [mailto:noreply@energytransfer.com]
Sent: July-12-16 3:45 PM
To: McClacherty, Shawn
Subject: Energy Transfer - Non-Critical Notice

Non-Critical Notice

Content:

Notice ID:	7015
Notice Type:	GEN
Critical:	N
Notice Status Description:	
Reqrd Rsp Desc:	
Posting Date/Time:	2016-06-13 14:58:00.0
Subject:	Enhanced Firm Transportation Open Season
Notice Effective Date/Time:	2016-06-13 14:58:00.0
Notice End Date/Time:	2016-07-13 12:00:00.0

Enhanced Firm Transportation Open Season
June 13, 2016

Notice Text:

Panhandle Eastern Pipe Line Company, LP (PEPL) is soliciting binding bids from Shippers interested in acquiring firm forward haul transportation service utilizing PEPL's Enhanced Transportation Service (Rate Schedule EFT), under the following criteria:

Primary Receipt Points: Lebanon Lateral #02821 or any point further upstream including points in the Field Zone (subject to available point capacity)
Primary Delivery Point: PEPL delivery points downstream of the Lebanon Lateral point (subject to available point capacity), provided the contracted path results in forward haul transportation on the PEPL system
Operationally available point capacities can be found on PEPL's ebb: http://peplmessenger.energytransfer.com/ipost/PEPL
Open Season CQ: 55,000 Dth/d available as of November 1, 2016; and an additional 95,000 Dth/d available as of April 1, 2017
Minimum Term: Five (5) years
Minimum Rate: Maximum Tariff Rate; provided that discounted rates may be considered for bids with a Primary Receipt Point upstream of PBRBN

Any interested party must complete the attached binding bid form and return it to PEPL, via email or fax as directed below. The deadline for submitting bids is 12 PM CST on Wednesday July 13, 2016.

All bids shall be deemed to be binding on Shippers. PEPL reserves the right to reject any and all bids, including non-conforming bids. Bids that do not meet the criteria set forth above, are incomplete or would require changes to the EFT Form of Service Agreement set forth in PEPL's Tariff will be deemed non-conforming bids. PEPL's discretion to reject or accept a bid, including any non-conforming bid, shall be exercised on a not unduly discriminatory basis.

After the close of this Open Season, PEPL will evaluate all conforming and acceptable bids. Awards of capacity, if any, will be based on the greatest net present value of the reservation charges produced by an acceptable bid, or combination of acceptable bids, received in this Open Season. Bids with an equal net present value will be awarded on a pro rata basis.

Please direct questions and bids to:
Joey Colton
Sr. Director, Optimization
Phone: (713) 989-7266
Fax: (713) 989-1191
Email: Joey.colton@energytransfer.com

Panhandle Eastern Pipe Line Company

Binding Bid Sheet for Available Firm Capacity

Bidder Name & Address (print or type):

Contact Name:

Contact Email:

Contact Phone:

Contact Fax:

Primary Receipt Pt	Primary Delivery Pt	Volume (MMBtu/d)	Reservation Rate ($/MMBtu/d)	Term

Reservation rate is applicable only to Primary Receipt Point(s) and Primary Delivery Point(s) referenced above.

Is Shipper willing to accept a pro-rata share of capacity? (yes or no)

The deadline to submit bids is 12:00 PM CST, Wednesday July 13, 2016.

Fax or email bids to Joey Colton at 713-989-1191 or Joey.colton@energytransfer.com

From: Liberty, Erin
Sent: May-26-16 12:12 PM
To: Liberty, Erin
Cc: McClacherty, Shawn
Subject: Union Gas Request for Proposals for Firm Ojibway Transportation Capacity

Union Gas Limited ("Union") is inviting your company, along with other suppliers, to submit proposals to provide Union with Long Term Firm Transportation capacity to the Panhandle Pipeline interconnection with Union Gas (Union Ojibway point) starting as early as November 1, 2016. Later start dates and combined Supply and Transportation purchases will also be considered.

Union will entertain capacity offers facilitated via capacity on the Panhandle Pipeline system as well as capacity from customers holding capacity on Union's Ojibway to Dawn transmission system. Bids involving both a Panhandle Pipeline and Union Gas concurrent release will also be entertained.

Please provide details capacity offered including path, quantity, start/end date, receipt and delivery points, secondary points and price. If capacity is contingent upon release of a secondary contract please specify in proposal.

If capacity is to be provided to Union Gas via capacity release the releasing party must provide a copy of the underlying contract to Union Gas prior to Union's acceptance of the proposal. Upon acceptance, the successful bidder will post the pre-arranged biddable release subject to FERC's capacity release posting rules.

Please submit your proposal by responding to this email.

Proposals to be received no later than 1:00 pm Eastern Time May 31st, 2016. Union will confirm receipt of proposal via email. If you do not receive confirmation of receipt from Union Gas prior to the submission please notify Union via contact info below.

The company with the successful proposal will be contacted as soon as possible. The lowest bid price or any proposal will not necessarily be accepted, at Union's sole discretion.

Any questions should be directed to the undersigned.

Sincerely,
UNION GAS LIMITED

Erin Liberty, CPA, CGA
Manager, Transportation Acquisitions
Union Gas Limited | A Spectra Energy Company
50 Keil Drive North | Chatham, ON N7M 5M1
Tel: (519) 436-5314
Email: eliberty@uniongas.com| www.uniongas.com

Alternative Description	Facility Requirements	Costs (million)		In-service Date	Post 2021 Facility Requirements	Rationale
		Capital	O&M			
Proposed Project New Pipeline from Dawn NPS 36	Replace (lift) 40 km of the existing Panhandle NPS 16 pipeline and replace with a new NPS 36 pipeline between Dawn and Dover Transmission. Rebuild Dover Transmission. Upgrade Dover Center and Mersea Gate	5 Yr Capex $ 265 6 Yr Capex $ 305	Avoid Capex and O&M cost to maintain 16" over 40 yrs ~NPV $16	01-Nov-17	Install approximately 16 km of NPS 12 pipeline into the Town of Kingsville and new Transmission station Install approximately 12 km NPS 6 Loop starting from McCormick Station	Please see Exhibit A, Tab 6, pages 3 - 6
New Pipeline from Dawn NPS 30	Install 40 km of NPS 30 pipeline, which will loop the existing NPS 16 & 20 Panhandle between Dawn and Dover Transmission. Rebuild Dover Transmission. Upgrade Dover Center and Mersea Gate	5 Yr Capex $ 264 6 Yr Capex $ 304	Capex + OM to maintain 16" over 40 years ~NPV $ 16	01-Nov-17	Install approximately 16 km of NPS 12 pipeline into the Town of Kingsville and new Transmission station Install approximately 12 km NPS 6 Loop starting from McCormick Station	Please see Exhibit A, Tab 6, pages 3 - 6
New Liquified Natural Gas ("LNG") Plant	Insall LNG Facility at Comber Station Requirements: 1) Complete necessary upgrades for increased flow to Comber Transmission and Mersea Gate	5 Yr Capex ~ $ 292 6 Yr Capex ~$700 ++	Annual $6 + Capex & OM Cost to maintain 16" for 5 yrs	01-Nov-19	Replace (lift) 40 km of the existing Panhandle NPS 16 pipeline and replace with a new NPS 36 pipeline between Dawn and Dover Transmission. Rebuild Dover Transmission. Install approximately 16 km of NPS 12 pipeline into the Town of Kingsville and new Transmission station Install approximately 12 km NPS 6 Loop starting from McCormick Station	Please see Exhibit A, Tab 6, pages 6 - 7
New Pipeline with Incremental Deliveries at Ojibway	Increase Ojibway import contracts to 94 TJ/d Replace (lift) 27 km of the existing Panhandle NPS 16 pipeline with a new NPS 36 pipeline between Dawn and Dover Centre Upgrade Dover Center and Mersea Gate Install 16 km of NPS 12 pipeline into the Town of Kingsville and new transmission station Install 12 km NPS 6 looping starting from McCormick Station	5 Yr Capex $ 235 6 Yr Capex $ 334	Capex & OM Cost to maintain 13km of 16" for 5 yrs	01-Nov-17	Replace (lift) remaining 13 km of the existing NPS 16 Panhandle pipeline between Dover Centre and Dover Transmission with a new NPS 36 pipeline Rebuild Dover Transmission Upgrade Dover Centre	Please see Exhibit A, Tab 6, pages 7 -15 Please see Exhibit B.FRPO.2c)

Note: All alternatives provide capacity to meet the forecast Winter 2021/22 demand of 106 TJ/d.

UNION GAS LIMITED

Answer to Interrogatory from
Board Staff

Reference: Exhibit A, Tab 3, p.7, lines 13-18; Exhibit A, Tab 7

Union has indicated that the uncertainty created by Cap and Trade and the CCAP has driven the need to calculate the revenue requirement and resulting rate impacts based on an estimated 20-year useful life of the project versus 50 years as per OEB approved depreciation rates. Union further notes that depreciating the asset over a 20-year useful life better aligns the cost with the timing of the reported restrictions and potential elimination of natural gas heating in homes and businesses.

a) In the OEB Proceeding on Community Expansion (EB-2016-0004), Union proposed revising the period for commercial/industrial load to a maximum 40 year term for heating load as compared to the current 20 year term used in the economic test under the E.B.O. 188 Guidelines. Why has Union proposed a different approach in the current application considering that both applications coincide with the Province's announcement of its climate change initiatives?

b) Has Union informed its large volume (contract) customers about its proposed approach of calculating rates using an estimated 20-year useful life of the project as compared to the OEB approved useful life of approximately 50 years?

c) Please outline the risks to Union if the OEB were to approve the existing depreciation period as opposed to the Union recommended useful life of the proposed project. Please quantify the magnitude and likelihood of the risks to the regulated entity with reference to the value of its rate base and remaining asset lives.

Response:

a) Union filed its EB-2015-0179 Community Expansion application on July 23, 2015, prior to the announcement of the Ontario government's Climate Change Action Plan ("CCAP").

The intent of EB-2016-0004 was to address generic issues deemed common to all natural gas distributors and new entrants seeking to provide gas distribution services in communities that do not have access to natural gas. Utility specific or project-specific depreciation rates were not in scope. However, while Union's utility specific community expansion model included a longer depreciation period, the CCAP had not fully manifested itself at the time of the hearing and, as further detailed in the response to part c) below, the impact of CCAP on the depreciation of Union's overall rate base will be considered as part of the next rebasing proceeding.

b) Yes. Union informed all large volume customers of the proposed rate impact in its Factsline communication that was sent to all large volume customers June 24, 2016. (see Attachment 1) The Factsline also had a link to Union's Panhandle Reinforcement Project evidence that compares the proposed rate calculation to the current useful life standard.

   Union also met with the following large customer trade associations: IGUA, APPrO, CME, and OGVG. Union reviewed its proposal with these industry representatives which included the 20 year useful life for depreciation.

c) There is an immediate need for this reinforcement of the Panhandle System based on the forecast market demands and lack of available firm capacity on the Panhandle System. Union expects demand to continue to grow at least in the medium-term, even when DSM impacts are considered. However, over the long-term there is increased risk to natural gas demand due to uncertainties presented by the CCAP. Union describes the level of risk in the short, medium and long-term below.

   When considering the impacts of CCAP, it is important to consider that the policy environment which existed at the time of Union's application was very uncertain. Based on final CCAP, there is no longer specific language or intent to "ban" natural gas and the Ontario government has reiterated its support for natural gas, and for extending natural gas to communities that do not currently have access. However, despite remaining policy uncertainty, Union continues to strive to meet customer requirements to support economic growth. Moving forward, Union will need to continue to closely monitor the potential impact of policy changes on its system and utilization in order to adjust and make changes as necessary.

   Short-term Impacts:

   As stated above, there is an immediate need for the reinforcement of the Panhandle System. The need for this Project has been demonstrated through the market forecast and written evidence in Exhibit A, Tab 4 (Benefit to Ontario) and Exhibit A, Tab 5 (Facilities and Growth), as well as the many letters of support from municipalities and customers. Union's forecasted demands will result in the capacity from this Project being fully subscribed after five (5) years.

   It is unlikley there will be any material impact of CCAP/DSM on natural gas demand within this time frame. In fact, data released by the Ministry of Environment and Climate Change quantifies that 2.8 MT CO_2e of abatement across Ontario ("ON Abatement") will result from the introduction of the cap-and-trade program by 2020[1] (Attachment 2). This represents less than 2% of Ontario emissions.

To further demonstrate market commitment, Union is in the process of entering into binding 5-year agreements for incremental firm contract rate service served from the Panhandle Reinforcement Project beginning November, 2017. Union has, in the past, backstopped major pipeline expansions (ie. Dawn Parkway) with contractual commitments from ex-franchise customers who will be using the capacity. Although the term contract does not require customers to pay for this incremental firm capacity with any up front aid for the transmission pipeline, Union is making a significant investment to provide customers with the firm capacity that they have been asking for and it is appropriate for customers to demonstrate their commitment to the Panhandle Reinforcement Project though contractual commitments. In addition, this helps demonstrate to other ratepayers and stakeholders that the facilties are required. This 5-year commitment also ensures that customers in this area are treated in a similar fashion as those who recently received firm capacity. Those customers supported the distribution build specific to their area needs through an aid to construct charge or term contract. This approach will continue with further distribution reinforcements, the need for which Union continues to evaluate given recent requests and market growth. The 5-year contract term related to the Panhandle System Reinforcement facilities is in line with Union's projection of future required reinforcement on the Panhandle System.

Medium-term Impact:

It is Union's view that the Panhandle System once expanded in 2017, will continue to be used for at least the next 20 years. Union believes 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.

Union does not expect the CCAP to change the expected use of the Panhandle System over the short to medium term for the following reasons:

- The main driver for the Project is largely due to growth in the greenhouse market, not by the residential or small commercial buildings, which is the focus of the CCAP.
- Consumer behavioural change (as identified in the government analysis in Attachment 2) is not significant in the foreseeable future.
- Even if consumer behaviour change was more significant in the short to medium term, extensive experience with DSM programs has illustrated that the reduction in consumption as a result of DSM programs is not sufficient to offset load growth in the market and the resulting need for facilities on peak day. In fact, peak day usage has

[1] "Impact Modelling and Analysis of Ontario Cap and Trade Program", EnviroEconomics, slide 12, provided at Attachment 2.

increased in spite of energy conservation initiatives such as DSM programs administered by Union.
- It is reasonable to assume that changes to peak day demand will take significant time to materialize; it would rely on the development and wide-spread adoption of new technologies, and would also require investment on behalf of consumers and businesses (eg. change in equipment).

Notwithstanding any of the above, if there were impacts from CCAP/DSM in the medium term that Union has not forecasted, the impact would not affect the currently proposed factilities. Rather, Union would expect it to delay future reinforcement required beyond the proposed facilities or Union could reduce upstream transportation or delivered supply at Ojibway to mitigate decreasing demand requirements and maintain utilization of the Panhandle System.

Long-term Impact (beyond 20 years):

While Union does not expect material impacts to natural gas peak day demand in the medium term, it is reasonable to expect that, over the long term, there is increased risk to natural gas demand due to uncertainties presented by the CCAP. For example, the CCAP introduces a new “Net Zero Carbon” requirement for small buildings by 2030 at the latest, with initial changes in 2020. “Net Zero Carbon” is not clearly defined in the CCAP, and is not a term that is understood or utilized by industry, homebuilders, and homebuilder associations. Given this, Union is unsure what Net Zero Carbon is or the impact it will have on future construction or on major renovations. In addition, there is no information with regards to future CCAP’s that extend beyond 2020, and the potential of these impacts to natural gas consumption over the long term. This creates uncertainty for Union, its customers, and investors.

Such uncertainty is impossible to quantify in terms of impact, or timing. However, it does present the risk that at some future point, customer behaviour may change peak day requirements, or new technologies may be more widely adopted, and this could impact Union’s facilities. Union does not expect such changes to occur within the short to medium term. However, it is possible that it will occur within the typical 40 to 50 year depreciation period and as such Union has proposed the 20 year depreciation term as a means of addressing this risk.

In the event that CCAP does have a material impact sooner than anticipated, a 20-year term for depreciation will mitigate the risk of any excess capacity for ratepayers. For example, if major load changes where to occur in year 15 of a 20 year depreciaton period, the pipe would be 75% depreciated. If major changes occurred in year 15 of a 50 year depreciation period, the pipe would only be 30% depreciated. Assuming Board-approved deprecation rates, the rate base associated with the Project would be $157 million at the end of 20 years; while under Union's proposal the rate base associated with the facilities would be $9 million at the end of 20 years.

As shown at Exhibit A, Tab 8, Schedule 1, line 11, the 2017 and 2018 revenue requirements associated with the Project based on Union's proposal to depreciate the assets over a 20-year useful life are approximately $32.2 million ($5.0 million and $27.2 million respectively).

At Exhibit A, Appendix B, Schedule 1, line 11 Union has provided the 2017 and 2018 revenue requirements for the Project based on Board-approved depreciation rates. The 2017 and 2018 revenue requirements are $18.0 million ($0.3 million and $17.7 million respectively).

Accordingly, the change in revenue requirements for 2017 and 2018 between Union's proposal and Board-approved depreciation rates is a reduction of $14.2 million. Should the Board reject Union's proposal to depreciate the Project assets over a 20-year useful life, Union will address the impacts of the Board's decision as part of its 2019 rebasing application.

The proposal to change the depreciation rate now enables the recovery of the investment from all customers rather than expecting to recover the investment later from the customers that remain on the system.

The benefit of reducing the depreciation period now to 20 years is that it recovers the investment from as many customers as soon as possible which will minimize the future rate impact to customers. Further, as discussed above Union would also have the option of decreasing upstream transportation commitments or delivered supply at Ojibway to mitigate the decreasing demand requirements on the Panhandle System. This would result in a higher utilization of the Project and an efficient use of the asset.

Please see the response at Exhibit B.Staff.3.

June 24, 2016

Union Gas Receives Approval for Rate Changes Effective July 1, 2016

factsline

Union Gas received approval from the Ontario Energy Board (OEB) for a change in rates effective July 1, 2016.

These rate changes include the following items:

- Updated 2016 distribution rates (Incentive Regulation)
- July 2016 Quarterly Rate Adjustment Mechanism (QRAM)

Updated 2016 Distribution Rates

When 2016 distribution rates were approved in December 2015, they included the approved 2015 Demand Side Management (DSM) budget as a placeholder while we awaited a decision on the 2015-2020 DSM Plan proceeding. Now that a decision on the 2015-2020 DSM Plan proceeding has been received from the OEB, Union Gas is updating its 2016 rates to include the approved 2016 DSM budget. Customers will see a change in rates going forward (in most cases an increase) from what was approved in December 2015.

Since this rate change is effective January 1, 2016, there will also be a one-time rate adjustment included on July 2016 bills to collect the difference in rates for the January to June 2016 period. Please contact your Union Gas account manager once you receive your July invoice if you have questions about your individual adjustment.

Rate Changes for Union Gas North Customers

The average rate change for contract rate customers in Union Gas North is shown below. Individual bill impacts will vary and will depend upon a customer's use of natural gas.

Rate class	Updated Incentive Regulation Avg. Price Change (cents/ m^3)	QRAM Delivery Rate Change (cents/ m^3)	Approved Total Delivery Rate Change (cents/ m^3)
Rate 20	0.1373	0.0025	0.1398
Rate 25	0.0235	0.0000	0.0235
Rate 100	(0.0318)	0.0000	(0.0318)

Balancing Transaction Fees

Balancing transaction fees will be updated effective July 1, 2016. For current rates, please see the Balancing Transaction Fee Schedule.

Rate 01 and Rate 10 Customers

Rate 01 and Rate 10 will also be changing effective July 1, 2016. Customers can locate current information on these rates on our website or in the notice included with their July bill.

Rate Changes for Union Gas South Customers

	Current Utility Sales (cents/ m^3)	New Approved Utility Sales (cents/ m^3)	Change (cents/ m^3)
Gas Commodity Rate	9.6231	10.1666	0.5435
Gas-Price Adjustment	(0.4178)	(0.4420)	(0.0242)
Transportation	3.9625	4.0983	0.1358

The average rate change for contract customers in Union Gas South is shown below. Individual bill impacts will vary and will depend upon a customer's use of natural gas.

Rate class	Updated Incentive Regulation Avg. Price Change (cents/ m^3)	QRAM Delivery Rate Change (cents/ m^3)	Approved Total Delivery Rate Change (cents/ m^3)
Rate M4	0.5544	0.0080	0.5624
Rate M5A	0.3364	0.0076	0.3440
Rate M7	0.4400	0.0085	0.4485
Rate M9	0.0393	0.0076	0.0469
Rate M10	0.4751	0.0109	0.4860
Rate T1	0.0368	0.0000	0.0368
Rate T2	0.0714	0.0000	0.0714
Rate T3	0.1161	0.0000	0.1161

Balancing Transaction Fees

Balancing transaction fees will be updated effective July 1, 2016. For current rates, please see the Balancing Transaction Fee Schedule.

Rate M1 and Rate M2 Customers

Rate M1 and Rate M2 will also be changing effective July 1, 2016. Customers can locate current information on these rates on our website or in the notice included with their July bill.

A look ahead - Upcoming items that impact rates

- **2014 DSM deferral clearing** – We are currently awaiting a decision from the OEB. At this time we are targeting October 2016 to clear these balances.
- **2015 non-DSM deferral clearing** – This application is currently under review as part of the OEB approval process and will be implemented as soon as possible following the OEB's decision.

- The **Parkway Delivery Commitment Incentive (PDCI)** credit begins effective November 1, 2016 for customers who are obligated to deliver to Parkway. Payment of the PDCI to Direct Purchase customers is by way of a credit on the bill to the Bundled Transportation or T1/T2/T3 contract holder.
- Union Gas is currently planning to file our **2017 distribution rates** application in September 2016.

More information on these initiatives will follow over the coming months.

Union Gas files an application for the Panhandle Reinforcement Project

On June 10, 2016, Union Gas filed an application to the Ontario Energy Board (OEB) for the Panhandle Reinforcement Project (EB-2016-0186). This project has a targeted in-service date of November 1, 2017, but will be dependent upon approval from the OEB.

Union Gas' Panhandle Transmission System supplies reliable natural gas to a diverse customer base within the Chatham to Windsor market. Natural gas demand has seen significant growth in recent years and is straining the capacity of the current transmission pipeline serving the area. Additional growth is forecasted in the area which cannot be accommodated by the existing natural gas transmission system. This pipeline expansion from Dawn Hub to Dover Transmission Station would support market growth along the entire Panhandle Transmission System, addressing expressed market concerns regarding availability of firm natural gas services.

If approved, this project will have overall rate impacts.

Estimated rate impacts of the proposed Panhandle Reinforcement Project

Rate Class	Estimated Delivery Charge Impact	Estimated Total Bill Impact (Incl. commodity based on Union Gas' April QRAM)
Rate M1	2%	1%
Rate M2	6-8%	2%
Rate M4	24-27%	4-6%
Rate M7	17-19%	2-5%
Rate T1	14-16%	2%
Rate T2	18-20%	1%

Estimated rate impacts are based on the current OEB approved distribution rates.

Natural Gas delivers low cost, reliable energy to the province. Upgrading the size of the existing pipeline provides additional benefits: using primarily the existing footprint reduces the need for additional land rights and creates less environmental impact and eliminates future operating and maintenance costs on the pipeline being removed.

Updates will be provided once a decision has been reached by the OEB.

If you have any questions about this edition of Factsline, please contact Patrick Boyer.

External link for publishing:
http://www.rds.ontarioenergyboard.ca/webdrawer/webdrawer.dll/webdrawer/rec/531574/view/UNION_APPL_PanhandleReinforcement_20160610.PDF

Meeting the Cap in 2020

In our analysis, allowances equal to the cap are distributed through,

- Auctioning, 91.8 Mt
- Transitional allowances, 25.6 Mt

  For large emitters >25Kt: transitional assistance and to mitigate the risk of emissions leakage (emissions fall in ON through output lost, rise elsewhere due to misaligned carbon prices).

Strategic Reserve 6.2 Mt, 5% of the cap, aligned with Quebec and California

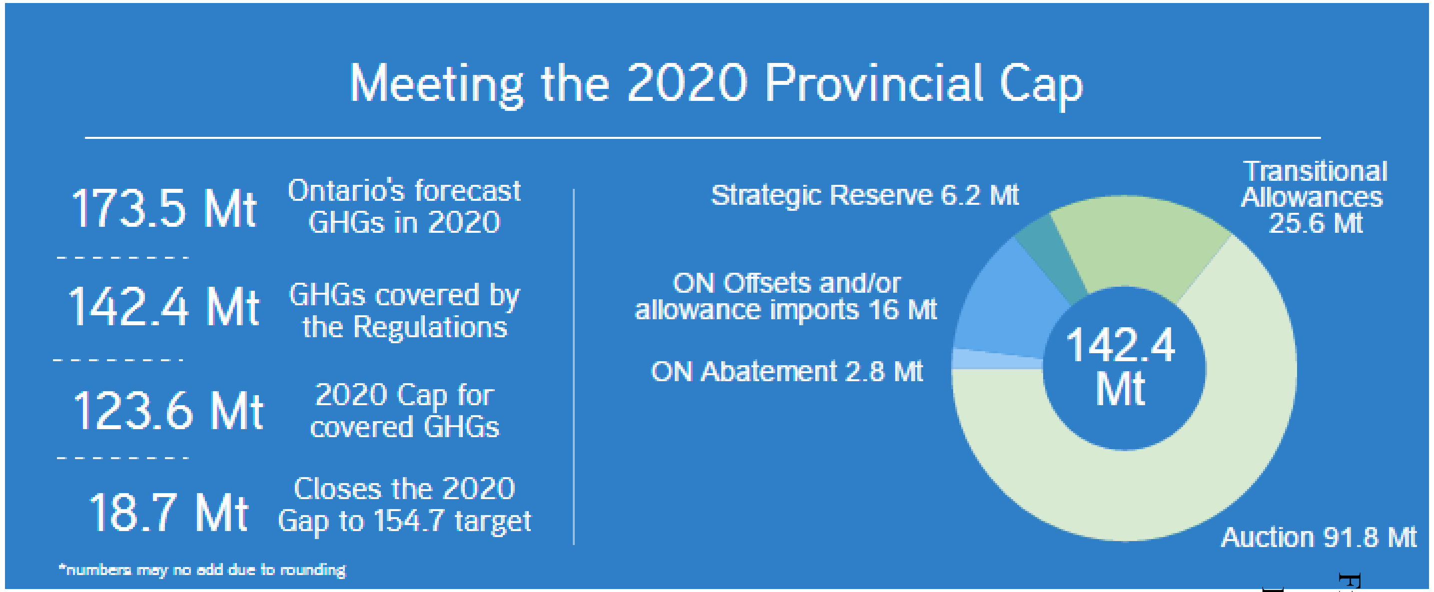
Compliance,

- ON abatement 2.8 Mt.
- 16 Mt from ON Offsets, WCI Imports or Action Plan reductions

Allowance Price: Average of Third-party forecasts*

	2017	2018	2019	2020
Nominal (~2% inflation)	$18.09	$18.10	$18.82	$19.86
Real $2016	$17.74	$17.40	$17.73	$18.33

*Assumes Ontario does not substantially impact the WCI allowance price



UNION GAS LIMITED

Answer to Interrogatory from
Board Staff

Reference: Exhibit A, Tab 3, p. 8, Table 3-1

Union has provided in-franchise bill impacts (Table 3-1) using a 20-year useful life and OEB approved depreciation rates.

a) Has Union informed its M4, M7, T1 and T2 customers about the bill impacts under the two scenarios (20-year depreciation versus OEB approved depreciation rates)? If no, why not?

b) Did Union consider a different useful life such as 30 years for calculating revenue requirement and resulting rate impacts? If no, why not?

Response:

a) Please see Exhibit B.Staff.4 b).

b) No. Union did not consider a different useful life other than the 20 years as proposed. The decision to use 20 years is based on management judgement and the rationale is detailed at Exhibit A, Tab 3, pp. 7-8.

UNION GAS LIMITED

Answer to Interrogatory from
Board Staff

Reference: Exhibit A, Tab 8, p.6-7; Exhibit A, Appendix B

Union has proposed to allocate the Panhandle System demand costs related to the project in proportion to the firm South in-franchise Panhandle System design day demands, updated to include the incremental firm project design day demands. Union has noted that with the addition of the significant project costs related only to the Panhandle System and no change to the cost of the St. Clair System, the use of the combined system for cost allocation purposes no longer reflects the costs to serve the customers on each transmission system. Union has indicated that its proposed interim allocation of project costs based on the Panhandle System design day demands better reflects the principle of cost causality during the remainder of the IRM term.

a) Is it the opinion of Union that the cost allocation methodology should be updated whenever there is a major change in the demand profile during an IRM term?

b) Did Union's IRM Settlement Agreement (EB-2013-0202) envision a change in the cost allocation methodology for large capital projects during the IRM term?

c) Please provide the total volumes segmented by rate class (including Rate C1 and M16) that will flow on the Panhandle System once the proposed project is in service. Please also provide the direction of the volumes under each rate class.

Response:

a) Union reviews the appropriateness of the EB-2011-0210 (2013 cost of service) Board-approved cost allocation methodology with each capital pass-through project application during the IRM term. The Panhandle Reinforcement Project is Union's first project that meets capital pass-through treatment criteria that Union has proposed cost allocation methodology other than Board-approved. Union's Brantford to Kirkwall/Parkway D, 2016 Lobo C and Hamilton to Milton, and 2017 Dawn Parkway Project applications all used Board-approved cost allocation methodologies and all included changes in the demand profile.

b) Yes. Union's IRM Settlement Agreement (EB-2013-0202) approved by the Board does provide the opportunity for a cost allocation methodology other than Board-approved. The IRM Settlement Agreement established eight criteria for a project to qualify for capital pass-through treatment. The major capital additions criteria vii) on page 34 of the Settlement Agreement states:

"Subject to direction otherwise from the Board, Union would allocate the net revenue requirement using the 2013 Board-approved cost allocation methodologies. Any party, including Union, may take any position with respect to the proposed allocation for any particular capital project during the review of the project, or its rate impacts, by the Board;"

c) The Panhandle Transmission System Forecast Design Day demands for Winter 2017/2018 are shown in the table below.

Panhandle Design Day Demands (Winter 2017/2018)			
In franchise Rate Class	Panhandle Design Day Demand	Panhandle Design Day Demand	Direction
	(10^3m^3/day)	(TJ/day)	
M1 / M2	7687.5	297	Westerly
M4 / BT4	2035.5	79	Westerly
M5 / BT5	284.8	11	Westerly
M7 / BT7	1191.7	46	Westerly
T-1	1121.4	43	Westerly
T-2	3808.3	147	Westerly
Total	16129.2	623	Westerly

Panhandle Transportation Contracts (Winter 2017/2018)			
Ex-franchise Rate Class	Contracted Volume	Panhandle Design Day Demand	Direction
	GJ/d		
C1	21016	0	Easterly
M16 (from Pool)	11760	0	Easterly
Union Supply (1)	58028	58028	Easterly

(1) As per Exhibit B.Staff.3 Attachment 1

UNION GAS LIMITED

Answer to Interrogatory from
Board Staff

Reference: Exhibit A, Tab 5, p.11-12, Table 5-2 and Table 5-3

Union forecast demand growth in the period 2017-20121 and period 2022 to 2034 is a Design Day requirement of 106TJ/day and 99TJ/day respectively.

a) Describe the methodology and parameters Union applied to determine the forecast 106TJ/day and 99TJ/day Design Day Requirement.

b) How did Union incorporate impacts of Cap and Trade, Province's CCAP and DSM in the demand growth forecast for 2016 to 2021 and 2022-2034?

c) With respect to forecast residential customer attachments, how did Union incorporate impacts of Cap and Trade, Province's CCAP and DSM on forecast residential customer attachments?

Response:

a) Union's forecast is based on specific customer requests (eg Windsor Mega Hospital and others identified at Exhibit A, Tab 5, p.7), expected conversion of interruptible to firm based on the unfulfilled firm capacity from the 2016 Leamington expansion expression of interest and from conversations with customers, as well as growth in the general service market. The Design Day demands are calculated using customer's forecast hourly usage converted into daily volume using standard peak hour design factors.

Below is the basis for the forecast from 2017-2021 and 2022-2034:

2017-2021
Greenhouse
The greenhouse market forecast is based on:
1. The unmet demand from the 2016 Leamington Expansion Project expression of interest
2. Other known customer expansions plans
3. Generic growth projection

Commercial/Industrial
The commercial/industrial forecast is based on:
1. Known customer expansions plans
2. Generic (private) CNG Fleets
3. Other generic growth

Residential

The residential forecast is based on the attachment forecast for areas served by the Panhandle System. This forecast is based on historical residential customer attachments on the Panhandle System.

2022-2034

The growth in this period is an extension of the generic demands for the period up to 2021, excluding the conversion of interruptible to firm.

b) Please see the response at Exhibit B.Staff.4 c).

c) Please see the response at Exhibit B.Staff.4 c).

UNION GAS LIMITED

Answer to Interrogatory from
Board Staff

Reference: Exhibit A, Tab 3, p.12; Exhibit A, Tab 9, p.7; Exhibit A, Tab 9, Schedule 4, p.1

Union will use “lift and lay” construction process. Majority of the existing pipeline will be removed from the ground. The existing pipeline will be abandoned in place at certain locations at major road crossings and watercourse crossing.

According to the updated CSA Z662-15 “Oil and Gas Pipeline Systems” clause 10.16, which sets the requirements for pipelines abandonment, a documented abandonment plan is required.

a) Did Union prepare abandonment plans, as required under the CSAZ663 section 10.16.1, that address the two methods of pipeline abandonment Union proposed for the Project?

b) If so, please file executive summary of the plans.

c) If no, please describe how will Union adhere to the requirements of section 10.16 of the CSA Z662-15 and indicate when will the pipeline abandonment plans be completed.

Response:

a) Union is currently preparing abandonment plans for the removal of the NPS 16 pipeline that will address the abandonment requirements contained in CSA Z662-15, clause 10.16.

b) Please see response to part a) above.

c) Union will adhere to all requirements in CSA Z662-15 clause 10.16, with regards to pipeline abandonment. It is anticipated that the abandonment plans will be completed by year end.

UNION GAS LIMITED

Answer to Interrogatory from
Board Staff

Reference: Exhibit A, Tab 9, Schedule 2, p.2 Paragraph 15

General techniques and methods of construction proposed by Union for the Project state that the bedrock will be removed by mechanical methods and that if blasting is required it will be conducted in accordance with Union's procedures and *Canadian Explosives Act.* Union does not anticipate any bedrock encounter during the construction of the Project.

In the event that blasting is required, what will be Union's communication program with potentially affected landowners?

Response:

If blasting is required, communication would occur with landowners located within 150 meters or closer of the blasting area. Union has a Lands Relation Agent ("LRA") on-site full time during construction. Each landowner would be notified by the LRA and a blasting plan would be developed to determine which landowners, if any, would require a monitoring plan specific to any structures that may be located within this proximity.

Staff at the local Municipalities would also be notified by email or phone that this work would be taking place.

UNION GAS LIMITED

Answer to Interrogatory from
Board Staff

Reference: Exhibit A, Tab 11, p.1-2; Exhibit A, Tab 11, Schedule 2

Union will need new permanent easements for about 1 kilometer of the pipeline route. Union also will need 309 acres of Temporary Land Use Areas for 2 years during construction and land restoration. For modifications of the Dover Transmission Station and the Dover Centre Valve Site, Union plans to purchase additional land.

a) Referring to the table in Exhibit A / Tab 11 / Schedule 2 please identify the permanent easement agreements and Temporary Land Use agreements that Union obtained since the application was filed.

b) What is the current status and prospect of negotiations with the landowners of properties where permanent easements and Temporary Land Use are needed?

c) What is the status and prospect of Union's purchase of the additional lands for the Dover Transmission Station and the Dover Centre Valve Site.

Response:

a) To date Union has secured permanent easements on 2 of 13 properties and temporary land use rights on 52 of 126 properties along the pipeline route.

b) Union continues to meet with landowners to acquire the necessary land rights. Union has provided information regarding discussions as well as handouts such as the Q&A document included at Attachment 1. Union anticipates that through negotiations with the landowners and their representatives that it will obtain all of the necessary land rights for construction of the project. In the event that all necessary land rights cannot be obtained through negotiation, Union will assess the impact upon the project, including impacts upon the construction schedule, resulting from the specific land right not granted by the landowner and will consider the most appropriate course of action, to be taken to ensure the safe and timely construction of the project, including but not limited to, filing an application for an expropriation order.

c) Union has obtained the fee simple rights for the Dover Transmission Station modifications. Negotiations are ongoing for the lands for the Dover Centre Valve Site modifications.

WORKING WITH UNION GAS

WHAT YOU NEED TO KNOW

A Spectra Energy Company

Union Gas is proud of the strong relationships we have with landowners. We build all of our relationships on mutual trust and respect. All landowners receive fair compensation for any land rights required, and disruption to property and the environment will be minimized.

- ✓ **We treat all landowners equally**. No matter if you are the first or last landowner to sign a Land Right Agreement with us, everyone will receive the same compensation formula.
- ✓ **All landowners are compensated for land rights** as well as damages that may occur before, during and after construction.
- ✓ **We will pay reasonable legal and consultant fees** to have the final agreement reviewed by a professional of your choice.
- ✓ **Union Gas pays an "Early Access Payment"** as well as payment for damages that may be incurred as a result of activities carried out on the land.
- ✓ **Union Gas will exercise the land right options** as outlined in the agreement and payments will be made within 30 days, upon Ontario Energy Board (OEB) approval of the natural gas pipeline project.
- ✓ **Construction will be completed in compliance** with all applicable regulations, codes and industry best practices.
- ✓ **Your designated land agent will communicate openly and regularly** with you so you know what to expect and are fully informed about the construction-related safeguards we employ.

WHO WE ARE

Union Gas is a major Canadian natural gas storage, transmission and distribution company in Ontario with over 100 years of experience delivering safe, affordable and reliable natural gas to over 1.4 million homes and businesses.

KEEPING YOU SAFE

Safety is a core value for our company and we are committed to ensuring that you, your family, your neighbourhood and our employees are safe at all times. Our pipelines and facilities are designed and maintained to strict safety standards and monitored 24/7 by two gas control centres.

ABOUT THE PANHANDLE REINFORCEMENT PIPELINE PROJECT

To meet the growing demand for safe, affordable and reliable natural gas in Windsor-Essex, Chatham-Kent and surrounding areas, Union Gas is proposing to increase the capacity of the Panhandle natural gas transmission system by replacing 40kms of existing natural gas pipeline with a larger 36-inch diameter pipeline, **within the existing permanent pipeline easement**. For additional details including a map, visit **uniongas.com/panhandle-reinforcement**.

Union Gas has submitted a project application to the Ontario Energy Board and if approved, construction could begin as early as spring 2017.

QUESTIONS AND ANSWERS

I've heard the last people to sign the Land Right Agreement always get the best deal. Is this the case?

We treat all landowners equally. No matter if you are the first or last landowner to sign an agreement with us, everyone will receive the same compensation formula.

Will Union Gas reimburse an individual landowner for the settlement funds or other payments they make to a landowner group negotiating on their behalf?

No. Union Gas will not reimburse an individual landowner for membership or other fees they pay directly to a landowner group negotiating on their behalf.

Will Union Gas provide any funds to a landowner group to negotiate on behalf of landowners?

Union Gas will compensate the negotiation committee members of a landowner group, for their time to attend meetings on behalf of the landowners they represent. The OEB may order Union Gas to pay the landowner committee costs when it makes a decision regarding the project.

How will I benefit from signing early in the planning stages for the project?

Union Gas pays an "Early Access Payment" as well as payment for damages that may be incurred as a result of activities carried out on the land. An integral part of this project is the completion of an Environmental Report by an independent third party. Early access to the land is needed to undertake comprehensive environmental, social and cultural studies that can take up to a year to complete prior to the start of construction.

If I sign the Union Gas Land Right Agreement, how will I know the company's OEB application status for the natural gas pipeline project?

Your designated land agent will provide you with regular project updates before, during and after construction. You can also find general project updates on **uniongas.com/panhandle-reinforcement**.

When will Union Gas exercise its land right options, for either a permanent easement or temporary land use, and make the required payments as outlined in the agreement?

Construction of this natural gas pipeline project is subject to approval by the OEB. Upon approval, we will notify each affected landowner that we will be exercising the land right options as outlined in the agreement. We deliver the agreed upon payments to you within 30 days of that notification.

Can I always speak to a Union Gas land agent?

Rest assured that you can call your Union Gas land agent directly with any questions or concerns you may have before, during, or after construction of the natural gas pipeline project.

Can the construction schedule be timed to avoid crops?

Your designated land agent will ensure you fully understand any potential construction-related impacts, including to crops, and how you will be compensated. There are two different methods for calculating crop loss payments available to you. Speak to your Union Gas land agent to learn more.

How will you ensure my field tile and drainage are not impacted?

Union Gas has over 100 years of experience in constructing natural gas pipelines, including on agricultural lands. A site-specific tile and drainage plan will be implemented for your property, with your input.

How will you ensure the integrity of agricultural soils?

Union Gas has established and tested measures to preserve the integrity of agricultural soils throughout the construction process. This includes the protection and separation of topsoil and subsoil, wet soil shut down protocols, and compaction prevention measures. Your land agent can provide you with additional information.

UNION GAS LIMITED

Answer to Interrogatory from
Board Staff

Reference: Exhibit A, Tab 12, p.1-4 and Exhibit A, Tab 10, Schedule 1 "Panhandle Reinforcement Project: Environmental Report", Section 3.5.11

Union is in the process of consultation with potentially affected Indigenous communities listed in Table 12-1 in the evidence.

a) Provide an update on the progress of the consultation and how Union plans to address any concerns and issues identified during the consultation.

b) Since the application was filed, were there any new issues and concerns raised by the consulted Indigenous communities? If so, how is Union addressing and resolving the concerns and issues?

Response:

a) Union has continued to consult with the Caldwell First Nation, Aamjiwnaang First Nation, the Chippewa's of the Thames First Nation, and the Kettle & Stony Point First Nation since filing the Project's application.

   The Caldwell First Nation and the Kettle & Stony Point First Nation have been involved with the archaeological surveys that have been completed for the Project.

   The Aamjiwnaang First Nation and Chippewa's of the Thames First Nation have requested future meetings be held to inform them of ongoing activity and progress.

   Union will continue to consult with all of the First Nations and the Métis Nation of Ontario to provide up to date information as requested.

b) No new issues or concerns have been raised.

UNION GAS LIMITED

Answer to Interrogatory from
Board Staff

Reference: Tab 2, Application, p.1, Paragraph 1

Union applied for OEB order for leave to construct facilities-under section 90(1) of the OEB Act. OEB's standard conditions of approval for section 90 applications are set out below. If Union does not agree to any of the draft conditions of approval noted below, please identify the specific conditions that Union disagrees with and explain why. If Union would like to recommend changes, please provide the proposed changes. Please note that these conditions are standard conditions and are a draft version subject to additions or changes.

Draft

Leave to Construct Conditions of Approval Application under Sections 90 of the OEB Act

Union Gas Limited

EB-2016-0186

1 Union Gas Limited (Union) shall construct the facilities and restore the land in accordance with the Board's Decision and Order in EB-2016-0186 and these Conditions of Approval.

2. (a) Authorization for leave to construct shall terminate 12 months after the decision is issued, unless construction has commenced prior to that date.

(b) Union shall give the OEB notice in writing:

i. of the commencement of construction, at least ten days prior to the date construction commences;
ii. of the planned in-service date, at least ten days prior to the date the facilities go into service;
iii. of the date on which construction was completed, no later than 10 days following the completion of construction; and
iv. of the in-service date, no later than 10 days after the facilities go into service.

3. Union shall implement all the recommendations of the Environmental Protection Report filed in the proceeding.

4. Union shall advise the OEB of any proposed change to OEB- approved construction or restoration procedures. Except in an emergency, Union shall not make any such change without prior notice to and written approval of the OEB. In the event of an emergency, the OEB shall be informed immediately after the fact.

5. Union shall file, in the proceeding where the actual capital costs of the project are proposed to be included in rate base, a Post Construction Financial Report, which shall indicate the actual capital costs of the project and shall provide an explanation for any significant variances from the cost estimates filed in this proceeding.

6. Both during and after construction, Union shall monitor the impacts of construction, and shall file with the OEB one paper copy and one electronic (searchable PDF) version of each of the following reports:

a) a post construction report, within three months of the in-service date, which shall:
   i. provide a certification, by a senior executive of the company, of Union's adherence to Condition 1;
   ii. describe any impacts and outstanding concerns identified during construction;
   iii. describe the actions taken or planned to be taken to prevent or mitigate any identified impacts of construction;
   iv. include a log of all complaints received by Union, including the date/time the complaint was received, a description of the complaint, any actions taken to address the complaint, the rationale for taking such actions; and
   v. provide a certification, by a senior executive of the company, that the company has obtained all other approvals, permits, licences, and certificates required to construct, operate and maintain the proposed project.

b) a final monitoring report, no later than fifteen months after the in-service date, or, where the deadline falls between December1 and May 31, the following June 1, which shall:

   i. provide a certification, by a senior executive of the company, of Union's adherence to Condition 3;
   ii. describe the condition of any rehabilitated land;
   iii. describe the effectiveness of any actions taken to prevent or mitigate any identified impacts of construction;
   iv. include the results of analyses and monitoring programs and any recommendations arising therefrom; and

v. include a log of all complaints received by Union, including the date/time the complaint was received, a description of the complaint, any actions taken to address the complaint, the rationale for taking such actions.

Response:

Union accepts the Board's Proposed Conditions of Approval.

UNION GAS LIMITED

Answer to Interrogatory from
The Association of Power Producers of Ontario ("APPrO")

Reference:

i. Exhibit A, Tab 3, page 6-7
ii. Exhibit A, Tab 5, pages 13-16
iii. Exhibit A, Tab 5, page 8, Table 5-1
iv. Exhibit A, Tab 5, page 12, Table 5-2

Preamble: In Reference (i), Union discusses Ontario's *Climate Change Action Plan* (CCAP) and in particular the province's plan to allocate

"almost $4 billion … in new grants, rebates and other subsidies directed toward energy retrofits and efficiency measures aimed at homeowners reduce their carbon footprints".

In Reference (ii), Union discusses its DSM program, which is intended to reduce natural gas consumption.

In Reference (iii), Union provides a year by year forecast of the increase in Design Day demands on the Panhandle system from new loads.

In Reference (iv), Union provides a forecast of the increase in new Panhandle Design Day loads for the period from 2016 to 2021 and the period from 2022 to 2034.

APPrO would like to understand how the future effects of CCAP and DSM on existing loads have been incorporated in this forecast.

a) Please estimate how much of the CCAP's $4 billion could be available to be spent in the region served by the Panhandle system using population ratios and any other means Union has employed to estimate such figures. Please list any material assumptions and describe the methods Union used to calculate these figures.

b) Please estimate the total DSM funds that Union will make available to the customers served by the Panhandle system for the period up to 2020. Please list any material assumptions and describe the methods Union used to calculate these figures.

c) Please provide a table containing estimates of the impact on the Design Day load from existing customers from 2016 forward for the market served by the Panhandle system as a result of each of the funding indicators noted in (a) and (b) above. For each funding indicator, please indicate if these impacts are explicitly reflected in the market demand forecasts in Tables 5-1 and 5-2 and, if so, please provide the details of the impact. Please list any material assumptions and describe the methods Union used to calculate these figures.

d) In the event that Union has not incorporated any demand reduction from existing markets due to application of CCAP and DSM funding, please explain why Union has not done so and provide any analysis performed to arrive at this conclusion.

e) In the event that Union were to direct its total DSM budget for each year from 2017 to 2020 only to customers served by the Panhandle system, and assuming the use of such funds was limited to those initiatives that could specifically lower the peak day demand, please provide a table estimating, by year, the reduction in Design Day demand that could be achieved from the application of such funds.

Response:

a) The CCAP lacks the required level of detail to determine how much of the CCAP's $4 billion could be spent in the region served by the Panhandle System. Union has not attempted to estimate such figures. If CCAP funds were allocated on the basis on population, approximately 4% would be allocated to the region served by the Panhandle System[1]. However, simply calculating the portion of the $4 billion attributable to the region served by the Panhandle System using population ratios may not be appropriate, since population may not be the basis for allocation of CCAP funds. Please see the response at Exhibit B.Staff.4 c).

b) Union's Board-approved DSM budget is allocated at a rate class level, not based on customers' locations on Union's distribution system. For the purpose of this response, Union estimates that the total DSM budget made available to customers served by the Panhandle System is approximately $10 million per year, for the term of 2018-2020. The actual DSM budget made available to Panhandle system customers will depend on their level of participation in Union's DSM programs.

In conducting this analysis Union first allocated the DSM budget to each individual rate class as per the methodology used in EB-2016-0245, Working Papers, Schedule 11. Union then estimated the percent of customers served by the Panhandle System, and applied that percentage to the DSM budget per rate class. By way of illustration, if 30% of Rate M4 customers are served by the Panhandle System, this analysis assumes 30% of the DSM budget will be made available to those customers. The estimated number of customers served by the Panhandle System can be found in Union's response at Exhibit B.IGUA.1 b).

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[1] The population of the region served by the Panhandle System relative to the total population of Ontario is approximately 4%.

c) Please see the response at Exhibit B.Staff.4 c).

d) Please see the response at Exhibit B.Staff.4 c).

e) Union’s DSM programs are primarily focused on reducing the customer’s annual natural gas consumption. As outlined in the Board’s decision in the 2015-2020 DSM Plan proceeding (Union/Enbridge EB-2015-0029/EB-2015-0049), Union will conduct a study assessing the potential of DSM to avoid/defer infrastructure investments. One of the objectives of the study is to assess the impacts of DSM on peak day demand. The study is being conducted in collaboration with Enbridge Gas Distribution and the results of the study will be made available to all stakeholders as part of the DSM mid-term review. It is currently premature to assess the impacts DSM could have on the Design Day demand of Union’s distribution system.

   Please see the response at Exhibit B.Staff.4 c).

UNION GAS LIMITED

Answer to Interrogatory from
The Association of Power Producers of Ontario ("APPrO")

Reference: i. Exhibit A, Tab 5, p.4-5
ii. Exhibit A, Tab 5, Table 5-1

Preamble: Union notes that a portion of the demand increase is related to customers that currently use interruptible service wanting to switch to firm service. APPrO would like to better understand this demand and the relative benefits of accessing firm service.

a) For each forecast year noted in Table 5-1, please indicate how much of the annual Design Day growth is:

i. Related to customers wanting to switch from interruptible to firm service;
ii. Organic growth in the general service market; and
iii. New contract customers (excluding any migration from interruptible load noted in (i) above).

b) For each year of Design Day demand growth noted in Table 5-1, please list, by contract rate class, the amount of capacity committed to customers that have signed binding precedent agreements.

c) For those customers noted in (a)(i) that are requesting firm service, please provide a table with Union's best estimate of their annual cost of alternative fuel, assuming that they would be interrupted in an amount similar to the interruptions Panhandle customers faced in the severe winter of 2014/15 (Exhibit A, Tab 5, page 5).

Response:

a)

Panhandle Annual Increase in System Demand (43.1 HDD IOFF) (TJ/d)	Forecast					
	W 16/17 (Leamington Expansion Project)	W 17/18 (Panhandle Reinforcement Project)	W 18/19	W 19/20	W 20/21	W 21/22
Conversion from interruptible to firm service	25	46	-	-	-	-
Growth in general service rate classes	3	2	2	3	2	4
New contract customers	9	10	13	10	8	6
Total	37	58	15	13	10	10

b) Please see the response at Exhibit B.Staff.4 c).

c) The table below estimates the annual cost of alternate fuel for the Panhandle system market that is displaced and replaced with firm natural gas service after the Panhandle Reinforcement Project is placed into service.

Alternative Fuel Mix		
Oil		60%
Diesel		25%
Propane		15%
Alternative Fuel Cost (/GJ)		
Oil	$	9.45
Diesel	$	15.05
Propane	$	13.98
Weighted cost of alternative fuel per GJ	$	11.53
Total Alternative Fuel Requirement on Peak Day (GJ)		69,000
Cost of Alternative Fuel per Day of Interruption	$	795,310.28
Days of Interruption in Winter 14/15		15.7
Annual Cost of Alternative Fuel	$	12,486,371.35

UNION GAS LIMITED

Answer to Interrogatory from
The Association of Power Producers of Ontario ("APPrO")

Reference: i. Exhibit A, Tab 4, p.4
ii. Exhibit A, Tab 5

Preamble: Union discusses alternatives to the proposed facilities.

a) In Reference (i), Union notes that two C1 shippers have year-round contracts to transport gas from Ojibway to the Dawn Hub.

i. Please provide the firm contract demand capacity for each of these two shippers.

ii. To reduce the need for new facilities, did Union approach these two customers to determine the types of conditions they would be prepared to accept to obligate their delivery at Ojibway during peak times?

b) Union notes at Reference (i) that the maximum import capability at Ojibway is 115 TJ/d, which is based on a summer month limitation.

i. What is the winter period import limitation?

ii. Please explain whether Union considered (a) contracting for higher upstream capacity in winter for system supply and (b) where possible, mitigating the cost of any unutilized capacity costs during the months when import capacity might be restricted. If so, please describe the projected impacts and, if not, please explain why Union did not consider these options.

c) Did Union consider requiring new customers fed from the Panhandle system to deliver their peak supply at Ojibway as an alternative to building the proposed facilities? If so, please describe. If not, please explain why Union did not consider this option.

d) Please provide a list of the other types of commercial and non-facility alternatives Union considered to reduce the need for building new facilities and explain why Union did not pursue these alternatives.

Response:

a) i. The two C1 transportation contract details are listed below:

Ojibway to Dawn						
Contract ID	Customer Name	Term Start	Term End	Quantity (GJ/d)	Firm or Interruptible	Renewal Rights
C10106	Emera Energy Incorporated	Nov 1/15	Oct 31/20	21,016	Firm	Yes
C10112	Direct Energy Marketing Ltd.	Apr 1/16	Apr 30/17	21,101	Firm	No

ii. Please see the response at Exhibit B.Staff.3 a) for the alternatives Union considered to reduce the need for new facilities including obligating C1 transportation customers to deliver at Ojibway.

b) i. Maximum firm winter import limitation is 140 TJ/d as referenced at Exhibit B LPMA.11 d). This is based on the lowest expected winter demand in the Windsor area and is the maximum firm amount Union could accept at Ojibway over the winter period.

ii. Please see the response at Exhibit B.Staff.3 a).

Union has discussed the possibility of longer term, renewable, winter-only capacity to Ojibway with PEPL but PEPL has not been able to provide the capacity to date. Union considers winter-only upstream transportation capacity unlikely to be available directly from PEPL or in the secondary market. Alternatives involving incremental supply at Ojibway are addressed at Exhibit A, Tab 6, pp.10-11 as well as the response at Exhibit B.IGUA.9 b) and Exhibit B.IGUA.10 f).

c) Union did consider but did not pursue requiring new customers fed from Union's Panhandle System to deliver their peak supply at Ojibway due to the risks associated with Ojibway being an non liquid trading point. Also, please see the response at Exhibit B.Staff.3 a) and Exhibit B. FRPO.2 a).

d) Please see the response at Exhibit B.Staff.3 a).

UNION GAS LIMITED

Answer to Interrogatory from
The Association of Power Producers of Ontario ("APPrO")

Reference: Exhibit A, Tab 6

Preamble: Union proposes developing new facilities to accommodate the forecasted growth in firm Design Day demand of 106 TJ/d by 2022. This includes the replacement of an existing NPS 16 pipeline with a much larger NPS 36 pipeline and significant station modifications.

a) Assuming that (a) the Panhandle system pipeline capacity is sustainable in the long run for the general service market, in that CCAP, DSM, and self-funding conservation initiatives are sufficient to allow new general service market growth to continue without the need to add any new facilities and (b) the Board only authorizes new facilities to accommodate the aggregate volume of contract capacity currently committed to under binding customer precedent agreements, without regard for future growth potential:

   i. Please provide the committed volume under binding precedent agreement.

   ii. Please describe how the Project would change in scope.

Response:

a) i.)ii) Union does not agree with the premise of the question that assumes existing facilities are sufficient to support current and future general service market growth without the need to add any new facilities, even considering the potential long-term impacts of the Climate Change Action Plan, DSM and self-funding conservation initiatives.

Please see the response at Exhibit.B.Staff.4 c).

UNION GAS LIMITED

Answer to Interrogatory from
The Association of Power Producers of Ontario ("APPrO")

Reference: Exhibit A, Tab 8

Preamble: Union proposes changes to the cost allocation methodology for the Panhandle system including the methodology for allocating costs to C1 and M16 contract customers (west of Dawn).

a) Please provide a table indicating aggregate injection levels for each and all of the M16 shippers west of Dawn that ship gas on the Panhandle system.

b) Are those M16 shippers west of Dawn that ship gas on the Panhandle system contractually prevented from injecting gas in winter? If so, please provide a copy of any contract language regarding this restriction.

c) Please provide a table with a column containing the rate impacts as filed and a column containing updated rate impacts to all classes with M16 injection volumes included in the Panhandle cost allocation.

Response:

a) Please see the response at Exhibit B.IGUA.3 b).

b) Yes, the M16 shipper is contractually prevented from transporting gas from Dawn to the storage pool during the winter period. As can be seen in the response at Exhibit.B.IGUA.3 b), the M16 transportation contract includes an interruptible Contract Demand that facilitates withdrawals *from* the storage pool and the movement of that gas *to* Dawn during the winter, in periods when Union is not curtailing transportation along this path.

c) Please see Table 1.

Table 1
Allocation of 2018 Panhandle Reinforcement Project Costs by Rate Class

Line No.	Particulars ($000's)	Proposed Cost Allocation	Updated Cost Allocation (1)
		(a)	(b)
	In-franchise South		
1	Rate M1	10,591	10,368
2	Rate M2	3,861	3,785
3	Rate M4	4,049	3,971
4	Rate M5	32	31
5	Rate M7	1,176	1,153
6	Rate M9	1	1
7	Rate M10	(0)	(0)
8	Rate T1	1,368	1,341
9	Rate T2	6,412	6,285
10	Rate T3	7	7
11	Total In-franchise South	27,497	26,942
	Ex-franchise		
12	Excess Utility Space	(20)	(20)
13	Rate C1	79	79
14	Rate M12	306	306
15	Rate M13	0	0
16	Rate M16	(16)	538
18	Total Ex-franchise	350	904
	In-franchise North		
19	Rate 01	(498)	(498)
20	Rate 10	(63)	(63)
21	Rate 20	(50)	(50)
22	Rate 100	(40)	(40)
23	Rate 25	(15)	(15)
24	Total In-franchise North	(667)	(667)
25	Total Costs	27,179	27,179

Notes
(1) Includes Rate M16 injection volumes in the proposed Project allocation factor.

UNION GAS LIMITED

Answer to Interrogatory from
The Association of Power Producers of Ontario ("APPrO")

Reference: i. Exhibit A, Tab 9
ii. Exhibit A, Tab 4, Schedule 3

Preamble: Union is proposing modifications to a number of stations as part of this project including upgrades to the Mersea Gate Station (replacement of inlet filter, boiler, boiler building, heat exchanger, pressure control and inlet piping). The Mersea Gate Station is remotely located from the proposed 36" Panhandle Reinforcement Project.

a) Please explain why Union included the Mersea Gate Station upgrades as part of the Project rather than as an independent project or as part of the Leamington Distribution Expansion Projects.

b) Please identify the 2016 and 2017 design flow of the Mersea Gate Station.

c) Please explain if the Mersea Gate Station costs are subject to the Board's distribution system expansion economic criteria and therefore included in the economics of adding new distribution loads (i.e. EBO 188)?

Response:

a/c) Panhandle System demands occur downstream of transmission stations. The Mersea Gate Station is included in the Panhandle Reinforcement Project (EBO 134) because the modifications are required prior to being able to serve the demands downstream of the station. The transmission revenue in the DCF analysis is based on the timing and quantity of the demand downstream of the stations. Absent the modifications to the Mersea Gate Station those demands could not be served.

In an alternative scenario, if there was sufficient Panhandle System capacity without the need to reinforce the Panhandle System and the constraint to servicing downstream demand was the Mersea Gate Station, then using EBO 188 criteria to expand the station would be appropriate. However, this is not the case.

b) The 2016 Design Day Flow of Mersea Gate Station is 37.6 TJ/d
The 2017 Design Day Flow of Mersea Gate Station is 42.2 TJ/d

UNION GAS LIMITED

Answer to Interrogatory from
The Association of Power Producers of Ontario ("APPrO")

Reference:
i. Exhibit A, Tab 3, p. 7
ii. Exhibit A, Tab 7
iii. EB-2015-0179

Preamble: At Reference (i), Union proposes reducing the depreciation period for the proposed facilities from 50 years to 20 years and states:

"Depreciating the asset over a 20-year useful life better aligns the cost with the timing of the reported restrictions and potential elimination of natural gas heating in homes and businesses."

The overall resulting Stage 1 NPV of the project is $(212) million; however, the direct energy savings for new customers is estimated to be $805 million.

APPrO would like to better understand the economics of the project and rationale and the impact of such a depreciation proposal.

a) Please provide all independent studies that were conducted to support the request to change the deprecation period to 20 years.

b) Please estimate the increase in overall revenue requirement and rate impact to customers with the depreciation period criterion applied to all transmission facilities commencing in 2019.

c) Please estimate the increase in revenue requirement and the rate impact to customers with the depreciation period criterion applied to all transmission and distribution facilities commencing in 2019.

d) In light of (i) CCAP and increased DSM funding resulting in the greater risk of gas demand declining over time, (ii) the proposed change in depreciation period, (iii) the highly negative Stage 1 economics, and (iv) the highly positive energy savings that new customers are expected to realize, would Union consider incorporating a surcharge for new customers in these types of circumstances, similar in nature to the "temporary connection surcharge" Union proposed in Reference (iii), in order to create better alignment between costs and benefits? Please explain why or why not.

Response:

a) There were no independent studies conducted to support Union's proposal to calculate the revenue requirement of the Project based on a 20-year depreciation term. Please see the response at Exhibit B.Staff.4 c).

b) For the purpose of this response, Union has estimated the increase in depreciation expense based on its 2013 Board-approved revenue requirement and the approved capital pass-through projects included in 2017 rates. Union estimates that if all transmission assets were depreciated over 20 years, transmission depreciation expense would increase from approximately $70 million to $150 million, or an increase of $80 million per year.

Based on a total cost of service of approximately $1.0 billion (Union's 2013 Board-approved cost of service plus the 2017 capital pass through projects), an increase in transmission depreciation expense of $80 million per year results in an average rate increase of 8%.

c) For the purpose of this response, Union has estimated the increase in depreciation expense based on its 2013 Board-approved revenue requirement and the approved capital pass-through projects included in 2017 rates. Union estimates that if all transmission and distribution assets were depreciated over 20 years, depreciation expense would increase from approximately $180 million to $340 million, or an increase of $160 million per year.

Based on a total cost of service of approximately $1.0 billion, an increase in transmission and distribution expenses of $160 million per year results in an average rate increase of 16%.

d) No. Union did not consider incorporating a surcharge for new customers similar to the "temporary expansion surcharge". Such an approach would represent a departure from Union's commitment to apply postage stamp ratemaking principles wherever possible. The intent of the "temporary expansion surcharge", introduced by Union in its Community Expansion Application (EB-2015-0179), was to help make expansions to areas currently not served by natural gas more economic. Union's proposal to reinforce the Panhandle System is a very different project in that it is not expansion to a new area, but rather reinforcement of an existing system.

UNION GAS LIMITED

Answer to Interrogatory from
Building Owners and Managers Association ("BOMA")

Reference: Exhibit A, Tab 3, p.7

a) Please provide the impact of the project on the revenue requirement of Union in each of 2017 and 2018, on the assumption that the project capital cost is depreciated over thirty years, forty years, and fifty years, respectively. Please show the calculations in each case.

b) Please provide reference to the Board's Accounting Manual, and the CICA Handbook, if any, that are pertinent to the Union proposed change to a twenty year useful life from a fifty year useful life for depreciation purposes.

Response:

a) Please see Attachment 1. Please note that the revenue requirement using Board-approved depreciation rates was also filed at Exhibit A, Appendix B, Schedule 1.

b) Section 5 of the Board’s Uniform System of Accounts for Gas Utilities (http://www.ontarioenergyboard.ca/documents/GasUSO.htm) states that depreciation shall be charged monthly to account no. 303**,** "Depreciation", or other appropriate accounts, with concurrent credits to the account for accumulated depreciation, amounts that will allocate the service value of the plant over its estimated service life in a systematic and rational manner.

   As described at Exhibit A, Tab 3, p.7, the longer term uncertainty created by Cap and Trade and the CCAP has driven the need for Union to calculate the revenue requirement and resulting rate impacts based on recovery over a 20-year life of the Project.

UNION GAS LIMITED
Panhandle Reinforcement Project Revenue Requirement

Line No.	Particulars ($000's)	As Filed (20 Years Depreciation) 2017	As Filed (20 Years Depreciation) 2018	OEB Approved Depreciation Rates 2017	OEB Approved Depreciation Rates 2018	30 Years Depreciation 2017	30 Years Depreciation 2018	40 Years Depreciation 2017	40 Years Depreciation 2018	50 Years Depreciation 2017	50 Years Depreciation 2018
		(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)
	Rate Base Investment										
1	Capital Expenditures	243,651	20,818	243,651	20,818	243,651	20,818	243,651	20,818	243,651	20,818
2	Average Investment	26,990	241,849	28,751	249,046	27,992	245,941	28,492	247,987	28,793	249,214
	Revenue Requirement Calculation:										
	Operating Expenses:										
3	Operating and Maintenance Expenses (1)	3	15	3	15	3	15	3	15	3	15
4	Depreciation Expense (2)	6,008	12,536	2,486	5,185	4,005	8,357	3,004	6,268	2,403	5,014
5	Property Taxes	261	1,569	261	1,569	261	1,569	261	1,569	261	1,569
6	Total Operating Expenses	6,271	14,120	2,750	6,769	4,268	9,941	3,267	7,852	2,666	6,598
7	Required Return (5.775% x line 2) (3)	1,559	13,966	1,660	14,382	1,616	14,203	1,645	14,321	1,663	14,392
	Income Taxes:										
8	Income Taxes - Equity Return (4)	312	2,799	333	2,882	324	2,846	330	2,870	333	2,884
9	Income Taxes - Utility Timing Differences (5)	(3,123)	(3,706)	(4,393)	(6,356)	(3,845)	(5,213)	(4,206)	(5,966)	(4,423)	(6,418)
10	Total Income Taxes	(2,811)	(907)	(4,060)	(3,474)	(3,521)	(2,366)	(3,876)	(3,096)	(4,090)	(3,534)
11	Total Revenue Requirement (line 6 + line 7 + line 10)	5,019	27,179	350	17,677	2,364	21,778	1,036	19,077	239	17,456
12	Incremental Project Revenue	250	1,572	250	1,572	250	1,572	250	1,572	250	1,572
13	Net Revenue Requirement (line 11 - line 12)	4,768	25,607	100	16,105	2,113	20,206	786	17,505	(11)	15,884

Notes:
(1) Expenses include incremental O&M for stations and pipe.
(2) Depreciation expense based on the term requested in the Interogatory.
(3) The required return of 5.775% assumes a capital structure of 64% long-term debt at 4.00% and 36% common equity at the 2013 Board-approved return of 8.93% (0.64 x 0.0400 + 0.36 x 0.0893).
For the "As Filed", the 2018 required return calculation is as follows:
$241.849 million x 64% x 4.00% = $6.191 million plus
$241.849 million x 36% x 8.93% = $7.775 million for a total of $13.966 million.
(4) Taxes related to the equity component of the return at a tax rate of 26.5%.
(5) 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

Answer to Interrogatory from
Building Owners and Managers Association ("BOMA")

Reference: Exhibit A, Tab 3, p.9

a) Who are the two shippers with the C-1 contracts from Ojibway to Dawn?

b) What is the term of each contract? What is the capacity of each contract? When do the two contracts expire? Are they renewable; on what terms?

c) Why cannot Union rely on the contracts to deliver gas when planning the system?

d) Please provide copies of the contracts or the C1 template (standard form) C1 long term contract, and explain how, if at all, the two Ojibway to Dawn contracts differ from the template.

e) Have there been any recent failures of the 60 TJs and C1 Ojibway contracts?

Response:

a) As described in the response at Exhibit B.FRPO.4 and in the table at Exhibit B.APPrO.3 a) i), the two shippers currently holding firm C1 transportation contracts from Ojibway to Dawn are Emera Energy Incorporated and Direct Energy Marketing Limited.

b) The Emera C1 transportation contract (Contract ID C10106) initial term expires on October 31, 2020 but contains a renewal provision that allows for a one (1) year renewal, and every one (1) year thereafter, with termination subject to notice in writing by Emera at least two (2) years prior to expiration. The Direct Energy transportation contract does not contain renewal rights and will expire on April 30, 2017.

c) The easterly flowing “counter flow” Ojibway to Dawn C1 ex-franchise firm transportation contracts are not obligated to arrive on Design Day. Union does not rely on these contracts to serve firm demand on Design Day due to the risk of not being able to provide reliable service to in-franchise customers. C1 transportation contracts are predominantly held by marketers who seek flexibility and optionality to divert gas supply to take advantage of higher prices at natural gas trading hubs.

   Counter flow is a terminology used to describe contracts which flow in the opposite direction to the Design Day gas flow direction. The Panhandle System Design Day gas flow direction is westerly from Dawn towards Ojibway.

Union's design methodology of not including "counter flow" ex-franchise transportation contracts to serve firm Design Day demand was also discussed in EB-2015-0200 (Union's Dawn Parkway 2017 Expansion) in Union's response at Exhibit B.FRPO.3 d).

Please see Exhibit B.Staff.3 c).

d) Union's standard C1 Transportation Contract can be found at www.uniongas.com/~/media/storagetransportation/resources/standardcontracts/C1_Contract.pdf
The Emera Energy Incorporated C1 transportation contract has a renewal provision, as outlined in the response at Exhibit B.BOMA.2 b), which is inserted into the Special Provisions section of Schedule 1.

e) Union has experienced no recent failures to deliver the 60 TJ/d of firm transportation service to Ojibway on PEPL.

Contracts for C1 Ojibway to Dawn transportation capacity are held by ex-franchise shippers. The utlization of these contracts is dictated by the contracting shipper, and therefore deliveries at Ojibway can and do vary as shown in Exhibit B.FRPO 8 c) iii). Union has not recently failed to deliver nominated quantities from Ojibway to Dawn for its firm C1 transportation shippers. Union is also not aware of any recent instance where its C1 transportation shippers experienced a failure by PEPL to deliver to Ojibway.

UNION GAS LIMITED

Answer to Interrogatory from
Building Owners and Managers Association ("BOMA")

Reference: Exhibit A, Tab 5, p.1-21

a) Why is London Airport data used to model the design day degree days rather than the Windsor airport, which should be more representative of the temperature in this case (Kingsville, Leamington) of the Panhandle system market?

b) Please confirm the degree day differences between the London and Windsor airports and winter temperature difference between London airport and Kingsville and Leamington and Windsor, and between Windsor airport and Kingsville and Leamington.

c) What would design day capacity be if measured at (i) Windsor; or (ii) a blend of London/Windsor?

d) Please show the growth forecast over the 2017-2021 period, and for the period past 2022 for each component of the market, including:

  i. East of Dover (Chatham Kent);
  ii. Leamington;
  iii. Kingsville;
  iv. Lakeshore;
  v. Tecumseh;
  vi. West Windsor cogen;
  vii. Brighton Bruce Power;
  viii. City of Windsor;
  ix. Other.

Response:

a) London Airport weather is used to determine the design degree days for the entire Union South delivery area as it is centrally located within the delivery area. London Airport data provides a consistent weather standard by which all of the Union South distribution, transmission, and storage facilities are designed to serve.

b) On average, Windsor Airport is 1.7 degree days warmer than London Airport however Windsor has experienced colder single day temperatures than London. For example, the coldest degree day during the winter of 2013/2014 occurred on January 16, 2014 where Windsor experienced a 43.5 Design Day (“DD”) while London experienced a 41.5 DD. The 43.5 degree day is higher than Union South design of 43.1 DD. Union does not have weather data specifically for Leamington or Kingsville.

c) Using Windsor degree days rather than London degree days actually increases the DD demand for the Panhandle System. Union completes a linear regression of the actual measured volumes into the Panhandle System with respect to the degree day for each day of the winter season. Using warmer degree days with the same measured volumes, increases the slope of the linear regression which when extrapolated to the design degree day results in increased DD demand. Also, the highest historical degree day at Windsor Airport is higher than that measured at London Airport which would increase the degree day demand even more (see part b) above).

d)

	Forecast Growth by Region (TJ/Day)				
Area/Customer	2017	2018	2019	2020	2021
Chatham-Kent	1	6	10	12	13
Leamington/Kingsville	38	45	51	57	63
Lakeshore	0.3	0.3	0.3	0.3	0.3
Tecumseh	1	1	1	1	1
Windsor	18	21	23	26	29
West Windsor Cogen	-	-	-	-	-
Brighton Beach Power	-	-	-	-	-
Total	58	73	86	96	106

Union does not have a detailed forecast after 2021, but assumes generic greenhouse growth of 6 TJ/day (5 TJ/day in Leamington/Kingsville and 1 TJ/day in Chatham-Kent) as well as 1 TJ/day of generic residential demand in Windsor.

UNION GAS LIMITED

Answer to Interrogatory from
Building Owners and Managers Association ("BOMA")

Reference: Exhibit A, Tab 5, p.6

How much capacity is currently available?

a) for Chatham Kent and environs;
b) west of Dover Transmission.

What percentage of design day capacity does this capacity represent?

Response:

For Winter 2016/2017 there is a very limited amount of capacity available for general service growth. There is no ability to attach any larger volume firm customer.

UNION GAS LIMITED

Answer to Interrogatory from
Building Owners and Managers Association ("BOMA")

Reference: Exhibit A, Tab 5, p.17

a) Did Union's reverse open season apply to the two long-term C1 customers as well? If not, please explain why not.

b) Please identify the greenhouse operations that have chosen to expand in Ohio.

c) Please describe the extent to which CO_2 produced by natural gas consumption at the greenhouse can be utilized within the greenhouse. Please provide a quantitative analysis.

d) Please provide the amount of IT service on the Panhandle system in each year since 2012 (inclusive).

e) Please indicate what components of the existing and forecast demand off the Panhandle system are:

i. heat sensitive (residential, commercial);
ii. heat sensitive (greenhouse);
iii. non-heat sensitive – electricity generation; Brighton Beach; West Windsor;
iv. non-heat sensitive – commercial (eg. commercial/institutional hot water; industrial);
ii. in each case, please state the sector or subsector volume/contract demand and the extent to which it is heat sensitive.

Response:

a) No, the reverse open season noted did not apply to the long term, firm C1 Ojibway to Dawn transportation contracts. Since the firm C1 Ojibway to Dawn transportation contracts are not included in the Panhandle System design on a Design Day, Union did not offer any turn back to its firm C1 transportation customers. As noted in Exhibit B.Staff.3 a), Union has secured a delivered service to Ojibway from one of the C1 firm transportation shippers. That shipper continues to hold its C1 Ojibway to Dawn transportation capacity with no immediate intention to turn the capacity back.

b) Within the last 18 months there are two operations that have chosen to expand in Ohio, rather than in the Leamington area.

NatureFresh Farms has indicated they will spend $250 million to develop 175 acres in Ohio. Just over 15 acres is in production today and 45 acres will be producing product by the end of 2016.

GoldenFresh is currently building 20 acres as phase 1 of a 4-phase plan. The current plan is to build 100 acres over 7 to 10 years

Union's Greenhouse Account Managers have been informed by two other greenhouse operators that they are reviewing Ohio as a possible location to expand their operations.

c) CO2 is one by-product of burning natural gas. A greenhouse operator will capture the CO2 using a flue gas condenser that is attached to the flue of the unit burning the natural gas. The captured CO2 gas is then fed back to the greenhouse. Growers can control the amount of CO2 that is released to the plants via control systems. Typically, during the daylight hours, more CO2 is needed for plant growth. A natural gas boiler will, on average, produce 2 kilograms of CO2 per m^3, of natural gas burned. On average, a greenhouse will require 100 kilograms of CO2 per acre. Increased CO2 levels can shorten the growing period by 5-10%, and improve crop quality and yield. The increased yield is a result of increased numbers of plants and faster flowering per plant.

It is important to note that without a CO2 by-product, a grower would have to purchase CO2 as the ambiant environment does not provide the needed amount for ideal production. For further information please see the following website.

http://www.omafra.gov.on.ca/english/crops/facts/00-077.htm

d)

Panhandle System Interruptible Volumes (from Contracts as of March 31 of a given year)	
Year	Panhandle IT (TJ/d)
2012	170.1
2013	170.1
2014	169.2
2015	136.2

e)

Cumulative (TJ/Day)	W 15/16	W 16/17	W 17/18	W 18/19	W 19/20	W 20/21	W 21/22
Heat Sensitive (residential) Heat Sensitive (commercial)	294	298	300	302	304	306	309
Heat Sensitive (greenhouse)	41	74	112	124	135	143	150
Heat Sensitive (industrial)	49	49	67	68	68	68	68
Non-heat Sensitive (electricity generation)	130	130	130	130	130	130	130
Total	514	551	609	624	637	647	657

Note: for the purposes of planning, all contract load is accumulated into one group. The result is that the contract rate demand as modeled (as a whole) is heat sensitive.

UNION GAS LIMITED

Answer to Interrogatory from
Building Owners and Managers Association ("BOMA")

Reference: Exhibit A, Tab 6, p.9 of 15

a) Has Union renewed its existing 60 TJ/day of PEPL capacity; on what terms and over what period?

b) Did it acquire the additional 34 TJs per day?

Response:

a) As a correction to Exhibit A, Tab 6, p.9, line 11-19 the amount of non-renewable PEPL capacity is 23 TJ/d (not 21 TJ/d) which leaves 37 TJ/d (not 39 TJ/d) of the 60 TJ/d of PEPL capacity, subject to Right of First Refusal (“ROFR”). Union will exercise its ROFR on the 37 TJ/d as provided in the PEPL Tariff in 2016 and 2017 in advance of the expiry of those contracts. As stated at Exhibit A, Tab 6, pp.10-11, excercising the ROFR means that it will be required to match any other offers on the transportatoin capacity that Union is attempting to renew. For example, if Union were to request a 2 year term on the ROFR capacity and another party offered a 15 year term on the same path, Union would have to match the 15 year term to retain that capacity.

b) No. See the response at Exhibit B.Staff.3 a).

Union was unable to secure its 23 TJ/d of firm transporation capacity without ROFR rights as capacity at the Ojibway interconnect is not available during the November 1, 2017 to October 31, 2022 time period. Accordingly, Union has also not been able to secure an incremental 34 TJ/d of upstream pipeline capacity on PEPL to Ojibway. Union also continues to discuss the potential of incremental capacity with PEPL however, Union does not expect that capacity to be available.

UNION GAS LIMITED

Answer to Interrogatory from
Building Owners and Managers Association ("BOMA")

Reference: Ibid: Exhibit A, Tab 6, p.4 of 15

Why would the Ojibway option require 16 km of NPS 12 pipeline into Kingsville, while the proposed solution would not (require that particular investment)?

Response:

There are two ways to increase system capacity: 1) increase the pressure and, 2) increase the diameter of the pipeline.

The alternative with incremental deliveries at Ojibway requires the NPS 36 pipeline to be installed between Dawn and the Dover Center Valve Site (13 km less than Proposed Pipeline). This configuration does not increase the pressure along NPS 20 Panhandle Line to the Leamington/Kingsville market area as much as the Proposed Pipeline. Since the pressure is not as high, and cannot be raised enough to accommodate the five (5) year forecast, the only option is to increase the pipe diameter into the market area. This is why the NPS 12 pipeline into Kingsville is required as part of that alternative.

UNION GAS LIMITED

Answer to Interrogatory from
Building Owners and Managers Association ("BOMA")

Reference: Ibid: response assumes, Exhibit A, Tab 8, p.7

Please confirm that lines 6 and 7 should refer to the revenue requirements, not project costs. If not, please explain.

Response:

Confirmed.

UNION GAS LIMITED

Answer to Interrogatory from
Building Owners and Managers Association ("BOMA")

Reference: Ibid: response assumes, Exhibit A, Tab 8, p.12

Please explain how the current rate design process provides in-franchise customers with a benefit, if any, from ex-franchise transmission margin generated. What is the relevance of the benefit provided, if any, to the issue of cost allocation.

Response:

Union's current rate design provides a benefit to in-franchise customers related to ex-franchise storage and transportation revenue that is greater than allocated ex-franchise storage and transportation costs. In Union's 2013 cost of service proceeding (EB-2011-0210) approved by the Board, in-franchise customers' rates were reduced by approximately $9.6 million related to ex-franchise transmission margin (including $3.4 million associated with the Panhandle System and St. Clair System) and $4.6 million related to ex-franchise storage margin.

The ex-franchise transmission margin is relevant to cost allocation because the margin is calculated as the difference between the forecasted revenue and the allocated costs for each ex-franchise rate class. To the extent there is ex-franchise revenue as part of the cost of service proceeding, in-franchise customers will receive the same net benefit either by way of a reduction to the allocated in-franchise costs or a reduction to in-franchise rates through the margin credit.

UNION GAS LIMITED

Answer to Interrogatory from
Building Owners and Managers Association ("BOMA")

Reference: Ibid, p.20

Can Union interrupt the two Agreements if necessary to maintain service to its in-franchise customers (i) on design day; (ii) under emergency conditions?

Response:

Union assumes the question refers to the C1 transportation contracts. Curtailing firm easterly transport from Ojibway to Dawn does not create incremental capacity to serve in-franchise demand.

UNION GAS LIMITED

Answer to Interrogatory from
Building Owners and Managers Association ("BOMA")

Reference: Ibid: response assumes, Exhibit A, Tab 8, p.16

In Union's 2013 cost of service, of the $3.4 million excess incremental revenue over allocated costs related to long-term/short-term C1 forecast revenue allocated costs, how much was from the Panhandle system; how much from the remainder of Panhandle/St. Clair? What was the actual excess revenue over cost (in Panhandle) of the last five years, and how was that accounted for?

Response:

Of the $3.4 million ex-franchise transportation margin credited to in-franchise customers in Union's 2013 cost of service (EB-2011-0210), $0.7 million is related to the Panhandle System and $2.7 million is related to the St. Clair System. The $3.4 million of ex-franchise transportation margin is related to Rate C1 and Rate M16 services. The detail of the ex-franchise transportation margin for the Panhandle System and St. Clair System is provided at Attachment 1, p.1.

The actual Rate C1 and Rate M16 revenue associated with the Panhandle System from 2011 to 2015 is provided at Attachment 1, p.2. Union does not maintain the cost detail required to calculate the actual ex-franchise transportation margin of the Panhandle System outside of a cost of service forecast. Rate C1 and Rate M16 revenue is included in the calculation of utility earnings, which is subject to sharing with ratepayers during Union's IRM term, as per Union's 2014-2018 IRM Settlement Agreement (EB-2013-0202).

UNION GAS LIMITED
Summary of Ex-Franchise Transportation Margin Associated with the Panhandle System and St. Clair System
Included In 2013-2015 In-Franchise Rates

Line No.	Particulars ($000s)	2013 Approved Forecast Revenue (1)	2013 Approved Allocated Cost (2)	Total Margin Included in 2013-2015 In-Franchise Rates
		(a)	(b)	(c) = (a - b)
	Panhandle System			
1	C1 Long-term Transportation	1,197	1,086	111
2	C1 Fuel	164	172	(7)
3	M16	204	247	(43)
4	Short-term Transportation	1,557	896	661
5	Total Panhandle System	3,122	2,401	722
	St. Clair System			
6	C1 Long-term Transportation	2,000	-	2,000
8	M16	330	172	158
9	Short-term Transportation	808	303	505
10	Total St. Clair System	3,139	475	2,663
11	Total Panhandle System and St. Clair System	6,261	2,876	3,385

Notes:
(1) EB-2011-0210, Rate Order, Working Papers, Schedule 14, pp. 9 - 11, column (g).
(2) EB-2011-0210, Rate Order, Working Papers, Schedule 14, pp. 9 - 11, column (e).

UNION GAS LIMITED
Actual Ex-Franchise Transportation Revenue Associated with the Panhandle System

Line No.	Particulars ($000s) (1)	2011	2012	2013	2014	2015
		(a)	(b)	(c)	(d)	(e)
1	C1 Long-term Transportation	1,223	1,350	1,368	1,463	1,144
2	C1 Fuel	-	-	-	-	-
3	M16	224	177	150	190	208
4	Short-term Transportation	1,026	1,782	742	2,715	1,173
5	Total	2,473	3,309	2,259	4,368	2,525

Notes:
(1) Actual revenue excludes customer supplied fuel.

UNION GAS LIMITED

Answer to Interrogatory from
Building Owners and Managers Association ("BOMA")

Reference: Exhibit A, Tab 8, Schedule 2

Why is the Project Allocation Factor for T2 reduced from forty-four percent (2013 April) to twenty-four percent and twenty-three percent (in 2017 and 2018, respectively)?

Response:

The 2013 Board-approved cost allocation methodology includes an allocation to ex-franchise Rate C1 and Rate M16 based on firm contracted demands and an allocation to in-franchise rate classes in proportion to the combined Panhandle System and St. Clair System Design Day demands. Union's proposed allocation factors use only the 2013 Board-approved Panhandle System Design Day demands updated for the incremental Project Design Day demands. The decrease in the allocation for Rate T2 from 44% to 24% and 23% in 2017 and 2018 respectively, is a result of removing the ex-franchise firm contract demands and the St. Clair System Design Day demands from the Board-approved allocation methodology, net of any increase related to the incremental Panhandle System Design Day demands added to the proposed allocation factors.

UNION GAS LIMITED

Answer to Interrogatory from
Building Owners and Managers Association ("BOMA")

Reference: Ibid: Exhibit A, Tab 8, p.19, Lines 1-2

Please explain the reallocation of cost components more fully.

Response:

Union’s Board-approved cost allocation methodology functionalizes certain costs based on the functionalization of rate base and O&M costs (e.g. as Transmission, Storage, or Distribution). An increase in a particular function’s rate base and/or O&M costs can also increase the allocation to that function of cost components that are functionalized based on rate base and O&M (general plant, administrative and general expenses, and general operations and engineering costs, and income and property taxes).

As a result of adding Project-related rate base and O&M to the Ojibway/St. Clair Demand functional classification, there is a shift of $1.6 million of indirect costs from distribution, storage and other transmission-related functions to the Project-related Ojibway/St. Clair Demand costs (Exhibit A, Tab 8, Table 8-7).

UNION GAS LIMITED

Answer to Interrogatory from
Building Owners and Managers Association ("BOMA")

Reference: Ibid, Tab 8, p.16

Does the constructed C1 ex-franchise supply from Ojibway to Dawn have priority, in any way, over Union's in-franchise customers, or do they share pro rata in any required shortfall of capacity on the Panhandle system on peak day, under an outage or other emergency conditions?

Response:

The C1 transportation contracts from Ojibway to Dawn are contracted as a firm service. Union's Panhandle System is designed to meet all firm loads (including in-franchise and firm C1 Ojibway to Dawn transportation contracts) on a Design Day.

If an outage or other emergency condition occurred and all interruptible load was curtailed and Union was then required to curtail firm scheduled flow, both firm in-franchise transportation and distribution services and firm ex-franchise services are located in Tier 1 of Union's Priority of Service (www.uniongas.com/~/media/aboutus/policies/POS.pdf?la=en) and would be curtailed pro rata as required.

UNION GAS LIMITED

Answer to Interrogatory from
Building Owners and Managers Association ("BOMA")

Reference: Exhibit A, Tab 8, Schedule 7

Please explain thoroughly why the impact of the Project revenue requirement is negative for the ex-franchise customers and Union North customers.

Response:

The negative revenue requirement impact on ex-franchise and Union North customers in 2017 is driven by the impact of Project-related income taxes on other functional classifications. 2017 Project-related income taxes are ($2.8) million as per Exhibit A, Tab 8, Schedule 1, column (a), line 10. Income taxes are functionalized in proportion to rate base which results in all functions receiving an allocation of the Project-related income tax credit. In 2017, the impact to ex-franchise rate classes of ($0.6) million and Union North rate classes of ($0.7) million is predominantly related to the income tax credit resulting in negative revenue requirement for these rate classes.

UNION GAS LIMITED

Answer to Interrogatory from
Building Owners and Managers Association ("BOMA")

Reference: General – June 10, 2016 Application Letter

Please provide the dollars spent, and a description of each of the NPS 16 and NPS 20 pipeline reinforcements since inception.

Response:

Union has applied to the Board for the following projects in relation to replacements that were upsized on the Panhandle System in the last 20 years:

Case Number	Name	Pipe Size	Length (metres)	Cost ($ millions)
EB-1999-0341	Sydenham River	2x12 to 16	300	0.6
RP-2000-0029	Thames River	2X12 to 16	230	1.2
EB-2013-0420	Panhandle 2014	16 to 20	13,000	29.6
EB-2015-0041	Panhandle 2015	16 to 20 16 to 16	2700 500	2.4

There have also been a number of shorter size-for-size replacements on the system to address site specific integrity and class location issues.

UNION GAS LIMITED

Answer to Interrogatory from
Building Owners and Managers Association ("BOMA")

Reference: Application, p.2

a) Please explain, in detail, the rationale for proposing to determine rates using twenty year depreciation, rather than the useful life fifty years weighted average, used in Board approved depreciation rates.

b) Why did Union not propose a twenty year useful life for the assets to be added in EB-2016-0004? Please discuss.

Response:

a) Under existing depreciation rates the capital invested in natural gas infrastructure is recovered over the estimated life of the asset (approximately 50 years). The uncertainty created by the Climate Change Action Plan is described at Exhibit B.Staff.4 c).

b) Please see the response at Exhibit B.Staff.4 a).

UNION GAS LIMITED

Answer to Interrogatory from
Building Owners and Managers Association ("BOMA")

Reference: Exhibit A, Tab 3, p.6

a)
  i. Given that the Premier has recently stated that the government is not banning natural gas or forcing anyone off it, and the fact that more work will be done to achieve longer term efficiency targets (much of which will presumably be undertaken by Union itself under DSM programs), and the government's support for renewable natural gas, why does Union see a need to propose a huge increase in the depreciation component of the revenue requirement at this time?

  ii. Why propose an interim solution at this time, in the middle of an IRM regime, rather than wait until the next rebasing which is only two years away?

b) Has Union approached the government to clarify that any stranded costs arising as a result of policy changes will one of the items be covered by revenue from the cap and trade levy? If not, why not?

c) What other options has Union explored?

d)
  i. Has Union conducted any analyses, either internally or by third parties, to assess the potential for stranded assets due to the implementation of the Ontario Government's GHG program? If so, please provide these analyses, as well as any proposals made to the Union Board on the GHG issue.

  ii. If not, please provide the rationale and the calculations and underpinning the proposal to change the weighted average useful life of its assets from fifty years to twenty years.

e) Has Union considered the utility of a hearing on the issue of a GHG impact on the gas utility industry, either separately or as part of its next rebasing case?

f) Can Union cite any precedents either in Canada or elsewhere when energy regulators have approved this radical change to the rate-making principles to address the alleged risks to gas utilities arising from the implementation of GHG reduction policies? Please provide, or provide links to, any known decisions, consultative, or studies.

Response:

a)

i. Please see the response at Exhibit B.Staff.4 c).

ii. Union's application (for incremental facilities) is brought in response to the immediate need and forecasted market demands and lack of available firm capacity on the Panhandle System (see Exhibit A, Tab 3, p.4, lines 12-13). This application is also where cost recovery will be addressed.

Please see the response at Exhibit B.Staff.4 c).

b) No. The purpose of the CCAP is to use cap and trade proceeds to reduce greenhouse gas emissions. Union is focused on the use of cap and trade proceeds (via CCAP) to fund natural gas solutions that leverage existing natural gas infrastructure, provide economic efficiencies and environmental benefits to customers.

Please see the response at Exhibit B.Staff.4 c).

c) Please see the response to part b) above.

d) i./ii.)

By reference to "GHG program", Union assumes this is in reference to the CCAP and/or the cap and trade program. Union has not conducted any such analyses either internally or externally in relation to these to assess the potential for stranded assets.

Please see the response at Exhibit B.Staff.4 c).

e) Union has not considered a separate hearing on the issue of GHG impacts on the natural gas utility industry. However, Union notes that the impact of Cap and Trade on regulated rates is addressed in EB-2015-0363 "Consultation to Develop a Regulatory Framework for Natural Gas Distributors' Cap and Trade Compliance Plans".

Union continues to work with the government on CCAP programs and believes that natural gas will be part of the solution for reducing emissions, with RNG and CNG as examples. Future review may be required but it is too early to determine. Union expects any forecast impacts will be reflected in future rate cases, if applicable.

f) There are examples of the OEB and NEB addressing accelerated depreciation rates based on factors other than physical life of the assets. These are outlined below:

The OEB made provision for accelerated cost recovery of assets by adjusting depreciation in EB-2009-0152 Report of the Board (*Regulatory Treatment of Infrastructure Investment in* *connection with the Rate-regulated Activities of Distributors and Transmitters in Ontario*) issued January 15, 2010:

"3.2.3 Accelerated Cost Recovery: Adjusting Depreciation

Traditionally, depreciation has been based on the useful life of a utility asset (in other words, the expected period of time during which it will be productive). Adjusting depreciation to reflect a contract term that is related to the use of a utility asset (such as a power purchase agreement executed by a connecting generator), or to align it with the life of a related non-utility asset (such as a connecting generation facility), is another way to reduce risk, thereby facilitating timely investment. In addition, allowing shorter depreciation periods where appropriate not only improves cash flow for the utility but should also result in a lower aggregate cost of capital over the life of the asset as the result of an accelerated decline in rate base.

The Board will therefore consider allowing utilities some flexibility in the useful life assumptions and thus the depreciation rates. Specifically, a utility may apply to use depreciation for rate purposes as follows:

- *over a period of time equivalent to a particular contract term related to the subject facility (for example, the term of the power purchase agreement with the first generator to connect to a transmission or distribution facility);*
- *over a period of time equivalent to the useful life of one or more connecting facilities;*
- *a hybrid approach, under which: a) accelerated depreciation is allowed for a pre-determined period (e.g., up to the length of the incentive regulation plan term that the utility is entering) and b) at the end of that period, the depreciation reverts to a rate determined by the remaining expected life of the asset; or*
- *any other reasonable and generally accepted regulatory method for estimating the project-specific depreciation.*

The Board will allow the depreciation established on a shorter useful life to be recovered in rates, and the resulting lower asset net book value to be added to rate base in a future cost of service proceeding." (EB-2009-0152 Report of the Board, pages 16-17)

The Board also addressed accelerated depreciation rates in the EB-2010-0207 (Union's Dawn to Dawn-TCPL transportation service), decision dated August 12, 2010.

Board Findings – Rate Design

[30] The Board finds that the proposed rate design for the Dawn to Dawn-TCPL transportation service is appropriate. Given the uncertainty regarding the demand beyond the initial 5-year term, the Board agrees with Union that the capital costs of $3.3 million should be recovered entirely over the 5-year term of the contract and therefore approves the depreciation methodology proposed by the Applicant. The Board also

agrees that any capital costs in excess of the $3.3 million estimated by Union should be paid by Union's shareholders and not its ratepayers.

The NEB has also approved accelerated depreciation for the existing Northern Ontario Line (NOL) recognizing the Economic Planning Horizon of each segment is influenced by unique factors. With respect to the usage of the NOL segment, TransCanada submitted that flows across the NOL segment have declined by roughly 70% over the past ten years and that the market demand along the NOL is also limited. TransCanada determined that a relatively short Economic Planning Horizon for the NOL, in the range of 2020 to 2030, would be appropriate. Similarly, the NEB approved accelerated depreciation rates for the Prairies Line with an Economic Planning Horizon.

TransCanada noted in the Energy East application that the accelerated depreciation for the NOL is due to the lack of perceived economic life of the asset.

The NEB also agreed with accelerated depreciation for the NOL:

"There is also no disagreement with TransCanada's proposition that the EPH of the NOL should lie somewhere between 2020 and 2030. We note TransCanada's intent to shorten the EPH of the NOL if the Restructuring Proposal is not implemented. In light of the approximately 70 per cent decline in NOL volume over the past decade and TransCanada's forecast of flat to declining NOL throughput, we are of the view that it would be appropriate for TransCanada to depreciate the NOL over a shortened time frame. Accordingly, we approve the EPH of the NOL to be 2020." (RH-003-2011 Reasons for Decision, page 54)

UNION GAS LIMITED

Answer to Interrogatory from
Building Owners and Managers Association ("BOMA")

Reference: Exhibit A, Appendix B, Schedule 1; Exhibit A, Tab 8, Schedule 6; Exhibit A, Tab 3, p.8 of 14, Table 3-10, Line 10

Please explain why the bill impact of moving from Board approved depreciation to twenty year depreciation is so much greater for Rate M4 direct purchase customers relative to M4 sales customers.

Response:

The impact of moving to 20 year depreciation is the same for a Rate M4 direct purchase customer and a Rate M4 sales service customer as shown in Attachment 1.

UNION GAS LIMITED
Rate M4 Bill Impacts

Line No.	Particulars	EB-2016-0040 Approved Annual Bill ($)	Updated Annual Bill ($)	Annual Bill Change ($)	Annual Bill Change (%)	Bill Increase over Board-Approved Depreciation Rates (3) ($)
		(a)	(b)	(c) = (b-a)	(d) = (c/a)	(e)
	Proposed 20 Year Depreciation Rates (1)					
1	Small Rate M4 - Direct Purchase	37,374	46,440	9,066	24%	2,965
2	Small Rate M4 - Sales Service	156,248	165,314	9,066	6%	2,965
3	Large Rate M4 - Direct Purchase	277,378	351,384	74,006	27%	24,205
4	Large Rate M4 - Sales Service	1,907,650	1,981,656	74,006	4%	24,205
	Board-Approved Depreciation Rates (2)					
5	Small Rate M4 - Direct Purchase	37,374	43,475	6,101	16%	
6	Small Rate M4 - Sales Service	156,248	162,349	6,101	4%	
7	Large Rate M4 - Direct Purchase	277,378	327,180	49,801	18%	
8	Large Rate M4 - Sales Service	1,907,650	1,957,452	49,801	3%	

Notes:

(1) Exhibit A, Tab 8, Schedule 6.

(2) Exhibit A, Appendix B, Schedule 6.

(3) Column (c), lines 1-4 minus column (c), lines 5-8, respectively.

UNION GAS LIMITED

Answer to Interrogatory from
Building Owners and Managers Association ("BOMA")

Reference: Exhibit A, Appendix B, Schedule 2

Why is Sarnia Industrial demand lumped in with Ojibway System Demand? What was the rationale for combining them? Please explain the project-induced large increase in M4 design day demand using current Board approved methodologies from 929 to 1,040 10^3m^3/day.

Response:

The Panhandle System and St. Clair System are combined and functionalized as Ojibway/St. Clair Transmission because both systems provide transportation opportunities for ex-franchise customers between the river crossings west of Dawn and the Dawn Compressor Station. The combined system costs are used to set a common cost-based Rate C1 long-term firm transportation rate for service between Dawn and St. Clair, Ojibway and Bluewater.

The increase in Rate M4 Design Day demands is being driven by the incremental Rate M4 demands being served as a result of the Project. As described at Exhibit A, Tab 5, p. 4, Union has received a large number of requests for new firm service and for conversion of existing Rate M5A interruptible service to firm Rate M4 service. The 2013 Board-approved Rate M4 Panhandle System Design Day demands of 929 10^3m^3/d are increasing by 696 10^3m^3/d in 2017 and an additional 343 10^3m^3/d in 2018 as a result of the Project. This total increase of 1,039 10^3m^3/d, results in total Rate M4 Panhandle System Design Day demands of 1,968 10^3m^3/d by 2018.

UNION GAS LIMITED

Answer to Interrogatory from
Building Owners and Managers Association ("BOMA")

Reference: Exhibit A, Appendix B, Schedule 3

Please explain each step in the changes made to the Board approved cost allocation for the Panhandle/St. Clair system, and the impact of each on each in-franchise and ex-franchise rate class (both Union South and North). Note: Are the numbers entitled "project cost" in the Schedule project costs by rate class or revenue requirement impacts (by rate class) of the project costs? Please clarify.

Response:

To arrive at the cost allocation impacts of the Project using Union's Board-approved cost allocation methodology, Union first updated the Ojibway/St. Clair Demand allocator in the 2013 Board-approved cost allocation study to include the maximum Project capacity of 2,739 10^3m^3 and the incremental Project demands. This first step isolates the reallocation of existing costs related to a change in the allocator. The impact by rate class of this change is shown at Exhibit A, Appendix B, Schedule 3, column (b).

Union then added the O&M, depreciation expense and required return on rate base components of the Project's 2018 revenue requirement to the 2013 Board-approved cost allocation study, functionalizing these costs directly to the Ojibway/St. Clair Demand functional classification. Union also added the property and income tax components of the Project's 2018 revenue requirement to the 2013 Board-approved cost allocation study. The cost allocation study functionalizes the Project's property tax cost based on property tax expense detail and the Project's income tax credit based on rate base. The impact by rate class of the Project-related costs on the Ojibway/St. Clair Demand functional classification and other functional classifications is shown at Exhibit A, Appendix B, Schedule 3, column (c) and column (g).

Once the O&M and rate base Project costs are added to the Ojibway/St. Clair Demand function, the cost allocation study shifts existing indirect costs allocated on rate base and O&M to the Ojibway/St. Clair Demand function from other functional classifications. The impact by rate class of the shift of costs is shown at Exhibit A, Appendix B, Schedule 3, columns (d) and column (h). The shift of costs within the cost allocation study is described in more detail at Exhibit B.BOMA.13.

The Project costs shown at Exhibit A, Appendix B, Schedule 3, column (c) and column (g) represent the Project revenue requirement impact by rate class.

UNION GAS LIMITED

Answer to Interrogatory from
Building Owners and Managers Association ("BOMA")

Reference: Exhibit A, Appendix B, Schedule 5

Please explain fully, in words, the very large difference in the changes in costs allocated to the smaller volume in-franchise rate classes (M1, M2, M4; +165%, +109% and +91%, respectively), and the large in-franchise rate class (T1, T2, -17% and -47%, respectively), and the ex-franchise C1 class (-97%), as a result of Union "interim" cost allocation proposal. Will not acting on the interim basis compromise a fair and balanced review cost allocation at Union's upcoming rebasing proceeding?

Response:

The 2013 Board-approved cost allocation methodology, updated for the Project, includes an allocation to ex-franchise Rate C1 and Rate M16 based on the firm contracted demands and an allocation in-franchise rate classes in proportion to the combined Panhandle System and St. Clair System Design Day demands.

Union’s proposed allocation of Project costs is in proportion to the 2013 Panhandle System Design Day demands only, updated to include the incremental firm Project Design Day demands in 2017 and 2018.

The increase in costs allocated to Rate M1 and Rate M2 using Union’s proposed cost allocation compared to the 2013 Board-approved methodology is related to a higher proportion of Panhandle System Design Day demands relative to the combined Panhandle System and St. Clair System Design Day demands.

The decrease in costs allocated to Rate T1 and Rate T2 using Union’s proposed cost allocation compared to the 2013 Board-approved methodology is related to a lower proportion of Panhandle System Design Day demand relative to the combined Panhandle System and St. Clair System Design Day demands.

In Union’s proposed cost allocation there is no allocation of Project-related demand costs to ex-franchise Rate C1 and Rate M16.

Union’s proposed interim allocation of Project costs does reflect the principle of cost causation during the remainder of the IRM term as Union’s proposal allocates the Project costs to those rate classes that use the Panhandle System on Design Day. Union will review the cost allocation for all Panhandle System and St. Clair System costs as part of its 2019 Rebasing application and propose an appropriate cost allocation methodology for all costs of the Panhandle System and St.

Clair System in that application. All parties involved in the 2019 rebasing proceeding will have an opportunity to review and provide argument on the cost allocation methodology proposed at that time.

UNION GAS LIMITED

Answer to Interrogatory from
Building Owners and Managers Association ("BOMA")

Reference: Ibid, Exhibit A, Appendix B, Schedule 6, p.2

With reference to large M4 rate class (lines 21-23), please explain the eighteen percent increase in delivery rate.

Response:

Union's proposed allocation of Project costs based on 2013 Board-approved depreciation rates results in $2.115 million allocated to Rate M4, as shown at Exhibit A, Appendix B, Schedule 5, column (i), line 3. The addition of $2.115 million to the existing revenue requirement of Rate M4 results in an 18% increase for a representative large Rate M4 customer in Union South with a firm contract demand of 50,000 m^3/d and an annual consumption of 12,000,000 m^3 per year.

UNION GAS LIMITED

Answer to Interrogatory from
Building Owners and Managers Association ("BOMA")

Reference: Exhibit A, Tab 9

a) Please provide the name and experience of the Pipeline contractor; if the contractor is not yet chosen, please provide the list of potential contractors who will receive an RFP or be otherwise considered. Please describe Union's process for selecting a contractor. Please provide a copy of Union's template construction contract, and RFP/RFI, if that is the method used.

b) Please itemize the location, river crossings, road crossings, etc. where Union will need a new land right. Please list the total length of the section of pipe which will be left in place and abandoned. Please describe the OEB's approach, if any, with respect to pipe abandonments.

Response:

a) The Panhandle Reinforcement Project was awarded to Banister Pipelines Construction Corp (Banister) on September 1, 2016.

Banister is a major pipeline construction company in Canada, founded in 1948. Banister is based in Nisku, Alberta, with an operations office in Mississauga, Ontario. Banister has three large pipeline spreads, being the largest in Canada. Banister has constructed pipeline projects across Canada including many large-diameter pipeline projects for Union Gas. These include the most recent Brantford to Kirkwall Project (2015) and the Hamilton to Milton Project (2016).

Union's process to select a contractor included:

- RFP Package sent to five pre-qualified Contractors; and,
- completion of a market analysis on the provided RFP responses based on pricing, performance bond/labour and material bond, parental guarantee, signing of facilities agreement and financial stability.

Please see Attachment 1 for copy of the table of contents of the RFP/construction contract.

b) The locations where pipe may need to be abandoned in place and where new permanent land rights would be required are referenced at Exhibit A, Tab 11, Schedule 2. Union is currently working through detailed design and construction plans and these locations will be refined through this process. The pipe to be abandoned in place will comply with all CSA Z662 and TSSA requirements.

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UNION GAS LIMITED

Answer to Interrogatory from
Building Owners and Managers Association ("BOMA")

Reference: Exhibit A, Tab 10, Schedule 2

Please indicate when the summary of the comments will be received. Will the full text of the comments also be available?

Response:

Please see Attachment 1 for a summary table of the letters received and responses to the OPCC Review.

OPCC Review Summary 2016

Panhandle Reinforcement Project

AGENCY	COMMENT	RESPONSE
Letter received by Ms. Zora Crnojacki Ontario Energy Board Dated June 29, 2016 Ministry of Environment and Climate Change Tammie Ryall Regional Environmental Planner	• Provided the D-3 and D-4 Guidelines. • Requested an investigation into what impact, if any, the proposed pipeline replacement could have in facilitating the migration of leachate and/or methane gas from active and former waste sites in the area.	Mark Iamarino, Stantec Letter dated August 22, 2016 (sent via email) • Completed a search of landfills within 500m of the project and provided a summary of the finding, including a map. • Given that the closest landfill to the project is located approximately 2.2 kilometres from the pipeline, landfill sites are not expected to represent a potential environmental concern to construction activities.
Letter received by Ms. Zora Crnojacki Ontario Energy Board Dated June 27, 2016 Ministry of Transportation Kevin DeVos Project Manager	• Outlined the need to obtain permits and consult with MTO before any construction could occur adjacent to Highway 40.	Mark Iamarino, Stantec Letter dated August 22, 2016 (sent via email • Confirmed that Union Gas understands the need to obtain permits and consult with MTO regarding construction adjacent to the Highway 40. • Provided details about the Highway 40 crossings.
Technical Standards and Safety Authority Kourosh Manouchehri Phone call dated June 28, 2016	• Provided details about a new project review process being proposed by TSSA that would involve an application and fee.	Mark Knight, Stantec No response required.
Infrastructure Ontario Letter Dated June 15, 2016 Patrick Grace Director, Land Transactions, Hydro Corridors & Public Works.	• Letter describing IO approvals process and requirements. • Details Provincial Crown's Aboriginal Duty to Consult obligations, Requirements of the MOI Public Work Class Environmental Assessment, Other due diligence requirements, Archaeological requirements and Heritage requirements.	No response required. Identified process and requirements to be followed during permitting and approvals.

Ministry of the Environment and Climate Change

733 Exeter Road
London ON N6E 1L3
Tel': 519 873-5000
Fax: 519 873-5020

Ministère de l'Environnement et de l'Action en matière de changement climatique

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London ON N6E 1L3
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Ontario

June 29, 2016

Ontario Pipeline Coordination Committee
Ontario Energy Board
2300 Yonge Street
27th Floor
P. O. Box 2319
Toronto, ON M4P 1E4

Attention: Ms. Zora Crnojacki
Chairperson

Re: Union Gas Pipeline Project – Environmental Report Panhandle Reinforcement Project

Dear Ms. Crnojacki:

This letter is to acknowledge receipt of the Final Report dated June 2, 2016 for the above mentioned project being undertaken by Union Gas Limited (proponent). It is understood that the proposed project will occur between the existing Union Gas Dawn Compressor Station located in the Township of Dawn-Euphemia and the existing Dover Transmission Station located in the Municipality of Chatham-Kent. The project will fulfil Ontario Energy Board requirements.

At this time I offer the following for your consideration.

Guideline D-3 Environmental Consideration for Gas or Oil Pipelines and Facilities
Attached you will find a copy of the Ministry of the Environmental and Climate Change (MOECC) guideline entitled "Guideline D-3 Environmental Consideration for Gas or Oil Pipelines and Facilities" dated April 1994. Until such time as updated D-series guidelines are released, the aforementioned is the current guideline of record to be followed.

Active and Former Waste Disposal Sites
Construction of underground pipelines can potentially act as a conduit for the migration of leachate and methane gas originating from nearby active and former waste disposal sites. The MOECC's attached April 1994 Guideline D-4, entitled "Land Use On or Near Landfills and Dumps" outlines matters that should be addressed when constructing on or within the vicinity of active and former waste disposal sites.

The MOECC's June 1991 Waste Disposal Site Inventory (which I understand is available from this Ministry's Public Information Centre) should be reviewed so as to ascertain the location of any active and former waste disposal sites located within and/or in close proximity to the proposed pipeline route. Given the date of the above mentioned guideline (i.e. June 1991), it would be advisable for the proponent to also consult with the Municipality of Chatham-Kent as to the existence of any waste disposal sites that they may be aware of in the Study Area not listed in the MOECC June 1991 Waste Disposal Site Inventory. The proponents should determine whether Section 46 of the *Environmental Protection Act* is applicable to this project, and what impact, if any, the proposed pipeline replacement could have in facilitating the migration of leachate and/or methane gas from active and former waste sites in the area.

From my own research of the waste disposal site inventory, I note one closed Waste Disposal Site located in the Study Area. The MOECC records indicate that it is located in Lot 1, Concession 8, Dover Township; a certificate of approval was issued on August 15, 1973; and, that it was .65 ha in area. A sketch map is attached for information.

Thank you for the opportunity to review and provide comments. Should you have any questions, please contact me.

Yours truly,

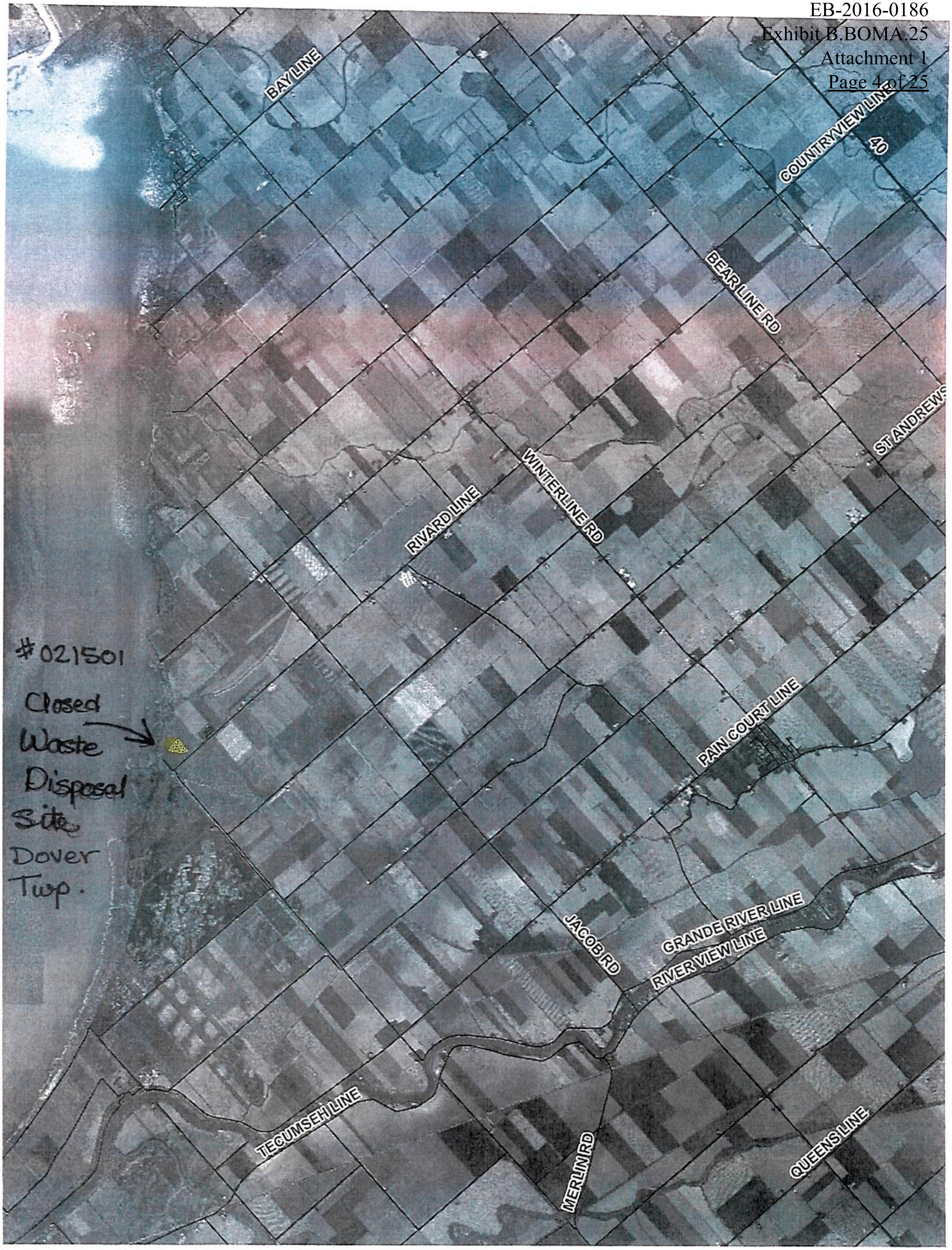
Tammie Ryall

Tammie Ryall
Regional Environmental Planner / Regional EA Coordinator
Ministry of the Environment and Climate Change
733 Exeter Road
London ON, N6E 1L3
(519) 873-5115 | tammie.ryall@ontario.ca

cc: Mark Iamarino, Environmental Planner, Stantec Consulting Ltd.

Enclosures -3

(BY EMAIL ONLY)


BAY LINE
COUNTRYVIEW LINE
40
BEAR LINE RD
ST ANDREWS
WINTERLINE RD
RIVARD LINE
#021501
Closed
Waste
Disposal
Site
Dover
Twp.
PAIN COURT LINE
GRANDE RIVER LINE
RIVER VIEW LINE
JACOB RD
TECUMSEH LINE
MERLIN RD
QUEENS LINE

REGIONAL INVENTORY OF CLOSED WASTE DISPOSAL SITES
REGION: SOUTHWESTERN

MAP ID NO	SITE NO	COUNTY	MUNICIPALITY	LOT OR STREET NO	CONCESS	NTS	UTM COORDINATES ZONE	EAST	NORTH	DATE CLOSED YEAR	MON	DAY	CLAS
24	X 5140	HURON	HAY	16	12	40P05	17	447850	4805250	1970	*	*	B8
25	X 5141	HURON	HAY	15	7	40P05	17	453300	4805500	1970	*	*	B8
26	X 6082	HURON	HOWICK	25	17	40P14	17	497550	4867550	1966	*	*	B8
27	X 6083	HURON	HOWICK	PT 1; Village of Gorrie		40P14	17	491550	4857700	1968	*	*	A8
28	X 6084	HURON	GREY	23	6	40P11	17	489800	4842050	1970	*	*	B8
29	X 6085	HURON	MORRIS	52	1	40P14	17	483150	4852550	1968	*	*	B8
30	X 6086	HURON	MORRIS	PT 5 S1/2	6	40P14	17	470350	4847200	1967	*	*	B8
31	X 6087	HURON	MORRIS	PT 30 S1/2	5	40P11	17	480100	4843950	1974	*	*	A8
32	X 6088	HURON	HULLETT	21	14	40P11	17	468300	4839250	1969	*	*	A8
33	X 6089	HURON	HULLETT	PT 24 N1/2	2	40P12	17	457550	4831550	1971	*	*	B8
34	X 6090	HURON	TURNBERRY	PT 52 N1/2	1	40P14	17	484450	4854850	1971	*	*	B8
3	A 020601	KENT	TILBURY	PT 17	4	40J08	17	382060	4680090	1974	9	20	B5
5	A 020701	KENT	WALLACEBURG	Baldoon Rd. S. of Libby St.		40J09	17	385351	4714100	1974	9	20	B5
7	A 021202	KENT	WHEATLEY	9-14; 16-18	BLOCK F; I	40J01	17	379360	4661090	1974	9	20	A4
8	A 021302	KENT	CAMDEN	13	A	40I12	17	418716	4711950	1974	6	15	A6
9	A 021306	KENT	CAMDEN	4	3	40J09	17	411645	4711740	1974	6	15	A6
10	A 021401	KENT	CHATHAM	7	3	40J09	17	402600	4700755	1979	2	31	A4
12	A 021501	KENT	DOVER	PT 1	8	40J08	17	384110	4693860	1974	6	15	B6
13	A 021702	KENT	HOWARD	PT 7 SE1/2	12	40I05	17	428300	4695025	1980	3	31	A4
14	A 021901	KENT	RALEIGH	13	4	40J08	17	396700	4690590	1974	9	20	A6
15	A 021902	KENT	RALEIGH	PT 7	8	40J08	17	384150	4683450	1975	4	31	B6
49	A 022102	KENT	TILBURY EAST	PT 13	9	40J01	17	388830	4676100	1989	12	2	A4
16	A 022103	KENT	TILBURY EAST	1 & 2, N1/2	8	40J08	17	398000	4683025	1981	3	31	A2
20	X 2060	KENT	TILBURY	Odette Crescent		40J08	17	381240	4678800	1949	*	*	NP
21	X 2061	KENT	CHATHAM	East of King & Duke St.		40J08	17	403875	4695400	*	*	*	A1
22	X 2062	KENT	CHATHAM	Richmond & Merritt St.		40J08	17	401500	4693300	1969	*	*	B5
23	X 2063	KENT	CHATHAM	Stanley Ave.		40J08	17	403200	4696025	1950	*	*	A1
24	X 2064	KENT	CHATHAM	Byng Avenue		40J08	17	402100	4693660	1977	*	*	B5
25	X 2065	KENT	CHATHAM	Water Street		40J08	17	402930	4695950	1940	*	*	B8
26	X 2066	KENT	CHATHAM	Richmond & Industrial St.		40J08	17	401130	4693290	1970	*	*	B7

* Year\Month\Day unknown.

Stantec Consulting Ltd.
1-70 Southgate Drive, Guelph ON N1G 4P5

August 22, 2016
File: 160961079

Attention: Tammie Ryall, Regional Environmental Planner / Regional EA Coordinator
Ministry of the Environment and Climate change
Southwest Region
733 Exeter Road
London, ON N6E 1L3

Dear Ms. Ryall,

Reference: Union Gas Pipeline Project – Environmental Report
Panhandle Reinforcement Project

Union Gas and Stantec appreciate the time that staff at the Ministry of the Environment and Climate Change (MOECC) have taken to review the Environmental Report. In regards to the letter provided by the MOECC on June 29, 2016, below please find responses to your various comments.

Stantec is familiar with the D-3 and D-4 Guideline documents, and these documents have been reviewed. The ecolog landfill search referenced in the Environmental Report does include a search of the 1991 waste disposal site inventory, but Stantec typically only searches using a buffer of 250 metre radius, which is consistent with Ontario Regulation 154/04 for Phase 1 site assessments. At your suggestion, Stantec has completed a 500 metre landfill search that compared the pipeline route to the landfill database and identified 4 of the closest landfills ranging in distance from approximately 2 km west of the route at the southern end to 6 km east of the route at the northern end of the pipeline. The pipeline route and landfill sites are shown on the attached map for reference. For future pipeline work subject to MOECC review, Stantec will use the 500 m landfill-specific search in addition to the standard 250 metre report.

Given that the closest landfill to the project (referenced in the MOECC letter) is located approximately 2.2 kilometres northeast of the pipeline, the current and historical landfill sites are not expected to represent a potential environmental concern to construction activities. Additionally, landfills that have been closed for more than 20 years are expected to have reduced impacts because their methane and leachate-generating waste is projected to have degraded by then.

Reference: Union Gas Pipeline Project – Environmental Report
Panhandle Reinforcement Project

Should you have any additional comments or questions regarding the Project please do not hesitate to contact the undersigned. Thank you again for taking the time to review the Environmental Report.

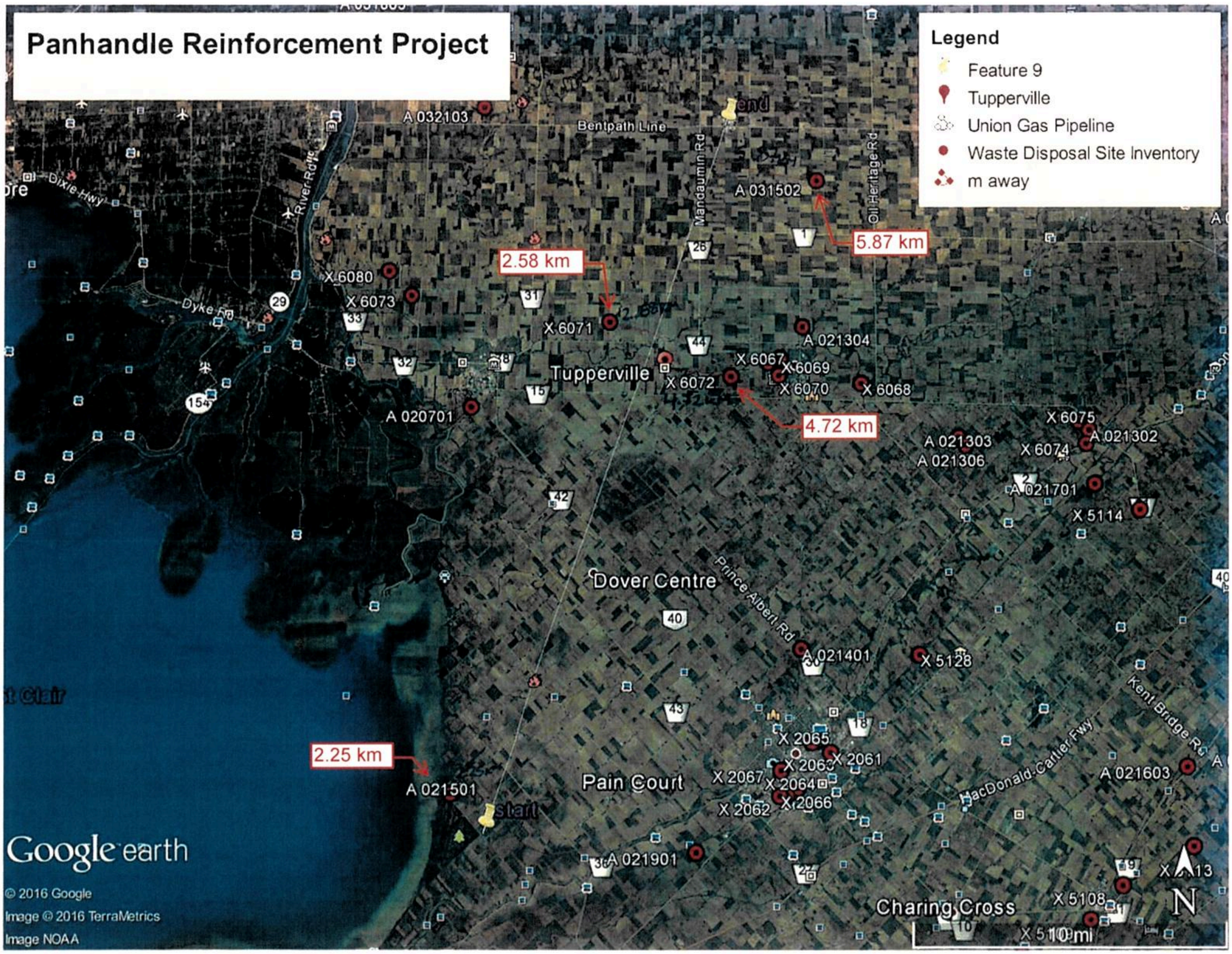
Regards,

STANTEC CONSULTING LTD.

Mark Iamarino
Environmental Planner
Phone: (519) 780-8187
mark.iamarino@stantec.com

Attachment: Map – Landfills identified within 500m of the proposed pipeline route

c. Mark Knight, Stantec
Ryan Park, Union Gas
Zora Crnojacki, Ontario Pipeline Coordinating Committee


Panhandle Reinforcement Project
Legend
Feature 9
Tupperville
Union Gas Pipeline
Waste Disposal Site Inventory
m away
2.58 km
5.87 km
4.72 km
2.25 km
A 032103
A 031502
X 6080
X 6073
X 6071
X 6072
X 6067
X 6069
X 6070
X 6068
A 021304
A 020701
A 021303
A 021306
A 021302
X 6075
X 6074
A 021701
X 5114
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X 5128
X 2065
X 2063
X 2061
X 2067
X 2064
X 2062
X 2066
A 021501
A 021901
A 021603
X 5108
Tupperville
Dover Centre
Pain Court
Charing Cross
Bentpath Line
Mandaumin Rd
Oil Heritage Rd
Dixie Hwy
River Rd
Dyke Rd
Prince Albert Rd
Kent Bridge Rd
MacDonald-Cartier Fwy
end
start
Google earth
© 2016 Google
Image © 2016 TerraMetrics
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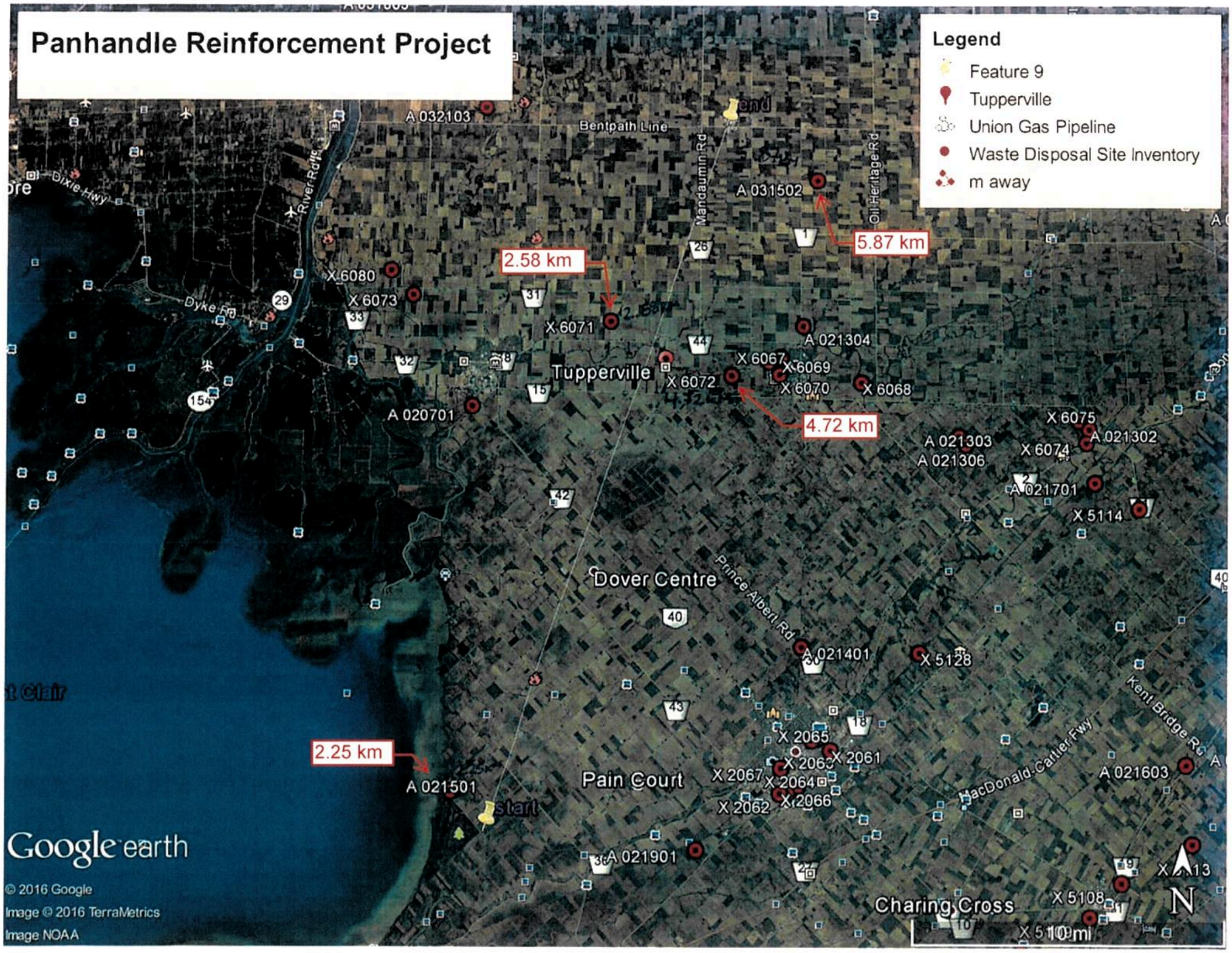
Panhandle Reinforcement Project
Legend
Feature 9
Tupperville
Union Gas Pipeline
Waste Disposal Site Inventory
m away
A 032103
Bentpath Line
end
Mandaumin Rd
Oil Heritage Rd
A 031502
5.87 km
2.58 km
X 6080
X 6073
X 6071
A 021304
Tupperville
X 6067
X 6069
X 6072
X 6070
X 6068
A 020701
4.72 km
X 6075
A 021303
A 021302
A 021306
X 6074
A 021701
X 5114
Dover Centre
Prince Albert Rd
A 021401
X 5128
Kent Bridge Rd
X 2065
X 2061
X 2067
X 2064
X 2062
X 2066
Pain Court
MacDonald-Cartier Fwy
A 021603
2.25 km
A 021501
start
A 021901
Charing Cross
X 5108
10 mi
Dixie Hwy
Dyke Rd
River Rd
Google earth
© 2016 Google
Image © 2016 TerraMetrics
Image NOAA

Ministry of Transportation

Engineering Office
Corridor Management Section
West Region
659 Exeter Road
London, Ontario N6E 1L3
Telephone: (519) 873-4594
Facsimile: (519) 873-4228

Ministère des Transports

Bureau du génie
Section de gestion des couloirs routiers
Région de l'Ouest
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London (Ontario) N6E 1L3
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Ontario

June 27, 2016

Zora Crnojacki
Chairperson, Ontario Pipeline Coordination Committee
Ontario Energy Board
2300 Yonge Street
Toronto, Ontario
M4P 1E4

email: zora.crnojacki@ontarioenergyboard.ca

RE: Union Gas Pipeline Project – Environmental Report
Panhandle Reinforcement Project
Municipality of Chatham-Kent – Highway 40

The Ministry of Transportation (MTO) has reviewed the above noted environmental report (dated June 2, 2016). The following outlines our comments.

General Comments

The report routinely refers to St. Clair Road, a major road between Chatham and Wallaceburg. The report does not indicate that this major road is in fact Highway 40, a provincial highway under the jurisdiction and control of MTO.

Please note that both the installation of a new pipeline and the decommissioning of an existing pipeline within a provincial highway right-of-way are subject to the approval of MTO.

It will be required that MTO be provided an opportunity to review and approve the detail design plans for both the installation of a new pipeline and the decommissioning of an existing pipeline and that the proponent enter into an agreement with MTO to document the location of the crossing, the design of the crossing (number of pipes, size of pipes, depth of installation, soil conditions, geotechnical investigations, etc.), the potential for future expansion and, roles and responsibilities of both parties during the construction, operations and maintenance of the pipeline.

As part of the development of this agreement, it will be important for MTO to understand any potential limitations or restrictions that may apply to future MTO maintenance or construction operations in the vicinity of the pipeline, if these potential limitations or restrictions could result in added cost or risk and who (MTO or the proponent) will be responsible to bear the added cost or risk.

An encroachment permit(s) for the installation of a new pipeline and the decommissioning of an existing pipeline within the Highway 40 right-of-way will be issued only after the above mentioned agreement is executed by both parties and construction activities cannot commence before the encroachment permit is issued.

A building and land use permit(s) for the installation of a new pipeline and the decommissioning of an existing pipeline adjacent to the Highway 40 right-of-way will be issued only after the above mentioned agreement is executed by both parties and construction activities cannot commence before the building and land use permit is issued.

Section 1.1 – Project Description

The report indicates that "… a new 36-inch diameter pipeline within the existing permanent easement…" Note that temporary or permanent easements are not granted over lands designated as provincial highway. MTO approval for the project is will come in the form of permits issued under the *Public Transportation and Highway Improvement Act* (PTHIA).

Table 1.1 – Summary of Potential Permits/Regulatory Requirements

The provincial permits and approvals section of this table does not include MTO permit approvals required under the PTHIA.

As indicated in section 34(2) of the PTHIA, *"Despite any general or special Act, regulation, by-law or other authority, no person shall, except under a permit therefor from the Minister, place, erect or alter any building, fence, gasoline pump or other structure or any road upon or within 45 metres of any limit of the King's Highway or upon or within 180 metres of the centre point of an intersection."*

Section 3.2.1 – Construction

The report indicates that *"select sections of pipe may be abandoned in place, such as at watercourse or road crossings."* It is not clear if this approach is being considered for the pipeline crossing of Highway 40. Any plans to abandon a pipeline within the Highway 40 right-of-way are subject to MTO approval.

The report indicates that *"crews also install pipes under obstacles such as roads or watercourses through a variety of different means."* It is not clear what construction method is being proposed for the pipeline crossing of Highway 40. The method of construction for the pipeline crossing of Highway 40 is subject to MTO approval.

Section 3.5.2 – Community Services and Infrastructure

Highway 40 (described in the report as St. Clair Road) is not an *"urban arterial road"*. Highway 40 is a provincial highway with a function classification of "arterial".

The report indicates that *"… St. Clair Road, which has an AADT of approximately 20,000 vehicles between Wallaceburg and Chatham…"* This statement does not correspond with the most current MTO traffic data from 2012 which indicates that this section of Highway 40 has an AADT of 6,300.

The Traffic Management Plan will require review and approval of MTO as a condition of securing any required permit under the PTHIA.

Section 3.5.4 – Infrastructure

The report indicates that *"consultation has been initiated, and will continue, with municipal personnel to obtain road and railway crossing permits."* The report does not mention any consultation with MTO in this regard. Construction activities within or adjacent to the Highway 40 right-of-way cannot commence before an MTO encroachment permit is issued.

Table 3.13 – Summary of Potential Impacts and Recommended Mitigation and Protective Measures

See comments above related to the Traffic Management Plan.

See comments above related to consultation with MTO and the need to secure an MTO encroachment permit before commencement of construction.

Section 5.1 – Monitoring

While the report describes measures to monitor municipal roads, it makes no mention of monitoring of provincial highways.

Appendix A – Figures

All figures and maps within the report improperly label Highway 40 as "St. Clair Road".

Appendix B1 – Contact List

While it is noted that MTO does have a member on the Ontario Pipeline Coordination Committee, MTO is not mentioned under "Provincial Agencies and Authorities" in the Agency Contact List.

Please ensure that the undersigned is included on the contact list for future correspondence related to this project.

Appendix B2 – Newspaper Notices

The maps found on both newspaper notices improperly label Highway 40 as "St. Clair Road" and "Communications Road".

Appendix B4 – Display Boards

Pipeline assembly areas and material stockpiles (topsoil, excavated subsoil and pipeline materials) as shown in the "Typical Cross Section" will not be permitted within the Highway 40 right-of-way.

Thank you for the opportunity to review the environmental report for this project. Should you have any questions related to the comments provided, please feel free to contact the undersigned.

Regards,

Kevin DeVos, LEL
Senior Project Manager

c. T. Di Fabio – MTO Corridor Management and Property Section
M. Iamarino – Stantec Consulting Ltd.

Stantec
Stantec Consulting Ltd.
1-70 Southgate Drive, Guelph ON N1G 4P5

August 22, 2016
File: 160961079

Attention: Kevin DeVos, Senior Project Manager
Ministry of Transportation
West Region
659 Exeter Road
London, ON N6E 1L3

Dear Mr. DeVos,

Reference: Union Gas Pipeline Project – Environmental Report
Panhandle Reinforcement Project
Municipality of Chatham-Kent – Highway 40

Union Gas and Stantec appreciate the time that staff at the Ministry of Transportation (MTO) have taken to review the Environmental Report. In regards to the letter provided by the MTO on June 27, 2016, below please find responses to your various comments.

General Comments

The Project Team understands that St. Clair Road is also referred to as Highway 40 and is under jurisdiction and control of the MTO.

Union Gas understands that an encroachment permit issued under the *Public Transportation and Highway Improvement Act* is required from the MTO before construction can commence. Detailed design plans for the decommissioning (abandoning in place) of the existing 16-inch diameter pipeline and construction of the proposed 36-inch diameter pipeline will be forwarded to the MTO for review and approval, when available. These design plans will facilitate in establishing an agreement between Union Gas and the MTO regarding the crossing of Highway 40 so that an encroachment permit can be issued. Additionally, Union Gas will consult with the MTO as part of this process and will address any comments regarding roles and responsibilities, increased cost or risk, future expansion and restrictions, operation and maintenance of the pipeline, as well as any additional comments or questions that may arise.

Section 1.1 – Project Description

See response above for clarification on permits. We understand that no permanent or temporary easements will be granted across the MTO highway limits.

Table 1.1 – Summary of Potential Permits/Regulatory Requirements

Table 1.1 is intended to capture environmental permits and approvals. Union Gas is aware of the requirement to obtain permits and approvals from the MTO prior to initiating any construction activities in or within 45 metres of the Highway 40 right-of-way at the crossing location.

**Reference: Union Gas Pipeline Project – Environmental Report
Panhandle Reinforcement Project
Municipality of Chatham-Kent – Highway 40**

Section 3.2.1 – Construction

Abandonment is proposed for the existing 16-inch diameter pipeline through the MTO right-of-way. The proposed 36-inch diameter pipeline will be installed via trenchless methods. More specific details will be determined during detailed design and will be provided to the MTO for review and approval.

Section 3.5.2 – Community Services and Infrastructure

Union Gas agrees with the provided classification of "arterial". Union Gas will use the current AADT data, as provided.

The Traffic Management Plan will be provided to MTO for review and approval, for purposes of obtaining required permits.

Section 3.5.4 - Infrastructure

During the process to obtain an encroachment permit, consultation will occur with the MTO. No work will commence until consultation occurs.

Table 3.13 – Summary of Potential Impacts and Recommended Mitigation and Protective Measures

See response above.

Section 5.1 – Monitoring

Monitoring activities for provincial highways will be required and confirmed during consultation with the MTO to obtain permits.

Appendix A

The Project Team understands that St. Clair Road and Communication Road are also referred to as Highway 40.

**Reference: Union Gas Pipeline Project – Environmental Report
Panhandle Reinforcement Project
Municipality of Chatham-Kent – Highway 40**

Appendix B1 – Contact List

Kevin DeVos, Senior Project Manager, MTO has been added to the project contact list.

Appendix B2 – Newspaper Notices

See response above under 'Appendix A – Figures'.

Appendix B4 – Display Boards

The Typical Cross Section drawing is intended to be applied generically to a majority of the municipal road crossings required for the project, but is not intended for Highway 40. Crossing plans specific to Highway 40 will be determined during detailed design and will be provided to the MTO for review and approval.

Should you have any additional comments or questions regarding the Project please do not hesitate to contact the undersigned. Thank you again for taking the time to review the Environmental Report.

Regards,

STANTEC CONSULTING LTD.

M. Iamarino

Mark Iamarino
Environmental Planner
Phone: (519) 780-8187
mark.iamarino@stantec.com

c. Ryan Park, Union Gas
Zora Crnojacki, Ontario Pipeline Corrdinating Committee

Ontario
Infrastructure Ontario

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June 15, 2016

Response to EA Notice

Thank you for providing Infrastructure Ontario (IO) with a copy of your Environmental Assessment Notice. From the information you have provided, it is unclear if you are proposing to use lands under the control of the Minister of Economic Development, Employment and Infrastructure (MEDEI lands) to support your proposed project.

Prior to MEDEI consenting to the use of MEDEI lands, the applicable environmental assessment, duty to consult Aboriginal peoples (if triggered) and heritage obligations will need to be met. In order for MEDEI to allow you access to MEDEI lands and to carry out proposed activities, MEDEI must ensure that provincial requirements and due diligence obligations are satisfied. These requirements are in addition to any such obligations you as the proponent of the project may have.

You as the proponent of the project will be required to work with Infrastructure Ontario (IO) to fulfill MEDEI's obligations which may include considering the use of any MEDEI lands as part of your individual environmental assessment. All costs associated with meeting MEDEI's obligations will be the responsibility of the proponent. Please note that time should be allocated in your project timelines for MEDEI to ensure that its obligations have been met and to secure any required internal government approvals required to allow for the use of the MEDEI lands for your proposed project.

In order for MEDEI and IO to assist you to meet your required project timelines, please recognize that early, direct contact with IO is imperative. The due diligence required prior to the use of MEDEI lands for your proposed project, may include but may not be limited to the following:

- Procedural aspects of the Provincial Crown's Aboriginal Duty to Consult obligations – *see Instruction Note 1*
- Requirements of the MOI Public Work Class Environmental Assessment – *see Instruction Note 2*
- Requirements of the Ministry of Tourism Culture and Sport (MTCS) Standards and Guidelines for Consultant Archaeologists– *see Instruction Note 3*
- Requirements of the MTCS Standards and Guidelines for the Conservation of Provincial Heritage Properties Consultant Archaeologists – *see Instruction Note 4*

Representatives from IO are available to discuss your proposed project, the potential need for MEDEI lands and the corresponding provincial requirements and due diligence obligations.

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Please review the attached instruction notes which provide greater detail on the due diligence obligations associated with the use of MEDEI lands for your proposed project. We are providing this information to allow you as the proponent to allocate adequate time and funding into your project schedule and budgets. If your project requires you to study MEDEI lands, then an agreement is required and all studies undertaken on MEDEI lands will be considered confidential until approval is received. IO will require electronic copies of all required studies on MEDEI lands that you undertake.

We strongly encourage you to work with IO as early as possible in your process to identify if any MEDEI lands would be required for your proposed project. Please note that on title MEDEI control may be identified under the name of MEDEI or one of its predecessor ministries or agencies which may include but is not limited to variations of the following: Her Majesty the Queen/King, Hydro One, MBS, MEI, MGS, MOI, OLC, ORC, PIR or Ministry of Public Works[1].

Please provide Rita Kelly with a confirmation in writing of any MEDEI lands that you propose to use for your proposed project and why the lands are required along with a copy of a title search for the MEDEI lands.

For more information concerning the identification of MEDEI lands in your study area or the process for acquiring access to or an interest in MEDEI lands, please contact:

Rita Kelly
Project Manager
Land Transactions, Hydro Corridors & Public Works
Infrastructure Ontario
1 Dundas St. West, Suite 2000
Toronto ON
M5G 2L5
Tel: (416) 212-4934
Email: rita.kelley@infrastructureontario.ca

An application package and requirements checklist is attached for your reference. Please note that transfer of an interest in MEDEI lands to a proponent can take up to one year and there is no certainty that approval will be obtained.

For more information concerning the MOI Public Work Class Environmental Assessment process and due diligence requirements, please contact:

Lisa Myslicki
Environmental Specialist

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[1] MBS - Management Board Secretariat; MEI - Ministry of Energy and Infrastructure; MGS - Ministry of Government Services; MOI - Ministry of Infrastructure; OLC - Ontario Lands Corporation; ORC - Ontario Realty Corporation; PIR - Ministry of Public Infrastructure Renewal

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Infrastructure Ontario
1 Dundas Street West, Suite 2000
Toronto, ON
M5G 2L5
Tel: (416) 212-3768
Email: lisa.myslicki@infrastructureontario.ca

If MEDEI lands are not to be impacted by the proposed project, please provide a confirmation in writing to Infrastructure Ontario.

Thank you for the opportunity to provide initial comments on your proposed project.

Sincerely,

Patrick Grace
Director
Land Transactions, Hydro Corridors & Public Works
Infrastructure Ontario
Dundas St. West, Suite 2000
Toronto, ON, M5G 2L5

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INSTRUCTION NOTE 1

Provincial Crown's Aboriginal Duty to Consult obligations

The Crown has a constitutional Duty to Consult (DTC) in certain circumstances and Aboriginal consultation may be required prior to MEDEI granting access to MEDEI lands or undertaking other activities. The requirement for Aboriginal consultation may be triggered given Aboriginal or treaty rights, established consultation or notification protocols, government policy and/or program decisions, archaeological potential or results, and/or cultural heritage consultation obligations. The requirement for Aboriginal consultation will be assessed by MEDEI.

Prior to the use of MEDEI lands, MEDEI must first meet any duty to consult obligations that may be triggered by the proposed use of MEDEI lands. It is incumbent on you to consult with IO as early in the process as possible once you have confirmed that MEDEI lands would be involved.

MEDEI will evaluate the potential impact of your proposed project on Aboriginal and treaty rights. MEDEI may assess that the Crown's Duty to Consult (DTC) requires consultation of Aboriginal communities. Proponents should discuss with IO whether MEDEI will require consultation to occur and if so, which communities should be consulted.

Where MEDEI determines that Aboriginal consultation is required, MEDEI will formally ask you to consult or continue to consult with Aboriginal peoples at the direction of MEDEI.

On behalf of MEDEI you will also be required to:

1. Maintain a record and document all notices and engagement activities, including telephone calls and/or meetings;
2. Provide the Ministry updates on these activities as requested; and
3. Notify the Ministry of any issues raised by Aboriginal communities.

If consultation has already occurred, IO strongly encourages you to provide complete Aboriginal consultation documentation to IO as soon as possible. This documentation should include all notices and engagement activities, including telephone calls and/or meetings.

Any duty to consult obligations must be met prior to publically releasing the Notice of Completion for the assessment undertaken under the MOI PW Class EA.

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INSTRUCTION NOTE 2

Requirements of the MOI Public Work Class Environmental Assessment

MEDEI has an approved Class EA (the Ministry of Infrastructure Public Work Class Environmental Assessment (Public Work Class EA) to assesses undertakings that affect MEDEI lands including disposing of an interest in land or site development. Details on the Public Work Class EA can be found at:
http://www.infrastructureontario.ca/Templates/Buildings.aspx?id=2147490336&langtype=1033

You may be required to work with IO to complete an environmental assessment under the Public Work Class EA for the undertakings related to MEDEI lands. IO will work with you to ensure that all of the MEDEI undertakings or activities related to the use of MEDEI lands are identified, that the appropriate Category of undertaking is used and a monitoring and report back mechanism is established to ensure that MEDEI's obligations are met.

The completion of another environmental assessment process that assesses the undertakings related to MEDEI lands may satisfy MEDEI's obligations under the Public Work Class EA. You will be required to work with IO to determine the most appropriate approach to meeting the Public Work Class EA obligations for undertakings related to MEDEI lands on a case by case basis.

Where it is decided that the assessment of undertakings related to MEDEI lands can be assessed as part of the environmental assessment being undertaken by the proponent then it is likely that the following provisions will be required:

- that the environmental assessment documents set out that one process will be relied on by both the proponent and MEDEI to evaluate their respective undertakings and meet their respective obligations to assess the potential impacts of their undertakings;
- that the proponent's description of the undertaking to be assessed include all of the MEDEI undertakings related to the use or access to MEDEI lands (see Glossary of Terms);
- the associated EA Category from the Public Works Class EA be identified and met by the environmental assessment (see Figure 22. Category Listing Matrix and/or Tale 2.1 EA Category Identification Table);
- that the proponent's environmental assessment indicate that MEDEI would be relying on the proponent's assessment to satisfy MEDEI's obligations under the *Environment Assessment Act*;
- establish a monitoring and report back mechanism to ensure that any obligations of MEDEI resulting from the assessment will be met; and

An environmental assessment consultation plan be developed to ensure that all stakeholders required to be consulted regarding the undertakings on the MEDEI lands are consulted

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Other Due Diligence Requirements

There may also be other additional due diligence requirements for the use of MEDEI lands in the proposed project. These may include:

- Phase One Environmental Site Assessment and follow up
- Stage 1 Archaeological Assessment and follow up
- Survey
- Title Search
- Species at Risk Survey(s)
- Appraisal

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INSTRUCTION NOTE 3 – ARCHAEOLOGY - (see also *Instruction Note on Duty to Consult*)

Archaeological sites are recognized and protected under the *Ontario Heritage Act*. Carrying out archaeological fieldwork is a licensed, regulated activity under the 2011 Ministry of Culture Standards and Guidelines for Consulting Archaeologists. Please visit………………

Archaeological due diligence is required for any proposed project on MEDEI land that could cause significant below ground disturbance such as, new building construction, installation/modification of site services, and installation/maintenance of new pipelines or transmission lines.

You, as the proponent, must engage IO prior to undertaking any archaeological work on MEDEI lands.

IO has two in-house licensed archaeologists who should be consulted early in the preparatory stages of a proposed project when geographic and site locations are being considered so that the potential for archaeological resources including historic and Aboriginal material (ion Aboriginal villages and burials sites) can be assessed.

To support both the Public Work Class EA and MEDEI's duty to consult analysis, archaeological assessments are required to determine if there are any significant findings that may be of cultural value or interest to Aboriginal people (e.g., archaeological or burial sites).

Archaeological work can begin before the assessment under the Public Works Class EA begins but the Class EA cannot be completed until the duty to consult that may be triggered regarding archaeological resources are fulfilled.

Depending upon the number or significance of resources found, the duty to consult may be triggered during any of the 4 phases of archaeological work (see below) or anytime during project construction.

The discovery of Aboriginal resources can impact on activities, including project and site plans, timelines and all costs. As the proponent, you are expected to ensure that you project timelines include adequate time and resources to address MEDEI due diligence obligations, including internal government approvals. All costs associated with meeting MEDEI's archaeological obligations will be the responsibility of the proponent.

For Archaeological Assessments (Stages 1 through 4), proponents must adhere to the four stage archaeological fieldwork process prescribed by the Ontario Ministry of Tourism, Culture and Sport (MTCS) as per the 2011 Standards and Guidelines for Consultant Archeologists. Not all noted Stages will be necessary for all work. Respondents must follow industry procedures and practices as per the MTCS Standards and Guidelines for Consultant Archeologists 2011 for each Stage of

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archaeological assessment, all reporting criteria and formatting, and any other license requirements and/or obligations.

- Stage 1 Background Study - Evaluation of Archaeological Potential
  - Archival research and non-intrusive site visit

- Stage 2 Property Assessment
  - In-field systematic pedestrian survey or test pitting and reporting
  -

- Stage 3 Site-specific Assessment
  - Limited excavation to determine site significance and size
  - Field works and reporting

- Stage 4 Site mitigation
  - Through either avoidance/protection or excavation Field work 4 to 8 weeks
  - Develop summary report
  - MTCS review – expedited review of summary report 6 weeks
  - Final report
  - Time to develop and implement mitigation measures – negotiation, legal protections, avoidance

IO Contact Information and direction to IO website....

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INSTRUCTION NOTE 4 – HERITAGE REQUIREMENTS

Built Heritage/Cultural Landscapes

Built heritage/cultural landscapes (cultural heritage) are recognized and protected under the Ontario Heritage Act, the regulations to that Act and the 2010 Ministry of Culture Standards and Guidelines for Conservation of Provincial Heritage Properties (S&Gs) Criteria for determining cultural heritage value or interest are set out in O. Reg. 9/06 and 10/06. The S&Gs set out a process for identifying properties of cultural heritage value, and the standards for protection, maintenance, use and disposal of these properties. Please visit................

Cultural heritage due diligence will be required for any proposed project on MEDEI land with the potential to impact cultural heritage resources, such as new building construction, installation/modification of site services, landscape modifications and installation/maintenance of new pipelines, transmission lines.

To support MEDEI's heritage and MOI PW Class EA obligations, proponents will be required to undertake cultural heritage assessments for all projects that require MEDEI lands. This will help to determine if the MEDEI lands are of cultural value or interest to the Province and the level of heritage significance. Where a property has heritage value, proponents may be required to develop appropriate conservation measures/plans and heritage management plans.

You, as the proponent, are strongly encouraged engage IO heritage staff as early in your project planning process as possible and in advance of beginning any cultural heritage assessment work. IO staff will be able to provide advice on the S&Gs and will provide any available heritage information for the MEDEI lands.

Proponents must also follow industry procedures and practices for all components of cultural heritage assessment work, all reporting criteria and formatting, and any other requirements and/or obligations. IO heritage staff can help dentify any required reports.

Should MEDEI lands be identified under the S&Gs as a Provincial Heritage Property (local significance) or a Provincial Heritage Property of Provincial Significance, IO must be engaged to determine next steps.

Please note that if a Provincial Heritage Property of Provincial Significance is to be impacted, it is likely that consent from the Minister, Ontario Minister, Tourism, Culture and Sport (MTCS) will be required prior to access being granted to MEDEI lands. Minister's consent requires a detailed application and approvals should land dispositions or building demolitions be applied for as part of the proposed project.

As the proponent, you are expected to ensure that your project timelines include adequate time

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and resources to address MEDEI's heritage due diligence obligations, including internal government approvals. All costs associated with meeting MEDEI's heritage obligations are the responsibility of the proponent.

Staff contacts……

UNION GAS LIMITED

Answer to Interrogatory from
Building Owners and Managers Association ("BOMA")

Reference: Revisions of the OEB Environmental Guidelines for the Location, Construction and Operation of Hydrocarbon Pipelines and Facilities in Ontario
On August 11, 2016, the OEB released revisions to its "Environmental Guidelines" to better define the roles and obligations for the Crown's duty to consult. The Board noted, at page 2 of its introductory letter that:

"The revised Guidelines are applicable to any new leave to construct application filed under section 90 of the OEB Act. For existing leave to construct applications, the OEB expects that parties, to the extent practicable, will abide by the intent of the revised Guidelines".

Please discuss fully what Union has done, or plans to do, to abide by the intent of the revised Guidelines.

Response:

The only applicable revisions relate to consultation with Indigenous communities. Please see the response at Exhibit B.Staff.11.

UNION GAS LIMITED

Answer to Interrogatory from
("CAEPLA-PLC")

Reference: Union Application, Exhibit A, Tab 3, p.7 of 14

Preamble: Anticipated Useful Life of Project

Union states that: The uncertainty created by Cap and Trade and the CCAP has driven the need for Union to calculate the revenue requirement and resulting rate impacts based on an estimated 20-year useful life of the Project assets rather than the weighted average useful life of approximately 50 years based on Board-approved depreciation rates. Depreciating the asset over a 20-year useful life better aligns the cost with the timing of the reported restrictions and potential elimination of natural gas heating in homes and businesses.

a) Considering that Union will be depreciating the project over 20 years, how is this short life span of the project reflected in the proposed easement agreement from a pipeline abandonment perspective and how is it reflected in existing easement agreements on which Union proposes to rely for this project?

b) Will tolls be set to reflect collection of funds to cover the costs of the abandonment (negative salvage value) due to the truncated 20 year depreciated lifespan of the pipeline and for remediation after the pipeline is removed?

c) Will funds be collected aggressively and have negative salvage values been considered in the tolling values?

d) As the provincial government moves aggressively towards renewable energy sources, is Union Gas taking these aggressive cost recovery tolling practices into consideration to protect landowners?

Response:

a) The depreciation rate used for setting rates has no effect on the easement agreement. The form of easement filed at Exhibit A, Tab 11, Schedule 3 is the same easement approved by the Board in the EB-2014-0261 (Dawn Parkway 2016 Expansion) with one change dealing with the prohibition of storage of flammable materials over the pipeline as required by the CSA code.

The rate of depreciation of a specific pipeline is not a required term for an easement agreement and is therefore not included in either the current agreement or the proposed easement.

b) Union has not, as part of this application, proposed any changes to asset removal costs recovered in rates. For simplicity, the depreciation expense proposed for the Panhandle Reinforcement Project does not include a provision for additional asset removal costs.

c) Union continues to recover asset removal costs in existing rates. As of December 31, 2015 Union has collected from customers $357 million for future asset removal activities.

d) Further adjustments to rates necessary to reflect the effect of government policy will be brought forward in the 2019 rebasing application, if required.

UNION GAS LIMITED

Answer to Interrogatory from
("CAEPLA-PLC")

Reference: Union Application, Exhibit A, Tab 3, p.12 of 14
Union Application, Exhibit A, Tab 6, p.4 of 15
Union Application, Exhibit A, Tab 11, p.1 of 4
CAEPLA-PLC Schedule "A" Property Listing updated as at August 29, 2016

Preamble: *Permanent Easements and TLU Rights Required*

Union describes the land requirements for the Project as:

The permanent and temporary land rights necessary for the construction of the Proposed Pipeline will be acquired from individual landowners. The majority of the Proposed Pipeline will be constructed within Union's existing easement. Union will only require approximately 1 kilometre in total of new permanent easement (multiple short sections for road and water crossing locations, etc) for the Proposed Pipeline. Union will require approximately 309 acres of temporary land use ("TLU") for construction and top soil storage purposes. Union has initiated meetings with the landowners from whom either permanent easements or TLU rights are required and will continue to meet with those landowners to acquire options for all the necessary lands.

Union also states:

As stated at Exhibit A, Tab 9, Union is proposing to remove the existing NPS 16 pipeline and replace it with a new NPS 36 pipeline within the boundaries of its current easement. The current easement for the NPS 16 pipeline does not restrict the diameter of the pipeline which can be constructed. Union will not be required to obtain a new easement for the construction of the majority of the new NPS 36 pipeline.

For each property owned by a CAEPLA-PLC member (as set out in the updated Schedule "A" property listing submitted to the OEB along with these interrogatories), please provide a copy of the easement agreement(s) or other document pursuant to which Union has constructed the existing NPS 16 pipeline and/or pursuant to which Union proposes to construct the replacement NPS 36 pipeline.

Response:

Please see Attachment 1 for the form of easement for the existing NPS 16 pipeline. All properties except one include a partial surrender which reduced the blanket easements obtained in 1950 to a site specific 15 meter easement.

Please see Attachment 2 for the form of partial surrender.

Copies of all the easements are available on line through Teranet Inc. or at the Registry Office.

PROVINCE OF Ontario
County of Kent
TO WIT.

I, Oliver Bruce Raymont of the City of Chatham in the County of Kent Agent, make oath and say:

1. THAT I was personally present and did see the within Instrument and a Duplicate thereof duly signed, sealed and executed by Lawrence H. Myers & Constance Myers the parties thereto.

2. THAT the said Instrument and Duplicate were executed by the said parties at the Township of Dover County of Kent

3. THAT I know the said parties. 4. THAT I am a subscribing witness to the said Instrument and Duplicate.

SWORN before me at the City of Chatham in the County of Kent this 31st day of October 1950

O. B. Raymont

H. E. Coatsworth

UNDER THE REGISTRY ACT AND LAND TITLES ACT

AFFIDAVIT AS TO MARRIAGE STATUS

COUNTY OF Kent

TO WIT:

Strike out words and paragraphs not applicable, and initial.

I, Lawrence H. Myers, farmer, one of the parties in the within instrument named, make oath and say:

Married or unmarried man or widower. ~~THAT at the time of the execution and delivery by me of the within instrument I was married, (un-married), (a widower), and of the full age of twenty-one years,~~ LHM

(or)

Married man—wife joining. THAT at the time of the execution and delivery by me of the within instrument I was legally married to Constance Myers, the person joining therein as my wife, and that we were each of the full age of twenty-one years.

(or)

Married woman. ~~THAT at the time of the execution and delivery by me of the within instrument I was legally married to ..., the person named therein as my husband, and that we were each of the full age of twenty-one years.~~ LHM

SWORN before me at the Twp of Dover in the county of Kent this 6th day of July 1951

Lawrence H Myers

H. E. Coatsworth
A Commissioner for taking Affidavits, etc.

D028840

DATED 19

FROM

—TO—

UNION GAS COMPANY OF CANADA, LIMITED

RIGHT OF WAY

REGISTRY OFFICE
AUG 29 1951
CHATHAM, ONT.

I certify that the within instrument is duly entered and registered in the Registry Office for the Registry Division of the County of Kent, in Book 42 for the town of Dover at 2:21 o'clock P.M., of the 29 day of Aug A.D. 1951 Number 28840

Registrar

INDEXED Aug 30/51
COPIED
COMPARED
FILED

Form No. 256-11-46-3000

AGREEMENT

FOR AND IN CONSIDERATION of the sum of One Dollar ($1.00) to me (us) in hand paid, the receipt whereof is hereby acknowledged,

I, (we) Laurence H. Myers & Constance Myers
R.R. #1, Dover Centre of
the Township of Dover in the County of Kent
Farmer, Owner (s) of the lands hereinafter referred to, for myself (ourselves) my (our) heirs, executors, administrators and assigns,

And I (we) ....
.... Wife (Wives) of the said Owner (s).

And I (we) Huron & Erie Mortgage Corporation
.... of the ~~Township~~ City of
London in the County of Middlesex Mortgagee (s) of the lands hereinafter referred to.

Do Hereby Grant to

UNION GAS COMPANY OF CANADA, LIMITED

its successors and assigns, the right to enter from time to time upon my (our) land situate in the Township of Dover East in the county of Kent described as follows:

namely, S.E. ¼ of Lot 16, Con. 10 OBR

OBR.
LAM

containing by admeasurement 50 acres more or less, and the right to lay, maintain, operate, renew and repair, in, through, along and under the said land a pipeline or pipelines in such location or locations as the Company may decide, together with the right to enter upon said land and remove any pipeline or pipelines so laid whenever the Company shall decide so to do.

In consideration of the above grant, Union Gas Company of Canada, Limited, is to pay to the owner (s) as soon as a pipe line is laid, the sum of Fifty Cents (50 cts.) for every rod in length of the said pipeline so laid in, under or upon said land.

All such pipelines shall be laid at sufficient depth so as not to interfere with the cultivation or drainage of the said land.

The Company shall pay to the Owner (s) all damages done to growing crops by any of the said operations above set out, including any and all damages done in the final removal of the said pipeline or pipelines.

The right hereby granted shall continue so long as any pipeline remains in or under the said lands but shall cease and be at an end when all of the pipelines have been removed.

DATED this 21st day of Sept. 1950

SIGNED, SEALED AND DELIVERED in the presence of

O. B. Raymont

Laurence H. Myers
Constance Myers

The Huron and Erie Mortgage Corporation
President
Secretary

UNION GAS COMPANY OF CANADA LIMITED
General Manager
Secretary

APPROVED BY

10:52

PROPERTY OF THE
REGISTRY OFFICE

242596

No.
Registry Division of Kent (No. 24)
I CERTIFY that this instrument is registered as of
10 52 A.M. JUN 19 1972 in the
Registry Office
at Chatham,
Ontario.

H. L. Widdis
REGISTRAR

INDEXED June 20/72

FILED June 20/72

242596

pt Lot 16 Conc 10 Dover

DATED May 25th., 1972.

UNION GAS COMPANY OF CANADA, LIMITED

TO

LAWRENCE H. MYERS AND CONSTANCE MYERS

240
B2

-: PARTIAL SURRENDER OF RIGHT-OF-WAY OR EASEMENT :-

4

Union Gas Company of Canada, Limited,
Gas Building,
50 Keil Drive, North,
Chatham, Ontario.

10.00

Form 665C

File No. 01-082-01-073

242596

PARTIAL SURRENDER OF
RIGHT-OF-WAY OR EASEMENT

WHEREAS by Agreement dated the 21st day of September, 1950, registered as No. 28840 in the Registry Office for the County of Kent in the Province of Ontario, LAWRENCE H. MYERS AND CONSTANCE MYERS
(Name of Grantor)
did grant unto UNION GAS COMPANY OF CANADA, LIMITED, a Company incorporated under the Laws of the Province of Ontario, with Head Office at the City of Chatham, in the County of Kent, (hereinafter called the "Company") or its predecessor a right-of-way and/or easement, for the purposes and upon the conditions therein set forth, in, over, through, along and under that certain parcel or tract of land and premises, situate, lying and being in the Township of Dover East, in the County of Kent and being composed of the south east quarter of Lot sixteen (16), Concession ten (10).

AND WHEREAS by Indenture of Mortgage dated as of the 1st. day of April, 1965, and registered as No. 159697 in the Registry Office for the County of Kent, supplemental to a Deed of Trust and Mortgage dated as of the 1st day of March, 1953, the Company did grant, transfer, assign, mortgage and charge all its right, title and interest in, to or out of the said right-of-way and/or easement to and in favour of THE CANADA PERMANENT TRUST COMPANY, the Trustee thereunder, upon the terms and conditions therein set forth;

AND WHEREAS sub-section (3) of Section 7.03 of Article Seven of the said Deed of Trust and Mortgage provides that until the security thereby constituted shall have become enforceable and the Trustee shall have determined or become bound to enforce the same, the Company may at any time and from time to time, without any release or consent by the Trustee, surrender, abandon or otherwise dispose of any grant of right-of-way or other right to lay or maintain pipe lines which is no longer required for the purposes of the Company's business;

AND WHEREAS the Company has determined that the said right-of-way and/or easement, save and except insofar as the same relates to that part of the hereinbefore described lands more particularly set forth in Schedule "A" hereto, is no longer required for the purposes of the Company's business;

Form 665A

AND WHEREAS the Company is not in default in the performance of any of its obligations under the said Deed of Trust and Mortgage and the security thereby constitued has not become enforceable.

NOW THEREFORE, this indenture witnesseth that the Company doth by these presents release, surrender and yield up to Lawrence H. Myers and Constance Myers and/or, to the person or persons in whom the said lands are now vested the lands hereinbefore described, save and except that part thereof set forth in Schedule "A" hereto, RESERVING to the Company, its successors and assigns, all its rights, title, interest and claim of, in, to and growing out of the hereinbefore-in-part recited Agreement granting the said right-of-way and/or easement to the Company insofar as it relates to the lands set forth in Schedule "A" hereto.

IN WITNESS WHEREOF the Company has hereunto affixed its corporate seal under the hands of its proper officers as of the 25th. day of May, 19 72.

UNION GAS COMPANY OF CANADA, LIMITED

Vice - President

M. J. Catherine Clement
Assistant Secretary

APPROVED
LANDS DEPT.

PROVINCE OF ONTARIO)
COUNTY OF KENT)
To Wit:)

I, ROSS McKECHNIE DAY [redacted], of the City of Chatham, in the County of Kent, Executive, make oath and say :-

1. That I am an Officer of Union Gas Company of Canada, Limited, being the duly appointed Assistant Secretary of and for such Company and presently holding such Office.

2. The recitals contained in the above indenture are true.

SWORN before me at the City of Chatham, in the County of Kent, this 12 day of June, 1972)

A Commissioner for taking Affidavits, etc.
S. Glenn Chittim, A Commissioner etc., Province of Ontario, for Union Gas Company of Canada Limited. Expiry July 10, 1974.

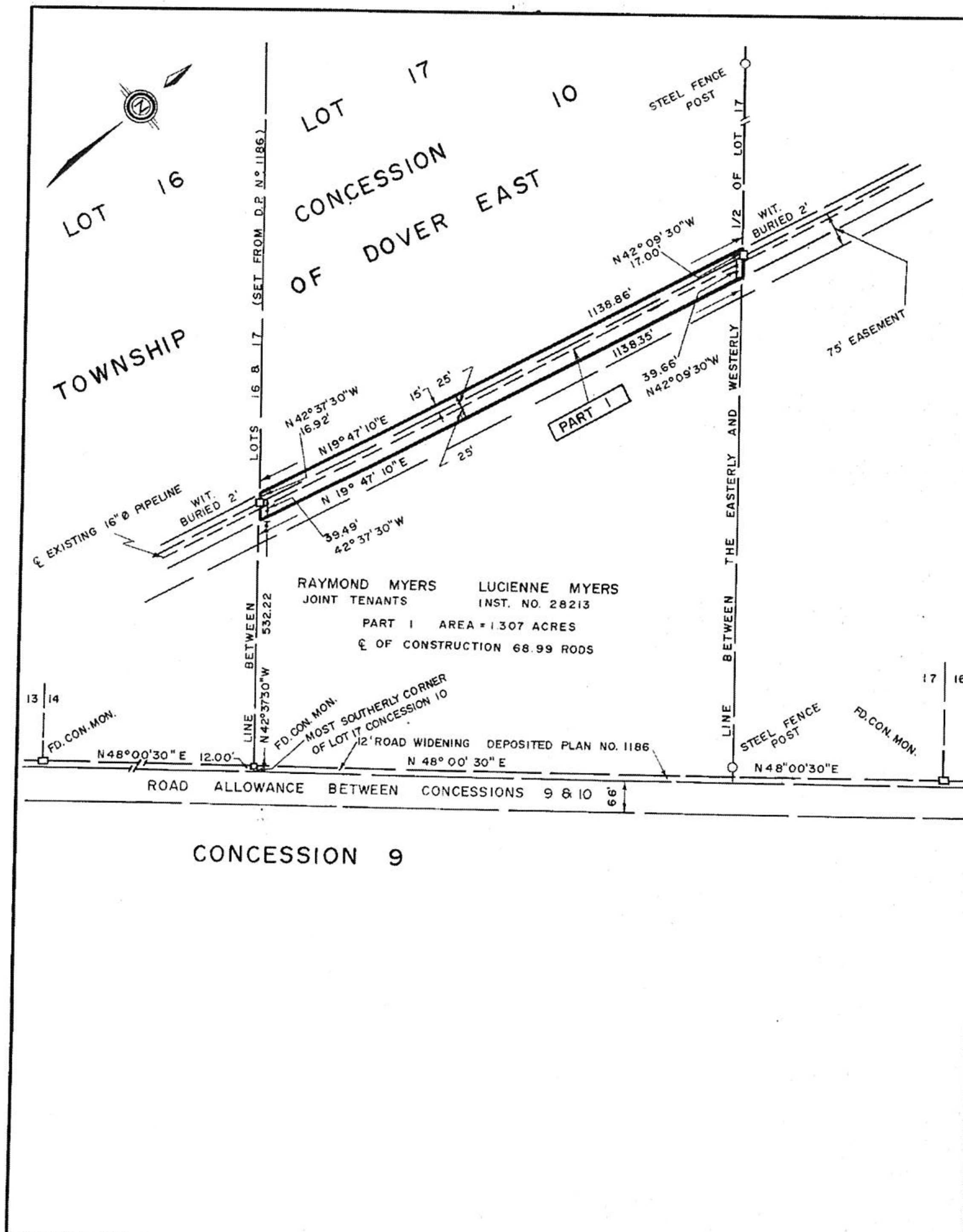
SCHEDULE "A"

ALL AND SINGULAR that certain parcel or tract of land and premises situate, lying and being in the Township of Dover East, in the County of Kent and Province of Ontario, and being composed of that part of Lot(s) sixteen (16), Concession ten (10), in the said Township of Dover East, shown within the heavy outline and designated PART(S) one (1) on a plan of survey prepared by James D. Nisbet Ontario Land Surveyor, dated the 29th. day of March, 19 72.

REFERENCE PLAN FILED AS NO. 24 R 407.

mgkc

FORM 665D - 5/72



I REQUIRE THIS PLAN TO BE DEPOSITED UNDER PART II OF THE REGISTRY ACT.

(DATE) 16/5/1972.

O.B. Rayment
(SIGNATURE)

O.B. RAYMENT
(NAME IN PRINT)

FOR UNION GAS COMPANY OF CANADA, LIMITED.

RECEIVED AND DEPOSITED AS PLAN 24 R 406

(DATE) 19 MAY 1972

H.L. Widdis
(SIGNATURE)

REGISTRAR FOR THE REGISTRY DIVISION OF THE COUNTY OF KENT.

SCHEDULE "B"

PLAN SHOWING
PART OF LOT 17, CONCESSION 10
TOWNSHIP OF DOVER EAST
COUNTY OF KENT

SCALE 1 INCH = 200 FEET

1972

BEARINGS SHOWN HEREON ARE ASTRONOMIC AND ARE REFERRED TO THE MERIDIAN THROUGH THE NORTHERLY CORNER OF LOT 19 CONCESSION 10 TOWNSHIP OF DOVER LONGITUDE 82° 20' 20"WEST AS DERIVED FROM DEPOSITED PLAN No. 1085 FOR THE COUNTY OF KENT.

DENOTES PLANTING OF 1" SQUARE IRON BAR WITH SURVEY CAP. 48"
DENOTES PLANTING OF 5/8"SQUARE IRON BAR 24" LONG.
WIT. DENOTES PLANTING OF WITNESS BAR

CAUTION: THIS PLAN IS NOT A PLAN OF SUBDIVISION WITHIN THE MEANING OF SECTIONS 26, 27 & 28 OF THE PLANNING ACT.

NOTE: ALL HANGING LINES SHOWN HEREON HAVE BEEN VERIFIED.

SURVEYOR'S CERTIFICATE

I HEREBY CERTIFY THAT:

(1) THIS SURVEY AND PLAN ARE CORRECT AND IN ACCORDANCE WITH THE SURVEYS ACT AND REGISTRY ACT AND THE REGULATIONS MADE THEREUNDER

(2) THE SURVEY WAS COMPLETED ON THE 20 Th DAY OF JULY 1971.

DATE March 29/72

JAMES D. NISBET
ONTARIO LAND SURVEYOR

JAMES D. NISBET
CONSULTING CIVIL ENGINEER
ONTARIO LAND SURVEYOR
206 WATER STREET PHONE 337-5436
SARNIA ONTARIO

DRAWN BY G.B.	CHECKED BY R.W.R.	SCALE 1" = 200'	DRAWING NO. S-71-85-5-B
	DRAWER	SHEET	DWG. NO.

UNION GAS LIMITED

Answer to Interrogatory from
("CAEPLA-PLC")

Reference: Union Application, Exhibit A, Tab 9, p.4 of 10, Figure 9-2
Stantec Environmental Report, Section 2.6, p.24 of 351

Preamble: Pipeline Wall Thickness

Union states:

Union anticipates sourcing two separate wall thickness and a single grade to meet the varying design conditions listed above. Pipe with a location factor of 0.9 and above uses 9.6 mm wall thickness and a specified minimum grade of 483 MPa. Pipe with a location factor of 0.625 uses 13.5 mm wall thickness and a specified minimum grade of 483 MPa.

Stantec states:

In southern Ontario, it is not uncommon for residential homes to be located adjacent to natural gas transmission corridors. The proposed pipeline will be designed to meet or exceed all safety regulations and codes. In addition, Union Gas has a rigorous safety and integrity program so that the pipeline is constructed and maintained to operate safely.

a) Which thickness of pipe provides better protection for farmers and landowners conduct agricultural and other activities over the proposed pipeline – 9.6 mm or 13.5 mm? Please explain.

b) Which thickness of pipe provides better protection for residents of residential homes adjacent to the pipeline route – 9.6 mm or 13.5 mm? Please explain.

c) What would be the incremental increases in the cost of the project (broken down into materials and other costs) if 13.5 mm pipe was used for the entire project?

Response:

a) b)

The pipeline is designed in accordance with the CSA Z662-15 Oil and Gas Pipeline code as adopted by the Ontario Technical Standards and Safety Authority in accordance with Ontario Regulation 210/01 using a combination of factors such as class location, grade of pipe and wall thickness. This design meets or exceeds the requirements of the CSA Z662-15 code to ensure the entire pipeline is safe for both wall thickness designs.

c) The materials cost of the Project would increase by approximately $2.3 million if 13.5 mm pipe was used for the entire length of the pipeline.

Union estimates a further $2 million in other costs associated with using 13.5 mm pipe (total of $4.3 million). These costs are based on the need for additional welding, plus more time required for pipe bending.

UNION GAS LIMITED

Answer to Interrogatory from
("CAEPLA-PLC")

Reference: Union Application, Exhibit A, Tab 9, p.5 of 10

Pipeline Depth of Cover

Union states:

Minimum depth of cover required will be 1.0 metre from top of pipe to final grade. Where required additional cover, will be, used to accommodate planned or existing underground facilities, 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 metres below grade.

a) Please provide a copy of Union Gas Limited's depth of cover monitoring program documents.

b) What is the depth of cover monitoring program proposed for the proposed pipeline?

c) What is the minimum depth of cover that will be maintained by Union Gas Limited over the proposed pipeline following construction (i.e. during operation)?

Response:

a) Please see Attachment 1 for a copy of Union's Standard Operating Practice for Depth of Cover.

b) Depth of cover monitoring program for the new pipeline will follow Union's Standard Operating Practice for Depth of Cover and will meet or exceed current code and regulation requirements. Please see response to a) above.

c) Ontario Regulations require that pipelines are installed and operated to meet the requirements of the CSA Z662 Standard. The standard has separate requirements for the design, installation, and operation of the pipelines. Union installs pipelines at elevations that provide cover in excess of the minimum Standard requirements and operates such pipelines to comply with the depth of cover requirements of the Standard and TSSA for operating pipelines. Please refer to Section 7 of the letter of understanding filed in the response at Exhibit B.CAEPLA-PLC.5. for additional information relating to the proposed depth of cover for the Project.

Depth of Cover - Practice

Intention

To provide a standard practice to define the frequency of inspections on all pipelines operating over 30% of SMYS, to provide for the priority level by degree of hazard, and to establish the maximum time to perform mitigation.

References

- C&M Manual Section 16.6, "Asbuilt Records"

Act Reference

- Technical Standards and Safety Act, 2000

Code or Regulation Reference

Ontario Regulation 210/01, Oil and Gas Pipeline Systems
Code Adoption Document, November 2012

Clause 10.6.5.5 Operating companies shall develop written procedures for periodically determining the depth of cover for pipelines operated over 30% of SMYS. Such written procedures shall include a rationale for the frequency selected for such depth determinations. Where the depth of cover is found to be less than 60 cm in lands being used for agriculture, an engineering assessment shall be done in accordance with clause 3.3 of Z662-11 and a suitable mitigation plan shall be developed and implemented to ensure the pipeline is adequately protected from hazards.

CSA Z662-11, Oil and Gas Pipeline Systems

10 Operating, maintenance, and upgrading
10.6 Right-of-way inspection and maintenance
10.6.1 Pipeline patrolling
10.6.1.1
Operating companies shall periodically patrol their pipelines in order to observe conditions and activities on and adjacent to their rights-of-way that can affect the safety and operation of the pipelines. Particular attention shall be given to the following:
(a) construction activity;
(b) dredging operations;
(c) erosion;
(d) ice effects;
(e) scour;
(f) seismic activity;
(g) soil slides;
(h) subsidence;
(i) loss of cover; and
(j) evidence of leaks.

Note: *Where pipeline patrolling reveals conditions that can lead to failure of the pipeline, see Clause 10.3.1.*

10.6.1.2
The frequency of pipeline patrolling shall be determined by considering such factors as:
(a) operating pressure;
(b) pipeline size;
(c) population density;
(d) service fluid;
(e) terrain;
(f) weather; and
(g) agricultural and other land use.

10.6.4 Crossings
10.6.4.2
Underwater crossings shall be inspected periodically for adequacy of cover, accumulation of debris, and other conditions that can affect the safety or integrity of the crossing.

10.3.1 Integrity of Existing Pipeline Systems
10.3.1.1
Where the operating company becomes aware of conditions that can lead to failures in its pipeline systems, it shall conduct an engineering assessment to determine which portions can be susceptible to failures and whether such portions are suitable for continued service.

10.3.1.3
Where the engineering assessment indicates that portions of the pipeline system are susceptible to failures, the operating company shall either implement measures preventing such failures or operate the system under conditions that are determined by an engineering assessment to be acceptable.

Note: *Clause N.10 provides options that may be used to reduce the frequency of failure and damage incidents*

N.10 Options for Reducing Frequency and Consequences of Failure or Damage Incidents
N10.2 External Interference
The options that may be used to reduce the frequency of failure and damage incidents associated with external interference include the following as applicable:
(a) Participations in one-call utility location organizations
(b) Measures to improve public awareness of and education about the pipeline system
(c) Vegetation control to improve right of way visibility
(d) Supplemental markers and signs to identify the presence of pipeline systems
(e) Increased frequency of right of way inspections and patrols
(f) Enhancement of procedures for pipeline system location and excavation
(g) Installation of structures or materials (e.g., concrete slabs, steel plates, or casings)
(h) Increase depth of cover
(i) Increased pipe wall thickness

Compliance

The Manager of Pipeline Engineering is responsible to ensure that the program is executed on and adhered to.

Definitions

Agricultural Lands are those lands that are currently being worked with mechanical farm equipment for the production of crops or grazing farm animals. Pasturelands are considered agricultural since such lands may be periodically worked with similar equipment to croplands.

Depth of Cover is the required depth of the pipe, from the top of the pipe to the ground surface. Any structure, such as weights or casings, connected to the pipe through mechanical means is considered part of the pipe and must meet the required depth of cover.

Specific Requirements

General Depth of Cover Survey Frequency

All targeted pipelines will be surveyed for depth of cover in accordance with approved locating and surveying procedures, at the frequencies shown in Table 15.1.

Table 15.1: General Depth of Cover Survey Frequency

Location	Survey Frequency
Sections of pipeline with less than 60 cm of cover	Annual until mitigation completed
Sections of pipeline through Agricultural Lands with 60 cm to 75 cm of cover	5 years
All other pipelines operating above 30% SMYS in Agricultural Lands	10 years
All other pipelines operating above 30% SMYS	20 years

Corrective Action or Notification Requirements

Mitigation of Shallow Areas

Any location on a pipeline with a depth of cover of 60 cm or less requires a response to ensure the pipeline is adequately protected from hazards. A large amount of the depth of cover survey will occur on private agricultural property. If a shallow area is found on private property, the Lands department shall contact the landowner before initiating any mitigation to protect the pipeline.

All locations found with depth less than 60 cm shall have a Direct Current Voltage Gradient (DCVG) survey completed within 1 year of discovery and prior to any mitigation to identify any coating damage in the area. Temporary protection shall be implemented within 60 days of identification to prevent further damage to the pipeline.

Mitigation measures shall be implemented to limit any further damage to the pipeline. Mitigation methods may include adding suitable fill material over the pipeline, fencing off the shallow area with fencing suitable to keep machinery from putting loading stress on or causing damage to the pipeline, placing protection such as concrete slabs over the pipeline, or lowering the pipeline to a suitable depth.

Retention of Records

Survey results shall be stored in the pipeline directory in the survey folder for each pipeline section surveyed. A minimum of three consecutive surveys shall be kept for each pipeline segment.

UNION GAS LIMITED

Answer to Interrogatory from
("CAEPLA-PLC")

Reference: Union Application, Exhibit A, Tab 10, p.3 of 4

Preamble: Agricultural Land Impact Mitigation

Union lists measures to be implemented to minimize impacts to soil and agricultural land along the pipeline route:

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

On past projects, Union Gas Limited has made formal construction methodology agreements with landowners in the form of a Letter of Understanding.

a) Please provide a copy of Union Gas Limited's Letter of Understanding or similar landowner construction agreement proposed for this project.

b) If no agreement is proposed, please explain why not.

Response:

Attachment 1 is a copy of the letter sent to CAEPLA (dated July 19, 2016) that includes Union's proposed letter of understanding, easement agreement and temporary land use agreement. The compensation package at the end of the attachment has been redacted. An un-redacted copy will be provided to the Board in confidence under separate cover.

July 19, 2016

Mr. Rick Kraayenbrink
1071 Bentpath Line
Sombra, Ontario
N0P 2H0

CAEPLA
c/o Rick Kraayenbrink
1071 Bentpath Line
Sombra, Ontario
N0P 2H0

Re: Union Gas Limited ("Union") Panhandle 2017 Reinforcement Project
Ontario Energy Board file no. EB-2016-0186
Early Access Negotiations

This letter attaches a number of documents that we have prepared as a result of the numerous negotiations we have had regarding this project.

I'd like to thank you again for contacting me in early February to initiate discussions regarding the questions from the landowners we understand you are representing. As you know, Union has agreed to a number of concessions and accommodations in the course of our negotiations, including changes to our construction techniques, procedures, compensation and documentation requirements. Over the course of six meetings and subsequent telephone conversations we have made changes to the compensation package and the Letter of Understanding ("LOU"), which outlines Union's commitment to the manner in which the pipeline will be constructed and lands remediated.

To date, we have remitted plus HST to you for your negotiation time. If there are invoices outstanding, please let me know. While we believe we have a clear sense of the parties on whose behalf you have been negotiating it is now time, in our view, to ensure that all parties are "on the same page" in respect of these negotiations. To that end, please provide executed acknowledgments from all parties on whose behalf you are negotiating confirming your authority to negotiate on their behalf.

As a result of our collaboration, we now have a final package which can be presented to landowners. Union understands that the landowners may want to have the package reviewed by their legal counsel. As discussed, Union will reimburse the landowners for all reasonable legal fees which they incur as a result of reviewing this final package.

Easement and Letter of Understanding

As Union's form of easement and LOU were amended and approved by the OEB as part of the Hamilton to Milton Pipeline Project and the Board's order approving the pipeline project on April 30, 2015, we agreed it was logical to utilize these same documents for this project. During the course of our meetings these documents were amended at your request to reflect some of the differences in construction between this project and the Hamilton to Milton project.

Easement

The only change to Union's form of easement from what the OEB approved during the Hamilton to Milton hearing was the inclusion of a provision prohibiting the storage of flammable materials over the pipeline as required by CSA code. A copy of the Option for Easement Agreement which includes the Easement Agreement itself is attached for your reference. As the majority of the land rights required for this project are temporary, a copy of Union's Option for Temporary Land Use is also attached for your reference.

Letter of Understanding

With respect to the LOU, our understanding is that one of the items identified as critical to you and the landowners is the construction protocols and parameters for the removal of the existing NPS 16 pipeline. As a result, in addition to Union carrying out all removal activities in accordance with TSSA regulations and requirements, and industry best practices, an additional section was included in the LOU to specifically address the protocols for the removal of the existing pipeline.

Union also agreed to your request that the Integrity Dig agreement apply both to the new proposed NPS 36 pipeline and the existing NPS 20 pipeline so that landowners are aware of what the construction protocols and compensation details will be for any future maintenance work on the pipeline.

Specifically we agreed to the following changes:

1) LOU- existing Agreement changes:
   a. Page 2- Introduction- 1st paragraph…. add wording first and second
   b. Page 2– Introduction- 2nd paragraph…. instead of "may"…. replace with "will cause damage…."
   c. Page 4– # 9. Topsoil replacement, stone picking etc….last paragraph add "greater than 4 inches"
   d. Page 4– # 10. Drainage Tiling- add "The Company will consider reasonable requests by the Landowner to construct additional tile runs near damaged lands"
   e. Page 5– # 10. Drainage Tiling cont'd- 2nd paragraph, 6th line – outside Easement limits-add "and Temporary Land Use" ("TLU")
   f. Page 5 – #10. Drainage Tiling- bottom….add "or stone pit drains with pea gravel"
   g. Page 6 ii) – # 10. Drainage Tiling- after compaction wording … post construction tiling…add "The Company will consider adding two drains between pipelines where necessary."
   h. Page 8 – #15 vii. Covenants- Company covenants- add…."unless mutually agreed upon."
   i. Page 8 – #15 xix. Covenants- Company covenants-remove paragraph and the reference to 0.9 (min design standards)
   j. Page 8 – Covenants- Landowner covenants- # i) remove wording "Clean-up Acknowledgement" and insert "Release Agreement"
   k. Page 10 - #23. Gored land……add "where reasonably practical"
   l. Page 11- #30. Integrity Dig Agreement….. add wording re to include …."The Integrity Dig Agreement will be utilized for all Integrity Digs pertaining to this pipeline and the existing paralleling NPS 20 pipeline, from Dawn to Dover Station."
   m. Page 17 – Schedule 6. Wet Soils Shutdown- ….last paragraph…..add wording…. "In this event, additional damages will be paid as a result based upon 50% of the disturbance payment on a one time only basis".

2) New Section. Pipeline Removal Process- Existing NPS 16.

A copy of the LOU with the above noted changes (in bold) is attached for your reference.

Construction Monitor

As part of the Hamilton to Milton settlement agreement between Union and GAPLO, Union agreed to the appointment of a Construction Monitor. The duties of the Construction Monitor include the following:

1. To observe impacts of construction on the land, including right-of-way preparation, trenching, backfill and clean-up operations as well as wet soil shutdown events;
2. To review construction activities for compliance with the OEB Conditions of Approval, and LOU agreed to between landowners and Union;
3. To review all specific construction commitments included in Union's construction contract;
4. To respond to specific requests by landowners and the committee within 24 hours while maintaining limited contact with landowners on a day-to-day basis; and
5. To prepare and deliver a series of activity reports in a timely manner to the appropriate individuals.

As the construction of the Hamilton to Milton pipeline has not been completed, it is premature to assess the usefulness of the Construction Monitor. As such Union agreed to your request to appoint a Construction Monitor for the Panhandle Project. We understand that this is acceptable to you and the landowners. We trust that the OEB will agree to this as well and will agree to be a party to the Construction Monitor committee.

Compensation Package

We agreed that the format for the compensation package, which has been accepted by both Union and GAPLO, for previous transmission pipeline projects (most recently for the Hamilton to Milton project) would be utilized for this project with the requested changes to reflect the variable land and crop values in the geographic regions the proposed pipeline crosses.

Union also agreed to the following changes, requested by you, to the established compensation package:

1. Landowners would have the option to have compensation payments spread out over a two year period;
2. An additional compensation payment of 50% of the per acre disturbance payment in the event that Union conducts construction during a wet weather shutdown;
3. Additional Disturbance Payment for the removal of the existing NPS16 pipeline and the subsequent requirement for a new trench location within existing Easement-payment based on 50% of the Disturbance Payment per acre; and
4. Land values based upon updated appraisals by a local appraiser.

A complete copy of the compensation package is included.

Early Access to Complete Preconstruction Surveys

Union wishes to advise you that it has filed an application with the OEB under section 98 of the OEB Act requesting an order for early access to landowner properties for completion of pre-construction surveys.

Union has responded to all the issues which you have raised and we have finalized a comprehensive package which addresses the concerns and requests of the landowners.

It is Union's intention to present the easement, temporary land use, LOU and compensation package to individual landowners and to initiate the immediate payment of the Option payments to the landowners as quickly as possible. If you have any questions or final comments please let me know.

Sincerely,

Signed on behalf of Union

[original signed by]

Mervyn R. Weishar
Senior Land Specialist, Lands Department

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:

Legal Description:

which lands are required by the Transferee;

1. In consideration of the sum of XX/100 Dollars ($ (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 _____ 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 XX/100 Dollars ($) 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) XX/100 Dollars ($) 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 XX/100 Dollars ($) 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.

5. The option contained in this Agreement shall be exercisable by the Transferee on or before 11:59 p.m. on the ___ day of _______________ 20__ (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, deposited in the post office, or delivered by courier.

   (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.

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__.

[Insert name of individuals or Corporation]

Signature (Transferor)	Signature (Transferor)
Print Name(s) (and position held if applicable)	Print Name(s) (and position held if applicable)
Address (Transferor)	Address (Transferor)

UNION GAS LIMITED

Signature (Transferee)

[insert name of signing authority], Choose an item.

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

unionoil gas
A Spectra Energy Company

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:

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:

Legal Description:

(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 XX/100 Dollars ($) (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 therefore. 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__.

[Insert name of Individuals or Corporation]

Signature (Transferor)	Signature (Transferor)
Print Name(s) (and position held if applicable)	Print Name(s) (and position held if applicable)
Address (Transferor)	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, , of the Municipality of Chatham-Kent, in the Province of Ontario;

DO SOLEMNLY DECLARE THAT:

1. I am a Choose an item., 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 **PIN/Part of the PIN:** **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.

unionGas
A Spectra Energy Company

OPTION FOR TEMPORARY LAND USE

(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: **Legal Description:**

a portion of which is temporarily required by the Transferee for the purpose of construction of one natural gas pipeline and/or related facility hereto (the “Facilities”):

AND WHEREAS the Transferor has agreed to grant the Transferee an Option to acquire a portion of the land for this purpose in accordance with the specimen Temporary Land Use Agreement attached hereto as **Appendix ”A”** (hereinafter called the “TLU Agreement”)

1. Now therefore in consideration of the sum of ____________XX/100 Dollars ($____), 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 acquire for itself, its successors and assigns, the right on foot and/or with vehicles, supplies, machinery and equipment at any time and from time to time during the term of the TLU Agreement to enter upon, use and occupy a parcel of land (hereinafter called the “TLU Lands”) more particularly described on the Sketch attached hereto as **Appendix ”B”** and forming part of this Option for any purpose incidental to, or that the Company may require in conjunction with, the construction by or on behalf of the Company of a proposed natural gas pipeline and appurtenances adjacent to the TLU Lands.

2. The consideration hereinafter referred to as (“the consideration”) to be paid for the TLU Agreement shall be ____________XX/100 Dollars ($____). The consideration shall be paid by cheque as follows:

   a) ____________XX/100 Dollars ($____) as a non-refundable payment on account of the TLU Lands, payable within Thirty (30) days of signing of this Option.

   b) the balance of ____________XX/100 Dollars ($____) to be paid on account of the TLU Lands upon delivery of the notice referred to in Clause 5 of this Option, and details as per attached Appendix “C”;

3. The Transferor hereby agrees that the Transferee's surveyors, engineers, consultants and servants may enter on the TLU Lands forthwith and at any time while this Option remains in effect for the purpose of performing soil tests, surveys, archaeological investigations and any other pre-construction activities which the Transferee deems necessary. The Transferor further hereby agrees that immediately following the giving by the Transferee of the notice referred to in Clause 5 hereof, that the Transferee shall have the immediate right in accordance with the TLU Agreement to enter and bring its equipment and equipment of its servants, agents and contractors upon the TLU Lands to construct, maintain and operate its Facilities. 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.

4. The Option contained in this agreement shall be exercisable by the Transferee on or before 11:59 p.m. on the ____ day of ______________ 20__ (hereinafter called the "Expiry Date").

5. This Option may be exercised by the Transferee upon delivery notice to the Transferor at any time on or before the Expiry Date;

6. Upon payment of the amount in clause 2(b), terms of the TLU Agreement shall be in full force and effect without the necessity of any further action, notice, or documentation.

7. If the Transferor is not at the date hereof the sole owner of the TLU 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 TLU Lands of Transferor, this Option shall likewise bind all such after-acquired interests.

8. 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.

9. All notices required or permitted to be given hereunder shall be in writing and delivered in person or by prepaid registered mail or courier in care of the Company to: Union Gas Limited, 50 Keil Drive North, Chatham, ON N7M 5M1 Attn: Lands Department and in the care of the Transferor to:

____

or to such other address as the Company and the Transferor respectively may from time to time designate in writing and any such notice shall be deemed to have been given and received by the addressee on the date on which it was delivered or if mailed shall be deemed to have been given to and received by the addressee on the fifth business day following the date on which it was deposited in the mail, except in the event of interruption of mail service after mailing, in which event it shall be deemed to have been given when actually received. Where notice is given by registered mail, notice thereof shall be conclusively presumed to have occurred within three (3) days of the actual date and time of mailing in the post office.

10. The Transferor hereby acknowledges that notice of this Agreement (hereinafter called the "Notice') may be registered electronically on title by the Transferee and the Transferor hereby authorizes the Transferee to complete this registration, at its expense. The Transferee hereby agrees and acknowledges that upon termination of these rights, a release will be prepared and registered to surrender this Notice, at its expense.

DATED this ____ day of __________________ 20__.

[Insert name of individual or corporation]

Signature (Owner)	Signature (Owner)
Print Name(s) (and position held if applicable)	Print Name(s) (and position held if applicable)
Address (Owner)	Address (Owner)

UNION GAS LIMITED

Signature (Company)

[Insert name of signing authority], Choose an item.
Name & Title (Union Gas Limited)

I have authority to bind the Corporation.

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

Additional Information: (if applicable)

Owner Solicitor: ______________________

Address: ____________________________

Telephone: ____________________________

Tenant Farmer Information: (if applicable)

Name: ____________________________

Address: __________________________

Telephone: ________________________

Appendix A

Temporary Land Use Agreement

TEMPORARY LAND USE AGREEMENT

(Hereinafter called the "Agreement")

Between

(hereinafter called the "Owner")

and

UNION GAS LIMITED
(hereinafter called the "Company")

In consideration of the sum of _________XX/100 Dollars ($____), payable by the Company to the Owner within thirty (30) days of signing of this Agreement in accordance with the compensation labelled as Appendix "A" hereto.

the Owner of **PIN:**

Legal Description: labelled as Appendix "B" hereto.hereby grants to Company, its servants, agents, employees, contractors and sub-contractors and those engaged in its and their business, the right on foot and/or with vehicles, supplies, machinery and equipment at any time and from time to time during the term of this Agreement to enter upon, use and occupy a parcel of land (hereinafter called the "Lands") more particularly described on the Sketch attached hereto labelled as **Appendix "C"** and forming part of this Agreement, the Lands being immediately adjacent to and abutting the Choose an item. for any purpose incidental to, or that the Company may require in conjunction with, the construction by or on behalf of the Company of a proposed Choose an item. and appurtenances on the Lands including, without limiting the generality of the foregoing, the right to make temporary openings in any fence (if applicable) along or across the Lands and to remove any other object therein or thereon interfering with the free and full enjoyment of the right hereby granted and further including the right of surveying and placing, storing, levelling and removing earth, dirt, fill, stone, debris of all kinds, pipe, supplies, equipment, vehicles and machinery and of movement of vehicles, machinery and equipment of all kinds.

1. This Agreement is granted upon the following understandings:

   a) The rights hereby granted terminate on the ______ day of _________________ 20__.

   b) The Company shall make to the person entitled thereto due compensation for any damages resulting from the exercise of the right hereby granted and if the compensation is not agreed upon it shall be determined in the manner prescribed by Section 100 of The Ontario Energy Board Act, R.S.O. 1998 S.O. 1998, c.15 Schedule B, as amended or any Act passed in amendment thereof or substitution there for;

   c) As soon as reasonably possible after the construction, the Company at its own expense will level the Lands, remove all debris therefrom and in all respects, restore the Lands to their former state so far as is reasonably possible, save and except for items in respect of which compensation is due under paragraph (b) and the Company will also restore any gates and fences interfered with around, (*if applicable*) the Lands as closely and as reasonably possible to the condition in which they existed immediately prior to such interference by the Company.

   d) It is further agreed that the Company 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 Agreement or anything done or maintained by the Company hereunder or intended so to be and the Company shall at all times indemnify and save harmless the Owner 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 Company 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 Owner.

The Company and the Owner agree to perform the covenants on its part herein contained.

Dated this ____ day of __________________ 20__.

[Insert name of individual or corporation]

Signature (Owner)	Signature (Owner)
Print Name(s) (and position held if applicable)	Print Name(s) (and position held if applicable)
Address (Owner)	Address (Owner)

UNION GAS LIMITED

Signature (Company)

[Insert name of signing authority], Choose an item.
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:

APPENDIX "A"

Temporary Land Use Compensation

APPENDIX "B"

Legal Description/GeoWarehouse

APPENDIX "C"

Property Sketch

LETTER OF UNDERSTANDING
("LOU")
Panhandle Reinforcement-Dawn to Dover Station

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LETTER OF UNDERSTANDING
("LOU")

Between:

hereinafter referred to as the "**Landowner**"

and

Union Gas Limited

hereinafter referred to as the "**Company**"

INTRODUCTION

The Company has applied to the Ontario Energy Board to construct a NPS 36 pipeline which will run approximately 40 kilometres starting at the existing Union Gas Dawn Compressor Station, and travelling parallel to an existing NPS 20 Union Gas natural gas pipeline easement, and terminating at the existing Union Gas Dover Transmission Station. As a result it will be necessary for the Company to enter onto the Landowner's property for the purpose of **first** removing the existing NPS 16 pipeline and **second** constructing and installing the NPS 36 pipeline (the "Project").

The Company recognizes that the construction of the pipeline **will** result in damage to the Landowner's property and a disruption to the Landowner's daily activities for which the Company is obligated to compensate the Landowner and observe various construction techniques to minimize such damages.

It is the policy of the Company that Landowners affected by its pipeline projects be dealt with on a consistent basis that is fair to both parties. This Letter of Understanding represents the results of negotiations between the Company and the Landowner and outlines the obligations of each party with respect to:

i) The construction of the pipeline;
ii) Remediation of the Landowner's property; and,
iii) Compensation to the Landowner for various damages as a result of the construction of the pipeline.

The parties acknowledge that the Company is required to adhere to all of the conditions set out in the Leave to Construct Order of the Ontario Energy Board and that the foregoing are additional undertakings that the Company has agreed upon with the Landowner on the Project. A copy of the Conditions of Approval will be mailed to the Landowner upon request.

1. **Pre-Construction Meeting**
   Prior to construction, the Company's representatives shall visit with the Landowner to conduct a preconstruction interview. During this interview the parties will review the timing of construction and discuss site specific issues and implementation of mitigation and rehabilitation measures in accordance with the provisions of this Letter of Understanding. For greater certainty, and to help ensure Landowner requests are implemented, the Company will document the results of such meetings and provide a copy to the Landowner.

2. **Testing For Soybean Cyst Nematode**
   In consultation with the Landowner, the Company agrees to sample all agricultural easements along the pipeline route of this Project, before construction, and any soils imported to the easement lands for the presence of soybean cyst nematode (SCN) and provide a report of test results to the Landowner. In the event the report indicates the presence of SCN, the Company will work with OMAFRA to develop a best practices protocol to handle SCN when detected and will employ the most current best practice at the time of construction. The Company will also test for SCN whenever it is conducting post-construction soil tests.

3. **Continued Supply of Services**
Where private water or utility lines are planned to be interrupted, the Company will supply temporary service to the affected Landowners prior to service interruption. In the case of unplanned interruption, temporary services will be provided by the Company at the earliest possible opportunity.

4. **Water Wells**
To ensure that the quality and quantity (i.e. static water levels) of well water and/or the well itself is maintained, a monitoring program will be implemented for all dug or drilled wells within 100 metres of the proposed pipeline and for any other wells recommended by the Company's hydrogeology Consultant. All samples will be taken by the Company's environmental personnel and analyzed by an independent laboratory. Results of testing will be summarized in a letter and will be provided to the Landowner. Lab testing results will be made available to the Landowner on request. Should well water (quantity and/or quality) or the well itself, be damaged from pipeline installation/operations, a potable water supply will be provided and the water well shall be restored or replaced as may be required.

5. **Staking of Work Space**
The Company agrees to stake the outside boundary of the workspace necessary for the construction of this Project which may include an easement and temporary land use area. The stakes will be located at 30 metre (98.4 foot) intervals prior to construction. The intervals or distance between stakes may decrease as deemed necessary in order to maintain sight-lines and easement boundaries in areas of sight obstructions, rolling terrain or stream and road crossings.

6. **Topsoil Stripping**
Prior to installing the pipeline in agricultural areas, the Company will strip topsoil from over the pipeline trench and adjacent subsoil storage area. All topsoil stripped will be piled adjacent to the easement and temporary land use areas in an area approximately 10 metres (33’) in width. The topsoil and subsoil will be piled separately and the Company will exercise due diligence to ensure that topsoil and subsoil are not mixed. If requested by the Landowner, topsoil will be ploughed before being stripped to a depth as specified by the Landowner.

The Company will strip topsoil across the entire width of the easement (at the request of the Landowner), provided also that a temporary right to use any necessary land for topsoil storage outside the easement is granted by the Landowner.
If requested by the Landowner the Company will not strip topsoil. The topsoil/subsoil mix will be placed on the easement on top of the existing topsoil.

At the recommendation of the Company’s Soils Consultant and/or at the request of the landowner topsoil will be over-wintered and replaced the following year. In these circumstances the Company will replace the topsoil such that the easement lands are returned to surrounding grade.

7. **Depth of Cover**
The Company will install the pipeline with a minimum of 1.2 metres of cover, 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.

If the Company, acting reasonably, determines in consultation with the Landowner that it is necessary to increase the depth of the Pipeline to accommodate current processes such as deep tillage, heavy farm equipment or land use changes, the Company will provide for additional depth of cover.

8. **Levelling of Pipe Trench**
During trench backfilling the Company will remove any excess material after provision is made for normal trench subsidence. The Landowner shall have the right of first refusal on any such excess material. The Company’s representative will consult with the Landowner prior to the removal of any excess material.

If topsoil is replaced in the year of construction and trench subsidence occurs the year following construction, the following guidelines will be observed:

i) 0 to 4 inches - no additional work or compensation.

ii) Greater than 4 inches - the Company will either:
   (a) Strip topsoil, fill the depression with subsoil and replace topsoil, or
   (b) Repair the settlement by filling it with additional topsoil.

If topsoil is replaced during the year of construction and mounding over the trench persists the year following construction, the following guidelines will be observed by the Company:

i) 0 to 4 inches - no additional work or compensation;
ii) Greater than 4 inches the Company will strip topsoil, remove the excess subsoil and replace the stripped topsoil;
iii) Should adequate topsoil depth be available, the mound can be levelled with the approval of the Landowner.

If following over-wintering of the topsoil,return to grade and the establishment of a cover crop, there is identifiable subsidence in excess of two (2) inches the Company will restore the affected area to grade with the importation of topsoil.

If the construction of the pipeline causes a restriction of the natural surface flow of water, due to too much or not enough subsidence, irrespective of the 4 inches level stated above, the Company will remove the restriction by one of the methods described above.

9. <u>Topsoil Replacement, Compaction Removal and Stone Picking</u>

The subsoil will be worked with a subsoiling implement, as agreed by the Company and Landowner.

Unless there is an agreement to the contrary, the Company will remediate any residual compaction in the subsoil prior to return of topsoil.

The Company will pick stones prior to topsoil replacement.

Stone picking will be completed, by hand or by mechanical stone picker to a size and quantity consistent with the adjacent field, but not less than stones 100 mm (4 inches) in diameter. After topsoil replacement, the topsoil will be tilled with an implement(s) as agreed by the Company and Landowners.

After cultivation, the Company will pick stones again.

The Company will perform compaction testing on and off the easement before and after topsoil replacement and provide the results to the Landowner, upon request.

If agreed to by the parties, the Company will return in the year following construction and will cultivate the easement area. When necessary, to accommodate planting schedules, the Landowner should perform cultivation themselves, at the Company's expense (see Schedule of Rates attached as Schedule 3.

For this Project, the Company shall, at a time satisfactory to the Landowner, return to pick stones **<u>greater than 4 inches,</u>** by hand/or with a mechanical stone picker in each of the first two years following construction. The Company shall, at a time satisfactory to the landowner, return to pick stones in the years following where there is a demonstrable need.

10. <u>Drainage Tiling</u>

The Company will repair and restore all field drainage systems and municipal drains impacted by construction to their original performance. The Company will be responsible for the remedy, in consultation with the Landowner, of any drainage problem created by the existence of the pipeline present and future. **<u>The Company will consider reasonable requests by the Landowner to construct additional tile runs near damaged lands.</u>** The Company will be responsible for any defects in the integrity and performance of tile installed or repaired in conjunction with construction, operation or repair, provided the defects are caused by the Company's activities, faulty materials or workmanship. The Company guarantees and will be responsible forever for the integrity and performance of such tile as well as any other drain tile or municipal drain compromised by the Company's activities, including future maintenance operations and problems caused by the Company's contractors, agents or assigns. Where the Landowner, acting reasonably, believes that there may be a drainage problem arising from the

Company's operations, the Company will perform an integrity check on any the construction/repair crossing the pipeline, and repair any deficiencies to the Landowner's satisfaction.

The Company will retain the services of a qualified independent drainage Consultant. The Consultant will work with each Landowner prior too, during and after construction. The Consultant will be responsible to gather as much background information from each Landowner prior to construction as available, and with this information in conjunction with the Landowner they will determine whether there is pre-construction, post construction and/or temporary tile construction required on their land. The Consultant will provide where requested each Landowner with a tile plan for their review and approval prior to any installation of tile. The installation of tile will only be performed by a licensed drainage contractor to ensure that all drainage best practices are used. The Company will consult with the Landowner and mutually develop a list of licensed tile drainage contractors from the area to bid on the work. All installations may be inspected by the Landowner or his/her designate prior to backfilling where practicable. The Company will provide the Landowner or his/her designate advance notice of the tile repair schedule. The Consultant will incorporate any professionally designed drainage plans obtained by the Landowner for future installation. If the Landowner intends to install or modify a drainage system but has not yet obtained professionally designed plans, the Consultant will work with the Landowner accordingly.

Once the Consultant has reviewed all the drainage background provided to them they will proceed in developing pre-construction tiling plans where required. The purpose of pre-construction work is to ensure that the pipeline work does not interfere or cut off any adjacent subsurface drainage. In conjunction with the Landowner the Consultant will design an appropriately sized header tile (interceptor drain) which will be installed 1m outside the easement **<u>and temporary land use</u>** limits by trench method in order to minimize the number of tiles crossing the pipeline easement. All intercepted tiles will be connected or end plugged accordingly. By installing the main outside the easement limits the Company can guarantee the integrity of the existing drainage system during the construction period. The Consultant/Landowner will be responsible for identifying to the pipeline contractor as reasonably possible any existing tiles 150mm or greater crossing the easement. The Company will ensure that any such crossings will be temporarily repaired across the trench line and maintained during the complete construction period until post construction work can repair them permanently. The Company where possible will expose any such tile crossings prior to pipeline trenching operations to obtain an exact invert depth and ensure that the pipeline is not going to conflict with them.

During construction the Consultant will be following the trenching operations collecting / monitoring and ensuring that the drainage is maintained accordingly. Once the Consultant has collected and reviewed all the survey information they will develop a post-construction tile plan and profile for each affected owner. These post construction tile plans will show the Landowner exactly how many tiles are to be installed on easement and by what method the contractor is to use plow/trench.

During construction, the Consultant will be following the trenching operations to ensure that the drainage is maintained.

The Consultant will also provide the Landowner with the most recent specifications concerning tile support systems for repairing and installing new tile across the pipeline trench. Once the Consultant has reviewed the drawing with the Landowner for their approval and received signature on the plan, the Consultant will provide the Landowner with a copy along with a specification for installation so they can monitor the work to be completed.

Also the Company will review other areas of drainage recommended by the drainage Consultant/Landowner such as:

i) In areas where water may accumulate on or off easement as a result of the construction, the drainage Consultant, in conjunction with the Landowner, will develop a temporary tile plan to mitigate these impacts where the water cannot be pumped into an open drain or ditch. The Company could then pump into the temporary tile, **<u>or stone pit drain with pea gravel,</u>** but not into any existing tiles unless otherwise discussed and agreed upon by the Landowner.

ii) In areas where the pipeline construction program clears lands adjacent to existing pipelines and adjacent drained land and as a result creates a newly cleared area large enough to farm, the Company will, at the request of the Landowner, develop a tile plan to drain the cleared area. **The Company will consider adding two drains between pipelines where necessary.** The Company will install the tile in the newly cleared area, and install a drainage outlet that will enable the implementation of the tile plan, provided the cost of such work does not exceed the net present value of the crop revenue from the cleared area. The net present value shall be calculated using the same crop value and discount rate used in the one time crop loss compensation calculation. The net crop revenue shall be derived by reducing the crop value by a negotiated input cost. The Company will accept drainage design solutions that include the use of a motorized pump, if the Landowner releases the Company from all future operation and maintenance responsibilities for the pump. The Company will accept drainage design solutions that include outlet drains crossing adjacent properties, if the Landowner obtains necessary easements or releases fully authorizing such crossings.

The Company will do its best weather permitting to complete the post construction tiling work in the year of pipeline construction after the topsoil has been pulled, unless otherwise agreed upon with the Landowner. If it is not possible for the Company to complete the post construction tiling in the year of construction, the Company will undertake all measures possible to mitigate any off easement damages to the best of its ability.

In situations where topsoil is to be over wintered, the tiling plan will address the timing of tile installation.

Once the tiling is complete the Consultant will adjust all tile plans to reflect the as-constructed information and a copy will be provided to the Landowner for their records.

11. Water Accumulation during Construction

The Company will, unless otherwise agreed to with the Landowner, ensure any water which may accumulate on the easement during construction will be released into an open drain or ditch, but not in a tile drain. This may, however, be accomplished through the installation of temporary tile. The Company will provide the Landowner with a proposed temporary tiling plan for review and approval. If the Company pumps into an existing tile with the Landowner's permission, the water will be filtered.

12. Access Across the Trench

Where requested by the Landowner, the Company will leave plugs for access across the trench to the remainder of the Landowner's property during construction. Following installation of the pipe and backfill, if soft ground conditions persist that prevent the Landowner from crossing the trench line with farm equipment, the Company will improve crossing conditions either by further replacement and/or compaction of subsoil at the previous plug locations. Should conditions still prevent Landowner crossing, the Company will create a gravel base on filter fabric across the trench line at the previous plug locations and remove same at the further request of the Landowner.

Following construction, the Company shall ensure that the landowner shall have access across the former trench area and easement.

13. Restoration of Woodlots

If requested by the Landowner prior to the start of construction, all stumps and brush will be removed from the easement. If the Landowner does not convert the land to agricultural use, Union will maintain a minimum 6 metre strip over the pipeline which will be kept clear by cutting the brush or spraying. The remainder of the easement will be allowed to reforest naturally or can be reforested by the Landowner.

14. Tree Replacement

The Company has established a policy to replant twice the area of trees that are cleared for the Project. Landowners whose woodlots are to be cleared may apply in writing to the Company should they wish to participate in this program. Tree seedlings will be replanted on the right-of-way or within the Landowner's property using species determined in consultation with the Landowner. Although replanting on easement is not encouraged by the Company, when planting on easement occurs, it must be done in accordance with the easement and the Company's policies.

For windbreaks/hedgerows the Company will implement the following practice:

i) If a deciduous (hardwood) tree in excess of six (6) feet is removed, a six (6) foot replacement tree will be planted; if a tree less than six (6) feet in height is removed, a similar sized tree will be planted.

ii) If a coniferous (evergreen) tree in excess of four (4) feet is removed, a four (4) foot replacement tree will be planted; if a tree less than four (4) feet in height is removed, a similar sized tree will be planted.

The Company will warrant such trees for a period of one year following planting, provided the Landowner waters the trees as appropriate after planting.

15. Covenants

Company covenants as follows:

i) On present and proposed agricultural lands, the Company will undertake appropriate survey techniques to establish pre-construction and post-construction grades with the view to restoring soils to pre-construction grade as reasonably practicable.
ii) All construction practices and appropriate environmental mitigation measures will be followed to ensure a proper clean up.
iii) Whenever possible, all vehicles and equipment will travel on the trench line.
iv) All subsoil from road bores will be removed.
v) To replace or repair any fences which are damaged by pipeline construction in a good and workmanlike manner.
vi) Any survey monuments which are removed or damaged during pipeline construction will be reset.
vii) Its employees, agents, contractors and sub-contractors, will not use any off-easement culverts incorporated into municipal drains to provide access to the easement.
viii) It will not use any laneway or culvert of the Landowner without the Landowner's prior written consent. In the event of such use, the Company will, at its own expense, repair any damage and compensate the Landowner accordingly.
ix) To monitor and maintain private driveways that cross the easement for a period of 18 months after construction.
x) That construction activities will not occur outside of agreed to areas without the written permission of the Landowner. In the event that such activities occur, the Company will pay for damages.
xi) To implement its Landowner Complaint Tracking system which will be available to Landowners for the proposed construction.
xii) To provide a copy of this Letter of Understanding and all environmental reports to the construction contractor.
xiii) To ensure suitable passage and land access for agricultural equipment during construction.
xiv) If there is greater than 50% crop loss after five years, at the request of the Landowner, the Company will retain an independent soils Consultant satisfactory to both parties to develop a prescription to rectify the problem.
xv) To permit the planting of the 6 metre strip with permission for the re-establishment of windbreaks and that trees may be planted as a crop (nursery stock), provided that no tree is permitted to grow higher than 2 metres in height, and the species are of a shallow rooting variety. The use of hydraulic spades within the 6 metre strip is prohibited.
xvi) In consultation with the Landowner, the Company agrees to retain an independent Consultant to carry out tests along the pipeline to monitor soils and crop productivity. As part of this testing, a soil specialist will conduct comparative compaction testing of the subsoil and NPK (nitrogen, phosphorus, potassium) testing and testing of PH levels on and off easement after construction. Global Positioning System (GPS) equipment may be used to identify all test locations. The Company further agrees to implement all commercially reasonable measures, where recommended by the soil specialist to remediate the soil.
xvii) To work with the Landowner to ensure that weeds are controlled along the pipeline. Weeds will be sprayed or cut after discussion with the Landowner. The Landowner

will be provided with a contact name in the event that concerns are experienced with weeds.

xviii) To implement the Company's Integrity Dig Agreement for all integrity and maintenance operations on the pipeline.

xix) At the request of the Landowner, the Company shall undertake a depth of cover survey of the pipeline and shall provide its findings to the Landowner. In areas where the top of the pipe is at or below bedrock, the Company will ensure a minimum of 0.6 metres of cover over the pipeline.

xx) Any imported topsoil shall be natural, free of SCN and shall have attributes consistent with the topsoil of adjacent lands as determined by the Company's Consultant and be from a source approved by the landowner.

xxi) To implement Union's wet soil shut down practice as described in Schedule 4.

Landowner covenants as follows:

i) To execute a **Release Agreement** when he/she is satisfied with the clean-up operations described in this Letter of Understanding. It is suggested that any tenant(s) who are affected by construction accompany the Landowner to inspect the clean-up prior to execution of the Clean-up Acknowledgment.

ii) To be responsible to ensure his/her tenant is aware of the terms of the easement or temporary land use agreement and this Letter of Understanding.

iii) To be responsible for making any compensation to his/her tenant for any matters included in the damage payment from the Company, as damages payments are made directly to the registered Landowner.

iv) To only access the work area when accompanied by the Company's designated representative.

16. Dispute Resolution

In the event the parties are unable to reach resolution with respect to the following matters, the Company shall pay the costs of independent Consultants satisfactory to both the Landowner and the Company to resolve site specific disputes involving affected lands on a binding basis concerning the following:

i) The need for topsoil importation as in Article 8 hereof, respecting the existence of identifiable subsidence,

ii) The establishment of levels of compensation for specialty crops as in Article 21.

iii) The resolution of future crop loss claims for Additional Productivity Loss under Article 21 hereof.

Where Construction Damages and Disturbance Damage settlements cannot be negotiated, the Company or the Landowner may apply to Ontario Municipal Board to settle unresolved claims. It is further understood and agreed that the Landowner's executing the easement, is without prejudice to his/her position in negotiation of damages following construction of the pipeline.

17. Land Rights - Easements

Land rights required for the Project include permanent interests such as pipeline easements (i.e. a limited interest in the affected lands) and may also include temporary land use agreements. The Company agrees that it will not surrender or be released from any of its obligations under an easement for this Project without the consent of the Landowner.

Consideration for these rights will be paid at the rate of 100% of the appraised market value of the affected lands. If agreement on the consideration for land rights cannot be reached, the Company will pay for a second report by a qualified appraiser who is chosen by the Landowner provided the appraiser and the terms of reference for the appraisal report are mutually acceptable to the Landowner and the Company. If consideration for land rights still cannot be agreed upon, the matter would be determined at a Ontario Municipal Board Compensation Hearing and the Company's offers would not prejudice either party's presentation at the Hearing.

18. Land Rights – Temporary Land Use Agreements and Top Soil Storage

These rights will be required for at least a two year period, being the year of construction and the following year to allow for clean-up and restoration activities. Consideration for these rights will be paid at the rate of 50% of the appraised market value of the affected land. Should activities extend beyond the two year period, payment will be negotiated on an annual basis.

Although every effort will be made by the Company to identify these rights in certain instances either before or during construction, additional temporary land use may be identified and compensation will be as outlined above.

19. **Damage Payments**

Compensation for damages can be grouped under two headings namely: Disturbance Damages, which are paid at the time easements and temporary land use agreements are executed, and Construction Damages, which are paid either before or after construction is completed. Top soil storage damages will be paid after construction is completed. Disturbance and Construction damage payments will apply to easement, temporary land use and top soil storage and will be based upon the areas of the proposed pipeline easement and temporary land use as set out in Schedule 1.

20. **Disturbance Damages**

Disturbance Damages are intended to recognize that pipeline construction will result in some unavoidable interference with active agricultural operations and certain other uses of affected lands. This may include lost time due to negotiations and construction, inconvenience to the farming operations, restricted headlands, interrupted access and extra applications of fertilizer. Other land uses may qualify for Disturbance Damages which are site-specific in nature and recognize the particular circumstances of the use being interfered with. Union will negotiate with the affected Landowner to address these site-specific issues.

21. **Construction Damages – Crop Loss**

The Company will offer the Landowner a one-time settlement for crop loss damages incurred on the easement and temporary land use areas resulting from the Project, which settlement will include the following:

i) year of construction and future crop loss;
ii) stone picking beyond the second year following construction;
iii) crop losses associated with establishment of a cover crop.

Notwithstanding that the Landowner will have executed a Full and Final Release for crop damages either before or after construction, should productivity loss exceed the percentages paid through the "One Time" Program as in any year following construction and the Landowner has not been (or is not being) compensated for crop loss under the terms of an existing crop loss compensation program with the Company, the Company will reimburse the Landowner for the difference calculated by applying the percentage loss to the Landowner’s actual gross return in the year and deducting the compensation received for that year under the “ One Time ” program (“Additional Productivity Loss”). It will be incumbent upon any Landowner making this type of claim to advise the Company in sufficient time to allow for investigation of the matter and completion of the required samplings**.**

Alternatively, at the option of the Landowner, upon provision of advance notice to the Company to permit opportunity for inspection, GPS data may be utilized to establish yield reductions for the purpose of any applicable Additional Productivity Loss provided that the Company is not responsible for installing GPS units or survey equipment if necessary (“GPS” option). In the event that the Landowner selects the GPS option, the Landowner must provide all necessary GPS documentation related to the entire farm field in question, including, but not limited to, maps, computer print-outs and formula to determine field averages. For greater clarity the following is an example of the calculation of Additional Productivity Loss:

i) Third year crop loss under "One Time" Program = 50%.
ii) Actual crop loss following investigation and sampling = 60%.
iii) Difference payable to Landowner = 10%.

Crop Loss for topsoil storage Areas

Compensation for crop loss on topsoil storage areas will be as follows:

- In year of construction - 100% crop loss;
- In years after construction - measured crop loss;
- Payments will be based upon actual area used for topsoil storage;
- Compensation will not be prepaid;
- Compensation will be paid on an as incurred basis.

Speciality Crops
The one time payment may not apply to specialty crops. Specialty crops include tobacco, produce (eg. carrots, peas, lentils) sugar beets and registered seeds. Compensation will be negotiated on a site specific basis.

Post construction cover crop program
In addition to the one time payment, the Landowner may request a cover crop rehabilitation program for cultivated lands. Under this program the Landowner will plant alfalfa/sweet clover or other restoration crops approved by the Company on the easement and his/her normal crop in the remainder of the field for up to three years. The initial cost of tillage and planting will be paid by the Company as determined by "Economics Information", published by the Ministry of Agriculture and Food. The cost of seed planted over the easement will be compensated upon presentation of an invoice for same. This cover crop program does not apply for tobacco or other specialty crops.

22. <u>Woodlots and Windbreak/Hedgerow Trees</u>
With respect to compensation for damage to woodlots, the Landowner will have the following two options:

Option 1:
Woodlots and hedgerow trees will be cut and appraised by a qualified forester retained by the Company. Evaluation of trees in woodlots will be based on the practice as outlined on Schedule 3.

Option 2:
The Landowner may accept the One Time Crop Loss and Disturbance Damage Payment in lieu of the woodlot evaluation.

With respect to compensation for damage to other wooded areas:

Tree plantations (Christmas trees and nursery stock) will be appraised separately. Compensation for trees evaluated in this manner shall be set out in Schedule 4 to this document.

Evaluation of aesthetic trees will be based on the practice outlined in Schedule 4.

The forester will contact the Landowner before entry on their property. Copies of appraisal reports will be made available to affected Landowners and payment will be made in accordance with the reports.

The Company reserves the right to use trees for which it has paid compensation. At the Landowner's request, any remaining logs will be cut into 10 foot (3.05 metre) lengths, lifted and piled adjacent to the easement.

23. <u>Gored Land</u>
The Company agrees to pay the Landowner 100 % crop loss on the gored land, **<u>where reasonably practical.</u>** Gored land is defined as land rendered inaccessible or unusable for agricultural purposes during the Project.

24. <u>Insurance</u>
Upon request of the Landowner, the Company will provide insurance certificates evidencing at least five million dollars in liability insurance coverage.

25. <u>Abandonment</u>
Upon the abandonment of the pipeline in accordance with the terms and conditions of the easement, the affected lands shall be returned as close as possible to its prior use and condition with no ascertainable changes in appearance or productivity as determined by a comparison of the crop yields with adjacent land where no pipeline has been installed. Without prejudice to any continuing right of the Landowner to Additional Productivity Loss, there shall be no additional compensation for crop loss to the Landowner

26. Liability

The Company will be responsible for damages to property, and equipment, resulting from construction operations, and will pay for repairs or replacement costs. The Company will be responsible, and indemnify the Landowner from any and all liabilities, damages, costs, claims, suits and actions except those resulting from the gross negligence or wilful misconduct of the Landowner.

27. Assignment

All rights and obligations contained in this agreement shall extend to, be binding upon, and enure 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. The Company shall not assign this agreement without prior written notice to the Landowner and, despite such assignment; the Company shall remain liable to the Landowner for the performance of its responsibilities and obligations in this agreement.

28. Site Specific Issues

Schedule 2 is to be used to identify any site specific issues which require special mitigation and compensation.

29. Compensation Levels

The levels of compensation applicable to your property are set out in Schedule 1 and are based upon the criteria set out above. Kindly sign the second copy of this Letter of Understanding and initial all Appendices to indicate your acceptance of our arrangements.

30. Integrity Dig Agreement

The Integrity Dig Agreement will be utilized for all Integrity Digs pertaining to this pipeline and the existing paralleling NPS20 pipeline from Dawn to Dover Station.

Dated at ________________, Ontario this ____ day of________________,2016.

UNION GAS LIMITED

____
Name & Title:

Dated at _________________, Ontario this ___ day of________________,2016.

Witness:

____
Landowner:

____
Landowner:

____
Landowner:

____
Landowner:

SCHEDULE 1: SETTLEMENT

Property No.: ______, Landowner(s): ___________________________

The parties to this Letter of Understanding dated the ___ day of __________, 2016, in consideration of making this settlement have summarized below all the obligations, claims, damages and compensation arising from and for the required land rights and the pipeline construction across the Landowner(s)' property, name: ___________________________

(Check all applicable items of compensation)

NOTE: Refer to APPENDIX "C" within Option Agreements for site specific details

Yes	No				
	LAND RIGHTS				
[ ]	[ ]	(a)	Easement @	$	per acre.
[ ]	[ ]	(b)	Temporary Land Use @	$	per acre.
[ ]	[ ]	(c)	Topsoil Storage Land Use @	$	per acre
	DAMAGES				
[ ]	[ ]	(a)	Disturbance @	$	per acre of easement.
[ ]	[ ]	(b)	Disturbance @	$	per acre of Temporary Land Use
[ ]	[ ]	(c)	Disturbance @	$	per acre of Top Soil Storage area
	CROP LOSS				
[ ]	[ ]		One Time Payment @	$	per acre of easement.
[ ]	[ ]		One Time Payment @	$	per acre of Temporary Land Use
[ ]	[}		One Time Payment @	$	per acre of Top Soil Storage area
	NON-AGRICULTURAL DAMAGE PAYMENTS				
[ ]	[ ]		Non-agricultural Lands @	$	per acre
[ ]	[ ]		Woodlots @	$	per acre

OBLIGATIONS

[ ] a) This Letter of Understanding.

[ ] [ ] b) Attached as Schedule 2 any other special requirements or compensation issues.

Initialled for identification by owner(s): ________. ________.

Approval (Union Gas Limited): ________. ________.

SCHEDULE 2: SETTLEMENT

Property No.:_______, Landowner(s): ____________________________

SCHEDULE 3

WOODLOT EVALUATION

At the time of signing of the Letter of Understanding the Landowners with woodlots will be given three options.

1. take a one time full and final for the total easement.

2. take a one time full and final for that portion of the easement in agricultural land, and have the woodlot evaluated separately.

3. take the crop monitoring program and have the woodlot evaluated separately.

Woodlots will be assessed in the following manner:

A forestry Consultant will cruise the woodlot to determine the amount of volume which could be harvested on a periodic basis from the woodlot under sustained yield management.

This volume will then be determined on an annual basis.

Current sale prices will then be given to this volume to determine an annual amount which could be harvested from the woodlot.

This value will then be present valued using the same formula as the one time payment option.

SCHEDULE 4

AESTHETIC TREE EVALUATION

The following procedure would be followed where a Landowner wishe**s** to have trees on his property evaluated for aesthetic values.

During discussions for the Letter of Understanding, the Landowners would identify the trees he wishes to have evaluated for aesthetic purposes.

Union would contract a qualified person to complete an evaluation of the trees.

The Landowners would be paid the evaluated price for the trees in addition to other payments.

If trees are less than 5 inches in diameter replacement of the trees may be considered in lieu of a payment.

If the Landowner disagrees with Unions evaluation a second evaluation may be completed using the same criteria as the original evaluation.

EVALUATION CRITERIA

A four part evaluation criteria will be completed for aesthetic trees:

Tree Value = Basic Value **X** Species Rating **X** Condition Rating **X** Location Rating

Basic value is estimated without consideration of condition, species or location. It is calculated by multiplying the cross-sectional area of the tree trunk by an assigned value per square inch of trunk area.

Species rating is a percentage rating based on the relative qualities of the tree species.

Condition rating is a percentage rating based on the health of the tree.

Location rating is a percentage rating based on the location of the tree.

SCHEDULE 5

Schedule of Rates for Work
Performed by Landowners

Typically all work will be done by the Company. If the parties agree that the Landowner will perform work on behalf of the Company, the Company will remunerate the Landowner in accordance with the following;

1.	Stonepicking	per hour/per person picking by hand
		per hour for use of tractor and wagon
2.	Chisel Plowing	per hour
3.	Cultivation	per hour
4.	Tile Inspection	per hour *

* Payment for Tile Inspection is for those hours spent inspecting tile at the request of the contractor.

SCHEDULE 6

Wet Soils Shutdown

The following sets out the Wet Soils Shutdown practice of Union Gas Limited for pipeline construction, repair and maintenance on agricultural lands.

While constructing the Company's pipeline the Company's senior inspectors inspect right-of-way conditions each day before construction activities commence for that day. If, in the judgment of these inspectors, the right-of-way conditions on agricultural lands are such that construction would have an adverse affect on the soils due to wet soils conditions, the contractor is prohibited from starting construction activities. The inspectors shall consider the extent of surface ponding, extent and depth of rutting, surface extent and location of potential rutting and compaction (i.e., can traffic be re-routed within the easement lands around wet area(s) and the type of equipment and nature of construction proposed for that day. The wet soil shutdown restriction would be in effect until, in the judgment of the Company representatives, the soils would have sufficiently dried to the extent that commencing construction activities would have no adverse affects on the soils.

Wet soils shutdown is a routine part of Union's normal management process for pipeline construction activities. In recognition of this, Union budgets for and includes in contract documents, provisions for payment to the pipeline contractors for wet soils shutdown thereby removing any potential incentive for the contractor to work in wet conditions.

In addition, Union's inspection staff is responsible for ensuring that construction activities do not occur during wet soils shutdown. This would include shutting down construction activities if soils became wet during the day.

It should, however, be recognized that there may be situations when construction activities cannot be carried out during the normal construction period due to delays in project timing and it may become necessary to work in wet conditions in the spring or fall of the year. Where construction activities are undertaken by the Company in wet soil conditions, additional mitigation measures may be put in place to minimize resulting damages. Mitigation measures may, where appropriate, be developed by Union on a site specific basis and may include avoiding certain areas, full easement stripping, geotextile roads, the use of swamp mats, or the use of other specialized equipment where deemed appropriate by Union. Union will authorize work in wet soils conditions only when all other reasonable alternatives have been exhausted. **In this event, additional damages will be paid as a result based upon 50% of the disturbance payment.**

SCHEDULE 7

Pipeline Removal Process
(Existing NPS 16)

The following sets out the sequence proposed by Union Gas Limited for the removal of the existing pipeline and related activities within the Easement and Temporary areas on agricultural lands.

1. **Trees are cleared.**

2. **The permanent and temporary easements are staked by a Surveyor.**

3. **Accesses (culverts) are installed to gain access onto the easement off of roads and across water-courses.**

4. **Topsoil is stripped and stock-piled off to the side, on top of topsoil.**

Next, are the steps specific to the removal of the 16":

5. **The 16" pipeline is isolated and purged of gas to 100% air. The 16" pipeline is located and staked out in the field.**

6. **An excavator removes the over-burden from over top of the 16" and casts the subsoil off to the "spoil side".**

7. **The 16" pipe is cut, and an excavator or sideboom with a roller cradle drives alongside the 16" pipe and "lifts" it out of the ground next to the ditch.**

8. **An excavator with a hydraulic shear cuts the pipe into 50' lengths.**

9. **A Scrap Dealer places a scrap bin at each road crossing on the temporary land use area, as requested by the Pipeline Contractor.**

10. **An excavator with a "bucket and thumb" grabs each 50' length of pipe and carries it to the nearest road crossing and places it into the scrap bin.**

11. **When the scrap bin is full, the Scrap Dealer takes away the bin.**

12. **A dozer or exactor with a clean up bucket, backfills the remaining ditch and levels it off.**

Installation of the 36" begins.

OVERALL SUMMARY - UNION GAS LIMITED - COMPENSATION PACKAGE
PANHANDLE REINFORCEMENT PIPELINE PROJECT-DAWN TO DOVER STATION

		CHATHAM-KENT	LAMBTON
PERMANENT EASEMENT PAYMENT PER ACRE			
a)	Land Value		
b)	Disturbance Damage		
c)	"One Time" Full and Final Crop Damage Settlement		
	Total Payment Per Acre		
TEMPORARY LAND USE PAYMENT PER ACRE			
e)	Land Value @ 50%		
f)	Disturbance Damage @ 50%		
g)	"One Time" Full and Final Crop Damage Settlement		
	Total Payment Per acre		
TOPSOIL STORAGE PAYMENT PER ACRE			
e)	Land Value @ 50%		
f)	Disturbance Damage @ 50%		
g)	One year crop loss		
	Total Payment Per acre		
d)	Bonus Payment for Complete Package Acceptance *		

NOTES:

"One Time" Full and Final Crop Damage Settlement may be replaced by Crop Monitoring Program as per Letter of Understanding at the choice of the individual landowner

Topsoil Storage Area
50% of appraised market value for agricultural lands
50% of Disturbance damages (as a component of Easement Disturbance Damages)
100% crop loss as incurred in year of construction.

Refer to the attached for calculations which are based on principles used in all recent transmission pipeline project Land Right Negotiations

* Bonus payment per property

PROPERTY SUMMARY - UNION GAS LIMITED - COMPENSATION PACKAGE
PANHANDLE REINFORCEMENT PIPELINE PROJECT-DAWN TO DOVER STATION
CHATHAM-KENT

OWNER:

ADDRESS:

PROPERTY LEGAL DESCRIPTION:

EASEMENT DESCRIPTION:

PERMANENT EASEMENT

1)Easement (Land value)	1.00	/ac @
2) Disturbance	1.00	/ac @
3) "One Time"	1.00	/ac @

Easement Compensation

TEMPORARY LAND USE

1) Temporary (Land value)	1.00	/ac @
2) Disturbance	1.00	/ac @
3) "One Time"	1.00	/ac @

Temporary Land Use Compensation

TOPSOIL STORAGE

1) Land value	1.00	/ac @
2) Disturbance	1.00	/ac @
3) One year crop loss	1.00	/ac @

Topsoil Storage Compensation

TOTAL COMPENSATION PACKAGE

NOTES:
Any additional Crop Damage Payment made as measured actual crop damage after construction, if required

PROPERTY SUMMARY - UNION GAS LIMITED - COMPENSATION PACKAGE
PANHANDLE REINFORCEMENT PIPELINE PROJECT-DAWN TO DOVER STATION
LAMBTON

OWNER:

ADDRESS:

PROPERTY LEGAL DESCRIPTION:

EASEMENT DESCRIPTION:

PERMANENT EASEMENT

1)Easement (Land value)	1.00 /ac @
2) Disturbance	1.00 /ac @
3) "One Time"	1.00 /ac @

Easement Compensation

TEMPORARY LAND USE

1) Temporary (Land value)	1.00 /ac @
2) Disturbance	1.00 /ac @
3) "One Time"	1.00 /ac @

Temporary Land Use Compensation

TOPSOIL STORAGE

1) Land value	1.00 /ac @
2) Disturbance	1.00 /ac @
3) One year crop loss	1.00 /ac @

Topsoil Storage Compensation

TOTAL COMPENSATION PACKAGE

NOTES:
Any additional Crop Damage Payment made as measured actual crop damage after construction, if required

SUMMARY - "ONE-TIME" FULL AND FINAL CROP DAMAGE PAYMENT
PANHANDLE REINFORCEMENT PIPELINE PROJECT-DAWN TO DOVER STATION

The following example is the formula used to calculate the "One Time" Full and Final Damage compensation payment for this Pipeline Project. This calculation is based upon a three year crop rotation of your basic cash crops of corn, soya bean and wheat . These crops are prevalent along the proposed route. If any specialty crops are encountered, the applicable rates will be negotiated and adjusted accordingly.

TOTAL "ONE-TIME" PAYMENT PER ACRE:

Crop damages beyond the negotiated land rights are compensated at 100% of the loss actually incurred during the year of construction. If problems occur in these areas following the year of construction, site specific areas will be reviewed with the landowner for any adjustments and settlement payment made accordingly.

* Interest rate utilized is based upon the RBC & CIBC 5yr GIC Current Rate as of May 1, 2016

SUMMARY - DISTURBANCE DAMAGE PAYMENT
PANHANDLE REINFORCEMENT PIPELINE PROJECT-DAWN TO DOVER STATION

The following is an example of the formula used to calculate the per acre "Disturbance" Damage payment for the Pipeline Project.

The concept of "disturbance damage" is that pipeline construction inevitably results in temporary disturbance to use of the easement, temporary land use and top soil storage. Therefore, compensation for such damage is primarily aimed at agricultural field operations and includes payment for these disturbances as follows:

Example: Based on per acre of easement
Average Annual Crop Revenue (ACR) per acre =

TOTAL "DISTURBANCE" PAYMENT PER ACRE

UNION GAS LIMITED

Answer to Interrogatory from
("CAEPLA-PLC")

Reference: Union Application, Exhibit A, Tab 10, p.3-4 of 4
Stantec Environmental Report, Section 3.3.5, p.37 of 351

Soy Bean Cyst Nematode ("SCN")

Union states:

Union will sample agricultural soils along the pipeline route and any soils imported to the easement lands for the presence of SCN. Sampling is proposed to take place in summer/fall 2016. In the event that sampling indicates the presence of SCN, Union's SCN management practices will be implemented on any impacted lands.

Stantec states:

A pre-construction soil sampling program for SCN should be implemented for agricultural fields, subject to landowner approval. Field surveys should be done when field conditions are dry. The pre-construction soil sampling would include the collection of one composite sample from each field. A composite sample consists of approximately 0.5 kilogram total from 10-15 sub-samples of topsoil collected systematically, for the length of each field along the easement. The subsamples should be collected to a depth of 15-20 cm with a narrow shovel, trowel or soil probe. The composite sample collected from each field should be sent to a laboratory capable of testing.

If SCN affected areas are discovered, a plan should be undertaken which will outline mitigation measures such as the use of machine washing stations.

Any imported topsoil should have a composite sample analyzed for SCN before it is placed on the easement.

a) Please provide Union Gas Limited's plan for dealing with soybean cyst nematode.

b) What is Union Gas Limited's plan for the control and containment of other weed and/or disease infestations encountered during construction and operation of the proposed pipeline?

c) Was any soybean cyst nematode identified in the previous constructions along this corridor? Please provide details and copies of any reports or studies prepared.

d) What is Union Gas Limited's experience with the transfer of soybean cyst nematode and other weed and/or disease infestations from property to property during construction or as a result of construction? Please provide details.

e) Please provide details of any landowner complaints received with respect to soybean cyst nematode, weeds or diseases along this corridor. How were these resolved?

Response:

a) Union has developed best management practices with the input from the Ministry of Agriculture, Food and Rural Affairs and the University of Guelph. As detailed in the Environmental Report (Section 3.3.5), Union will implement a pre-construction soil-sampling program to determine if soybean cyst nematode ("SCN") is present along the easement and to pre-test any soils imported to the easement.

   Depending if and where SCN is found, best management practices may include, thorough pressure washing of equipment upon leaving an infested area and/or construction sequencing (starting construction on non-infested fields first) and/or complete topsoil stripping of infested fields followed by thorough pressure washing of equipment. The practices to address SCN will be determined following SCN testing and in consultation with the landowner.

b) On non-cultivated lands, Union will seed the ROW after restoration is complete to establish a vegetative cover and thus discourage the onset of weeds. Union will monitor the re-growth on the ROW after construction and work with the landowner to eradicate excessive weed growth.

c) Yes, SCN has been identified during previous constructions along the corridor. No reports or studies have been prepared regarding SCN within this corridor other than site specific soil test results completed for individual properties as part of SCN best management practices.

d) Union first undertook measures to minimize the spread of SCN on its Brooke Strathroy pipeline project (constructed in 2006). Union developed these measures through discussions with the Ontario Ministry of of Agriculture, Food and Rural Affairs. Landowners were generally pleased that Union had a SCN protocol in place to address this matter. In the year following construction, Union monitors its ROW to assess the restoration of the construction work area and other associated issues such as weeds. In the event weeds or disease infestations such as SCN are noted or brought to Unions' attention by the landowner, Union would work with the landowner to correct the issue.

e) To date, Union has not received any landowner complaints regarding SCN, weeds or diseases along the corridor.

UNION GAS LIMITED

Answer to Interrogatory from
("CAEPLA-PLC")

Reference: Union Application, Exhibit A, Tab 10, p.4 of 4
Stantec Environmental Report, Section 3.3.3, p.31 of 351

Ground Water and Private Water Wells

Union states:

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

Stantec states:

There are approximately 104 water supply wells within 500 m of the proposed pipeline route, 61 of which are domestic. The majority of these private domestic supply wells are greater than 100 m from the proposed pipeline route, with only 6 WWR mapped within a 100 m radius. Trench dewatering and sand-pointing has the possibility of negatively affecting water well quality and quantity depending on the location and condition of the wells.

Please provide details of Union's well monitoring program.

Response:

Please refer to Section 4 of the letter of understanding filed in the response at Exhibit B.CAEPLA-PLC.5.

UNION GAS LIMITED

Answer to Interrogatory from
("CAEPLA-PLC")

Reference: Union Application, Exhibit A, Tab 11, p.2 of 4
Union Application, Exhibit A, Tab 11, Schedule 3

Form of Easement and TLU

Union states:

For those landowners from whom a new permanent easement will be required for the Proposed Pipeline, Union's Form of Easement is attached at Exhibit A, Tab 11, Schedule 3. This agreement covers the installation, operation, and maintenance of one pipeline. This form of easement has been amended from the form of easement previously approved by the Board in EB-2014-0261 to include the amendments to CSA Z662-15 with respect to the prohibition of storage of flammable material, solid or liquid spoil, refuse waste or effluent on the easement.

The TLU agreements are in the form used by Union in the past on similar 1 pipeline projects. These agreements are usually for a period of two years, beginning in the year of construction. This allows Union an opportunity to return in the year following construction to perform further clean-up work as required.

Please provide a copy of Union's form of TLU agreement.

Response:

Please see the response at Exhibit B.CAEPLA-PLC.5.

UNION GAS LIMITED

Answer to Interrogatory from
("CAEPLA-PLC")

Reference: Union Application, Exhibit A, Tab 11, p.4 of 4

Clean-up Acknowledgement Form

Union states:

When clean-up is completed, the landowner will be asked by a Union representative to sign a Clean-up Acknowledgement Form if satisfied with the clean-up. This form, when signed, releases the contractor allowing payment for the clean-up on the property. This form in no way releases Union 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.

Please provide a copy of Union's Clean-up Acknowledgement Form.

Response:

Please see Attachment 1 for a copy of Union's Clean-Up Acknowledgment form.

unaiongas
A Spectra Energy Company

Clean-Up Acknowledgement

50 Keil Drive North, Chatham, Ont. N7M 5M1 352-3100

WBS #	Easement/Lease/CAP Number		
Owner's Name			Yr. 20 Mo. Da.
Lot	Concession	Township	County
Project			

I acknowledge that ______________________________ has completed clean-up on my property and their work is satisfactory. I understand this is not a release for damages, but merely an acknowledgement that their clean-up work and repair of fences is satisfactory, subject to any conditions defined in Items 1 and 2 below:

Item 1 - On Easement

Item 2 - Off Easement

Authorizing Signature of Owner/Tenant			Telephone No.
Address			Postal Code
Contractor Representative	Date	Company Representative/Originator	Date

White - Lands Dept., Union Yellow - Landowner
0543 - 2016/09

UNION GAS LIMITED

Answer to Interrogatory from
("CAEPLA-PLC")

Reference: Stantec Environmental Report, p.2 of 351

Preparation of Environmental Report

Stantec's Environmental Report was prepared by Mark Iamarino and reviewed by Mark Knight and David Wesenger.

Please provide copies of the most recent resumes or CVs for Mr. Iamarino, Mr. Knight, and Mr. Wesenger.

Response:

Please see Attachment 1.

David Wesenger B.E.S.

Senior Principal

Over his 25-year career, David has worked as a business center managing leader, inter-disciplinary project team coordinator, senior environmental assessment specialist, and regulatory approvals and permits specialist. David's experience includes practical, project-specific application of environmental assessment methodologies. He has utilized these skills in facility siting, route selection, as well as facility planning, design and construction. David has extensive experience coordinating the public consultation component of projects through the planning, design and construction phases. He has assembled and managed multi-disciplinary teams in a diverse range of infrastructure planning and permitting studies as well as numerous environmental assessments and associated facilities siting and permitting investigations and preliminary design. David has extensive experience leading and overseeing the environmental approvals and permitting process for linear facilities under the Ontario Energy Board Act and National Energy Board Act.

EDUCATION

B.E.S., Environmental and Resource Studies, University of Waterloo, Waterloo, Ontario, 1988

PROJECT EXPERIENCE

Oil & Gas

40 KM Dawn to Dover Natural Gas Pipeline OEB EA (Senior Advisor)

Ontario and National Energy Board, Oil & Gas Midstream, Facilities, Multiple Projects, Various Sites, Ontario

Senior Advisor for the preparation of Environmental Reports to either the National or Ontario Energy Board, including managing field investigations, consultation programs, permitting and construction inspection:
– Parkway West Compressor Station, New Build, OEB
– Lobo Compressor Station, Expansion, OEB
– Empire Odourant Station, Abandonment, NEB
– Dawn Compressor Station, Expansion, OEB
– Bright Compressor Station, Expansion, OEB

13.5 km Burlington to Oakville Natural Gas Peipleine, OEB EA (Senior Advisor)

Highway 6 Natural Gas Pipeline Replacement Environmental Review (Senior Advisor)

19.5 km Hamilton to Milton Natural Gas Pipeline OEB EA (Senior Advisor)

Parkway West Natural Gas Pipeline OEB EA (Senior Advisor)

Shell Natural Gas Pipeline OEB EA (Senior Advisor)

Brantford to Kirkwall Natural Gas Pipeline OEB EA Addendum (Senior Advisor)

Glenorchy Natural Gas Pipeline Relocation (Senior Advisor)

Bayfield to Lobo Natural Gas Pipeline (Senior Advisor)

NOVA 2020 Projects (Senior Advisor)

Genesis Pipeline Extension Project (Senior Advisor)

Blue Water Pipeline - St Clair River Crossing (Senior Advisor)

Strathroy to Lobo Natural Gas Pipeline Environmental Route Selection (Senior Advisor)

Nanticoke Natural Gas Pipeline Environmental Route Selection (Senior Advisor)

Sudbury Route Relocation Environmental Report (Senior Advisor)

Halton Hills Natural Gas Pipeline Environmental Report (Senior Advisor)

Dawn-Gateway Natural Gas Pipeline Environmental Route Selection (Senior Advisor)

** denotes projects completed with other firms*

St.Clair Energy Centre Natural Gas Transmission Pipeline (Project Manager)

Toronto Port Lands, Reinforcement Project: South Section. Natural Gas Transmission Pipeline, Enbridge Gas Distribution Inc. (Project Manager)

Thunder Bay Generating Station, 12" Natural Gas Pipeline, Union Gas Limited (Project Manager)

Environment and Socio-Economic Review of Integrity Dig Sites (Lines 7,8,9,10 and 11), Enbridge Pipelines Inc. (Project Manager)

Greenfield Energy Centre Natural Gas Transmission Pipeline, Union Gas Ltd. (Project Manager)

St. Clair Pool Development Project Environmental Report, Market Hub Partners Canada (Project Manager)

Southdown Station Natural Gas Transmission Pipeline, Sithe Southdown Pipelines Ltd. (Project Manager)

Goreway Station Natural Gas Transmission Pipeline, Sithe Canadian Pipelines Ltd. (Project Manager)

17 km Hamilton to Milton 48" Natural Gas Pipeline, Union Gas Limited (Project Manager)

20 km Strathroy to Lobo 48" Natural Gas Transmission Pipeline, Union Gas Limited (Project Manager)

7km Guelph Reinforcement 12" Natural Gas Pipeline, Union Gas Limited (Project Manager)

Sarnia Airport Pool Natural Gas Pipeline and Sarnia Airport Storage Pool Development Plan, Market Hub Partners Canada (Project Manager)

60 km PRISM Pipeline - 12" CAT Naptha Transmission Pipeline, Imperial Oil Limited (Project Manager)

832 km Line 9 Reversal - 30" Crude Oil Transportation Project, Enbridge Pipelines (Project Manager)

Toronto to Montreal - Oil Spill Control Point Manual, Enbridge Pipelines (Project Manager)

Tipperary Pool Natural Gas Pipeline and Tipperary Storage Pool Development Plan, Tribute Resources Inc. (Project Manager)

Tank 226 - 150,000 barrel Oil Storage Tank, Enbridge Pipelines (Project Manager)

Sarnia to Nanticoke - Oil Spill Control Point Manual, Enbridge Pipelines (Project Manager)

Route selection studies for more than 500 km of distribution pipeline for domestic natural gas delivery in Ontario (Project Manager)

Proposed Bryanston Natural Gas Compressor Station, InterCoastal Pipeline (Project Manager)

PRISM Pipeline - Oil Spill Control Control Point Manual, Imperial Oil (Project Manager)

PRISM Metering Station, Hamilton, Ontario, Imperial Oil Limited (Project Manager)

Line 9 Reversal Tank 227 - 150,000 barrel Oil Storage Tank, Enbridge Pipelines (Project Manager)

Ladysmith Pool Natural Gas Pipeline and Ladysmith Storage Pool Development Plan, Tecumseh Gas Storage (Project Manager)

Initiating Pump Station, Terrebonne, Quebec, Enbridge Pipelines (Project Manager)

** denotes projects completed with other firms*

Gretna to Wawina - Oil Spill Control Point Manual, Lakehead Pipelines (Project Manager)

Environmental Protection Plan for Mainline Construction, Vector Pipelines L.P. Limited (Project Manager)

Environmental Protection Plan for Directional Drilling the St. Clair River, Vector Pipelines L.P. Limited (Project Manager)

Environmental Management Manual, Maritimes and Northeast Pipelines (Project Manager)

Environmental Inspection, Kitchener-Waterloo West Line, NPS 16 Mainline Construction, Union Gas (Environmental Inspector)

Environmental Inspection, Kirkwall to Hamilton, NPS 48 Mainline Construction, Union Gas (Environmental Inspector)

Directional Drill of the St. Clair River, Vector Pipeline L.P. Limited (Project Manager)

Directional Drill of the St. Clair River, Niagara Gas Transmission Ltd. (Project Manager)

Directional Drill of the St. Clair River, InterCoastal Pipeline (Project Manager)

Coveny Pool Natural Gas Pipeline and Coveny Storage Pool Development Plan, Tecumseh Gas Storage (Project Manager)

75 km Millennium West - 36" Natural Gas Transmission Pipeline, St. Clair Pipelines (Project Manager)

30 km Ancaster to Canadian Gypsum Natural Gas Transmission Pipeline, Union Gas Limited (Project Manager)

225 km Line 8 Oil Products Transportation System, Enbridge Pipelines (Project Manager)

20 km Vector Pipeline - 42" Natural Gas Transmission Pipeline, Vector Pipelines L.P. Limited (Project Manager)

1992-93, 1993-94, 1995-96 Facilities Application, Environmental and Socio-Economic Assessments, TransCanada PipeLines Ltd. (Project Manager)

10 km Northland Power Cogeneration Transmission Pipeline, Centra Gas Limited (Project Manager)

Power
Port Alma Wind Power Project, Kruger Energy, Port Alma, ON (Project Manager)

Southdown Station, Mississauga, Ontario - 800 MW Power Plant, Sithe Energies Canadian Development (Project Manager)

Goreway Station, Brampton, Ontario - 800 MW Power Plant, Sithe Energies Canadian Development (Project Manager)

40 km Les Cedres Hydroelectric Development 500 kV Transmission Line, Hydro Quebec (Project Manager)

2 km 230kV Hydroelectric Transmission Line, Sithe Energies Canadian Development (Project Manager)

Management Consulting
Environmental Review Program, Enbridge Eastern Region (Project Manager)

Environmental Guidelines and Standards for Pipeline Construction, Enbridge Pipelines (Technical Support)

** denotes projects completed with other firms*

Environmental Management Manual for Environmental Protection, Enbridge Gas Distribution (Technical Support)

Environmental Inspector's Handbook, Union Gas Limited (Project Manager)

Environmental Guidelines for Access Roads and Gathering Lines, Tecumseh Gas Storage (Technical Support)

Environmental Code of Practice, Centra Gas Limited (Technical Support)

Corporate Environmental Policy, Centra Gas Limited (Technical Support)

Oil & Gas Midstream, Facilities
Empire Odourant Station Abandonment NEB EA (Senior Advisor)

Oil & Gas Midstream, Pipelines
Parkway West Compressor Station OEB EA (Senior Advisor)

Lobo Compressor Station Expansion OEB (Senior Advisor)

Expert Testimony
Expert Testimony, EB-2005-0201, Union Gas Limited, Trafalgar Facilities Expansion Program Leave to Construct Application (Project Manager)

Expert Testimony, RP-2001-0059, Imperial Oil Limited, PRISM Pipeline Leave to Construct Application (Project Manager)

Expert Testimony, RP-2000-0110, Union Gas Limited, Trafalgar Facilites Expansion Program Leave to Construct Application (Project Manager)

Expert Testimony, RP-1999-0047, Union Gas Limited, Century Pools Storage Development Phase II Leave to Construct Application (Project Manager)

Expert Testimony, RP-2005-0022, EB-2005-0473; Union Gas Limited, Greenfield Energy Centre Natural Gas Pipeline, Leave to Construct Application (Project Manager)

Expert Testimony, EB-2005-0550; Union Gas Limited, Trafalgar Facilities, Expansion Program, Leave to Construct Application (Project Manager)

Expert Testimony EB-2006-0305, Enbridge Portlands. Energy Centre Reinforcement Project, Leave to Construct Application. (Project Manager)

Environmental Inspection / Post Construction Monitoring
Kitchener-Waterloo West Natural Gas Pipeline (Environmental Inspector)

Kirkwall to Hamilton Natural Gas Pipeline (Environmental Inspector)

** denotes projects completed with other firms*

PUBLICATIONS

P.G. Prier, D.S. Eusebi and D.P. Wesenger. Environmental Management System Challenge with Linear Facilities.. *Seventh International Symposium on Environmental Concerns in Rights-of-Way Management p.263 to 266.*, 2000.

Mark Iamarino BURPI

Environmental Planner

Stantec

Mark Iamarino is an Environmental Planner with the Assessment, Permitting & Compliance group in the Guelph office. He is actively involved in conducting environmental assessments for oil and gas projects. His project tasks include assessing environmental impacts, developing and implementing stakeholder consultation programs, providing planning and environmental permitting support, implementing impact mitigation strategies, fieldwork coordination and construction inspection. Mark's role also involves project management, including managing a multi-disciplinary team, developing project budgets and schedules, tracking progress and managing scope changes, and building and preserving relationships with clients and agencies.

Previously, Mark gained experience assisting on a wide range of planning projects including class environmental assessments for municipal infrastructure, zoning by-law amendments, and monitoring programs for renewable energy projects and feasibility reports.

EDUCATION

Environmental Management & Assessment Graduate Certificate, Niagara College, Niagara-on-the-Lake, Ontario, 2014

Bachelor of Urban & Regional Planning, Ryerson University, Toronto, Ontario, 2012

MEMBERSHIPS

Candidate Member, Ontario Professional Planners Institute

Candidate Member, Canadian Institute of Planners

PROJECT EXPERIENCE

Oil & Gas

Pipelines, Multiple Projects, Various Locations, Ontario (Environmental Planner)

Environmental Planner for the preparation of Environmental Reports submitted to the Ontario Energy Board. Project tasks included: providing project management assistance, conducting stakeholder consultation, providing permitting support, coordinating and conducting field investigations, and report preparation:
– Panhandle Natural Gas Pipeline Replacement (NPS 36, 41 km)
– Burlington to Oakville Natural Gas Pipeline (NPS 20, 12 km)
– Hamilton to Milton Natural Gas Pipeline (NPS 48, 20 km)
– Brantford to Kirkwall Natural Gas Pipeline (NPS 48, 14 km)

Midstream Facilities, Multiple Projects, Various Locations, Ontario (Environmental Planner)

Environmental Planner for the preparation of Environmental Reports submitted to the Ontario Energy Board. Project tasks included: providing project management assistance, conducting stakeholder consultation, providing permitting support, coordinating and conducting field investigations, and report preparation:
– Corunna 3 Horizontal Natural Gas Well and Pipeline
– Dawn Natural Gas Compressor Station Expansion
– Bright Natural Gas Compressor Station Expansion
– Lobo Natural Gas Compressor Station Expansion

Energy East Pipeline Project (4,600 km), National Energy Board, Ontario (Health & Safety Support - Ontario)

Provided health and safety support by maintaining a certification database to facilitate health & safety compliance for the project team.

Renewable Energy

Wind Projects, Multiple Projects, Various Locations, Ontario (Environmental Planner)

Environmental Planner supporting the preparation of Renewable Energy Approval (REA) applications for onshore Wind projects. Project tasks included: permitting support, preparing modification reports, developing post-construction monitoring programs, and conducting field investigations:
– Amherst Island Wind Project, Lennox & Addington County (75 MW)
– Niagara Region Wind Project, Niagara Region (230 MW)
– Grand Valley Wind Project Phase 3, Dufferin County (40 MW)
– Armow Wind Project, Bruce County (180 MW)
*– HAF Wind Energy Project, Niagara Region (9 MW)**
*– Wainfleet Wind Energy Project, Niagara Region (9 MW)**

Class Environmental Assessments

Class Environmental Assessments for Public Works, Multiple Projects, Various Locations, Ontario (Environmental Planner)

Environmental Planner for the preparation of Class Environmental Assessments on behalf of Infrastructure Ontario:
– Panhandle Natural Gas Pipeline Replacement (1 easement)
– Burlington to Oakville Natural Gas Pipeline (17 easements)
– Brantford to Kirkwall Natural Gas Pipeline (2 easements)

** denotes projects completed with other firms*

Class Environmental Assessments for Municipal Infrastructure Projects, Multiple Projects, Various Locations, Ontario (Environmental Planner)
Environmental Planner for the preparation of Class Environmental Assessments on behalf of various municipalities:
*– Lornewood Creek sanitary sewer lining and realignment (1.7 km), Peel Region**
*– Stanley Avenue improvements from Whirlpool Road to Thorold Stone Road, Niagara Region**
*– Lakeshore Road widening and improvements from Lakeport Road to Lake Street, Niagara Region **
*– Niagara Stone Road Rehabilitation from Four Mile Creek Road to East West Line, Niagara Region **

Land Development
Niagara Escarpment Plan Development Permit, Plan Amendment, Hamilton to Milton Pipeline Project, Halton Region, Ontario (Environmental Planner)
Environmental Planner for the preparation of a Niagara Escarpment Plan Development Permit, Plan Amendment and supporting Planning Justification Report submitted to the Niagara Escarpment Commission.

Zoning By-law amendments, Multiple Projects, Niagara Falls, Ontario (Land Use Planner)
Land Use Planner for the preparation of municipal zoning by-law amendment applications and supporting Planning Justification Reports submitted to the City of Niagara Falls:
*– Low Density to High Density Residential**
*– Light Industrial to High Density Residential**

Permitting
Conservation Act Permits Multiple Projects, Various Locations, Ontario (Environmental Planner)
Environmental Planner supporting the preparation of watercourse crossing plans and permit application packages for a number of conservation authorities in southern Ontario.
– Burlington to Oakville Natural Gas Pipeline
– Hamilton to Milton Natural Gas Pipeline
– Panhandle Natural Gas Pipeline Replacement

Overall Benefit Permit, Hamilton to Milton Pipeline Project, Halton Region, Ontario (Environmental Planner)
Environmental Planner supporting the preparation of an Overall Benefit Permit for the American Eel under Section 17(2)(c) of the Endangered Species Act (2007) submitted to the Ministry of Natural Resources and Forestry.

Construction Inspection
Brantford-Kirkwall Pipeline, Waterloo Region and Hamilton, Ontario (Environmental Inspector)
Conducted environmental site inspection and compliance monitoring during various stages of construction, including site clearing, site preparation (silt fence installation, culvert installation, and access road and ramp construction), trenching, stringing, pipe fabrication and lowering, watercourse crossings, and backfilling.

** denotes projects completed with other firms*

Mark Knight MA, MCIP, RPP

Environmental Planner

Mark is a registered environmental planner with experience in federal, provincial and class environmental assessments for the municipal, transportation, energy (waterpower, wind) and oil and gas sectors. Project participation has involved managing environmental and socio-economic impact assessments, developing and implementing consultation strategies, coordinating field studies, and applying knowledge of land use and environmental legislation and policies.

EDUCATION

BA Honors, Geography, Wilfrid Laurier University, Waterloo, Ontario, 2002

Master of Arts, Geography, University of Waterloo, Waterloo, Ontario, 2006

MEMBERSHIPS

Member, Ontario Professional Planners Institute

PROJECT EXPERIENCE

Class Assessment

Infrastructure Ontario Class Assessments, Multiple Projects, Various Sites, Ontario

Environmental Planner for the preparation of IO Class Environmental Assessments:
– Glenorchy Natural Gas Pipeline Relocation
– Brantford-Kirkwall Pipeline Project
– William Halton Parkway
– 930 Erb St. West Commercial Development
– Mississauga Off-Road Trail
– Burlington Oakville Pipeline Project

Municipal Roads Class Assessments, Multiple Projects, Various Sites, Ontario

Environmental Planner for the preparation of MEA Transportation Class Environmental Assessments:
– Williams Parkway Improvements from Torbram Road to Humberwest Parkway, Brampton, ON
– James Snow Parkway Improvements from RR25 to Boston Church Road, Halton Region, ON
– Goreway Drive Improvements from Brandon Gate Drive to Steeles Avenue, Brampton, ON

Provincial Highways Class and Individual Assessments, Multiple Projects, Various Sites, Ontario

Environmental Planner for the preparation of environmental studies under either the individual or Class Environmental Assessment process, including managing consultation programs:
*– Highway 406 Improvements from Port Robinson Road to East Main Street, MTO Class EA**
*– Highway 401 Improvements from Highway 401/410/403 to Hurontario, MTO Class EA**
*– Highway 427 Transportation Corridor, Individual EA**
*– GTA West Transportation Corridor, Individual EA**
*– Highway 401 Improvements from Sydenham Road to Montreal Street, MTO Class EA**
*– Highway 534 Beatty Creek Bridge Replacement, MTO Class EA**
*– Highway 542 Mindemoya Lake Bridge and Dam Replacement, MTO Class EA**
*– Highway 105 Chukuni River Bridge Replacement, MTO Class EA**
*– Highway 8 Rehabilitation, MTO Class EA**
*– Highway 69 Route Planning Study, MTO Class EA**
*– Highway 6 Four Mile Creek Bridge Replacement, MTO Class EA**
*– Highway 60 Bridge Replacements, MTO Class EA**
– Niagara to GTA Transportation Corridor, Individual EA (Consultation Specialist)*

Municipal Water Class Assessments, Multiple Projects, Various Sites, Ontario

Consultation Specialist for the preparation of MEA Water Class Environmental Assessments:
*– Streetville Pumping Station and Reservoir Capacity**
*– Milliken Pumping Station**

Oil & Gas Midstream, Facilities

Ontario and National Energy Board, Oil & Gas Midstream, Facilities, Multiple Projects, Various Sites, Ontario

Environmental Planner for the preparation of Environmental Reports to either the National or Ontario Energy Board, including managing field investigations, consultation programs, permitting and construction inspection:
– Parkway West Compressor Station, New Build, OEB
– Lobo Compressor Station, Expansion, OEB
– Empire Odourant Station, Abandonment, NEB
– Dawn Compressor Station, Expansion, OEB
– Bright Compressor Station, Expansion, OEB

Oil and Gas Pipelines

Ontario and National Energy Board, Oil and Gas Pipelines, Multiple Projects, Various Sites, Ontario

Project Manager for the preparation of Environmental Reports to either the National or Ontario Energy Board, including managing route selection, consultation programs, field investigations, permitting and construction inspection:
– 19.5 km Hamilton to Milton Natural Gas Pipeline, OEB
– McCraney Creek Pipeline Replacement, OEB
– 13.5 km Burlington to Oakville Natural Gas Pipeline, OEB
– 4,600 km Energy East Pipeline Project, NEB (Ontario Coordinator)
– Ojibway Park Pipeline Replacements, OEB
– 30km Premier Mine Natural Gas Pipeline, OEB
– Strathroy-Caradoc Natural Gas Pipeline Replacement, OEB
– Highway 6 Natural Gas Pipeline Replacement, OEB
– 5 km Payne Sarnia Natural Gas Pipeline, OEB
– 14 km Brantford to Kirkwall Natural Gas Pipeline, OEB
– Shell Natural Gas Pipeline, OEB
– 450 m HDD of St. Clair River, NEB
– 90 km Nanticoke GS Natural Gas Pipeline, OEB
– Sudbury Natural Gas Pipeline Relocation, OEB
– Woodford to Meaford Natural Gas Pipeline Relocation, OEB
– 17 km Thunder Bay Natural Gas Pipeline, OEB
– 65 km Bayfield to Lobo Natural Gas Pipeline, OEB
– 12 km Bickford to Dawn Natural Gas Pipeline, NEB/OEB

Renewable Energy

Renewable Energy Approval (REA), Multiple Projects, Various Sites, Ontario

Environmental Planner for the preparation of Renewable Energy Approval (REA) applications for on-shore wind projects, including managing consultation programs, field investigations and permitting:
– Grand Valley Phase 3 Wind Project, Grand Valley, ON (40 MW)
– White Pines Wind Project, Prince Edward County, ON (60 MW)
– Port Dover and Nanticoke Wind Project, Haldimand and Norfolk, ON (104 MW)
– Brooke-Alvinston Wind Project, Watford, ON (10 MW)

** denotes projects completed with other firms*

UNION GAS LIMITED

Answer to Interrogatory from
("CAEPLA-PLC")

Reference: Stantec Environmental Report, Section 3.3.5, p.36 of 351

Wet Soil Shutdown

Stantec states:

To the extent feasible, construction activities should occur during drier times of the year. Lands affected by heavy rainfall events should be monitored for wet soil conditions, to avoid the potential for topsoil and subsoil mixing. Construction activities should be temporarily halted on lands where excessively wet soil conditions are encountered, as per Union Gas's standard wet soils shutdown practice. Union Gas's on-site inspection team should determine when construction activities may be resumed.

If a situation develops that necessitates construction during wet soil conditions, soil protection measures should be implemented, such as confining construction activity to the narrowest area practical, installing surface protection measures, and using wide tracked or low ground pressure vehicles.

Please provide a copy of Union Gas Limited's standard wet soils shutdown practice.

Response:

Please refer to Schedule 6 of the letter of understanding filed in the response at Exhibit B.CAEPLA-PLC.5.

UNION GAS LIMITED

Answer to Interrogatory from
("CAEPLA-PLC")

Reference: *OEB Environmental Guidelines for the Location, Construction and Operation of Hydrocarbon Pipelines and Facilities in Ontario, 7th Edition 2016*, Section 5.12, page 63, Restoration Plans

The *Guidelines* include the following with respect to the rehabilitation of the easement post-construction:

"The landowner must be consulted and any reasonable request regarding rehabilitation of the easement complied with. Planting of soil-building cover crops should be considered. … It is recommended that a professional agronomist/agrologist be retained to review the proposed restoration technique and its application with the contractor and the landowner, in order to ensure that optimal results are achieved."

a) Has Union Gas retained a professional agronomist and/or agrologist for this project?

b) If so, please provide his or her most recent resume or CV.

c) If not, when will a professional agronomist and/or agrologist be retained by Union Gas for this project, and in what capacity?

Response:

a) Union has not retained a professional agronomist and/or agrologist.

b) Please see the response at Exhibit B.CAEPLA-PLC.12 a).

c) Upon approval of the Project by the Board, Union will hire a full time professional agronomist and/or agrologist. This person(s) will assist/provide input with wet weather shut down, topsoil handling and soil restoration requirements.

UNION GAS LIMITED

Answer to Interrogatory from
("CAEPLA-PLC")

Reference: Stantec Environmental Report, Section 4.0, p.105 of 351 et ff.

OEB Environmental Guidelines for the Location, Construction and Operation of Hydrocarbon Pipelines and Facilities in Ontario, 7th Edition 2016, Section 4.3.14, pages 44 et ff., Cumulative Effects

OEB Environmental Guidelines for the Location, Construction and Operation of Hydrocarbon Pipelines and Facilities in Ontario, 7th Edition 2016, Section 6.2.2, page 68, Monitoring Reports

Stantec Environmental Report, Exhibit A, Tab 10, Schedule 1, p.218 of 351 – Information Session Questionnaire

Cumulative Effects Assessment

The Stantec EA Report does not appear to include consideration of adjacent pipelines and pipeline easements in its analysis of cumulative effects.

During consultation for the project, Union received comments from at least one landowner concerning damage to soil caused by previous construction on the landowner's property.

The *OEB Environmental Guidelines for the Location, Construction and Operation of Hydrocarbon Pipelines and Facilities in Ontario, 7th Edition 2016* include the following guidelines with respect to the assessment of cumulative effects:

Page 43 et ff.: "Cumulative impacts may result from pipeline projects which loop existing systems and should be addressed. This may include an examination of areas of known soil erosion, soil compaction or soil productivity problems. It may mean the examination of impacts associated with continued loss of hedgerows and woodlots in the same area. As well, it could mean the increased loss of enjoyment of property because of disruptions caused by the construction of successive pipelines on a landowner's property. There may also be heightened sensitivities as a result of improper or ineffective practices and mitigation measures in the past."

"Cumulative effects, when identified as part of the assessment process, should be integrated in the appropriate section of the ER (e.g. soil impacts)."

"The following is a list that encompasses some of the cumulative effects of pipeline construction:

(a) Incremental increase of easement width when adding new parallel pipelines to reinforce the systems;

(b) Additive effects of vegetation removal including riparian vegetation, forest cover, agricultural crops;

(c) Repetitive disturbance of soils including soil compaction, drainage systems damages, loss of soil fertility, crop yield reduction;

(d) Streams and groundwater degradation and effects on water wells;

(e) Residual effects caused by the removal of forest edge and interior, such as reduced species diversity and other habitat alterations."

Page 66: "The Final Monitoring Report should address any potential cumulative effects which may arise for pipelines, these may include for example, reduced soil productivity over easements which overlap, land-use restrictions due to increased easement widths or additional above ground facilities and/or the repeated construction through sensitive areas."

a) Please provide a detailed chronology of pipeline development on the properties affected including: dates of construction, widths of individual easements obtained or acquired, total width of corridor, projected economic life of each pipeline.

b) Please provide copies of interim and final monitoring reports for the pipelines in the corridor.

c) Please provide details of damage caused to soils within the corridor and of crop loss suffered within the corridor in connection with previous Union Gas Pipeline construction projects and operations.

d) What is Union Gas Limited doing to investigate and remediate residual damage from past projects within the corridor?

e) Has Union Gas studied crop yield effects from previous pipeline constructions in the corridor, including on the lands to be affected by the new construction? Please provide any reports, data, results, conclusions, analyses, etc. in connection with such study.

Response:

a) In 1951, Union constructed the NPS 16 pipeline utilizing a blanket easement (for the entire property) which was subsequently reduced to a 15.2 metre easement on all but one property. In 1973, Union constructed the NPS 20 pipeline within a 22.9 metre easement. The NPS 20 pipeline easement overlaps the NPS 16 easement by 10.7 metres. The total width of the NPS 16 and 20 pipeline corridor is 27.4 metres.

b) In 1951, when the NPS 16 was constructed, the Board did not require interim and final monitoring reports be prepared.

c) A review of Union’s records indicate that no landowner concerns have been expressed regarding soil damage or crop loss from any previous pipeline construction activities in the corridor.

d) Union has not been advised of any non-remediated residual damage from past pipeline projects from any of the landowners in the corridor.

e) Union did not complete post construction soil and crop monitoring studies after pipeline construction. Union is not aware of any site specific issues within the corridor which would require further studies.

UNION GAS LIMITED

Answer to Interrogatory from
Consumers Council of Canada ("CCC")

Reference: Exhibit A, Tab 3, p.4

The evidence states that the Application was brought by Union in response to the immediate need and forecasted market demands and lack of available firm capacity on the Panhandle System. Please explain when this need was first identified. Please provide all internal documentation related to identifying this "immediate need". Please explain how Union has assessed the potential impacts of the Climate Change Action Plan ("CCAP") and the proposed Cap and Trade Program on its forecasted market demands related to this project. Is Union relying on forecasts that were undertaken prior to the announcement of the CCAP and the Cap and Trade Program? If so, does Union intend to undertake updated forecasts? If not, why not?

Response:

Please see the responses at Exhibit B.Staff.1 and Exhibit B.Staff.4 c).

UNION GAS LIMITED

Answer to Interrogatory from
Consumers Council of Canada ("CCC")

Reference: Exhibit A, Tab 3, p. 4-7

The evidence states that the uncertainty created by Cap and Trade and the CCAP has driven the need for Union to calculate the revenue requirement and resulting rate impacts based on the estimated 20-year useful life of the project assets rather than the weighted average useful life of approximately 50 years based on Board-approved depreciation rates. Please explain why the Cap and Trade program and the CCAP have not put into question the need for this project. If cost recovery is an issue why should Union's ratepayers be the ones assuming the cost recovery risk?

Response:

Please see the response at Exhibit B.Staff.4 c).

UNION GAS LIMITED

Answer to Interrogatory from
Consumers Council of Canada ("CCC")

Reference: Exhibit A, Tab 3, p. 7

The evidence states that Union's choice of 20 years recognizes the changes being proposed by the CCAP. Does Union intend to apply a 20-year depreciation rate for all of its facility applications going forward? If not, why does this project warrant unique treatment?

Response:

Please see the responses at Exhibit B.BOMA.17 a) and Exhibit B.BOMA.18 a) for the rationale supporting Union's request for a 20 year depreciation term. In light of the uncertainty caused by Cap and Trade and the Climate Change Action Plan, Union's plan is to review depreciation from a system-wide basis as part of its 2019 rebasing application. Until that time, Union will assess its facility applications on a case by case basis to determine the appropriate depreciation rate.

Please also see the response at Exhibit B.Staff.4 c).

UNION GAS LIMITED

Answer to Interrogatory from
Consumers Council of Canada ("CCC")

Reference: Exhibit A, Tab 3, p. 7

If the OEB does not approve the 20-year depreciation rate will Union still go ahead with the project? Please explain.

Response:

It will depend on the nature of the Board's Decision. Union will evaluate a Decision relative to the risk, and considering the immediate need of customers.

The benefit of reducing the depreciation period now to 20 years is that it recovers the investment from as many customers as soon as possible which will minimize the rate impact to customers.

The uncertainty and risk caused by the introduction of Cap and Trade and the Climate Change Action Plan extends beyond the new Panhandle System investment to Union's entire asset base. Union plans to review alternatives, including depreciation rates from a system-wide basis, to address this risk as part of its 2019 rebasing application.

UNION GAS LIMITED

Answer to Interrogatory from
Consumers Council of Canada ("CCC")

Reference: Exhibit A, Tab 4, p. 2

The evidence states that the firm Design Day demand along the Panhandle System is forecasted to grow by 19% by 2021 and 37% in total by 2034. Please provide the detailed basis for these assumptions. Please list all factors that could potentially reduce these forecast growth levels.

Response:

Please see the responses at Exhibit B.Staff.7 a) and Exhibit B.Staff.4 c).

There are a number of facts that may result in actual future demand being different than the forecast.

In addition to those addressed in the response at Exhibit B.Staff.4 c), factors that may reduce the forecasted demand include:

- Government policy, or any event which results in increased energy costs relative to neighbouring jurisdictions, making Ontario an uneconomic environment for business.
- Government policy making electricity less expensive relative to natural gas
    - such as the Ontario government's recent decision to reduce the price of electricity through the rebate of provincial portion of the sales tax.
- Economic challenges for Union's large customers.

Factors that may increase the forecasted demand include :

- Increased consumption of natural gas as a result of the adoption of CNG for transport fleets.
- Increased consumption as a result of Combined Heat and Power projects to counteract relatively high electricity costs.
- Increased production at manufacturing facilities.
- New industrial and commercial facilities in the area.
- Greenhouse growth beyond what is currently forecast.

UNION GAS LIMITED

Answer to Interrogatory from
Consumers Council of Canada ("CCC")

Reference: Exhibit A, Tab 3, p. 2

Please explain, in detail, how Union has developed its load forecast for the areas served by the Panhandle System. Has Union entered into any contractual arrangements with its distribution customers that are forecasting increased loads to be served through the Panhandle System? If, so please explain the nature of those arrangements. If not, why not? How can Union be assured that the increased load will materialize?

Response:

Please see the responses at Exhibit B.Staff.4 c) and Exhibit B.Staff.7 a).

UNION GAS LIMITED

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

Reference: Tab 3, p.8, Table 3-1 - Bill Impacts of the Panhandle Replacement Project by Rate Class.

Preamble: FRPO requires further information to understand what cost allocation methodology was used to derive these impacts.

For the rates shown in Table 3-1, what cost allocation methodology is used under the Board Approved (i.e., Union's proposal versus 2013 Board Approved)?

Response:

The bill impacts presented under the "Board-Approved Depreciation" heading at Exhibit A, Tab 3, p.8, Table 3-1 reflect Union's proposed cost allocation methodology for the Panhandle Reinforcement Project using Board-approved depreciation rates.

UNION GAS LIMITED

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

Reference: Tab 3, p.11-12.

Preamble: One of the stated benefits offers by the proposed alternative is it "provides the necessary incremental capacity without the increased reliance on third party gas supply transportation services".

a) Please explain why incremental third party supply transportation services should not be part of the preferred approach?

b) Does Union rely on capacity arriving at Dawn or Parkway by third party gas supply transportation services in its peak day design? Please explain why these types of services should not be relied upon as part of a prudent design?

c) Does Union plan to eliminate the use of third party gas supply transportation services to provide incremental capacity? Please explain.

Response:

a) Incremememental third party supply services was considered as an alternative and discussed at Exhibit A, Tab 6, pp. 7-13 of the evidence. Also, please see the response at Exhibit B.Staff.3 a). Union was able to secure delivered supply at Ojibway from a third party.

b) On the Dawn Parkway System, Union relies on Parkway Delivery Obligations on Design Day, which have been decreasing since 2014 and are forecast to continue to decrease. In Union's 2013 rebasing proceeding (EB-2011-0210) customers were concerned with the costs associated with a Parkway Delivery Obligation. Parkway was identified as an illiquid purchase point with limited connectivity and high price volatility in comparison to the liquid Dawn Hub. During the settlement conference specific to that proceeding, Union agreed to establish a Parkway Obligation Working Group and as a result, agreed to shift Parkway Delivery Obligations to Dawn subject to the availability of transportation capacity along the Dawn Parkway System.

All of Union's transmission systems rely on customers supplying their Dawn Delivery Obligations on Design Day.

c) Union will continue to review and assess where it will rely on third party gas supply transportation services, such as at Ojibway, to assist in meeting Union's customer needs, as long as that supply is obligated to arrive. The use of third party commercial services introduces risks such as availability, term and price as outlined at Exhibit A, Tab 6, pp.10-11. As described at Exhibit A, Tab 6, pp.7-12, for the Panhandle System incremental deliveries at Ojibway are not available and would not provide sufficient incremental capacity into the growing market area without significant incremental facilities. Ojibway is not a liquid trading point. It is a trans-shipment point between the PEPL system and Union's Panhandle System with upstream and downstream transportation capacity held by a limited number of counter parties. Purchasing gas at Ojibway would be subject to significant availability and price risk.

UNION GAS LIMITED

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

Reference: Tab 4, p.3-4.

Preamble: On page 3, Union states "The Panhandle System predominantly flows from the Dawn Hub west to the market. Approximately 90% of the demand on the Panhandle System is served from the Dawn Hub on Design Day." On page 4, Union states "The Panhandle System also flows from Ojibway east to the market. Approximately 10% or 60 TJ/d of the demand on the Panhandle System is served through Union's gas supply (to serve system customers) delivered at Ojibway on Design Day. Union relies on these firm deliveries in Design Day analysis of the Panhandle System to help reduce the physical transportation needs from Dawn. Ojibway provides some interconnectivity to the Dawn Hub, enables access to natural gas supplies shipped through the PEPL system in the U.S. and contributes to the security and diversity of supply to the Dawn Hub."

a) Please explain the term "predominately". Can the Panhandle System transport gas east to the Dawn Hub? What is the easterly flow capacity of the Panhandle System to Dawn?

b) Please provide the gas supply contracts Union has on the PEPL and Trunkline systems for delivery at Ojibway, showing contract quantities and terms.

c) Please provide the contract utilization of the gas supply contracts in (a) for the past 5 years, in terms of winter peak day, winter average day, summer peak day and summer average day.

d) Please provide the amount of gas supplies from (c) delivered into Dawn for the past 5 years, in terms of winter peak day, winter average day, summer peak day and summer average day.

e) Please provide the amount of capacity (TJ/day) that Union has not secured or is listing as Dawn supply in its gas supply portfolio for:

   i. 2016/17
   ii. 2017/18
   iii. 2018/19

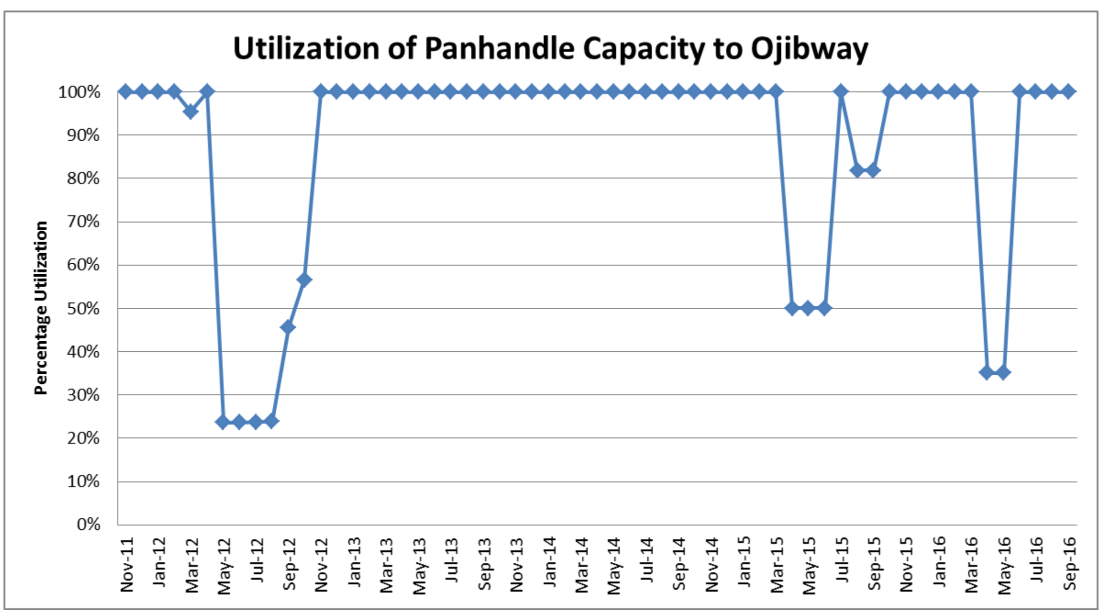
Response:

a) The definition of the word predominately is “mainly, for the most part”. Yes, the Panhandle System can transport gas east to the Dawn Hub. On a Design Day, there is no flow east from Ojibway to Dawn. The gas delivered at Ojibway is consumed in the market in Windsor (west of the Sandwich Compressor Station). The receipt capacity at Ojibway is 115 TJ/d in the summer and 140 TJ/d in the winter.

b) Please see the table below outlining the four contracts that Union has with PEPL for firm transportation.

Contract Reference	Contracted Capacity (Dth/d)	Contracted Capacity (TJ/d)	Contract End Date	ROFR Rights
PEPL FZ (19605)	25,000	26	October 31, 2017	Yes
PEPL FZ (43059)	10,000	11	October 31, 2017	Yes
PEPL FZ (36203)	2,000	2	October 31, 2017	No
PEPL/Trunkline	20,000	21	October 31, 2017	No
Total	57,000	60		

c) The Gas Supply Plan forecasts a 100% load factor on all Union South upstream transportation capacity. In a warmer than normal year, Union may have unutilized capacity to balance supply with lower demands. As shown below, in the summer of 2012, 2015 and 2016, Union had unutilized contracted capacity on the PEPL system to balance supply with demand. In addition, in April and May of 2016, Union reduced its committed quantities on the PEPL system to accommodate system maintenance on Union’s Panhandle System.



d) As indicated at Exhibit A, Tab 4, p.4, lines 5-15, Union relies on firm deliveries of Union’s gas supply contracts of 60 TJ/d (57,000 Dth/d) to Ojibway in the Design Day analysis of the

Panhandle System which helps reduce the physical transportation needs from Dawn. As discussed, in part c) above, none of Union's delivered supply to Ojibway would have been delivered operationally to Dawn in the winter as all of this gas would have been consumed in the in-franchise Panhandle System markets. In the summer, there were only seven days in the past five years when Union's gas supply volumes of 60 TJ/d flowed from Ojibway to Dawn.

e) As per Union's 2016/2017 Gas Supply Plan, the total uncommitted capacity (i.e. Dawn purchases) for Union North and Union South as of November 1st of each year are shown below:

i. 2016/2017 – 37 TJ/d for Union South and 19 TJ/d of uncommitted supply requirements for Union North East.

ii. 2017/2018 – 108 TJ/d for Union South and 20 TJ/d of uncommitted supply requirements for Union North East.

iii. 2018/2019 – 109 TJ/d for Union South and 28 TJ/d of uncommitted supply requirements for Union North East.

UNION GAS LIMITED

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

Reference: Tab 4, p.4, lines 12-15.

Preamble: Union states "Currently, two ex-franchise shippers (C1) have transportation contracts to transport natural gas from Ojibway to the Dawn Hub on a year round basis."

Please provide a table of C1 contracts from Ojibway to Dawn or Dawn to Ojibway that are/were in place and/or executed in the period between 2013 to 2016, inclusive, showing the following detail:

i. Term
ii. Quantity
iii. Firm or interruptible
iv. Peak amount used
v. Date of peak utilization
vi. Any special conditions associated with the individual contract
vii. The renewal rights for these contracts.

Response:

The C1 transportation contracts from Ojibway to Dawn in place or executed during the 2013 to 2016 period are listed below.

Ojibway to Dawn									
Contract ID	Customer Name	Term Start	Term End	Quantity (GJ/d)	Firm or Interruptible	Renewal Rights	Peak Amount Used	Date of Peak Utilization	Any special conditions?
C10085	Dynegy Gas Imports, LLC	Nov 1/08	Oct 31/15	38,533	Firm	No	36,356	multiple	No
C10092	Direct Energy Marketing Ltd.	Nov 1/10	Oct 31/15	10,000	Firm	No	10,000	multiple	No
C10093	Direct Energy Marketing Ltd.	Nov 1/10	Oct 31/15	10,000	Firm	No	10,000	multiple	No
C10098	J. Aron & Company	Oct 1/10	Jan 31/15	9,212	Firm	No	21,347	multiple	No
C10101	Direct Energy Marketing Ltd.	Nov 1/11	Mar 31/16	20,000	Firm	No	20,000	multiple	No
C10106	Emera Energy Incorporated	Nov 1/15	Oct 31/20	21,016	Firm	Yes	21,016	multiple	No
C10112	Direct Energy Marketing Ltd.	Apr 1/16	Apr 30/17	21,101	Firm	No	21,101	multiple	No

The Emera C1 transportation contract (Contract ID C10106) initial term expires on October 31, 2020 but contains a renewal provision that allows for a one (1) year renewal, and every one (1) year thereafter, with termination subject to notice in writing by Emera at least two (2) years prior to expiration.

UNION GAS LIMITED

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

Reference: Tab 4, p.4, lines 13-15.

Preamble: In respect of the C1 contracts, "Union must be able to transport these volumes on the Panhandle System on a firm basis as requested by the shipper. However, Union cannot rely on these volumes at Ojibway when designing the system."

a) Is Union aware of, or has it used, a Must Nominate feature in the firm transportation contract services offered by other natural gas transmission companies in Canada? If yes, please provide details.

b) Has Union considered offering a Must Nominate feature or any other market incentive to existing C1 shippers to establish firm deliveries to Ojibway?

   i. If so, please provide a summary.
   ii. If not, please explain why not?

c) Could Union offer a free exchange service from Ojibway to Dawn for those who commit to nominate each day throughout the winter period? What would be the potential forgone revenue?

d) Please file the section from the Settlement Agreement approved by the Board in EB-2015-0200 relating to Union's obligation to seek market based solution prior to applying for incremental expansion of the Dawn-Parkway system.

   i. Could this type of mechanism be sought to defer facilities while providing firm peak day deliveries to the Panhandle system including Leamington customers? Please explain your answer citing the specific limitations to this approach being tested as a feasible solution.

e) On May 26, 2016, Union broadcast a request for companies to submit proposals to Union for Long Tern Firm Transportation capacity to the Panhandle Pipeline Interconnection at Ojibway starting as early as Nov. 1, 2016. The proposals were due May 31st, 2016.

   i. Please file a copy of the request.
   ii. Please file a summary of the submissions in tabular fashion that describes the path, quantity, start/end date, receipt and delivery points, secondary points and price and any conditions or contingent releases associated with the offer.
   iii. Please provide a status on any capacity contracted and resulting terms.
   iv. If no capacity was contracted, please indicate explain why?
   v. Did Union seek or negotiate any winter only deliveries? If not, why not?

Response:

a) Union is aware of one other Canadian natural gas transmission company that required a Must Nominate feature in a firm transportation contract service. This temporary service was a seasonal Must Nominate Service offered by TransCanada called Dawn Overrun Service Must Nominate (DOS MN) whereby TransCanada received gas at Empress and redelivered these volumes at Dawn. This service was offered by TransCanada and contracted by Union for 2 years (Winter 2008/2009 and Winter 2009/2010). The DOS-MN service expired at March 31, 2010.

As noted at Exhibit B, Tab 1, p.22 of Union's 2012 Deferral Disposition and Earnings Sharing application (EB-2013-0109), *"DOS-MN was a temporary service enhancement provided by TCPL in the winter of 2008/2009 and the winter of 2009/2010….firm transportation shippers, like Union, made a commitment to deliver gas to TCPL at Empress and receive gas from TCPL at Dawn each day of the winter, paying substantially less than the demand charge for transportation service from Empress to Dawn. This was incremental to the firm transportation quantities for which shippers had contracted. DOS-MN was put in place to allow TCPL to manage its short haul capacity shortfall from Dawn to points east of Parkway."*

b) Please see the response at Exhibit B.Staff.3 a).

c) Please see the response at Exhibit B.Staff.3 a).

d) Union has provided an excerpt below from the Settlement Proposal as approved through the Board Decision in EB-2015-0200 and also provided a link to the complete Decision.

http://www.rds.ontarioenergyboard.ca/webdrawer/webdrawer.dll/webdrawer/rec/510834/view/Dec_Order_Union_2017%20Dawn-Parkway%20Expansion_20151222.PDF

Union notes that the Settlement Proposal outlines concerns raised by certain parties, but does not include an obligation on Union's part.

Issue 4
Do the proposed facilities meet the Board's economic tests as outlined in the Filing Guidelines on the Economic Tests for Transmission Pipeline Applications, dated February 21, 2013, as applicable. (E.B.O. 134 and Treatment of Dawn Plant B replacement)
(Complete Settlement)

Based on the evidence, and for the purposes of this agreement (but without prejudice to future positions on these issues), the parties accept Union's application of the Board's policy on economic feasibility tests for new gas pipeline transmission projects as first enunciated in the E.B.O. 134 Report and later reiterated by the Board in its Filing Guidelines on the Economic Tests for Transmission Pipeline Applications ("Feasibility Guidelines"). Considering;

i. the passage of time since E.B.O. 134;
ii. the fact that the Feasibility Guidelines clarified filing requirements but did not review, reconsider or clarify the E.B.O. 134 principles or tests themselves;
iii. the rapid evolution of both the market and gas infrastructure; and
iv. the recent context of projects a principal purpose of which is to allow ex- franchise shippers to shift gas supply to eastern North American resources<u>, a number of the parties believe that a different approach to addressing feasibility and impact on existing ratepayers may be appropriate in future, and that review and clarification by the Board of "feasibility" parameters for future similar expansion projects would be timely. A number of parties further believe that given the accelerating pace of change in the market, future expansion applications should include evidence reflecting consideration and evaluation, including through consultation with the market, open season or by way of RFP, as, when and if appropriate, of the risks and benefits of permanent or interim non-facility alternatives to facility investment. These parties further suggest that, to start with, the topic could be usefully included in the Board's next Energy Sector Forum (as contemplated in the Board's March 31, 2015 Letter to interested parties at the conclusion of the EB-2014-0289 Natural Gas Market Review).</u>

The following parties agree with the settlement of this issue: APPrO, BOMA, CME, Energy Probe, FRPO, IESO, IGUA, LPMA, SEC, VECC
The following parties take no position: ANE, Gaz Métro, TransCanada

Please also see the response at Exhibit B.Staff.3 a).

e) Please see the response at Exhibit B.Staff.3 a).

UNION GAS LIMITED

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

Reference: Tab 4, p.4, lines 17 to 20.

Preamble: Union states "The amount of natural gas Union can accept from PEPL 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 Tecumseh. Currently, Union has a maximum capability to accept imports of 115 TJ/d at Ojibway on a yearly basis (summer month limitation)."

a) Please explain why the amount of natural gas Union can accept from PEPL is not limited by its contracts with PEPL?

b) Please explain why the maximum capability to accept imports of 115 TJ/d at Ojibway on a yearly basis. Please illustrate using a numerical example if necessary.

c) Please provide the maximum imports Union can accept at Ojibway during the winter and summer, both on peak and average basis.

d) Please explain why Union cannot use the maximum imports Union can accept at Ojibway to serve the Market demand.

Response:

a) Union's Panhandle System has firm capacity to transport a larger volume of gas from Ojibway to Dawn than its firm contracts with PEPL which is why Union can offer firm C1 transportation services from Ojibway to Dawn. The PEPL system has more firm capacity to transport natural gas than just the upstream transportation capacity held by Union. Union also has the ability to accept more gas at Ojibway on an interruptible basis during the year when market demand in Windsor is larger. Union has attempted to sell long-term C1 transportation services and short-term S&T services to utilize capacity.

b) 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. Please see the response at Exhibit B.FRPO.14 a) for Union's Panhandle System (Summer Design) Schematic.

c) The maximum imports Union can accept at Ojibway from PEPL is 210 TJ/d which is limited by the Presidential Permit. The maximum amount of Ojibway to Dawn C1 transportation capacity that Union guarantees (firm receipts at Ojibway) is 140 TJ/d in the winter and 115 TJ/d in the summer less the amount of being utilized by gas supply deliveries (58 TJ/d). The remaining capacity can be sold on a short-term (daily, monthly) discretionary basis when; 1) the market demand is greater in the Windsor area, and 2) short term capacity is available on the PEPL system.

d) Please see the response at Exhibit B.BOMA.2 c).

UNION GAS LIMITED

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

Reference: Tab 4, Schedule 3, Panhandle System Schematic.

Preamble: FRPO requires clarification of this schematic.

a) Please provide all the pipelines that interconnect at Ojibway on the U.S. side and on the Canadian side.

b) Please confirm there are no other interconnections with pipelines owned by a third party or by Union.

c) If not confirmed, please provide a schematic showing all other interconnections.

d) Please provide Union's understanding of any potential interconnections of new pipelines (such as Nexus and Rover), the timing of those connections, the relative proximity to Ojibway and, if known, the additional capacity to Ojibway.

e) Please provide the amount of unsubscribed capacity available at Union Ojibway from Panhandle Eastern Pipeline.

Response:

a) Panhandle Eastern Pipeline ("PEPL") connects to Ojibway on the U.S side and Union's Panhandle System connects to Ojibway on the Canadian side. These are the only two pipelines that interconnect at Ojibway. Please refer to Exhibit A, Tab 4, p.3.

b) Confirmed.

c) N/A

d) The Nexus Pipeline begins in eastern Ohio and interconnects with DTE (MichCon) in Michigan at Willow Run. Nexus Pipeline flow into Ontario will be through the Vector Pipeline (via the DTE system) as well as through the DTE/Union interconnect at St. Clair. The Nexus Pipeline does not utilize the PEPL system and will not flow through the Ojibway delivery point. The Nexus Pipeline creates no additional capacity to Ojibway.

The Rover Pipeline will interconnect to the PEPL system upstream of Ojibway (at Defiance in Ohio and at other receipt/delivery points in Michigan). Rover Pipeline flow will primarily enter Ontario through the Vector Pipeline. Union understands that capacity on the PEPL system through Ojibway has been reserved for the Rover Pipeline. In Union's view, this is why there is no capacity available at the Ojibway interconnect during the 2017 to 2022 time period. Union also understands that PEPL wishes to utilize upstream transportation capacity on its system to provide service to Rover Pipeline to Dawn (in addition to the Vector Pipeline path). This will require C1 transportation capacity from Ojibway to Dawn on Union's Panhandle System and to date, PEPL has not contracted for transportation on Union's system. Union understands that PEPL would provide a service from Willow Run, Michigan to Dawn and that Ojibway will not be offered as a delivery point in the Rover Pipeline Tariff. Since the Rover Pipeline is using existing upstream PEPL capacity, no additional capacity is created to Ojibway.

Both the Nexus Pipeline and the Rover Pipeline are currently scheduled to be in-service in late 2017.

e) As discussed at Exhibit B.Staff.3 a), Union understands that there is no unsubscribed upstream transportation capacity to Ojibway on the PEPL system. Union recently attempted to replace an expiring contract on the PEPL system and was not successful as there was no capacity available to Ojibway during the 2017 to 2022 time frame.

UNION GAS LIMITED

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

Reference: Tab 5, p.2, lines 6-19.

Preamble: Union describes 10 assumptions used in design day model for the Panhandle system in the Reference.

a) Please confirm all the assumptions were previously approved by the Board.

b) If confirmed, please provide copies of the decisions approving each of the 10 assumptions.

c) If not confirmed, please provide the following:

i. The methodology used to derive in-franchise customers Design Day estimates, including the underlying firm contract demand, historical consumption, and forecast growth. Please include a numerical example to illustrate.
ii. The contracts underpinning the delivery of 60 TJ/d at Ojibway.
iii. The actual C1 Ojibway to Dawn flows for the past 5 years in terms of highest, lowest and average flows for the winter season and the summer season.
iv. The maximum operating pressure and the maximum allowable operating pressure for the Panhandle system. If the two pressures are different, please explain.
v. An explanation for the determination of the required pressure and supply from Dawn. Please include a numerical example to illustrate.
vi. An explanation for the determination of the minimum pressures for laterals and stations, at Brighton Beach Power Station and Leamington North Gate Station.

Response:

a) Union has filed its Design Day assumptions in its Dawn Parkway System Expansions. Specifically, they can be found in EB-2014-0261 (Dawn Parkway 2016) and EB-2015-0200 (Dawn Parkway 2017) at Exhibit A, Tab 8, p.3, lines 8-23. Union did not request specific approval of the assumptions; however, the Board issued favorable decisions in these applications, approving facilities underpinned by these assumptions. Panhandle System Design Day methodology is the same as the Dawn Parkway System, with Panhandle System specific constraints included.

b) See part a) above.

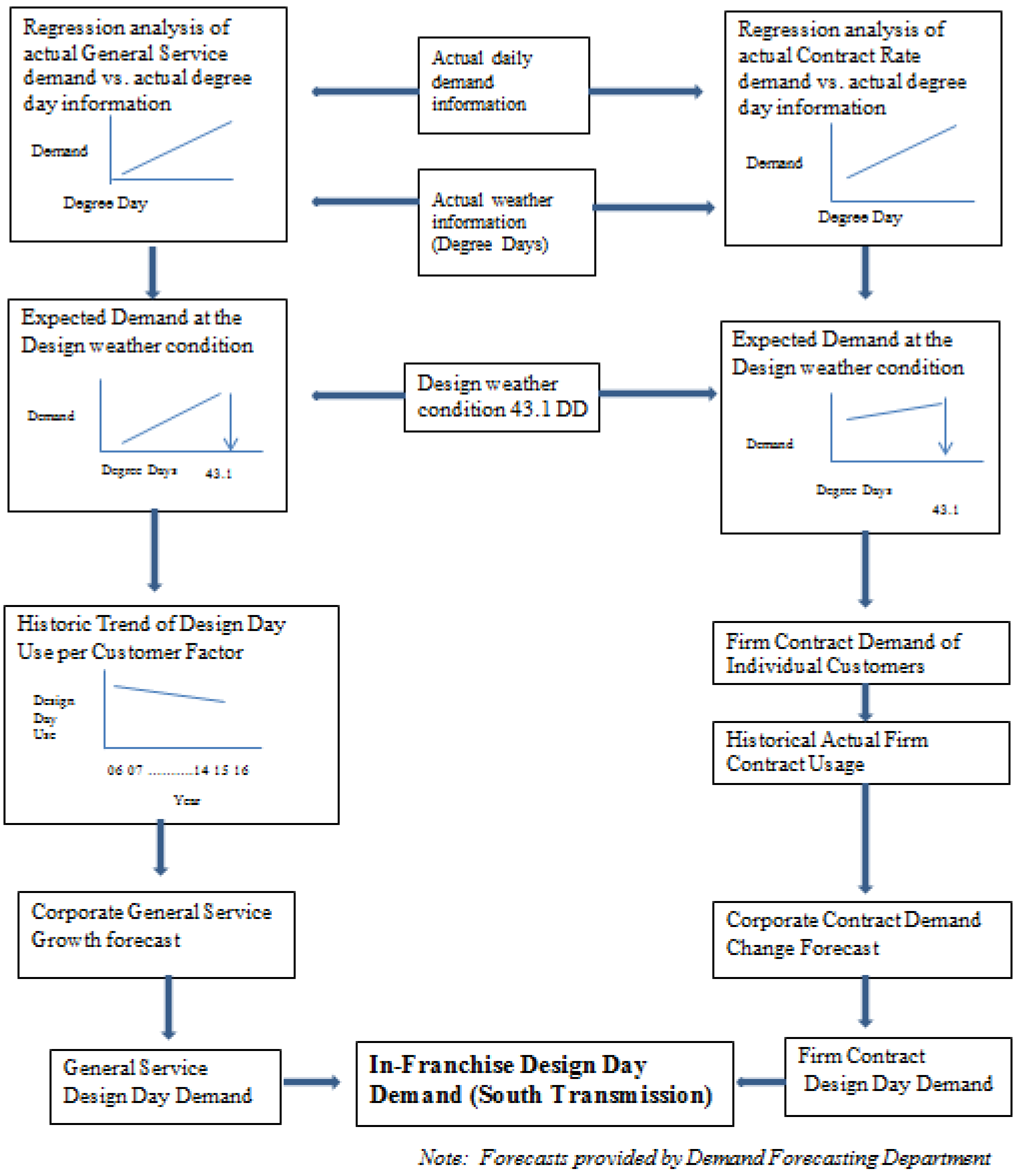
c)

i. Union's Southern Ontario in-franchise Design Day demand development methodology is shown in the diagram below.

Union develops its base year general service Design Day demands from a regression analysis of actual measured demands and degree days from the previous winter season. Based on analysis of the general service customer's demands, Union has found a gradual downward trend in the Design Day use per general service customer. A regression line has been calculated from this data and the base year Design Day demands are adjusted to fit the line. Growth rates for the general service customers are developed by the Demand Forecast department to account for the forecast addition of new customers. The growth rates are calculated from the forecast winter seasonal volumes. The growth rates are applied to the base year Design Day demands.

Union develops its base year contract rate Design Day demands from a regression analysis of actual measured demands and degree days from the previous season demand. These regression analyses are segmented based on rate class, heat sensitivity and location. Contract rate customer contracted demands ("CD") and historical usage are used to guide the selection of appropriate design volumes for these customers. Growth rates for the contract rate customers are developed by the Demand Forecast department to account for the addition of new customers and changes to the requirements of existing customers. The growth rates are customer specific and assigned to specific customer locations on the transmission systems.

Southern Ontario In-franchise Design Day Demand Development



ii. Please see the response at Exhibit B.FRPO.3 b) for a listing of the contracts that make up the 60 TJ/d of upstream transportation currently contracted by Union on the PEPL system.

iii. Please see the table below for the actual C1 Ojibway to Dawn flows (in GJ) for the past 5 years in terms of highest, lowest and average flows for the winter season and the summer season.

Daily C1 Activity GJ

Summer	Minimum	Average	Maximum
2011	0	35,074	75,460
2012	37,202	48,406	73,558
2013	35,472	35,473	35,473
2014	20,012	44,801	46,275
2015	0	12,779	39,812
Winter	Minimum	Average	Maximum
2010-11	17,334	52,442	55,104
2011-12	52,461	55,194	64,518
2012-13	54,741	59,590	60,040
2013-14	0	42,068	66,436
2014-15	0	40,065	64,432
2015-16	41,016	41,016	41,016

Data: 2011-01-01 to 2015-12-31

iv. Maximum operating pressure ("MOP") and maximum allowable operating pressure ("MAOP") mean the same thing for determining the capacity of the Panhandle System. The Panhandle System has several MOPs as detailed in Exhibit A, Tab 5, p.5, lines 14-22 and p.6, lines 1-2.

v. The Panhandle System capacity and ability to serve Design Day demands is dependent upon the facilities at Dawn.

Dawn must supply the Panhandle System its maximum operating pressure of 6040 kPag. Without this pressure the Panhandle System cannot maintain pressure above the minimum inlets at the system constraint locations.

Dawn must be able to supply a volume equivalent to the in-franchise demand being served by the Panhandle System less any Union supply arriving at Ojibway. If the required molecules are not available at Dawn, Union cannot provide reliable service on Design Day.

vi. Brighton Beach Power Station (Shell – BBPS) has a contract which requires Union to provide a minimum pressure of 1724 kPag out of Union's customer station. This pressure is required by the customer's gas consuming equipment.

The distribution system downstream of Leamington North Gate station operates with a MOP of 1900 kPag. The Leamington North Gate station has equipment which regulates the pressure and flow between the upstream 6040 kPag system and the downstream 1900 kPag system. The equipment in the station (filter, heater, regulation and pipe) has a pressure resistance of 414 kPag which results in the Panhandle System having to provide a minimum inlet to the station of 2275 kPag to provide adequate pressure to the downstream system. The 414 kPag of resistance is at a practical minimum for the station design. It may be possible to reduce the resistance by 70 kPag, which would result in an increase in capacity by 1.1 TJ/d. This change would not reduce the Project facilities.

UNION GAS LIMITED

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

Reference: Tab 5, p.4, lines 5 – 20.

Preamble: "Currently there is a significant amount of interruptible demand served from the Panhandle System, equivalent to approximately 20% of the firm Design Day volume. The majority of this demand is greenhouse and power generating 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."

a) Please breakout the amount of interruptible demand between the Leamington area and the Windsor area.

b) For each market area in (a), please breakout the amount of interruptible demand by greenhouse and power generation market sectors.

c) Please provide the amount of interruptible demand that has requested to firm that is supported by a letter of request or response to firm bid process for each of the greenhouse and power generation markets in the respective geographic markets.

d) What is Union's view of the effectiveness of using interruptible demand in increasing asset utilization? Please explain.

e) Please provide any studies Union has performed recently on increasing the incentive for customers to stay or go on interruptible service. Has Union tested these incentives with current customers in these market areas?

f) Has Union assessed the viability of a new firm service with limited interruption? If yes, please explain. If not, please explain why not.

Response:

a) Please see part b) below.

b)

Panhandle System Interruptible Demand (Winter 2015/2016 Actuals)		
Market Segment	Leamington (TJ/d)	Windsor/Chatham (TJ/d)
Greenhouse	54.1	1.6
Power Generation	0	44.9
Other	0	12.7
Total	54.1	59.2

c) From the Leamington Phase 2 Expansion project (EB-2016-0013 – p.3) Expression of Interest, there were requests for 129,097 m^3/hour (79.7 TJ/d)of firm service. Customers were allocated 51,900 m^3/hour (32 TJ/d). There was 11,691 m^3/hour (7.2 TJ/d) of additional interruptible capacity contracted for and 52,369 m^3/hour (32 TJ/d) of interruptible capacity that could not be converted to firm service. Based on the original expression of interst and from ongoing discussions with these customers, Union expects 61,508 m^3/hour (37 TJ/d) from Leamington Phase 2 will be converted to firm service.

An Expression of Interest or firm bid process was not conducted for the overall Panhandle System or Power Generation Market.

d) Union is supportive of offering interruptible service, provided customers want the service and Union has the capability to serve it with existing facilities. It is an effective way to increase asset utilization during non-Design Day conditions.

e) Please see the response at Exhibit B.IGUA.11 c).

f) Please see the response at Exhibit B.IGUA.11 c).

UNION GAS LIMITED

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

Reference: Tab 5, p.5, lines 1 – 4.

Preamble: "On an operational basis, Union has been able to manage physical interruptions based on C1 Ojibway to Dawn transportation activity. This activity allows interruptible customers to be served on colder days where otherwise they would need to be interrupted, provided the C1 volumes are delivered to Union at Ojibway.

FRPO would like to understand this mechanism better.

For each day of the last 3 winters including 2013/14 to 2015/16, on the days when there were interruptions or when there could have been interruptions:

a) Please provide the daily deliveries from Ojibway and the amount of interruptible volumes that were allowed to flow broken down between the Windsor area and the Leamington area.

b) What contractual feature does Union need to establish incremental firm winter gas supply at Ojibway in order to facilitate firm deliveries to these markets?

Response:

a) The daily deliveries from Ojibway and the interruptible volumes as requested are provided in the table below.

The table below includes a list of all full and part day interruptions. The amount of interruptible allowed is zero during the times when customers are interrupted.

Year	Gas Day Interrupted	Daily Deliveries at Ojibway (TJ/d)
W13/14	06-Jan-14	22.5
	07-Jan-14	132.9
	08-Jan-14	89.8
	27-Jan-14	103.7
	28-Jan-14	94.2
	29-Jan-14	139.9
W14/15	06-Jan-15	129.8
	07-Jan-15	55.5
	08-Jan-15	64.4
	13-Jan-15	80.1
	14-Jan-15	103.8
	01-Feb-15	68.1
	02-Feb-15	104.3
	04-Feb-15	70.8
	05-Feb-15	60.5
	12-Feb-15	104.3
	14-Feb-15	103.8
	15-Feb-15	102.9
	16-Feb-15	103.8
	17-Feb-15	102.7
	18-Feb-15	95.7
	19-Feb-15	79.1
	22-Feb-15	100.5
	23-Feb-15	97.3
	26-Feb-15	113.9
	24-Feb-15	91.1
	27-Feb-15	105.7
	28-Feb-15	105.8
	05-Mar-15	161.3
W15/16	12-Feb-16	102.9
	13-Feb-16	99.1

Union does not actively track non-interruption events and does not have the requested information.

b) As it relates only to Union Ojibway to Dawn C1 contracts, to establish incremental firm winter gas supply at Ojibway to facilitate firm deliveries to these markets, Union would have to pay for a must run service with C1 Ojibway to Dawn shippers. This contractual feature would not eliminate interruptions but may reduce the magnitude dependent on the location of the constrained market. This contractual feature would limit the flexibility for the C1 contract holder and would come at a cost to Union. The ability to incorporate this into plans and to be able to count on this volume to be delivered all winter for November 1, 2017 is limited as only one C1 contract will be in place for 21 TJ/d of firm Ojibway to Dawn capacity and Union has contracted with that party to deliver 21 TJ/d of firm supply to Ojibway as part of Union's gas supply portfolio.

UNION GAS LIMITED

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

Reference: Tab 5, p.6, lines 4-13.

Preamble: Union describes 2 constraints on the Panhandle System, namely maintaining the minimum delivery pressure of 1724 kPa to Brighton Beach Power Station (BBPS) and West Windsor Power Station (WWPS) at the western end of the system, and maintaining the minimum inlet pressure of 2275 kPa at the Leamington North Gate Station.

a) Please provide the minimum delivery pressure from PEPL. Please identify the location at which the minimum delivery pressure occurs on the Panhandle System Schematic. If that location varies, please provide the conditions for each to be the location of minimum delivery.

b) Please provide the highest, average and lowest delivery pressures from PEPL for the past 5 years, separately for the winter and summer periods.

c) Please describe the changes to the Panhandle System's capacity if (i) increasing the delivery pressure from PEPL, (ii) decreasing the inlet pressure at the Leamington North Gate Station; and (iii) both (i) and (ii).

d) Please explain what changes in contracts and/or facilities would be required to implement (i) increasing the delivery pressure from PEPL, (ii) decreasing the inlet pressure at the Leamington North Gate Station; and (iii) both (i) and (ii).

e) Please explain whether the 2 constraints described are due to physical facilities or due to market demands. Please explain what steps can be undertaken to alleviate those constraints, other than the proposed alternative.

Response:

a) There is no contractual minimum delivery pressure from PEPL specified in the agreement.

The current Design Day minimum delivery pressures on the Panhandle System occur at Brighton Beach Power Station and at the inlet to the Leamington North Gate Station (refer to Exhibit A, Tab 4, Schedule 3). The locations of Brighton Beach Power Station and Leamington North Gate Station do not change.

b)

Delivery pressures from PEPL from 2011-2015							
Year	Winter			Year	Summer		
	Min Pressure (kPag)	Average Pressure (kPag)	Max Pressure (kPag)		Min Pressure (kPag)	Average Pressure (kPag)	Max Pressure (kPag)
2010/11	2,123	2,543	2,863	2011	2,083	2,551	2,897
2011/12	1,917	2,561	2,853	2012	2,150	2,501	2,865
2012/13	2,164	2,513	2,822	2013	2,176	2,587	2,930
2013/14	2,123	2,494	2,810	2014	2,133	2,518	2,866
2014/15	2,051	2,446	2,811	2015	2,131	2,449	2,867

c)

i. Increased pressure from the PEPL system alone does not directly increase the capacity of the Panhandle System, it increases the ability of PEPL to deliver and Union to accept additional volume at Ojibway. System capacity is increased only if Union is able to have more gas than 115 TJ/d consumed in the Windsor market. Please see response at Exhibit B.IGUA.9 b).

ii. There is minimal capacity increase of 1 TJ/d. The station inlet is at a design minimum Please refer to Exhibit B.FRPO.8c)vi.)

iii. Please refer to Exhibit B.FRPO.11c)i.)

d)

i. An increase in delivery pressure from PEPL would require a new river crossing, and upgrades on the PEPL system. Which at a minimum would include new compression and pipeline.

ii. Please refer to Exhibit B.FRPO.11c)ii.).

iii. Please refer to Exhibit B.FRPO.11d)i.).

e) Both are constrained by physical facilities and market demand. The constraints of minimum delivery pressure to Brighton Beach Power and West Windsor Power are contracted by the customer and are requirements of the customer's equipment.

Union could request Brighton Beach Power and West Windsor Power to install equipment to reduce their need for high pressure service. However, Union has a 1900 kPag system in the area which is still required to be served. Only the reduction of firm gas use at these plants would provide capacity to serve additional demand.

The minimum inlet to Leamington North Gate Station is determined by the 1900 kPag MOP of the downstream system and the pressure resistance within the station. The pressure resistance in the station is at a design minimum, therefore the only option to add additional demand is to provide higher pressure into the station by way of upstream facilities or to reduce the demand served by the system.

UNION GAS LIMITED

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

Reference: Tab 5, p.7, lines 18 – 21.

Preamble: "Union has identified incremental demand for firm service across the entire market, including the new Windsor Mega hospital, the new Gordie Howe International Bridge, CNG facilities for transport fleets, and load increases for existing industrial customers, further reinforcing the need for incremental capacity."

Please provide the forecasted incremental firm demand, the location of the delivery point and the year of connection for each of the four components described in the above evidence reference.

Response:

Please see the table below for the forecasted increase in firm demand for the four components described at the above evidence reference.

Customer	Incremental Firm Demand (TJ/day)	Location	In-service
Windsor Mega Hospital (1)	2.9	Windsor	2019
Gordie Howe International Bridge	0.8	Windsor	2018
CNG Facilities (private)	1.5	Windsor	2021
Existing Industrial	17.6	Windsor	2017

The majority of the Panhandle System expansion will serve other markets in addition to the markets identified in this table.

(1)Windsor Mega hospital is forecast to initially come into service in 2019 with a firm demand of 1 TJ/d growing to 2.9 TJ/d by 2022.

UNION GAS LIMITED

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

Reference: Tab 5, p.8, Table 5-1 – Design Day (TJ/d); p.12, Table 5-2 – Design Day Forecast Growth.

Preamble: Union provides a forecast of system capacity and system demand for each of the years 2017/18 to 2021/22 in Table 5-1 but not for each of the years in Table 5-2.

a) Please provide the derivation of the system capacity for each of 2017/18 to 2021/22.

b) Please provide the forecast system demand for each year from 2022/23 to 2036/37.

c) Please explain how the proposed Panhandle Reinforcement Project will help meet the forecast demands in (b), including what additional facilities would be required and the locations of these facilities.

d) Please provide the forecast system demand for 2037/38 to 2042/43. Please explain how much excess capacity is expected with the proposed Panhandle Reinforcement Project plus any additional facilities identified in (c).

Response:

a) The derivation of the system capacity is the Winter 2016/2017 capacity of 565 TJ/d plus the capacity of the proposed Panhandle Reinforcement Project of 106 TJ/d to arrive at a capacity of 671 TJ/d for the years Winter 2017/2018 to 2021/2022.

b) Union's Panhandle Design Day demand forecast is provided below. Union does not have a forecast beyond Winter 2034/35.

	Panhandle Design Day Demand Forecast												
	Winter												
	22/23	23/24	24/25	25/26	26/27	27/28	28/29	29/30	30/31	31/32	32/33	33/34	34/35
(TJ/d)	684	691	698	706	713	720	727	734	741	749	756	763	770

c) The Proposed Project provides the capacity to serve the forecast Design Day demands from Winter 2017/2018 to Winter 2021/2022.

As stated at Exhibit A, Tab 6, p.12, lines 19-22 and p.13, lines 1-5:

> *"In reviewing the long-term facility requirements, all alternatives will require the installation of the Proposed Pipeline. In addition, downstream reinforcement projects connecting into the distribution network, and ultimately further Panhandle System reinforcement west of Dover Transmission, will be required. Regardless of project scope, the long-term solution to respond to the growing Panhandle System requires increasing the capacity of the Panhandle System beginning at Dawn heading westerly to maintain the required system delivery pressures and serve the growing Design Day demands, as proposed in this Project."*

Incremental facilities proposed for 2022 are included at Exhibit A, Tab 6, p.13, Table 6-1 Incremental Reinforcement Facilities Comparison in 2022, under column Proposed Pipeline. Beyond 2022, Union anticipates the need for further facilities downstream of Dover Transmission Station however scope has not been determined and will be dependent upon the degree of market growth.

d) Union does not have a forecast beyond Winter 2034/35. The Project serves demand for Winter 2021/2022 and does not have any surplus capacity. Since the full scope of facilities beyond Winter 2021/2022 has not been determined, surplus capacity is unknown.

UNION GAS LIMITED

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

Reference: Tab 5, p.8, Table 5-1, Design Day; Tab 4, Schedule 3, Panhandle system Schematic; Tab 4, p.4, lines 19-20 "Union has a maximum capability to accept imports of 115 TJ/d at Ojibway on a yearly basis (summer month limitation)".

Preamble: FRPO requires further information to understand the design day capacities shown in Table 5-1, the summer month limitation described in Tab 4, p.4 and the system schematic shown in Tab 4, Schedule 3.

a) Please provide flow schematics for the design day and for the summer month limitation identified in the References showing the following:

   i. MAOP and MOP for each pipeline segment
   ii. The flows (load taken at the lateral) and pressures for each receipt point, delivery point, pipeline junctions, as well as the suction and discharge sides of each compressor station, including all laterals off the 16" or 20" pipelines.
   iii. The length of pipe between each source of gas, lateral, junction (eg. Between the Brighton Beach/West Windsor lateral and the NPS 16/20 junction), compressor or transmission station.

b) Please describe the capacity limiting factor or bottlenecks in (a) above.

c) Please describe the steps necessary and the associated cost to remove the limiting factors or bottlenecks in (b) above.

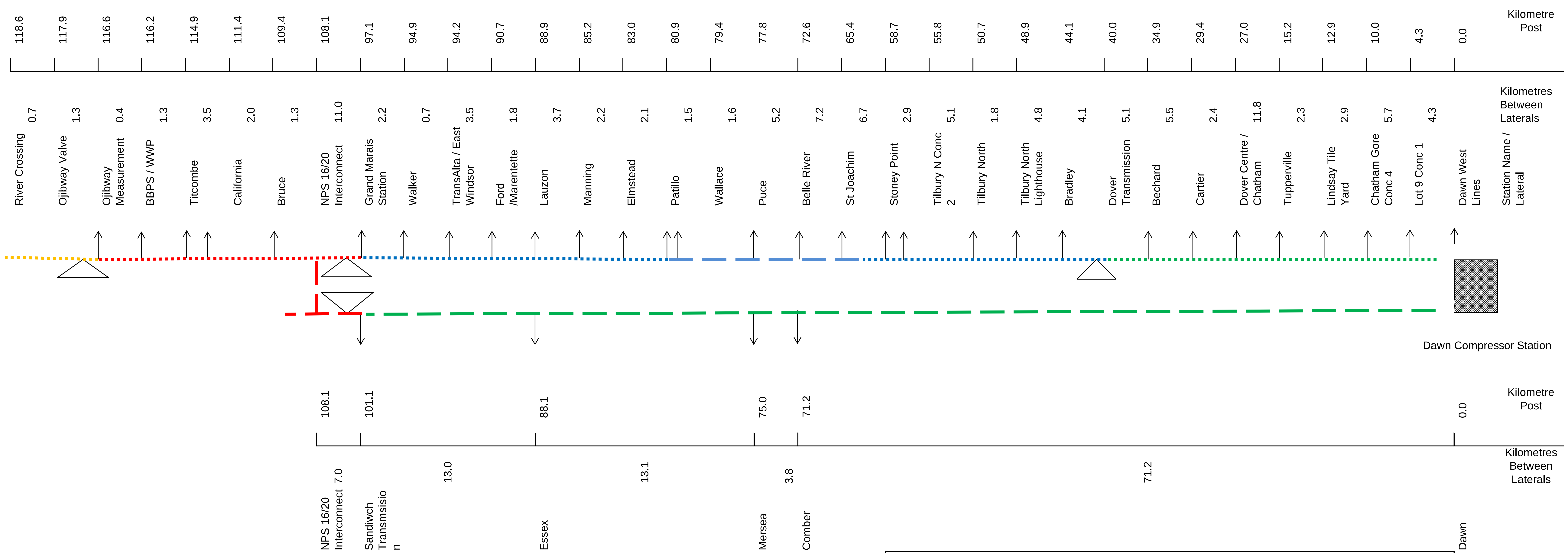
Response:

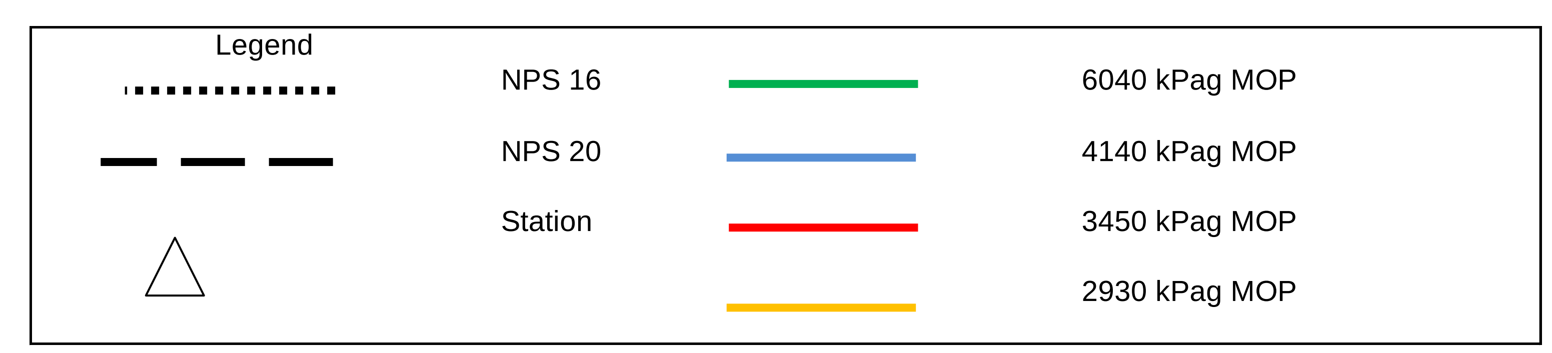
a) Please see Attachment 1.

b) In the winter, the existing NPS 20 pipeline is constrained between Dawn and the Sandwich Compressor Station on Design Day. In the summer, the Panhandle System is constrained by the capability of the Sandwich Compressor Station to move Ojibway imports back to Dawn and by the capacity of the pipe between Sandwich Compressor Station and Ojibway.

c) Union is concerned about meeting demand growth in the winter. The Panhandle Reinforcement Project removes the constraint as identified in part b) above.

Union Gas Panhandle System (Design Day)



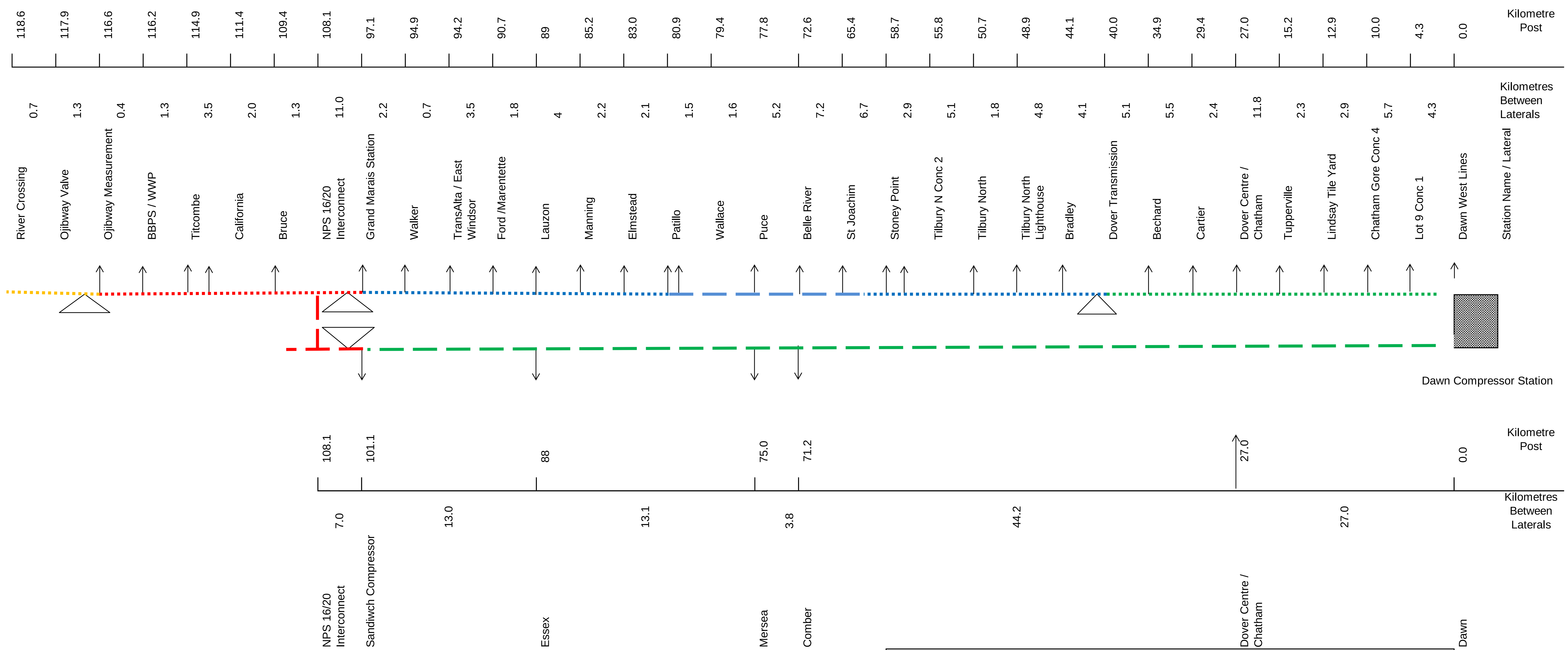


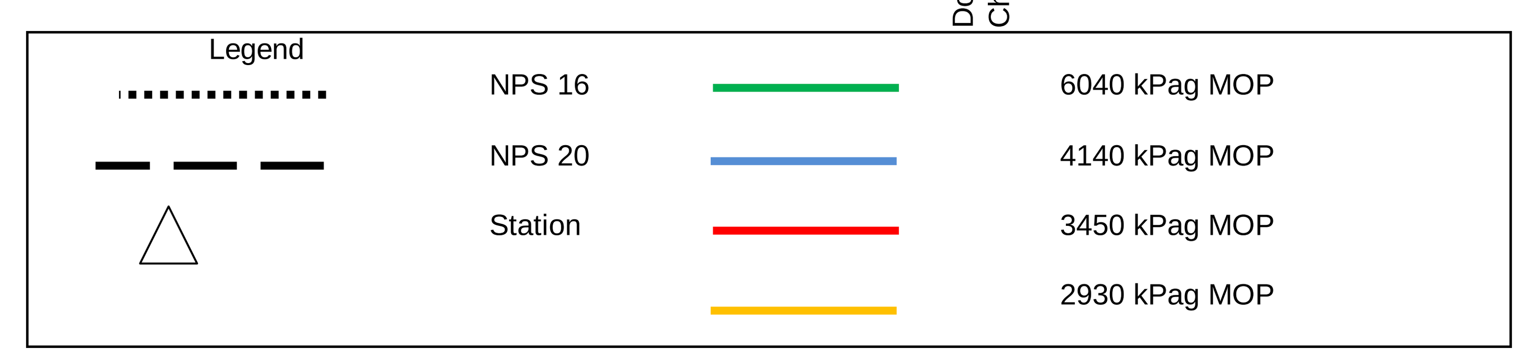
Design Day Demands	(GJ/d)	*Design Day Pressure* (kPag)
Ojibway Measurement	22391	1857.5
BBPS / WWP	94345	1828.6
Titcombe	17817	1876.8
California	18102	1939.6
Bruce	6596	2007.8
Grand Marais Station	46132	2007.8
Walker	45459	2008.5
TransAlta / East Windsor	35466	2008.5
Ford /Marentette	1621	2143
Lauzon	24895	2192.6
Manning	10551	2366.4
Elmstead	1298	2471.9
Patillo	6144	2580.8
Wallace	57	2597.3
Puce	1826	2611.8
Belle River	4174	2726.3
St Joachim	668	2835.2
Stoney Point	1276	3160.7
Tilbury N Conc 2	10	3299.9
Tilbury North	3203	3544.7
Tilbury North Lighthouse	201	3630.9
Bradley	22	3859.1
Bechard	391	4297
Cartier	38	4558.3
Dover Centre / Chatham	49416	4672.7
Tupperville	2193	5309.2
Lindsay Tile Yard	19	5416
Chatham Gore Conc 4	19	5553.9
Lot 9 Conc 1	3	5824.9
Dawn West Lines	7558	6029.7
Comber	96215	3513
Mersea	36600	3433
Essex	15283	3248.9
Sandwich Transmission	15637	3073.1
Total	565626	

System Capacity	(GJ/d)
Total System Capacity including Ojibway Supplies	565,832
	60,138
Total Requirements	565,626
Surplus	206

WINTER DESIGN DAY
PANHANDLE SYSTEM
WINTER 2016/2017

Union Gas Panhandle System (Summer Design)





Design Day Demands	(GJ/d)	*Design Day Pressure* (kPag)
Ojibway Measurement	2306	2386
BBPS / WWP	0	2381
Titcombe	2618	2325
California	1428	2229
Bruce	945	2155
Grand Marais Station	3587	2154
Walker	6365	2150
TransAlta / East Windsor	0	2153
Ford /Marentette	107	2144
Lauzon	1676	2142
Manning	1376	2138
Elmstead	100	2137
Patillo	483	2134
Wallace	10	2133
Puce	157	2133
Belle River	276	2130
St Joachim	45	2128
Stoney Point	85	2122
Tilbury N Conc 2	35	2115
Tilbury North	190	2115
Tilbury North Lighthouse	10	2112
Bradley	2	2109
Bechard	5	2106
Cartier	3	2104
Tupperville	230	2083
Lindsay Tile Yard	1	2075
Chatham Gore Conc 4	3	2074
Lot 9 Conc 1	8	2072
Dawn West Lines	16311	2069
Dawn	56723	4930
Dover Centre / Chatham	8006	4966
Comber	8283	5018
Mersea	707	5025
Essex	754	5046
Sandwich Compressor	1188	2125
Total	114023	

System Capacity	*(GJ/d)*
Total System Capacity including	115,000
Ojibway Supplies	115,000
Fuel	977
Total Requirements	115,000
Surplus	0

Compressor Station	
STATION	Sandwich
Power Available (	2.8
Power Required (	2.8
Pressure	
Suction (kPag)	2125
Discharge (kP	5068
Compression Ra	2
Flow (GJ/d)	74040
Daily Fuel (GJ/d)	977

SUMMER DESIGN DAY
PANHANDLE SYSTEM

2016

UNION GAS LIMITED

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

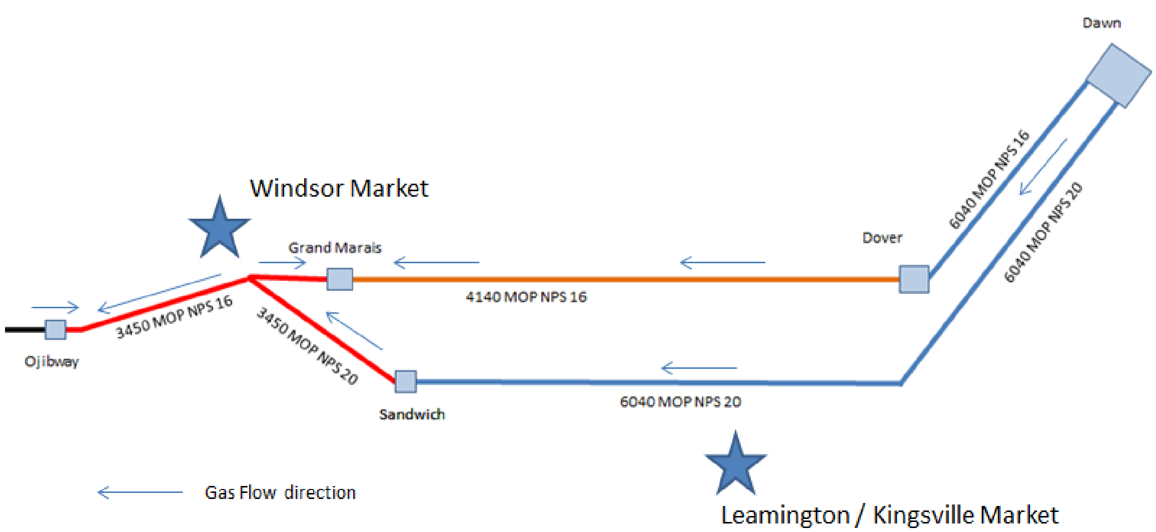
Reference: Tab 5, p.17, lines 18 – 21.

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.

UNION GAS LIMITED

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

Reference: Tab 6, p.7, footnote 2 "This would bring the total contracted Union deliveries at Ojibway to 94 TJ/d, which maximizes Union's import capability given the 115 TJ/d limit and the existing renewable Ojibway to Dawn capacity of 21 TJ/d held by a third party."

Preamble: FRPO would like to understand more about the 21 TJ/day renewable Ojibway to Dawn capacity.

a) Please explain Union's use of the term renewable. Who has the right to renew?

b) Please describe what rights, premiums or other compensation was exchanged by the parties to arrive at this renewable condition.

c) What right does Union have to provide notice and terminate the contract?

d) When was this contract executed?

e) Please provide all similar renewable contracts Union has on its system.

f) Was this renewable contract approved by the Board?

g) What right does the Board have to order a provision of notice and termination?

Response:

Please note that the contract referenced in parts a) through d) below is Contract ID C10106 (Emera Energy Inc) as outlined at Exhibit B.FRPO.4 a).

a) Please see the response at Exhibit B.BOMA.2 b). Only one existing C1 Ojibway to Dawn transportation contract contains renewal provisions (Contract ID C10106).

b/c)
There were no specific rights, premiums or other compensation exchanged by the parties in providing renewal rights. The contract was negotiated in its entirety considering all the attributes that were included, including the primary term length of five (5) years. In consideration of the longer term commitment, Union agreed to a renewal feature within the C1 transportation contract. Union does not have the right to provide notice and terminate the

contract under the renewal provisions of this specific C1 transportation contract as renewal options are at the discretion of the shipper. This is consistent with the renewal provisions of Union's M12 transportation contracts.

d) The C1 transportation Ojibway to Dawn transportation contract (Contract ID C10106) was executed February 20, 2014.

e) In addition, Union has the following C1 transportation contracts with renewal rights:

Receipt Point	Delivery Point	Quantity (GJ/d)	Start Date	End Date
Parkway	Dawn	100,000	April 1/13	March 31/19
Parkway	Dawn	236,586	November 1/12	March 31/19
Parkway	Dawn	10,785	April 1/07	March 31/19
Parkway	Dawn	42,202	April 1/15	March 31/20
Kirkwall	Dawn	26,335	April 1/15	March 31/20
Kirkwall	Dawn	73,745	November 1/15	October 31/20
Dawn	Dawn (TCPL)	500,000	November 1/10	October 31/18
Bluewater	Dawn	123,000	November 1/13	October 31/23
Dawn	Dawn (Vector)	92,845	March 1/08	October 31/18

f) No. The Board does not approve individual contracts. Union's standard C1 contract was reviewed through the Storage and Transportation Access Rule ("STAR") proceeding (EB-2008-0052). Subsequent to that proceeding Union's standard form of C1 contract is posted on its website as per 2.3.5 of STAR.

The balance of the contract (ie. rates, GTC, nominations, points and pressures) are all part of the tariff and subject to Board approval.

Link to informational posting
https://www.uniongas.com/storage-and-transportation/informational-postings/transport-shippers

Link to Contract also posted since it is a negotiated contract
https://www.uniongas.com/~/media/storage-transportation/infopostings/contractreporting/C10106amendment.pdf?la=en

g) The Board does not have the right to order a provision of notice and termination of a commercial agreement.

UNION GAS LIMITED

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

Reference: Tab 6, p. 9 – 10; EB-2016-0118 Ex. A, Tab 4, Appendix A, Schedule 2

Preamble: In Tab 6, "Union has also estimated that, on a forecasted basis, the landed cost of PEPL Field Zone supply delivered to Union at Ojibway over a 10 year term (2016 to 2026) is approximately $0.30/GJ higher than the cost of Dawn sourced supply over the same period." In EB-2016-0118, Union shows a lower landed cost for gas supplies from Ojibway as compared to those from Dawn for the period 2015 to 2018.

Please fully explain the methodologies and assumptions used in the forecast in this application and those used in the referenced document filed on 2016-04-19 in proceeding EB-2016-0118.

Response:

The landed cost analysis calculation used in each of these applications is consistent with the methodology approved in the EB-2005-0520 (Union's 2007 Cost of Service) Settlement Agreement.

The differences in assumptions between the landed cost analysis in this application and EB-2016-0118 are:

Reference	Date of Analysis	Time Period Evaluated	Commodity Price Source	Fuel Ratios	Transportation Tolls	Foreign Exchange	Energy Conversions
EB-2016-0118 Exhibit A Tab 4 Appendix A Schedule 1	January 2015	November 2015 - October 2016	ICE January 27, 2015	Average ratio over the previous 12 months or Pipeline Forecast	Tolls in effect on Alternative Routes at the time of Union's Analysis	$1 USD = $ 1.240 CDN From Bank of Canada Closing Rate January 27, 2015	1 DTH = 1 MMBTU = 1.055056
EB-2016-0118 Exhibit A Tab 4 Appendix A Schedule 2	March 2015	November 2015 - October 2018	ICF Q1 2015 Base Case	Average ratio over the previous 12 months or Pipeline Forecast	Tolls in effect on Alternative Routes at the time of Union's Analysis	$1 USD = $ 1.278 CDN From Bank of Canada Closing Rate March 16, 2015	1 DTH = 1 MMBTU = 1.055056
EB-2016-0186 Exhibit A Tab 6 Page 9 of 15	May 2015	November 2017 - October 2027	ICF Q2 2016 Base Case	Average ratio over the previous 12 months or Pipeline Forecast	Tolls in effect on Alternative Routes at the time of Union's Analysis	$1 USD = $ 1.254 CDN From Bank of Canada Closing Rate May 2, 2016	1 DTH = 1 MMBTU = 1.055056

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)".

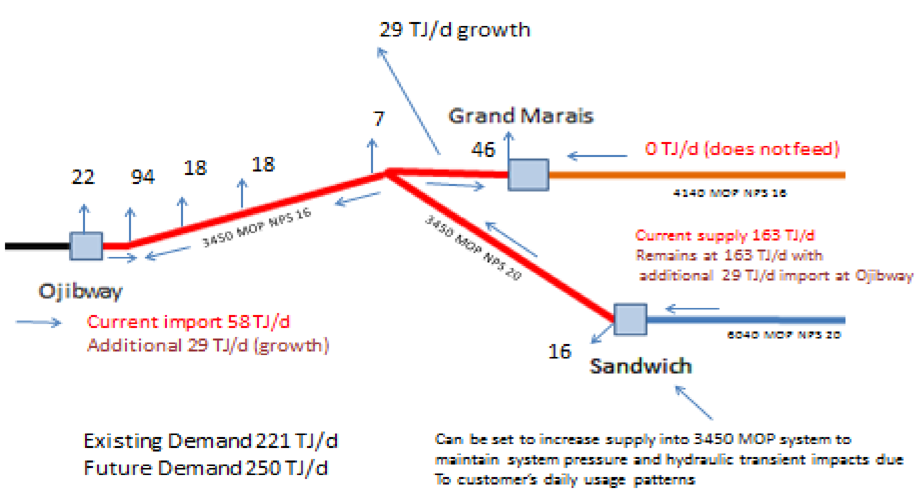
a) Please explain, by way of a numerical example, the derivation of the 1 GJ of incremental Ojibway deliveries that equates to less than 1 GJ of capacity east of Sandwich.

b) Please provide, similar to (a) above, for 1 GJ of incremental Dawn deliveries to west of Sandwich.

c) 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:

a) 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.

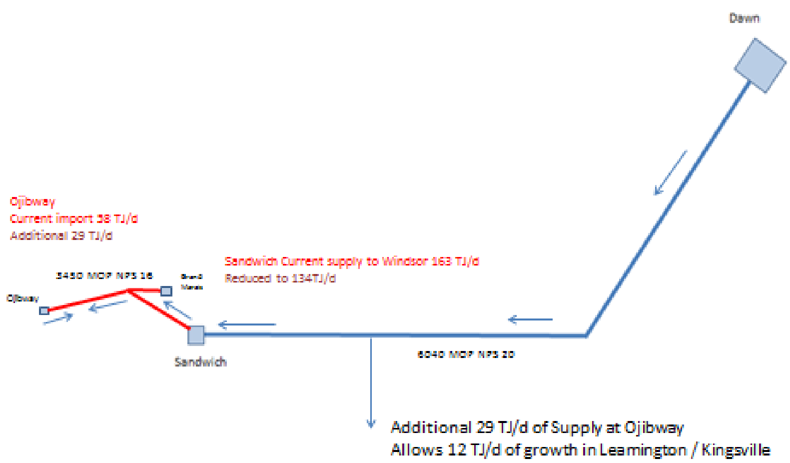
One option to feed forecast 29 TJ/d of growth in Windsor market is to contract for additional supply from Ojibway. Physically the additional molecules will feed a larger portion of the 94 TJ/d power generation load.

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.

UNION GAS LIMITED

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

Reference: Tab 6, Schedule 2, Integrity Maintenance Cost Assumptions for Panhandle NPS 16 Pipeline.

Preamble: FRPO requires further information of the maintenance cost assumptions.

How many sections and what lengths have been replaced in the last 20 years?

Response:

On the NPS 16 Panhandle Line between Dawn and Dover Transmission Station there have been 39 segments replaced in the past 20 years with an average length of approximately 110 metres.

UNION GAS LIMITED

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

Reference: Tab 8, p.9-10.

Preamble: "The 2013 Board-approved cost allocation study reflects the maximum design capacity of 15,188 103m3/d (or 573 TJ/d[1], which includes the Panhandle System capacity of 12,355 103m3 (or 466 TJ/d) and St. Clair System import capacity of 2,833 103m3/d (or 107 TJ/d)[1]. Of the total maximum design capacity of 15,188 103m3/d, the firm long-term ex-franchise Rate C1 and Rate M16 demands represent 2,737 103m3/d and the remaining 12,452 103m3/d is allocated to Union South in-franchise rate classes. The allocation to Union South in-franchise rate classes is in proportion to the combined Panhandle System and St. Clair System firm Design Day demands. The methodology for allocating Panhandle System and St. Clair System demand costs was most recently reviewed and approved by the Board in EB-2011-0210 (Union's 2013 Cost of Service proceeding)."

Please provide the actual daily receipts for the Panhandle System and the St. Clair System over the last three winters.

[1] Energy conversion based on the 2013 Board-approved heat value of 37.75 GJ/103m3.

Response:

Please see Attachment 1 which provides the Daily Receipts (GJ) for last three winters for the Panhandle System at Ojibway and Dawn, for the St. Clair System. The St. Clair System daily receipts is the total of supply from Bluewater and DTE MichCon. The daily receipts for the two systems include Union's system supply, quantities delivered under C1 transportation contracts and short-term (less than one year) transportation contracts.

Units GJ

Date	Panhandle System Ojibway/Dawn	St. Clair System (Bluewater/DTE)
11/1/2013	185,177	103,498
11/2/2013	197,057	136,505
11/3/2013	197,689	140,465
11/4/2013	190,680	121,876
11/5/2013	184,966	180,262
11/6/2013	184,432	198,117
11/7/2013	206,517	222,982
11/8/2013	186,719	203,721
11/9/2013	177,950	209,194
11/10/2013	188,374	158,643
11/11/2013	261,831	180,814
11/12/2013	268,793	191,566
11/13/2013	248,875	194,655
11/14/2013	201,026	235,454
11/15/2013	172,693	227,443
11/16/2013	156,088	236,541
11/17/2013	177,023	214,075
11/18/2013	217,664	219,242
11/19/2013	227,481	237,600
11/20/2013	189,317	234,034
11/21/2013	180,034	234,231
11/22/2013	227,284	236,219
11/23/2013	287,862	210,391
11/24/2013	279,254	236,034
11/25/2013	271,590	244,784
11/26/2013	241,768	237,587
11/27/2013	281,289	262,053
11/28/2013	274,000	268,284
11/29/2013	231,171	268,114
11/30/2013	195,430	280,138
12/1/2013	192,927	286,362
12/2/2013	217,237	285,622
12/3/2013	205,722	357,671
12/4/2013	192,707	374,652
12/5/2013	186,729	339,746
12/6/2013	244,859	322,657
12/7/2013	256,637	346,250
12/8/2013	240,954	347,038
12/9/2013	281,031	333,662
12/10/2013	286,105	311,640
12/11/2013	333,310	327,652
12/12/2013	309,790	326,829

12/13/2013	288,692	502,842
12/14/2013	280,262	441,911
12/15/2013	298,472	441,980
12/16/2013	320,364	233,791
12/17/2013	280,056	222,699
12/18/2013	236,606	232,984
12/19/2013	195,626	241,762
12/20/2013	189,891	201,756
12/21/2013	215,849	188,587
12/22/2013	214,421	185,438
12/23/2013	247,771	445,748
12/24/2013	276,828	480,751
12/25/2013	253,483	463,804
12/26/2013	225,785	472,700
12/27/2013	214,180	474,759
12/28/2013	180,106	476,892
12/29/2013	218,465	458,776
12/30/2013	255,705	447,809
12/31/2013	273,553	356,853
1/1/2014	305,535	473,146
1/2/2014	401,172	494,036
1/3/2014	377,250	497,082
1/4/2014	251,518	376,156
1/5/2014	274,170	371,690
1/6/2014	388,408	465,112
1/7/2014	399,393	316,393
1/8/2014	350,658	515,920
1/9/2014	303,193	492,246
1/10/2014	226,586	494,160
1/11/2014	224,429	522,745
1/12/2014	231,065	563,438
1/13/2014	229,214	561,514
1/14/2014	246,538	552,588
1/15/2014	294,094	550,120
1/16/2014	303,837	612,019
1/17/2014	274,018	634,603
1/18/2014	299,491	637,674
1/19/2014	281,521	620,710
1/20/2014	327,572	604,526
1/21/2014	418,324	617,111
1/22/2014	440,290	567,502
1/23/2014	420,166	626,955
1/24/2014	396,240	613,902
1/25/2014	316,554	522,569
1/26/2014	353,603	491,640
1/27/2014	352,945	555,888
1/28/2014	368,267	484,514

1/29/2014	348,202	496,982
1/30/2014	301,372	572,811
1/31/2014	267,713	574,456
2/1/2014	257,894	608,674
2/2/2014	298,295	563,461
2/3/2014	292,295	506,158
2/4/2014	326,993	580,810
2/5/2014	363,558	575,615
2/6/2014	380,265	512,612
2/7/2014	385,859	512,608
2/8/2014	319,470	529,266
2/9/2014	343,031	513,649
2/10/2014	361,136	484,516
2/11/2014	436,480	481,442
2/12/2014	384,300	553,124
2/13/2014	320,977	522,833
2/14/2014	296,698	518,558
2/15/2014	300,592	522,857
2/16/2014	352,003	507,056
2/17/2014	347,677	485,219
2/18/2014	276,586	570,167
2/19/2014	270,300	565,685
2/20/2014	265,548	562,654
2/21/2014	257,670	568,420
2/22/2014	220,200	546,854
2/23/2014	265,157	529,979
2/24/2014	289,229	489,957
2/25/2014	327,098	479,082
2/26/2014	324,755	347,528
2/27/2014	367,832	374,031
2/28/2014	288,689	364,552
3/1/2014	310,599	340,027
3/2/2014	378,907	281,883
3/3/2014	368,180	271,149
3/4/2014	342,331	311,918
3/5/2014	352,224	253,275
3/6/2014	316,482	306,352
3/7/2014	236,209	304,709
3/8/2014	271,241	311,122
3/9/2014	219,191	318,511
3/10/2014	193,933	315,314
3/11/2014	216,488	363,552
3/12/2014	374,323	318,858
3/13/2014	294,160	356,369
3/14/2014	212,697	339,153
3/15/2014	249,416	352,456
3/16/2014	323,030	329,521

3/17/2014	291,933	339,714
3/18/2014	220,714	336,369
3/19/2014	239,568	348,147
3/20/2014	248,242	347,687
3/21/2014	195,985	321,669
3/22/2014	246,009	347,768
3/23/2014	278,748	342,987
3/24/2014	318,648	340,667
3/25/2014	329,317	298,660
3/26/2014	265,305	316,364
3/27/2014	234,230	313,960
3/28/2014	198,354	294,292
3/29/2014	270,939	290,479
3/30/2014	207,284	286,118
3/31/2014	183,218	291,838
11/1/2014	133,328	93,811
11/2/2014	123,501	90,612
11/3/2014	120,406	70,645
11/4/2014	121,136	93,213
11/5/2014	124,097	92,912
11/6/2014	126,166	93,265
11/7/2014	155,552	92,699
11/8/2014	156,599	83,262
11/9/2014	156,223	90,604
11/10/2014	154,456	90,599
11/11/2014	156,629	90,604
11/12/2014	104,487	88,108
11/13/2014	133,603	88,221
11/14/2014	132,655	88,297
11/15/2014	134,985	88,270
11/16/2014	134,546	88,254
11/17/2014	166,740	88,317
11/18/2014	145,412	134,144
11/19/2014	114,800	121,842
11/20/2014	121,057	144,550
11/21/2014	149,353	275,086
11/22/2014	150,219	169,961
11/23/2014	150,430	169,994
11/24/2014	150,963	174,400
11/25/2014	150,942	210,562
11/26/2014	150,613	210,490
11/27/2014	150,401	206,593
11/28/2014	150,449	207,030
11/29/2014	130,771	207,015
11/30/2014	121,512	206,339
12/1/2014	177,192	199,676
12/2/2014	176,117	206,973

12/3/2014	180,409	228,981
12/4/2014	173,739	218,372
12/5/2014	179,468	229,504
12/6/2014	183,185	244,510
12/7/2014	184,660	240,750
12/8/2014	186,685	240,568
12/9/2014	187,777	217,833
12/10/2014	187,408	242,006
12/11/2014	179,966	414,689
12/12/2014	187,089	290,588
12/13/2014	184,779	234,011
12/14/2014	177,950	221,286
12/15/2014	178,528	221,863
12/16/2014	174,519	216,267
12/17/2014	173,603	202,578
12/18/2014	177,443	229,341
12/19/2014	176,701	202,213
12/20/2014	177,164	210,899
12/21/2014	178,048	223,547
12/22/2014	170,759	247,425
12/23/2014	177,538	233,682
12/24/2014	175,991	233,490
12/25/2014	175,483	234,159
12/26/2014	172,838	237,381
12/27/2014	174,160	237,871
12/28/2014	175,268	228,560
12/29/2014	176,246	221,991
12/30/2014	136,942	277,894
12/31/2014	129,486	247,181
1/1/2015	142,699	313,125
1/2/2015	161,920	309,961
1/3/2015	140,462	294,546
1/4/2015	140,630	295,487
1/5/2015	141,008	313,157
1/6/2015	139,566	317,929
1/7/2015	63,326	309,645
1/8/2015	72,487	282,797
1/9/2015	67,355	296,788
1/10/2015	72,370	270,699
1/11/2015	72,466	284,430
1/12/2015	73,950	344,232
1/13/2015	89,091	337,423
1/14/2015	111,389	326,621
1/15/2015	156,666	387,672
1/16/2015	179,214	419,719
1/17/2015	158,691	448,607
1/18/2015	163,483	461,465

1/19/2015	164,207	467,338
1/20/2015	164,459	452,849
1/21/2015	184,336	479,398
1/22/2015	188,195	479,438
1/23/2015	188,162	540,082
1/24/2015	189,556	471,807
1/25/2015	184,369	456,020
1/26/2015	184,336	499,668
1/27/2015	184,132	500,189
1/28/2015	170,423	563,424
1/29/2015	180,943	520,929
1/30/2015	183,816	467,030
1/31/2015	183,561	467,375
2/1/2015	83,710	419,865
2/2/2015	87,024	412,241
2/3/2015	87,057	533,845
2/4/2015	86,854	469,427
2/5/2015	76,145	449,258
2/6/2015	87,693	492,409
2/7/2015	90,509	570,232
2/8/2015	87,865	571,830
2/9/2015	88,128	604,749
2/10/2015	161,248	609,943
2/11/2015	176,569	553,905
2/12/2015	123,779	594,347
2/13/2015	148,596	661,305
2/14/2015	122,105	626,223
2/15/2015	119,604	622,079
2/16/2015	120,691	603,300
2/17/2015	119,580	590,367
2/18/2015	112,174	628,293
2/19/2015	95,525	643,755
2/20/2015	103,351	607,714
2/21/2015	96,937	612,699
2/22/2015	119,555	589,142
2/23/2015	115,440	590,359
2/24/2015	109,308	614,319
2/25/2015	109,152	588,007
2/26/2015	127,896	530,852
2/27/2015	123,901	533,524
2/28/2015	123,511	544,267
3/1/2015	172,587	549,045
3/2/2015	184,906	586,871
3/3/2015	191,124	577,289
3/4/2015	192,898	572,407
3/5/2015	181,536	545,480
3/6/2015	181,337	518,023

3/7/2015	178,780	544,642
3/8/2015	176,837	593,057
3/9/2015	164,783	578,219
3/10/2015	163,726	554,400
3/11/2015	166,417	483,853
3/12/2015	164,930	433,188
3/13/2015	169,984	485,869
3/14/2015	168,073	563,797
3/15/2015	164,736	490,186
3/16/2015	165,131	503,781
3/17/2015	165,020	504,011
3/18/2015	165,062	466,664
3/19/2015	165,393	456,703
3/20/2015	165,920	413,064
3/21/2015	165,622	386,639
3/22/2015	165,656	367,214
3/23/2015	162,562	406,614
3/24/2015	166,280	490,415
3/25/2015	166,317	444,450
3/26/2015	174,938	460,142
3/27/2015	176,570	423,649
3/28/2015	181,060	425,327
3/29/2015	185,336	418,388
3/30/2015	185,951	417,789
3/31/2015	183,161	456,340
11/1/2015	152,671	63,436
11/2/2015	120,395	141,430
11/3/2015	120,168	139,684
11/4/2015	122,107	126,280
11/5/2015	139,396	126,939
11/6/2015	147,166	139,094
11/7/2015	146,533	140,379
11/8/2015	146,250	139,802
11/9/2015	131,972	164,326
11/10/2015	129,231	133,951
11/11/2015	147,619	104,374
11/12/2015	150,871	141,168
11/13/2015	150,547	134,951
11/14/2015	149,798	155,895
11/15/2015	128,643	141,472
11/16/2015	128,315	146,507
11/17/2015	128,267	138,354
11/18/2015	128,320	139,704
11/19/2015	108,321	160,417
11/20/2015	108,116	162,229
11/21/2015	107,963	168,462
11/22/2015	107,178	169,141

11/23/2015	108,751	170,030
11/24/2015	107,421	167,847
11/25/2015	108,137	192,521
11/26/2015	108,557	166,882
11/27/2015	123,416	167,340
11/28/2015	123,025	170,491
11/29/2015	122,679	168,795
11/30/2015	116,361	153,288
12/1/2015	109,101	226,108
12/2/2015	107,768	231,301
12/3/2015	109,393	234,607
12/4/2015	109,757	209,384
12/5/2015	76,759	236,353
12/6/2015	76,254	231,431
12/7/2015	76,058	207,390
12/8/2015	89,488	198,154
12/9/2015	121,601	208,178
12/10/2015	124,442	230,597
12/11/2015	75,496	230,501
12/12/2015	100,494	232,391
12/13/2015	110,573	232,250
12/14/2015	125,298	219,646
12/15/2015	87,189	200,592
12/16/2015	97,831	180,940
12/17/2015	106,120	202,495
12/18/2015	108,252	173,283
12/19/2015	108,140	177,202
12/20/2015	108,084	173,244
12/21/2015	107,891	177,600
12/22/2015	108,452	177,435
12/23/2015	104,584	177,423
12/24/2015	107,992	177,377
12/25/2015	109,398	177,336
12/26/2015	108,648	177,197
12/27/2015	108,602	176,928
12/28/2015	108,643	197,026
12/29/2015	108,592	198,750
12/30/2015	108,477	228,116
12/31/2015	108,604	201,557
1/1/2016	108,563	314,105
1/2/2016	108,402	317,864
1/3/2016	108,023	316,077
1/4/2016	108,295	339,360
1/5/2016	112,696	336,636
1/6/2016	107,271	387,733
1/7/2016	105,482	316,560
1/8/2016	111,209	300,232

1/9/2016	108,369	334,789
1/10/2016	107,929	318,205
1/11/2016	108,400	344,169
1/12/2016	98,257	294,618
1/13/2016	109,366	295,893
1/14/2016	101,305	305,259
1/15/2016	109,184	288,276
1/16/2016	113,557	249,251
1/17/2016	119,564	243,604
1/18/2016	119,807	241,363
1/19/2016	119,528	240,145
1/20/2016	119,285	243,659
1/21/2016	119,245	246,211
1/22/2016	113,343	258,076
1/23/2016	107,283	296,088
1/24/2016	107,485	295,483
1/25/2016	107,563	323,265
1/26/2016	107,560	245,267
1/27/2016	107,792	331,603
1/28/2016	118,663	324,648
1/29/2016	118,967	284,522
1/30/2016	118,910	276,699
1/31/2016	118,669	285,911
2/1/2016	118,651	325,124
2/2/2016	119,144	326,704
2/3/2016	118,336	269,841
2/4/2016	118,984	220,989
2/5/2016	119,114	277,676
2/6/2016	119,334	311,212
2/7/2016	119,496	288,605
2/8/2016	120,070	301,327
2/9/2016	113,611	227,045
2/10/2016	119,699	229,986
2/11/2016	119,900	222,511
2/12/2016	119,384	213,756
2/13/2016	119,060	202,307
2/14/2016	119,494	201,085
2/15/2016	119,237	201,162
2/16/2016	119,065	195,282
2/17/2016	119,225	265,482
2/18/2016	119,173	327,567
2/19/2016	118,071	326,479
2/20/2016	119,346	314,413
2/21/2016	117,019	307,034
2/22/2016	117,517	305,065
2/23/2016	118,026	354,090
2/24/2016	117,952	315,544

2/25/2016	106,954	261,415
2/26/2016	106,756	259,765
2/27/2016	106,758	238,462
2/28/2016	97,250	235,832
2/29/2016	106,583	214,308
3/1/2016	106,364	368,533
3/2/2016	84,750	380,472
3/3/2016	88,672	379,194
3/4/2016	107,247	357,479
3/5/2016	110,730	317,024
3/6/2016	111,482	284,424
3/7/2016	106,572	299,086
3/8/2016	103,575	225,460
3/9/2016	107,921	222,310
3/10/2016	113,503	222,574
3/11/2016	119,043	226,967
3/12/2016	114,680	239,051
3/13/2016	118,771	246,189
3/14/2016	118,671	223,357
3/15/2016	162,060	274,368
3/16/2016	169,692	284,603
3/17/2016	164,769	302,821
3/18/2016	166,031	297,973
3/19/2016	168,116	314,611
3/20/2016	164,915	322,444
3/21/2016	163,862	253,769
3/22/2016	159,668	260,315
3/23/2016	168,427	296,117
3/24/2016	171,645	296,159
3/25/2016	160,349	228,194
3/26/2016	164,099	224,694
3/27/2016	156,991	219,514
3/28/2016	180,435	243,808
3/29/2016	178,516	222,575
3/30/2016	177,334	232,584
3/31/2016	177,537	217,260

UNION GAS LIMITED

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

Reference: Tab 8, p.12-14

Preamble: The reference describes the ex-franchise rate design and the C1 Transportation charges.

a) Please provide the original evidence on which the Board approved for the use of C1 transportation as a means of managing transportation asset utilization, and all updates to the original approved approach to C1 transportation.

b) Please provide a table showing C1 revenues on the Ojibway path and the St. Clair path starting with Board-approved 2013 and continuing with the actual revenues from each year from 2013 to 2015.

c) Please update the tables 8-1 to 8-5 including both St. Clair and Panhandle updates and using the peak daily utilization for C1 as the demand allocator for those rate classes.

Response:

a) The introduction of Rate C1 was approved by the Board in Union's Fiscal 1990 Rates proceeding (EBRO 456). The new rate class included firm and interruptible short-term storage service and cross-franchise transportation service between Dawn and Ojibway, St. Clair and Oakville (now referred to as Parkway). Consistent with Union's current Rate C1 service, Union set a common Rate C1 firm transportation rate for service between Dawn and Ojibway and St. Clair and negotiated rates for interruptible services, within a minimum and maximum range. The proposed Rate C1 replaced Rate M30 (Ojibway transportation service) and Rate M32 (Oakville transportation service) that had previously provided interruptible transportation service only on a reasonable efforts basis. Union also introduced the St. Clair transportation service option as part of this proceeding. The EBRO 456, Exhibit N13, p. 22-23 evidence is provided at Attachment 1.

There have been no material changes to the design of the Rate C1 transportation services since the EBRO 456 proceeding. The Rate C1 transportation changes have primarily related to additional delivery and receipts points available under the service, including the Bluewater location which was added to the Rate C1 rate schedule in Union's Fiscal 1995 and 1996 Rates proceeding (EBRO 486). Union also removed the minimum rate for interruptible transportation service as part of Union's 1999 Rates proceeding (EBRO 499) to allow for more effective service packaging.

The other notable change in Union's 1999 Rates proceeding was to the cost allocation for the Ojibway (Panhandle) and St. Clair Systems, in which Union introduced a new cost allocation model that separately identified transmission functions as Ojibway/St. Clair, Other Transmission and Dawn-Trafalgar (now Dawn Parkway). Prior to this change, the allocated share of the transmission facilities was derived outside of the cost allocation study. Although changes were made to the new cost allocation model, the results were not materially different and no changes were proposed to the Rate C1 rate design.

b) Please see Attachment 2.

c) For the purposes of this response, Union has updated the proposed cost allocation to include Rate C1. Union has assumed that the peak day utilization would be up to the current firm long-term Rate C1 Ojibway to Dawn transportation contract limit of 21,016 GJ (545 10^3m^3/d), as provided in the response at Exhibit B.FRPO.4. This update to the proposed Project cost allocation results in a change to Table 8-1 and Table 8-3 only, as provided below in Table 1 and Table 2, respectively.

This alternative is not consistent with the use of the Panhandle System on Design Day, as Union does not consider the receipt of Rate C1 gas supply volumes on Design Day because these customers have no contractual obligation to supply gas to Union's system.

Table 1
Proposed Project Cost Allocation Factors
Updated to Include 21 TJ of Rate C1 Long-Term Firm Ojibway to Dawn Demands (10^3m^3/d)

Line No.	Rate Class	2013 Panhandle Design Day Demands	Incremental 2017 Project Design Day Demands	Rate C1 Update	Total 2017 Allocation Factor	Incremental 2018 Project Design Day Demands	Total 2018 Allocation Factor
		(a)	(b)	(c)	(d) = (a+b+c)	(e)	(f) = (d+e)
1	M1	5,567	28	-	5,595	28	5,623
2	M2	1,870	24	-	1,894	21	1,915
3	M4	929	696	-	1,625	343	1,968
4	M5A	30	-	-	30	-	30
5	M7	131	439	-	570	-	570
6	T1	524	154	-	678	-	678
7	T2	3,051	151	-	3,202	-	3,202
8	C1	-	-	545	545	-	545
9	Total	12,102	1,492	545	14,139	392	14,531

Note:
(1) Firm long-term Rate C1 Ojibway to Dawn demands of 21,016 GJ/d, converted using a heat value of 38.55 GJ/10^3m^3.

Table 2
Comparison of Board-Approved vs. Proposed Project Cost Allocation Factors
Updated to Include 21 TJ of Rate C1 Long-Term Firm Ojibway to Dawn Demands

Line No.	Rate Class	Board-Approved Allocation ($10^3m^3/d$)	Board-Approved Allocation (%)	Proposed Allocation Including Rate C1 Update ($10^3m^3/d$)	Proposed Allocation Including Rate C1 Update (%)	Variance ($10^3m^3/d$)	Variance (%)
		(a)	(b)	(c)	(d)	(e) = (c-a)	(f) = (d-b)
1	Rate M1	3,789	21%	5,623	39%	1,834	18%
2	Rate M2	1,289	7%	1,915	13%	627	6%
3	Rate M4	1,174	7%	1,968	14%	793	7%
4	Rate M5	18	0%	30	0%	12	0%
5	Rate M7	338	2%	570	4%	232	2%
6	Rate T1	1,023	6%	678	5%	(345)	-1%
7	Rate T2	7,560	42%	3,202	22%	(4,357)	-20%
8	Total In-franchise	15,191	85%	13,986	96%	(1,204)	12%
9	Rate C1	2,264	13%	545	4%	(1,719)	-9%
10	Rate M16	473	3%	-	0%	(473)	-3%
11	Total Ex-franchise	2,737	15%	545	4%	(2,191)	-12%
12	Total	17,927	100%	14,531	100%	(3,396)	

3(k) Diversity Benefits

Union has not had sufficient experience with unbundled contract carriage service to properly assess the potential diversity benefits of these customers when allocating costs or designing rates.

4. New Services

Union is proposing to replace the existing M30 and M32 service with a new cross-franchise transportation service under the C-1 rate schedule. C-1 customers may contract to deliver customer-owned gas to Union at one of the delivery points listed in the rate schedule for redelivery to the customer by Union at contracted interconnections with other pipeline systems.

The rate to be charged for this service approximates the cost of service for the facilities over which gas flows. That is the rate charged for transportation between Dawn and

St. Clair and between Dawn and Ojibway approximates the cost of service of the St. Clair and Union's Panhandle transmission facilities. These rates will replace the current M30 and M32 rates.

UNION GAS LIMITED
Summary of Ex-Franchise Revenue Associated with the Panhandle System and St. Clair System

Line No.	Particulars ($000s)	2013 Board-Approved (1)	2013 Actuals (2)	2014 Actuals (2)	2015 Actuals (2)
		(a)	(b)	(b)	(b)
	Panhandle System				
1	C1 Long-term Transportation	1,197	1,368	1,463	1,144
2	C1 Fuel	164	-	-	-
3	M16	204	150	190	208
4	Short-term and Interruptible Transportation	1,557	742	2,715	1,173
5	Total Panhandle System	3,122	2,259	4,368	2,525
	St. Clair System				
6	C1 Long-term Transportation	2,000	327	786	710
8	M16	330	441	348	314
9	Short-term and Interruptible Transportation	808	3,972	3,721	2,665
10	Total St. Clair System	3,139	4,741	4,855	3,689
11	Total Panhandle System and St. Clair System	6,261	7,000	9,223	6,214

Notes:
(1) EB-2011-0210, Rate Order, Working Papers, Schedule 40.
(2) 2013-2015 actual revenue excludes customer supplied fuel.

UNION GAS LIMITED

Answer to Interrogatory from
Industrial Gas Users Association ("IGUA")

Reference: Exhibit A, Tab 3, p.2, lines 11-18; Exhibit A, Tab 4, p.2, lines 2-6; Exhibit A, Tab 5, p.4, lines 1-3; Exhibit A, Tab 5, p.4.

The evidence refers to significant recent, and expected, demand growth in markets served by the Panhandle System, particularly from greenhouses, and including requests for firm service from currently interruptible customers. Union is forecasting that, without reinforcement, operational requirements of the Panhandle System will not be met for the winter 2017/18.

a) Please provide a map of the Union South service area that illustrates which portion of that service area is served by the Panhandle System.

b) Please populate a table with the following data for all of the Union South rate classes:

Rate Class	**# Customers served by Panhandle System**	**Volumes served by Panhandle System**	**# customers not served by Panhandle System**	**Volumes not served by Panhandle System**

c) What are the benefits anticipated from the project for customers in Union South not served by the Panhandle system?

d) Please provide the number and length of interruptible customer service interruptions in each of the past 5 years (ending in 2015/16) in the area served by the Panhandle System.

e) Please provide Union's estimate of the *"cost of alternate fuel required during an interruption"* as referenced in the evidence, in aggregate for each of the past 5 years.

f) Please provide the current number of in-franchise customers in the area served by the Panhandle System, by category as follows (please consider these categories as mutually exclusive):

Customer Type	**# Customers**	**# Customers with Interruptible Volumes**	**Total Firm Volumes**	**Total Interruptible Volumes**
Residential				
Greenhouse/Agricultural				
Other Commercial				
Small Industrial (<25million m^3/year)				
Large Industrial (>25million m^3/year) not Power Gen				
Power Gen				

g) Please provide the total in-franchise volumes in the area served by the Panhandle System in 2015/16, by customer category as in response to part (f), for customers who are currently interruptible but are seeking firm service. [Exhibit A, Tab 5, p. 4; Exhibit A, Tab 5, p.7, lines 8-10].

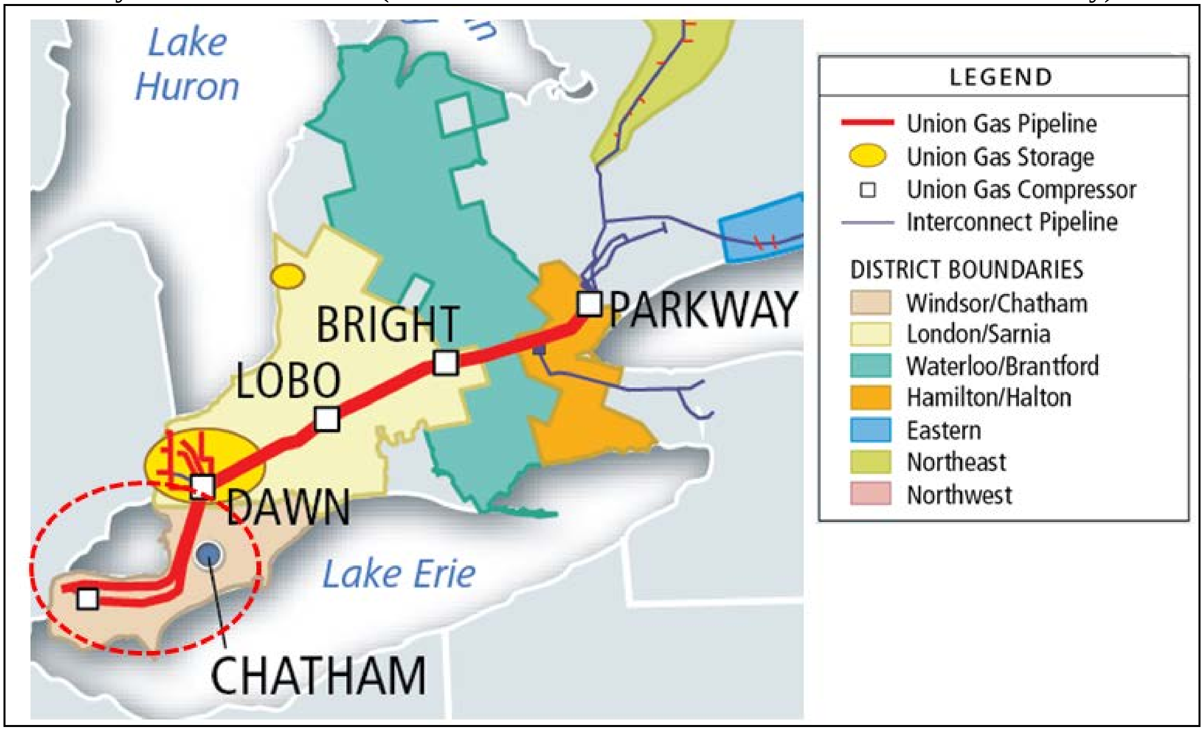
h) Please provide the number of C1 and M16 customers, and their respective (aggregate) demand and volumes in 2015 served by the Panhandle system.

i) The evidence indicates that without facility changes, *"operational requirements of the Panhandle System will not be met for the Winter of 2017/18"*. Please explain the anticipated operational consequences should facilities not be changed, for both in-franchise and ex-franchise customers.

j) Please provide the forecast number of in-franchise customers and associated customer volumes in 5, 10 and 15 years for the area served by the Panhandle System, using the same customer categories as in response to part (f) (but <u>not</u> disaggregated into firm and interruptible).

Response:

a) In the map presented below, the area served by the Panhandle System is coloured peach and is circled by the red dotted line (included within the Windsor/Chatham district boundary).



b) The Winter 2015/2016 actual design volumes for Union South in-franchise customers are shown in the table below. The number of customers and contract customer rate class is based on data available on March 31, 2016.

Winter 2015/2016 Actual Volumes for Union South In-franchise Customers				
Rate Class	Panhandle Customers	Panhandle Design Day Demand	Union South (non-Panhandle) Customers	Union South (non-Panhandle) Design Day Demand
	(number)	(TJ/day)	(number)	(TJ/day)
M1 / M2	186,751	293.8	913,361	1,270.0
M4 / BT4	48	35.6	137	72.4
M5 / BT5	40	1.1	32	0.3
M7 / BT7	16	13.4	16	51.8
M9 / BT9	0	0.0	3	17.3
T-1	10	31.1	29	48.9
T-2	5	138.5	19	725.7
T-3	0	0.0	1	94.7
Total	186,870	513.5	913,598	2,281.1

c) The Project is required to meet the identified demand growth for the specified area. Customers in other areas, such as those who benefited from the Burlington Oakville Project, do not benefit from the Project directly but have benefited from the approved methodology for allocating costs from pipeline expansions in the past.

As with other Union South pipeline expansions, customers will share the costs of this pipeline expansion through rates. Customers served by the Panhandle System have seen rate increases in the past that supported pipeline expansion in other areas. This is the regulatory framework that Union works within.

d) The number and duration of the Panhandle System interruptions is provided in the table below:

Panhandle System Interruptions		
Winter	Number of Interruptions	Duration (in days)
2011/2012	0	0
2012/2013*	1	3
2013/2014	2	6
2014/2015	9	16
2015/2016	1	2

Note*: interruption in Winter 12/13 was called for Leamington/Kingsville only.

e) Please see the table below for Union's estimate of the cost of alternate fuel during an interruption over the past five years.

Alternative Fuel Mix	W11/12	W12/13	W13/14	W14/15	W15/16
Oil		70%	70%	70%	70%
Diesel		30%	30%	30%	30%
Propane					
Alternative Fuel Cost					
Oil		$ 22.13	$ 23.34	$ 13.54	$ 7.52
Diesel		$ 22.47	$ 24.93	$ 18.26	$ 13.44
Propane		$ -	$ -	$ -	$ -
				-	
Weighted cost of alternative fuel per GJ		$ 22.23	$ 23.81	$ 14.96	$ 9.30
Total Alternative Fuel Requirement on Peak day (GJ)		91,660	75,833	72,325	58,718
Cost of Alternative Fuel per Day of Interruption		$ 2,037,904	$ 1,805,954	$ 1,081,948	$ 545,791
Days of Interruption in Winter 14/15	-	2.8	5.8	15.7	2
Annual Cost of Alternative Fuel		$ 5,706,132	$ 10,474,534	$ 16,986,578	$ 1,091,582

f) The Winter 2015/2016 actual firm and interruptible design volumes for Panhandle System customers are shown in the table below. The number of customers and contract customer rate class is based on data available on March 31, 2016. Union is not able to assign general service firm and interruptible design volumes to the categories requested. Union has allocated all of the contract rate customers to the Small Industrial/Large Industrial and Power Generation categories.

W2015/2016 Actual Firm and Interruptible Design Volumes for Panhandle Customers				
Customer Type	Customers (total)	Customers Interruptible	Firm Volume	Interruptible volume
	(number)	(number)	(TJ/day)	(TJ/day)
M1 / M2	186,751	0	293.8	0.0
Small Industrial (contract)	114	63	81.1	68.5
Large Industrial (contract)	1	0	8.6	0.0
Power Generation (contract)	4	4	130.0	44.9
Total	186,870	67	513.5	113.4

g) Please see the response at Exhibit B.APPrO.2 a).

h) Please see the response at Exhibit B.FRPO.4 for C1 customer information and Exhibit B.IGUA.3 b) for M16 customer information. The aggregate firm demand of all C1 Ojibway to Dawn transportation contracts (108,761 GJ/d with varying expiration dates within 2015) and M16 transportation contracts (up to 11,760 GJ/d) is 120,521 GJ/d. Below are the aggregate scheduled quantities of all contracted C1 Ojibway to Dawn transportation contracts and M16 transportation contracts for calendar year 2015.

2015 Calendar Year – Aggregate Scheduled Quantities (GJ)		
Year	C1	M16
2015	7,886,294	1,757,687

i) If the Project is not constructed, Union will not be able to connect new general service customers (including residential customers) to the system, or allow any connection of new or expansion of existing firm volume customers. The market available for Ojibway to Dawn ex-franchise transportation capacity will remain the same.

Not having firm gas for existing and new customers would affect investment decisions on current, expanding or new facilities. It may also impact the ability of offering Compressed Natural Gas to large trucks in the area if only interruptible service was available.

The operational consequences do not impact ex-franchise customers. The Project is required for in-franchise growth and does not create firm incremental Ojibway to Dawn capacity for ex-franchise market contracting.

j)

Forecast Firm and Interruptible Customer Count and Volume				
Customer Type	Customers (total) (2015/2016)	Total Volume (Firm and Interruptible) (2015/2016)	Customers (total) (2020/2021)	Total Volume (Firm and Interruptible) (2020/2021)
	(number)	(TJ/day)	(number)	(TJ/day)
Residential Greenhouse / Agricultural Other Commercial	186,751	293.8	192,751	302.4
Small Industrial (contract)	114	149.6	141	193.2
Large Industrial (contract)	1	8.6	1	17.9
Power Generation (contract)	4	174.9	4	174.9
Total	186,870	626.9	192,897	688.5

Union does not have a detailed forecast after 2021, but assumes generic greenhouse growth of 6 TJ/day as well as 1 TJ/day of generic residential demand.

UNION GAS LIMITED

Answer to Interrogatory from
Industrial Gas Users Association ("IGUA")

Reference: Exhibit A, Tab 6, p.2.

The evidence on alternatives considered indicates that the project need is for 106 TJ/d of incremental capacity, to address forecast growth through 2021.

Exhibit A, Tab 8, p.10, line 8.

2,739 10^3m^3 of capacity is to be created by the project.

a) Please provide the amount of capacity in Tj/d to be created by the project, and specify the appropriate conversion factor for conversion of capacity measurements between Tj and 10^3m^3.

b) Assuming that the project proceeds as currently planned;

  i. How much excess capacity will be provided at the time the project goes into service?

  ii. Please confirm that Union anticipates having to further expand the Panhandle System by 2022 [Exhibit A, Tab 6, p.13, Table 6-1].

Response:

a) The amount of capacity created by the Project is approximately 106 TJ/d. The conversion factor used is the Heating Value that was in effect as of April 1, 2015, being 38.55 $GJ/10^3m^3$.

b)
  i. There is forecast to be a surplus of 48.5 TJ/d during the Winter of 2017/2018.

  ii. Confirmed assuming continued growth of the market served by the Panhandle System.

UNION GAS LIMITED

Answer to Interrogatory from
Industrial Gas Users Association ("IGUA")

Reference: Exhibit A, Tab 4, p.4, lines 5-20; Exhibit A, Tab 5, p.2; Exhibit A, Tab 5, p.16.

Union serves approximately 60 TJ/d of Panhandle System demand with gas flowing east from Ojibway. Union assumes these flows in its design day calculations for the system. The evidence indicates that Union has been able to defer reinforcement of the system based on these flows.

Union also provides C1 transportation services, on a firm "as requested" basis from Ojibway to Dawn. Union assumes in its design day calculations that these volumes do not flow.

Exhibit A, Tab 5, p.5, lines 1-4.

Union indicates that it has been able to manage physical interruptions based on C1 Ojibway to Dawn transportation activity.

a) If Union could rely on its current C1 volumes as well as its current system volumes flowing from Ojibway east in its design day calculations for the project;

i. Would there be an impact on project size/costs?

ii. Could there be an impact on project timing (i.e. could the project be deferred)?

b) Please describe Union's M16 contracts which utilize the Panhandle System (i.e. what types of customers use this service, what demand volume is contracted, how and when do those volumes flow). Could these volumes have an impact on project cost or timing if they were assumed to be flowing on design day?

Response:

a) i./ii. Assuming Union can rely on 100 TJ/d arriving at Ojibway effecitve November 1, 2017; made up of 42 TJ/d of C1 Ojibway to Dawn transportation capacity and 58 TJ/d of PEPL transportation capacity, this scenario would not be considered viable for the reasons described at Exhibit A, Tab 6, pp. 7-13. The project size and scope would then be consistent with what is described in the New Pipeline with Incremental Deliveries alternative. This new project would not meet the in-service requirement of November 1, 2017 and not meet the forecasted demand along the Panhandle System. The Project as proposed is still the most economic and viable solution.

b) Union currently has one customer with one M16 transportation contract that utilizes the Panhandle System. The M16 transportation contract allows for gas to flow from Dawn to a point on the Panhandle System during the summer (April 1 to October 31), and from a point on the Panhandle System to Dawn during the winter (November 1 to March 31). The contract does not include firm service (wholly interruptile) so flow occurs at Union's discretion as operations allow.

Period	Receipt Point	Delivery Point	Contract Demand (GJ/d)	Firm or Interruptible
Summer (April 1 to October 31)	Dawn	Panhandle *	9,622	Interruptible
Winter (November 1 to March 31)	Panhandle *	Dawn	11,760	Interruptible

* Panhandle represents the point on the Panhandle System contracted by the customer to reach their storage facilities.

This M16 transportation contract is nominated at the customer's discretion. Union cannot rely on the volumes under the M16 transportation contract flowing to Dawn on Design Day. An excerpt from the contract outlining the relevant interruptible nature of the service is shown below.

5.0 **ARTICLE 5.0 - SERVICES**

5.01 Services: Shipper agrees to the terms and conditions set out herein for Services, as follows:

a) Transportation Service:

i. Upon the Commencement Date, subject to the terms herein, Union and Shipper agree; upon the commencement of service obligations pursuant to Section 4.0 hereunder, on any day, subject to Section 9.0, and based upon a Maximum Transportation not greater than 1,764,003 GJ (1,671,952 MMBtu),

(1) From April 1 to October 31 (the "Injection Period"), the Contract Demand shall be 9,622 GJ/day (9,120 MMBtu/day) as follows:

Union agrees to accept receipt on Shipper's behalf at Dawn (TCPL) or Dawn (Facilities), on an interruptible basis, of such quantity of gas as Shipper may tender for transport to [redacted] for injection into [redacted] equal to a quantity between 1,069 GJ/day (1,013 MMBtu/day) and 14,967 GJ/day (14,186 MMBtu/day). Union shall use reasonable efforts in Union's sole discretion to transport quantities in excess of 14,967 GJ/day (14,186 MMBtu/day). Subject to the provisions herein and any adjustment required by Section 5.01 a) i. (4) and 5.01 (v) Union shall accept a cumulative total of receipts for transport to [redacted] up to 1,764,003 GJ (1,671,952 MMBtu) ("Maximum Transportation for Injection").

(2) From November 1 to March 31 (the "Withdrawal Period"), the Contract Demand shall be 11,760 GJ/day (11,146 MMBtu/day), as follows:

Union agrees to accept receipt on Shipper's behalf from the [redacted] at [redacted] on an interruptible basis of such quantity of gas as Shipper may tender for transport to Dawn (TCPL) or Dawn (Facilities) equal to a quantity between 4,276 GJ/day (4,053 MMBtu/day) and 18,175 GJ/day (17,227 MMBtu/day). Union shall use reasonable efforts in Union's sole discretion to transport quantities in excess of 18,175 GJ/day (17,227 MMBtu/day). Subject to the provisions herein and any adjustment by Section 5.01 a) i. (4) and 5.01 (v) Union shall accept a cumulative total of receipts for transport from [redacted] up to 1,764,003 GJ (1,671,952 MMBtu) ("Maximum Transportation for Withdrawal).

Please note that the information was redacted to protect the specific identity of the M16 customer.

UNION GAS LIMITED

Answer to Interrogatory from
Industrial Gas Users Association ("IGUA")

Reference: Exhibit A, Tab 3, p. 9, lines 16-20.

Union is proposing to not allocate any portion of the project costs to Rate C1 and Rate M16 customers during the remainder of the current incentive regulation plan term, on the basis that this *"better reflects how ex-franchise Rate C1 and Rate M16 customer[s] use the Panhandle System on design day"*.

Exhibit A, Tab 3, p.10, lines 4-7.

The evidence reflects an increase in costs allocated to ex-franchise rate classes of approximately $0.4 million.

a) If Union proposes not to allocate any portion of the project costs to Rates C1 and M16, then please indicate who will bear the $0.4 million in costs allocated to ex-franchise rate classes.

b) Please confirm that both C1 and M16 customers have in fact utilized the Panhandle System on peak demand days, and will continue to have the ability to do so.

Response:

a) To clarify, Union's proposal does not allocate any Project-related demand costs to ex-franchise rate classes. As provided at Exhibit A, Tab 8, Schedule 4, the allocated costs of $0.4 million to ex-franchise rate classes is solely related to the impact of Project-related income and property tax costs on other functional classifications and a shift of indirect costs. Under Union's proposal, ex-franchise rate classes will bear the $0.4 million in costs.

b) Customers holding C1 transportation capacity and M16 transportation capacity have utilized the Panhandle System on peak demand days. These customers dictate when and to what degree nominations are made under their contracts so they may or may not utilize the Panhandle System on peak demand days.

C1 customers may continue to utilize the Panhandle system on design days, should they choose to do so, as they have contracted for firm service. The M16 customer has contracted for interruptible service and can only utilize the Panhandle System on design days if nominated and authorized by Union.

UNION GAS LIMITED

Answer to Interrogatory from
Industrial Gas Users Association ("IGUA")

Reference: Exhibit A, Tab 3, p.5 – 8.

The evidence cites a risk to the return of capital invested in natural gas infrastructure as a result of the Ontario government's 5-year (2016-2020) Climate Change Action Plan.

Exhibit A, Tab 5, p.11, line 13, et seq.

The evidence presents a 20 year Panhandle Growth Forecast (2015-2034).

Exhibit A, Tab 6, p.12-13.

Union assumes a subsequent 99 Tj/d need for expansion (in the 2021-2035 period) in assessing the project against alternatives.

Exhibit A, Tab 5, p.20, lines 1-6.

The evidence refers to the potential for CNG refuelling stations along the 401 into Windsor.

Exhibit A, Tab 5, p.15, lines 14-17.

The evidence refers to the potential for customer migration to natural gas from more carbon intensive fuels.

a) What adjustments, if any, were made to the 20 year Panhandle Growth Forecast (2015-2034) in consideration of Ontario's climate change/environmental policies?

b) Please detail the risk perceived by Union related to the capacity to be added to the Panhandle System by the current project in particular, in consideration of the nature of the load to be served by the proposed facilities, the specific timing for connection of that load, and Union's assumption of a further expansion need by 2022.

c) What is Union's assessment of the potential for current and future Panhandle served customers to switch off of gas service, once connected to the system?

d) Please describe Union's ongoing initiative to assess and deploy the distribution of renewable natural gas through its existing distribution system. Please include;

   i. details on government or other external funding committed to this work; and

ii. Union's current assessment of the likelihood of success on this initiative and timing for its implementation.

e) Will Union proceed with the project if the Board approves the project, but allows only a conventional (approximately 50 years) depreciation period for the project?

Response:

a) Please see the response at Exhibit B.Staff.4 c).

b) Please see the response at Exhibit B.Staff.4 c).

c) Please see the response at Exhibit B.Staff.4 c).

d) During 2015 and early 2016, Union consulted with various Ontario Government Ministries regarding the use of renewable natural gas as part of Ontario's Cap and Trade Program.

Union continues to assess opportunties to develop sources of renewable natural gas to utlize as part of the distribution system and is awaiting further consultations with the Ontario Government under the CCAP.

i. The Ontario Government's 2016-2020 CCAP identified funding towards renewable natural gas distribution in the following sections:

a. Transportation Section 1.2:	$100 million to $155 million
b. Transportation Section 1.3:	$15 million to $20 million
c. Buildings and Homes Section 6.1:	$60 million to $100 million

The details on the intent and timing of the funding allocation are not known at this time.

ii. The likelihood of success and timing of implementation related to the procurement and distribution of renewable natural gas, will depend upon a number of factors, including a supportive regulatory framework and the timing of the Government programs that will support the development of Renewable Natural Gas (including the allocation of the Provincial Government funding); all of which are unknown at this time.

e) Please see the response at Exhibit B.CCC.4.

UNION GAS LIMITED

Answer to Interrogatory from
Industrial Gas Users Association ("IGUA")

Reference: Exhibit A, Tab 3, p.4, lines 1-10.

Union's evidence cites various economic and customer benefits of the provision of (more) natural gas to the project area.

a) Has Union done any analysis of the project specific economic and customer benefits? If so, please provide any resulting materials.

b) Has Union done any analysis of the potential project specific economic costs and customer dis-benefits from the rate increases that would result from the project? If so, please provide any resulting materials.

Response:

a) b)

Union has quantified the economic benefits under the Stage 2 (Energy cost savings) and Stage 3 (GDP benefits). These sum to $1.1 billion as noted in Exhibit A, Tab 7, p.9, Table 7-3. The calculations for each are found in Exhibit A, Tab 7, Schedules 5 and 6.

The availability of natural gas from the construction of the Project will in turn spur investment by customers (ie. greenhouse expansions, commercial and industrial development, etc.) resulting in further positive economic impact for the communities where the investment occurs. This is not quantified in Union's figures.

Union does note that by a considerable margin relative to other fuels, natural gas remains the lowest cost energy option for customers.

UNION GAS LIMITED

Answer to Interrogatory from
Industrial Gas Users Association ("IGUA")

Reference: Exhibit A, Tab 3, p.7, lines 9-11.

The evidence refers to a weighted average useful life of approximately 50 years for the project, based on Board-approved depreciation rates.

a) Please provide a table which lists the following details of Union's calculation of the approximately 50 year depreciation life for the project;

   i. the constituent asset components for the project;

   ii. the depreciation useful life used in Union's calculation for each constituent asset component listed;

   iii. Union's expectation for the actual (physical) useful life of each constituent asset component;

   iv. the current physical (as distinct from accounting) age (a range would be fine) for the same or substantially similar asset components currently in use elsewhere on Union's system.

b) Please indicate what portion of Union's regulated assets are currently fully depreciated and remain in physical service.

Response:

a)

   i. The assets or facilities associated with Project include: land, land rights, structures and improvements, mains and measuring and regulating equipment.

   ii. With the exception of land, which is not a depreciable asset, the useful life used in Union's revenue requirement calculation is 20 years.

   iii. Union's expectation for the actual useful life of each asset component is indefinite if properly maintained.

   iv. The current physical age for similar assets on Union's system include for example, the Panhandle NPS 20 Line which has been in service for 48 years and the NPS 20 Hamilton Line which has been in service for 58 years.

Please see Attachment 1 which was filed at the time of Union's 2013 rebasing proceeding (EB-2011-0210) regarding depreciation rates.

b) For the purpose of this response Union has considered Dawn to Parkway and Panhandle transmission assets only:

The estimated gross cost of Dawn Parkway transmission assets as of December 31, 2015 is $1.7 billion. Of this total, $30.5 million (or approximately 1.8%) are fully depreciated and in service.

The estimated gross cost of Panhandle transmission assets as of December 31, 2015 is $84.5 million of which $2.9 million (or approximately 3.4%) are fully depreciated and in service.

UNION GAS LIMITED
Provision for Depreciation,
Amortization and Depletion
Calendar Year Ending December 31, 2013

Line No.	Particulars ($000's)	Depreciation Using Proposed Rates	Depreciation Using 2004 Rates	Variance From 2004 Rates
		(a)	(b)	(c)
1	Total provision for depreciation and amortization before adjustments (per page 3)	198,732	213,282	(14,550)
2	Adjustments: vehicle depreciation through clearing	2,265	2,265	-
3	Provision for depreciation amortization and depletion	196,467	211,017	(14,550)

UNION GAS LIMITED
Provision for Depreciation,
Amortization and Depletion
Calendar Year Ending December 31,2013

Line No.	Particulars ($000's)	Average Plant (1)	Proposed Rate (%)	Proposed Provision	Average Plant (1)	2004 Rate (%)	Provision Using 2004 Rate	Variance From 2004 Rate
		(a)	(b)	(c)	(d)	(e)	(f)	(g)
	Intangible plant:							
1	Franchises and consents	1,321		63	1,321		63	-
2	Intangible plant - Other	6,356		122	6,356		122	-
3		7,677		185	7,677		185	-
	Local Storage Plant							
4	Structures and improvements	3,299	2.85%	94	3,299	3.30%	109	(15)
5	Gas holders - storage	4,574	2.54%	116	4,574	2.68%	123	(7)
6	Gas holders - equipment	13,250	3.54%	469	13,250	3.68%	488	(19)
7	Regulatory Overheads	1,656	30	55	1,656	30	55	-
8		22,779		734	22,779		775	(41)
	Storage:							
9	Land rights	32,062	2.10%	673	32,062	2.23%	715	(42)
10	Structures and improvements	47,792	2.50%	1,195	47,792	2.34%	1,119	76
11	Wells and lines	90,073	2.48%	2,234	90,073	2.66%	2,396	(162)
12	Compressor equipment	235,882	2.68%	6,322	235,882	3.19%	7,525	(1,203)
13	Measuring & regulating equipment	46,275	3.11%	1,439	46,275	4.30%	1,990	(551)
14	Other Storage Equipment	2,302	20.00%	460	2,302	20.00%	460	-
15	Regulatory Overheads	14,664	35	419	14,664	35	419	-
16		469,050		12,742	469,050		14,624	(1,882)
	Transmission:							
17	Land rights	37,846	1.76%	666	37,846	2.00%	757	(91)
18	Structures and improvements	54,602	2.03%	1,108	54,602	2.66%	1,452	(344)
19	Mains	1,078,915	1.98%	21,362	1,078,915	2.37%	25,570	(4,208)
20	Compressor equipment	337,120	3.23%	10,889	337,120	3.52%	11,867	(978)
21	Measuring & regulating equipment	166,532	2.60%	4,330	166,532	3.61%	6,012	(1,682)
22	Regulatory Overheads	44,785	40	1,120	44,785	40	1,120	-
23		1,719,800		39,475	1,719,800		46,778	(7,303)
	Distribution - Southern Operations:							
24	Land rights	7,571	1.65%	125	7,571	1.67%	126	(1)
25	Structures and improvements	129,114	2.22%	2,866	129,114	2.94%	3,757	(891)
26	Services - metallic	113,773	2.81%	3,197	113,773	3.69%	4,199	(1,002)
27	Services - plastic	783,833	2.51%	19,674	783,833	3.18%	24,926	(5,252)
28	Regulators	68,701	5.00%	3,439	68,701	3.30%	2,270	1,169
29	Regulator and meter installations	70,003	2.80%	1,956	70,003	3.51%	2,454	(498)
30	Mains - metallic	414,764	2.83%	11,738	414,764	2.54%	10,535	1,203
31	Mains - plastic	531,747	2.31%	12,284	531,747	2.34%	12,443	(159)
32	Measuring & regulating equipment	38,524	3.66%	1,410	38,524	4.54%	1,788	(378)
33	Meters	226,902	3.82%	8,668	226,902	3.70%	8,395	273
34	Regulatory Overheads	72,124	35	2,061	72,124	35	2,061	-
35		2,457,056		67,418	2,457,056		72,954	(5,536)

UNION GAS LIMITED
Provision for Depreciation,
Amortization and Depletion
Calendar Year Ending December 31,2013

Line No.	Particulars ($000's)	Average Plant (1)	Proposed Rate (%)	Proposed Provision	Average Plant (1)	2004 Rate (%)	Provision Using 2004 Rate	Variance From 2004 Rate
		(a)	(b)	(c)	(d)	(e)	(f)	(g)
	Distribution plant - Northern & Eastern Operations:							
1	Land rights	9,443	1.71%	161	9,443	1.68%	159	2
2	Structures & improvements	62,145	2.41%	1,498	62,145	3.13%	1,945	(447)
3	Services - metallic	96,441	3.22%	3,106	96,441	3.58%	3,452	(346)
4	Services - plastic	374,732	2.60%	9,743	374,732	3.19%	11,954	(2,211)
5	Regulators	27,294	5.00%	1,365	27,294	3.34%	912	453
6	Regulator and meter installations	29,845	2.92%	871	29,845	3.50%	1,045	(174)
7	Mains - metallic	379,283	3.02%	11,454	379,283	2.52%	9,558	1,896
8	Mains - plastic	208,318	2.38%	4,958	208,318	2.35%	4,895	63
9	Compressor equipment	-		-	-	3.34%	-	-
10	Measuring & regulating equipment	110,387	3.77%	4,162	110,387	4.63%	5,111	(949)
11	Meters	65,744	4.03%	2,649	65,744	3.67%	2,413	236
12	Regulatory Overheads	32,523	35	929	32,523	35	929	-
13		1,396,155		40,896	1,396,155		42,373	(1,477)
	General:							
14	Structures and improvements	44,184	1.92%	848	44,184	2.13%	941	(93)
15	Office furniture and equipment	6,405	6.67%	427	6,405	6.67%	427	-
16	Office equipment - computers	101,827	25.00%	25,457	101,827	25.00%	25,457	-
17	Transportation equipment	41,741	13.27%	5,539	41,741	10.07%	4,203	1,336
18	Heavy work equipment	18,649	6.92%	1,291	18,649	4.55%	849	442
19	Tools and other equipment	29,694	6.67%	1,981	29,694	6.67%	1,981	-
20	Communications equipment	15,145	6.67%	1,010	15,145	6.67%	1,010	-
21	Communications structures	225	6.67%	15	225	4.88%	11	4
22	Regulatory Overheads	7,143	10	714	7,143	10	714	-
23		265,013		37,282	265,013		35,593	1,689
24	Sub-total	6,337,530		198,732	6,337,530		213,282	(14,550)
25	Total provision for depreciation and amortization			198,732			213,282	(14,550)
26	Depreciation through clearing			2,265			2,265	-
27		6,337,530		196,467	6,337,530		211,017	(14,550)

UNION GAS LIMITED

Answer to Interrogatory from
Industrial Gas Users Association ("IGUA")

Reference: Exhibit A, Tab 8, p.7, lines 1-6; Exhibit A, Tab 8, p.8, lines 2-7.

The evidence distinguishes between the Panhandle System and the St. Clair System, in proposing to allocate costs based on design day demand for the former only.

a) Please provide a map which illustrates the two systems.

b) Please describes how each is used by Union's in-franchise and ex-franchise customers (and how that use is distinct).

Response:

a) Please see Attachment 1.

b) The Pandhandle System and the St.Clair to Dawn path are two independent pipeline systems serving two distinct and geographically separated distribution markets, these paths also serve two different import market areas. (See also see the response at Exhibit B.IGUA.12 a).

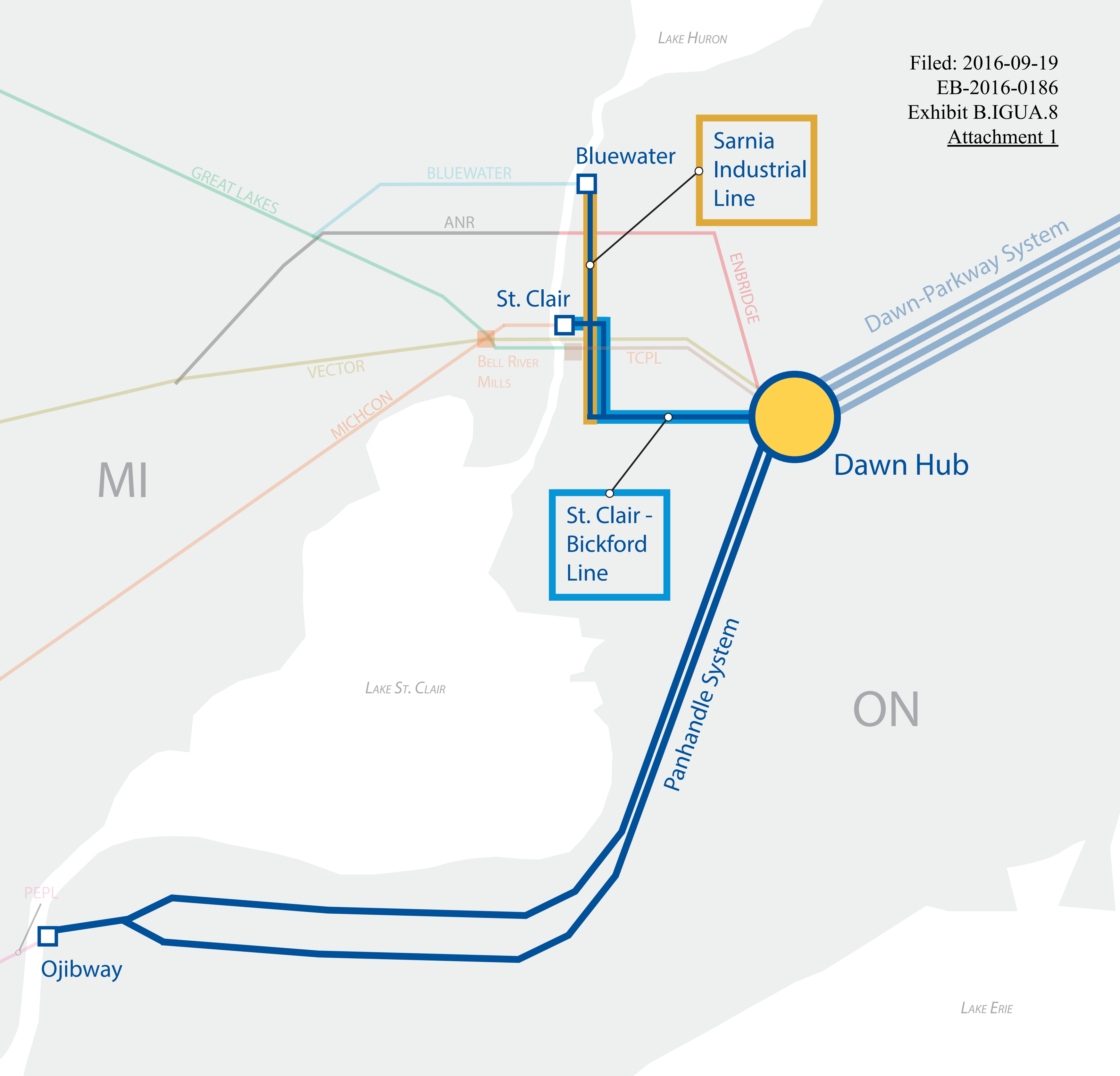
The Panhandle System represents the primary transmission pipeline asset to transport natural gas from Dawn and the Ojibway Valve Site ("Ojibway") in Windsor to high pressure distribution pipelines serving residential, commercial and industrial in-franchise markets in Chatham-Kent, Windsor, Lakeshore, Leamington, Kingsville, Essex, Amherstburg, LaSalle, and Tecumseh. As well, the Panhandle System provides transportation for contracted ex-franchise C1 Ojibway to Dawn capacity. Shippers nominate to transport gas from Ojibway to Dawn at their discretion.

The St. Clair to Dawn path is the primary transmission pipeline which transports natural gas from an interconnect with the DTE system (former MichCon) to Dawn. The DTE system connects to the St. Clair Pipelines L.P. system at the international border (St. Clair River Crossing) and then to Union's St. Clair to Bickford pipeline. Union's St. Clair to Bickford pipeline also interconnects with Union's Sarnia Industrial system. At the Bickford Compressor Station, which connects directly to the Bickford, Sombra and St. Clair storage pools, pipelines run to Dawn.[1] The natural gas arriving on the St. Clair to Dawn path serves residential, commercial and industrial in-franchise markets in the Sarnia area. The St.Clair to

[1] The Bluewater System connects Bluewater Gas Storage with Union at the international border (Bluewater Interconnect) just north of the St. Clair (MichCon) crossing and also connects into Union's Sarnia Industrial Line.

Dawn path also provides ex-franchise C1 transportation services between DTE and Dawn. These shippers nominate to transport gas from DTE to Dawn at their discretion.

Filed: 2016-09-19
EB-2016-0186
Exhibit B.IGUA.8
Attachment 1



UNION GAS LIMITED

Answer to Interrogatory from
Industrial Gas Users Association ("IGUA")

Reference: Exhibit A, Tab 6.

The evidence discusses Union's consideration of alternatives to the project.

a) Did Union's consideration that the project should be planned based on a 20 year expected useful life have any impact on consideration of alternatives? If so, what impact? If not, why not?

b) Were there any alternatives to the project considered by Union and not discussed in the cited evidence? (If so, please provide further detail on these alternatives and why they were rejected.)

c) Has Union considered "propane aeration" (the practice of mixing propane with air and injecting the resulting gas into the gas distribution system as a means of increasing the capacity of the Panhandle distribution system west of Dover? If not, why not? Would such an alternative be practical?

d) Has Union considered building additional capacity from Detroit to Windsor to serve South-Western Ontario as an alternative to the Project? If not, why not? Would such an alternative be practical?

Response:

a) No. The decision to depreciate the Project based on a 20-year useful life had no impact on the consideration of alternatives.

   The alternatives were evaluated based on their effectiveness to meet forecast peak day demand for the next five years. The decision to propose a 20-year useful life was based on the uncertainty and risks created by Cap and Trade and the Climate Change Action Plan (CCAP) in the longer term (20 to 50 years).

b) Union explored serving the entire 106 TJ/d of market growth through incremental gas supply delivered at Ojibway. This alternative would require approximately 195 TJ/d of upstream firm renewable capacity to Ojibway from PEPL and incremental facilities needed to transport this gas from Ojibway to Dawn when the Windsor area market is insufficient to consume it.

   The attempted acquisition of incremental gas supply delivered at Ojibway introduces risks such as availability, term and price risk as outlined at Exhibit A, Tab 6, pp.10-11. The purchase of 195 TJ/d of supply on the PEPL system would represent over 40% of Union's forecast 2017 daily average gas supply and would require Union to de-contract more economic supply paths, if contract terms allow.

Purchasing supply directly at Ojibway is not a reasonable option. Ojibway is not a liquid trading point and given Union's recent experience in trying to buy gas supply at Ojibway, the counterparties are limited adding to the uncertainty. Please see the response at Exhibit B.Staff.3 a).

The incremental facilities required include a new NPS 20 river crossing, additional compression at Sandwhich Compressor Station, and a 17 km NPS 20 pipeline between Ojibway and Sandwich and a rebuild of the Mersea Gate Station.

c) "Propane aeration" was not considered as an alternative although both CNG and LNG were considered as alternatives.

d) Union did contemplate increased capacity by replacing the existing NPS 12 Detroit River Crossing pipelines with a single NPS 20 pipeline. This alternative is complex requiring significant new facilities on the PEPL system upstream of the Detroit River Crossing to provide a minimum of 3,450 kPag (500 psig) at Ojibway and new facilities on Union's Panhandle System between Ojibway and consuming markets. Without new upstream facilities, a new river crossing pipeline would still only be able to deliver 2,930 KPag (425 Psig), the MOP of upstream PEPL pipeline facilities. Union explored this alternative with PEPL however the large amount of facilities required made this alternative cost prohibitive. PEPL would also require significant compressor and pipeline investment to increase the delivery pressure to Union. Even if the capital costs were reasonable for such an alternative, Union would be required to contract for long term upstream transportation (at least 10 years) from the Panhandle Field Zone to Ojibway to support the additional facilities required on the PEPL system.

UNION GAS LIMITED

Answer to Interrogatory from
Industrial Gas Users Association ("IGUA")

Reference: Exhibit A, Tab 6, p.7, footnote 2.

The evidence indicates that:

- Union's import capability limit at Ojibway is 115 Tj/d.
- 21 TJ/d of that capability is subject to an existing renewable Ojibway to Dawn contract of 21 Tj/d held by a 3rd party.
- Union currently imports 60 Tj/d of supply at Ojibway for system gas customers.

Exhibit A, Tab 6, p.9.

The evidence indicates that a total of 94 Tj/d of supply on PEPL to Ojibway (composed of the 60 Tj/d already contracted by Union at present plus an incremental 34 Tj/d) is under negotiation.

a) Please confirm that the 39 Tj/d of capacity that Union holds a right of first refusal on is included in the 94 Tj/d that the evidence indicates is under discussion with PEPL.

b) What is the current status of negotiations with PEPL, how much supply has been secured, and how much remains under discussion?

c) What is the cause of the 115 Tj/d limit on Union's import capability at Ojibway?

d) Is the 21 Tj/d of capacity held by a 3rd party as referred to in the evidence held under a C1 contract?

e) Please confirm that there is an additional 34 Tj/d (115 – 21 – 60) of import physical capacity for Union at Ojibway.

f) If Union maximized physical flows from Ojibway east on design day (i.e. physically and contractually secured the flow of 115 Tj);

   i. Would there be an impact on project size/costs?
   ii. Could there be an impact on project timing (i.e. could the project be deferred)?

g) The evidence on alternatives [Exhibit A, Tab 6, pp.11-12] describes a need for incremental Panhandle facilities even if imports from Ojibway were maximized. Are these incremental facilities required to incorporate incremental gas through Ojibway onto Union's system, or to provide the remaining capacity requirements that incremental Ojibway imports could not satisfy?

Response:

a) As a correction to Exhibit A, Tab 6, p.9, lines 11-19 the amount of non-renewable PEPL capacity is 23 TJ/d (not 21 TJ/d) which leaves 37 TJ/d (not 39 TJ/d) of PEPL capacity subject to Right Of First Refusal. Confirmed subject to the correction noted above. Union will exercise its Right of First Refusal in 2016 and 2017 in advance of the expiry of those contracts. Please see response at Exhibit B.BOMA.6 a).

b) Based on Union's unsuccessful Open Season bid response neither the 34 TJ/d or 23 TJ/d are available.

Union has been actively working to extend the 23 TJ/d contract and obtain renewal rights or right of first refusal for this capacity with PEPL but has not been successful. The terms and conditions related to the acquisition of any incremental capacity with PEPL is likely to require Union to commit to long term transportation (10 to 15 year term) sourced from less economic supply basins. Union expects no further discussions ongoing on this incremental capacity.

c) Please see the response at Exhibit B.FRPO.6 b).

d) Confirmed. Emera Energy Incorporated holds a 21 TJ/d C1 Ojibway to Dawn firm transportation contract (Contract ID C10106).

e) Due to contracting changes there is 36 TJ/d available. Please reference Exhibit B.LPMA.11a).

f) i./ii. Securing 115 TJ/d at Ojibway would require Union to contract for the entire 115 TJ/d (an incremental 57 TJ/d) of PEPL capacity or third party services at Ojibway. Incremental capacity on PEPL with firm deliveries to Ojibway is not available. In addition, 21 TJ/d of Ojibway to Dawn C1 capacity has been contracted and is not available.

In such a scenario where 115 TJ/d is available, this alternative would not be considered viable for the reasons described at Exhibit A, Tab 6, pp. 7-13. The Project size and scope would then be consistent with what is described in the New Pipeline with Incremental Deliveries alternative. This new project would not meet the in-service requirement of November 1, 2017 and not meet the forecasted demand along the Panhandle System. The Proposed Pipeline is still the most economic and viable solution.

g) The facilities are required to provide remaining capacity requirements (transportation from Dawn) that incremental Ojibway imports alone could not satisfy.

UNION GAS LIMITED

Answer to Interrogatory from
Industrial Gas Users Association ("IGUA")

Reference: Exhibit A, Tab 5, p.4.

The evidence discusses current interruptible demand on the Panhandle System, and relates that current interruptible customers, and new customers, are seeking firm service.

Exhibit A, Tab 5, p.17.

The evidence describes the reverse open season held by Union prior to determining Panhandle System expansion requirements.

a) Please provide the detailed parameters (conditions, delivery rate discounts relative to firm service, interruption limits, etc.) of the interruptible service offered by Union.

b) What was the total discount provided by Union to interruptible customers (relative to firm service) in each of the past 5 years?

c) Has Union considered any modifications to its interruptible service to make such service more valuable to its in-franchise customers?

Response:

a) Please see Attachment 1 for the Rate M4, Rate M5, Rate M7, Rate T1 and Rate T2 rate schedules. Please use the attached link to access the standard Gas Distribution Service contracts. https://www.uniongas.com/business/account-services/unionline/contracts-rates

b) Please see Attachment 2, p.1 for the estimated discount from 2012 to 2016 based on the volumetric average unit rates for Rate M4 and Rate M5, Rate M7, Rate T1 and Rate T2.

The volumetric Rate T2 interruptible average unit rate is greater than firm because the interruptible Rate T2 customers have a lower load factor than the firm service customers. The lower load factor results in a higher demand cost per unit of volume for the interruptible service as compared to firm service. If Union were to calculate the discount based on the Design Day demands (as compared to volumetrically), the interruptible Rate T2 customers receive a discount of approximately 78% of distribution and transportation revenue requirement as compared to the firm service. Please see Attachment 2, p.2 for the derivation of the firm and interruptible unit rates based on Design Day demands for Rate M4 and Rate M5, Rate M7, Rate T1 and Rate T2 based on the 2013 cost allocation study.

c) Union does a periodic review on all of its service offerings in line with cost of service/IRM proceedings. As part of the upcoming cost of service/IRM proceeding, Union will be conducting a review of its rates and services, including potential modifications to the interruptible service.

It is important to note that interruptible service is intended to be used by specific customers on Union's system. Only customers who have the alternate fuel capacity required to reduce their overall consumption to their firm contracted capacity should consider interruptible service. This requirement for interruptible service is in place to ensure that an interruption, when called, is complied with as Union relies on those interruptions to maintain the integrity of Union's system for firm distribution service customers.

Historically, not all customers have been able to meet interruptions. Frequently, the reasons for this include system malfunctions due to the age or lack of maintenance on the equipment, lack of supply of available alternate fuel on site, lack of available alternate fuel in the market, cost of alternate fuel due to the lack of supply, CO2 requirements for greenhouse operations and, in rare cases, because of a lack of desire to comply (usually driven by the increased complexity of having multi fuels). Developing an interruptible service with few days of interruption (at a higher cost) does not alleviate most of the above concerns for customers. Union also has not had requests for changes to the existing suite of interruptible services.

As a result, making an interruptible rate overly attractive relative to firm distribution service may incent customers to choose interruptible service for financial reasons when they are not genuinely prepared to comply with interruptions due to factors in or out of their control. This has been Union's experience in the past. It should also be noted that if the number of days of interruption were changed, it would mean that for those customers that take that service, they would typically be interrupted on days that are colder than if they had the base service. Because these customers are being interrupted on colder days, additional transmission capacity would still be required.

Due to the importance of compliance with interruptions, as of January 1, 2016 the Board approved a $60/GJ charge for not complying with interruptions of gas distrbution service. Although this charge is not a cost of the interruptible distribution service itself, the risk of the significant cost of non-compliance makes firm service more desirable relative to interruptible service for those customers who cannot genuinely comply with interruptions.

unionGas

FIRM INDUSTRIAL AND COMMERCIAL CONTRACT RATE

(A) Availability

Available to customers in Union's Southern Delivery Zone.

(B) Applicability

To a customer who enters into a contract for the purchase or transportation of gas for a minimum term of one year that specifies a daily contracted demand between 2 400 m³ and 60 000 m³.

(C) Rates

The identified rates (excluding gas supply charges, if applicable) represent maximum prices for service. These rates may change periodically. Multi-year prices may also be negotiated which may be higher than the identified rates.

1. Bills will be rendered monthly and shall be the total of:

(i) A Monthly Demand Charge

First	8 450 m³ of daily contracted demand	48.6123 ¢ per m³
Next	19 700 m³ of daily contracted demand	21.7965 ¢ per m³
All Over	28 150 m³ of daily contracted demand	18.3122 ¢ per m³

(ii) A Monthly Delivery Commodity Charge

First 422 250 m³ delivered per month	1.0712 ¢ per m³
Next volume equal to 15 days use of daily contracted demand	1.0712 ¢ per m³
For remainder of volumes delivered in the month	0.4387 ¢ per m³
Delivery- Price Adjustment (All Volumes)	0.0000 ¢ per m³

(iii) Gas Supply Charge (if applicable)

The gas supply charge is comprised of charges for transportation and for commodity and fuel. The applicable rates are provided in Schedule "A"

2. Overrun Charge

Authorized overrun gas is available provided that it is authorized by Union in advance. Union will not unreasonably withhold authorization. Overrun means gas taken on any day in excess of 103% of contracted daily demand. Authorized overrun will be available April 1 through October 31 and will be paid for at a Delivery Rate of 2.6694 ¢ per m³ and, if applicable, the total gas supply charge for utility sales provided in Schedule "A" per m³ for all volumes purchased.

Unauthorized overrun gas taken in any month shall be paid for at the rate of 4.4473 ¢ per m³ for the delivery and the total gas supply charge for utility sales provided in Schedule "A" per m³ for all gas supply volumes purchased.

3. Firm Minimum Annual Charge

In each contract year, the customer shall purchase from Union or pay for a minimum volume of gas or transportation services equivalent to 146 days use of firm contracted demand. Overrun gas volumes will not contribute to the minimum volume. In the event that the customer shall not take such minimum volume the customer shall pay an amount equal to the deficiency from the minimum volume times a Delivery Charge of 1.2622 ¢ per m³ and, if applicable a gas supply commodity charge provided in Schedule "A".

In the event that the contract period exceeds one year the annual minimum volume will be prorated for any part year.

unionGas

4. Interruptible Service

Union may agree, in its sole discretion, to combine a firm service with an interruptible service provided that the amount of interruptible volume to be delivered and agreed upon by Union and the customer shall be no less than 350,000 m^3 per year.

The price of all gas delivered by Union pursuant to any contract, contract amendment, or contract renewal shall be determined on the basis of the following schedules:

a) (i) Monthly Delivery Commodity Charge

Daily Contracted Demand Level (CD)	Price per m³
2 400 m³ ≤ CD < 17 000 m³	2.7347 ¢ per m³
17 000 m³ ≤ CD < 30 000 m³	2.6048 ¢ per m³
30 000 m³ ≤ CD < 50 000 m³	2.5365 ¢ per m³
50 000 m³ ≤ CD ≤ 60 000 m³	2.4886 ¢ per m³

Delivery- Price Adjustment (All Volumes)	- ¢ per m³

(ii) Days Use of Interruptible Contract Demand

The price determined under Paragraph 4(a) of "Rates" will be reduced by the amount based on the number of Days Use of Contracted Demand as scheduled below:

For 75 days use of contracted demand	0.0530 ¢ per m³
For each additional days use of contracted demand up to a maximum of 275 days, an additional discount of	0.00212 ¢ per m³

(iii) Gas Supply Charge (if applicable)

The gas supply charge is comprised of charges for transportation and for commodity and fuel.
The applicable rates are provided in Schedule "A"

(iv) Monthly Charge $669.55 per month

b) In each contract year, the customer shall take delivery from Union, or in any event pay for, if available and not accepted by the customer, a minimum volume of gas or transportation services as specified in the contract between the parties and which will not be less than 350 000 m³ per annum. Overrun volumes will not contribute to the minimum volume. In the event that the customer shall not take such minimum volume, the customer shall pay an amount equal to the deficiency from the minimum volume times a Delivery Charge of 2.9257 ¢ per m³, and if applicable, a gas supply charge provided in Schedule "A".

In the event that the contract period exceeds one year, the annual minimum volume will be prorated for any part year.

c) Overrun gas is available without penalty provided that it is authorized by Union in advance. Union will not unreasonably withhold authorization. Overrun means gas taken on any day in excess of 105% of contracted daily demand.

Unauthorized overrun gas taken in any month shall be paid for at the rate of 4.4473 ¢ per m³ for the delivery and the total gas supply charge for utility sales provided in Schedule "A" per m³ for all gas supply volumes purchased.

Unauthorized Overrun Non-Compliance Rate:
Unauthorized overrun gas taken any month during a period when a notice of interruption is in effect shall be paid for at the rate of 231.3000 ¢ per m³ ($60 per GJ) for the delivery.

(D) Delayed Payment

The monthly late payment charge equal to 1.5% per month or 18% per annum (for an approximate effective rate of 19.56% per annum) multiplied by the total of all unpaid charges will be added to the bill if full payment is not received by the late payment effective date, which is 20 days after the bill has been issued.

(E) Direct Purchase

Unless otherwise authorized by Union, customers who are delivering gas to Union under direct purchase arrangements must obligate to deliver at a point(s) specified by Union, and must acquire and maintain firm transportation on all upstream pipeline systems for all volumes. Customers initiating direct purchase arrangements, who previously received Gas Supply service, must also accept, unless otherwise authorized by Union, an assignment from Union of transportation capacity on upstream pipeline systems.

(F) Bundled Direct Purchase Delivery

Where a customer elects transportation service under this rate schedule the customer must enter into a Bundled T Gas Contract with Union for delivery of gas to Union.

Bundled T Gas Contract Rates and Gas Purchase Contract Rates are described in rate schedule R1.

INTERRUPTIBLE INDUSTRIAL AND COMMERCIAL CONTRACT RATE

(A) Availability

Available to customers in Union's Southern Delivery Zone.

(B) Applicability

To a customer who enters into a contract for the purchase or transportation of gas for a minimum term of one year that specifies a daily contracted demand between 2 400 m³ and 60 000 m³ inclusive.

(C) Rates

The identified rates (excluding gas supply charges, if applicable) represent maximum prices for service. These rates may change periodically. Multi-year prices may also be negotiated which may be higher than the identified rates.

1. Interruptible Service

The price of all gas delivered by Union pursuant to any contract, contract amendment, or contract renewal shall be determined on the basis of the following schedules:

a) (i) Monthly Delivery Commodity Charge

Daily Contracted Demand Level (CD)	Price per m³
2 400 m³ ≤ CD < 17 000 m³	2.7347 ¢ per m³
17 000 m³ ≤ CD < 30 000 m³	2.6048 ¢ per m³
30 000 m³ ≤ CD < 50 000 m³	2.5365 ¢ per m³
50 000 m³ ≤ CD ≤ 60 000 m³	2.4886 ¢ per m³
Delivery- Price Adjustment (All Volumes)	0.0000 ¢ per m³

(ii) Days Use of Interruptible Contract Demand

The price determined under Paragraph 1(a) of "Rates" will be reduced by the amount based on the number of Days

For 75 days use of contracted demand	0.0530 ¢ per m³
For each additional days use of contracted demand up to a maximum of 275 days, an additional discount of	0.00212 ¢ per m³

(iii) Gas Supply Charge (if applicable)

The gas supply charge is comprised of charges for transportation and for commodity and fuel.
The applicable rates are provided in Schedule "A"

(iv) Monthly Charge $669.55 per month

2. In each contract year, the customer shall take delivery from Union, or in any event pay for, if available and not accepted by the customer, a minimum volume of gas or transportation services as specified in the contract between the parties and which will not be less than 350 000 m³ per annum. Overrun volumes will not contribute to the minimum volume. In the event that the customer shall not take such minimum volume, the customer shall pay an amount equal to the deficiency from the minimum volume times a Delivery Charge of 2.9257 ¢ per m³, and if applicable, a gas supply charge provided in Schedule "A".

   In the event that the contract period exceeds one year, the annual minimum volume will be prorated for any part year.

3. Overrun gas is available without penalty provided that it is authorized by Union in advance. Union will not unreasonably withhold authorization. Overrun means gas taken on any day in excess of 105% of contracted daily demand.

   Unauthorized overrun gas taken in any month shall be paid for at the rate of 4.4473 ¢ per m³ for the delivery and the total gas supply charge for utility sales provided in Schedule "A" per m³ for all gas supply volumes purchased.

   Unauthorized Overrun Non-Compliance Rate:
   Unauthorized overrun gas taken any month during a period when a notice of interruption is in effect shall be paid for at the rate of 231.3000 ¢ per m³ ($60 per GJ) for the delivery.

4. Non-Interruptible Service

   Union may agree, in its sole discretion, to combine an interruptible service with a firm service in which case the amount of firm daily demand to be delivered shall be agreed upon by Union and the customer.

   a) The monthly demand charge for firm daily deliveries will be 28.5762 ¢ per m³.

   b) The commodity charge for firm service shall be the rate for firm service at Union's firm rates net of a monthly demand charge of 28.5762 ¢ per m³ of daily contracted demand and a delivery commodity price adjustment of 0.0000 ¢ per m³.

   c) The interruptible commodity charge will be established under Clause 1 of this schedule.

(D) Delayed Payment

The monthly late payment charge equal to 1.5% per month or 18% per annum (for an approximate effective rate of 19.56% per annum) multiplied by the total of all unpaid charges will be added to the bill if full payment is not received by the late payment effective date, which is 20 days after the bill has been issued.

(E) Direct Purchase

Unless otherwise authorized by Union, customers who are delivering gas to Union under direct purchase arrangements must obligate to deliver at a point(s) specified by Union, and must acquire and maintain firm transportation on all upstream pipeline systems. Customers initiating direct purchase arrangements, who previously received Gas Supply service, must also accept, unless otherwise authorized by Union, an assignment from Union of transportation capacity on upstream pipeline systems.

(F) Bundled Direct Purchase Delivery

Where a customer elects transportation service under this rate schedule the customer must enter into a Bundled T Gas Contract with Union for delivery of gas to Union.

Bundled T Gas Contract Rates and Gas Purchase Contract Rates are described in rate schedule R1.

Effective April 1, 2016 Chatham, Ontario
O.E.B. Order # EB-2016-0040

Supersedes EB-2015-0340 Rate Schedule effective January 1, 2016.

SPECIAL LARGE VOLUME
INDUSTRIAL AND COMMERCIAL CONTRACT RATE

(A) Availability

Available to customers in Union's Southern Delivery Zone.

(B) Applicability

To a Customer

a) who enters into a contract for the purchase or transportation of gas for a minimum term of one year that specifies a combined maximum daily requirement for firm, interruptible and seasonal service of at least 60 000 m³; and

b) who has site specific energy measuring equipment that will be used in determining energy balances.

(C) Rates

The identified rates (excluding gas supply charges, if applicable) represent maximum prices for service. These rates may change periodically. Multi-year prices may also be negotiated which may be higher than the identified rates.

1. Bills will be rendered monthly and shall be the total of:

(i) A Monthly Demand Charge

A negotiated Monthly Demand Charge of up to 27.0809 ¢ per m³ for each m³ of daily contracted firm demand.

(ii) A Monthly Delivery Commodity Charge

(1) A Monthly Firm Delivery Commodity Charge for all firm volumes of 0.3343 ¢ per m³ for each m³, and a Delivery - Price Adjustment of 0.0000 ¢ per m³.

(2) A Monthly Interruptible Delivery Commodity Charge for all interruptible volumes to be negotiated between Union and the customer not to exceed an annual average of 4.8305 ¢ per m³, and a Delivery - Price Adjustment of 0.0000 ¢ per m³.

(3) A Monthly Seasonal Delivery Commodity Charge for all seasonal volumes to be negotiated between Union and the customer not to exceed an annual average of 4.6031 ¢ per m³, and a Delivery - Price Adjustment of 0.0000 ¢ per m³.

(iii) Gas Supply Charge (if applicable)

The gas supply charge is comprised of charges for transportation and for commodity and fuel.
The applicable rates are provided in Schedule "A".

(iv) Overrun Gas

Overrun gas is available without penalty provided that it is authorized by Union in advance. Union will not unreasonably withhold authorization.

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Unauthorized overrun gas taken in any month shall be paid for at the M1 rate in effect at the time the overrun occurs, plus, if applicable, the total gas supply charge for utility sales provided in Schedule "A" per m³ for all the gas supply volumes purchased.

Unauthorized Overrun Non-Compliance Rate:
Unauthorized overrun gas taken any month during a period when a notice of interruption is in effect shall be paid for at the rate of 231.3000 ¢ per m³ ($60 per GJ) for the delivery.

2. In negotiating the Monthly Interruptible and Seasonal Commodity Charges, the matters to be considered include:

(a) The volume of gas for which the customer is willing to contract,

(b) The load factor of the customer's anticipated gas consumption, the pattern of annual use, and the minimum annual quantity of gas which the customer is willing to contract to take or in any event pay for,

(c) Interruptible or curtailment provisions, and

(d) Competition.

3. In each contract year, the customer shall take delivery from Union, or in any event, pay for if available and not accepted by the customer, a minimum volume of gas as specified in the contract between the parties. Overrun gas volumes will not contribute to the minimum volume.

4. The contract may provide that the Monthly Demand Charge specified in Rate Section 1 above shall not apply on all or part of the daily contracted firm demand used by the customer during the testing, commissioning, phasing in, decommissioning and phasing out of gas-using equipment for a period not to exceed one year (the "transition period"). In such event, the contract will provide for a Monthly Delivery Commodity Charge to be applied on such volume during the transition of 3.4816 ¢ per m³ and the total gas supply charge for utility sales provided in Schedule "A" per m³, if applicable.

5. Either the utility or a customer, or potential customer, may apply to the Ontario Energy Board to fix rates and other charges different from the rates and other charges specified herein if the changed rates and other charges are considered by either party to be necessary, desirable and in the public interest.

(D) Delayed Payment

The monthly late payment charge equal to 1.5% per month or 18% per annum (for an approximate effective rate of 19.56% per annum) multiplied by the total of all unpaid charges will be added to the bill if full payment is not received by the late payment effective date, which is 20 days after the bill has been issued.

(E) Direct Purchase

Unless otherwise authorized by Union, customers who are delivering gas to Union under direct purchase arrangements must obligate to deliver at a point(s) specified by Union, and must acquire and maintain firm transportation on all upstream pipeline systems. Customers initiating direct purchase arrangements, who previously received Gas Supply service, must also accept, unless otherwise authorized by Union, an assignment from Union of transportation capacity on upstream pipeline systems.

(F) Bundled Direct Purchase Delivery and Short Term Supplemental Services

Where a customer elects transportation service and/or a short term supplemental service under this rate schedule, the customer must enter into a Contract under rate schedule R1.

Effective April 1, 2016 Chatham, Ontario
O.E.B. Order # EB-2016-0040

Supersedes EB-2015-0340 Rate Schedule effective January 1, 2016.

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STORAGE AND TRANSPORTATION RATES
FOR CONTRACT CARRIAGE CUSTOMERS

(A) Availability

Available to customers in Union's Southern Delivery Zone.

(B) Applicability

To a customer:

a) whose qualifying annual transportation volume for combined firm and interruptible service is at least 2 500 000 m^3 or greater and has a daily firm contracted demand up to 140,870 m^3; and

b) who enters into a Carriage Service Contract with Union for the transportation or the storage and transportation of Gas for use at facilities located within Union's gas franchise area; and

c) who has meters with electronic recording at each Point of Consumption; and

d) who has site specific energy measuring equipment that will be used in determining energy balances; and

e) for whom Union has determined transportation and/or storage capacity is available.

For the purposes of qualifying for a rate class, the total quantities of gas consumed or expected to be consumed on the customer's contiguous property will be used, irrespective of the number of meters installed.

(C) Rates

The following rates shall be charged for all quantities contracted or handled as appropriate. The identified rates represent maximum prices for service. These rates may change periodically. Multi-year prices may also be negotiated, which may be higher than the identified rates.

STORAGE SERVICE:

	Demand Charge Rate/GJ/mo	Commodity Charge Rate/GJ	For Customers Providing Their Own Compressor Fuel: Fuel Ratio	For Customers Providing Their Own Compressor Fuel: Commodity Charge Rate/GJ
a) Annual Firm Storage Space Applied to contracted Maximum Annual Storage Space	$0.011			
b) Annual Firm Injection/Withdrawal Right: Applied to the contracted Maximum Annual Firm Injection/Withdrawal Right				
Union provides deliverability Inventory	$1.531			
Customer provides deliverability Inventory (4)	$1.195			
c) Incremental Firm Injection Right: Applied to the contracted Maximum Incremental Firm Injection Right	$1.195			
d) Annual Interruptible Withdrawal Right: Applied to the contracted Maximum Annual Interruptible Withdrawal Right	$1.195			

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	Demand Charge Rate/GJ/mo	Commodity Charge Rate/GJ	For Customers Providing Their Own Compressor Fuel: Fuel Ratio	For Customers Providing Their Own Compressor Fuel: Commodity Charge Rate/GJ
e) Withdrawal Commodity Paid on all quantities withdrawn from storage up to the Maximum Daily Storage Withdrawal Quantity		$0.026	0.403%	$0.008
f) Injection Commodity Paid on all quantities injected into storage up to the Maximum Daily Storage Injection Quantity		$0.026	0.403%	$0.008
g) Short Term Storage / Balancing Service Maximum		$6.000		

Notes:

1. Demand charges for Annual Services are paid monthly during the term of the contract for not less than one year unless Union, in its sole discretion, accepts a term of less than one year. Demand charges apply whether Union or the customer provides the fuel.

2. Annual Firm Injection Rights are equal to 100% of their respective Annual Firm Withdrawal Rights. Injection Rights in excess of the Annual Firm Injection Rights will be charged at the Incremental Firm Injection Right.

3. Annual Firm Storage Space

The maximum storage space available to a customer at the rates specified herein is determined by one of the following storage allocation methodologies:

3.1 Aggregate Excess

Aggregate excess is the difference between the customer's total 151-day winter consumption (November 1 through March 31) and the customer's average daily consumption (Daily Contract Quantity) for the contract year multiplied by 151 days of winter. This calculation will be done using two years of historical data (with 25% weighting for each year) and one year of forecast data (with 50% weighting). If a customer is new, or an existing customer is undergoing a significant change in operations, the allocation will be based on forecast consumption only, as negotiated between Union and the customer. Once sufficient historical information is available for the customer, the standard calculation will be done. At each contract renewal, the aggregate excess calculation will be performed to set the new space allocation.

3.2 Obligated daily contract quantity multiple of 15

Obligated daily contract quantity is the firm daily quantity of gas which the customer must deliver to Union. The 15 x obligated daily contract quantity calculation will be done using the daily contract quantity for the upcoming contract year. At each contract renewal, the 15 x obligated daily contract quantity calculation will be performed to set the new space allocation.

Customers may contract for less than their maximum entitlement of firm storage space.

4. Annual Injection/Withdrawal Right

   The maximum level of deliverability available to a customer at the rates specified herein is determined by one of the following methodologies:

   4.1 The greater of obligated daily contract quantity or firm daily contract demand less obligated daily contract quantity.

   Customers may contract for less than their maximum entitlement of deliverability. A customer may contract up to this maximum entitlement with a combination of firm and interruptible deliverability as specified in Section (C) Storage Service.

5. Additional storage space or deliverability, in excess of the allocated entitlements per Notes 3 and 4, may be available at market prices.

6. Storage Space and Withdrawal Rights are not assignable to any other party without the prior written consent of Union.

7. Deliverability Inventory being defined as 20% of annual storage space.

8. Short Term Storage / Balancing Service is:
   - i) a combined space and interruptible deliverability service for short-term or off-peak storage in Union's storage facilities, or
   - ii) short-term firm deliverability, or
   - iii) a component of an operational balancing service offered.

   In negotiating the rate to be charged for service, the matters that are to be considered include:
   - i) The minimum amount of storage service to which a customer is willing to commit,
   - ii) Whether the customer is contracting for firm or interruptible service during Union's peak or non-peak periods,
   - iii) Utilization of facilities, and
   - iv) Competition

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TRANSPORTATION CHARGES:

	Demand Charge Rate/m^3/mo	Commodity Charge Rate/m^3	For Customers Providing Their Own Compressor Fuel: Fuel Ratio (5)	For Customers Providing Their Own Compressor Fuel: Commodity Charge Rate/m^3
a) Annual Firm Transportation Demand Applied to the Firm Daily Contract Demand				
First 28,150 m^3 per month	33.4147 ¢			
Next 112,720 m^3 per month	23.0858 ¢			
b) Firm Transportation Commodity Paid on all firm quantities redelivered to the customer's Point(s) of Consumption Commodity Charge (All volumes)		0.1276 ¢	0.303%	0.0760 ¢
c) Interruptible Transportation Commodity Paid on all interruptible quantities redelivered to the customer's Point(s) of Consumption Maximum		4.8305 ¢	0.303%	4.7789 ¢

Notes:

1. All demand charges are paid monthly during the term of the contract for not less than one year unless Union, at its sole discretion, accepts a term of less than one year. Demand charges apply whether Union or the customer provides the fuel.

2. In negotiating the rate to be charged for the transportation of gas under Interruptible Transportation, the matters that are to be considered include:

   a) The amount of the interruptible transportation for which customer is willing to contract,

   b) The anticipated load factor for the interruptible transportation quantities,

   c) Interruptible or curtailment provisions, and

   d) Competition.

3. In each contract year, the customer shall pay for a Minimum Interruptible Transportation Activity level as specified in the Contract. Overrun activity will not contribute to the minimum activity level.

4. Transportation fuel ratios do not apply to customers served from dedicated facilities directly connected to third party transmission systems with custody transfer metering at the interconnect.

5. Either Union or a customer, or potential customer, may apply to the Ontario Energy Board to fix rates and other charges different from the rates and other charges specified herein if the changed rates and other charges are considered by either party to be necessary, desirable and in the public interest.

SUPPLEMENTAL CHARGES:

Rates for supplemental services are provided in Schedule “A”.

Notes:

1. All demand charges are paid monthly during the term of the contract for not less than one year unless Union, in its sole discretion, accepts a term of less than one year.

OVERRUN SERVICE:

1. Annual Storage Space

Authorized

Authorized Overrun is provided as Storage/Balancing Service. It is payable on all quantities on any Day in excess of the customer’s contracted Maximum Storage Space. Overrun will be authorized by Union at is sole discretion. Storage Space Overrun equal to the customer’s firm deliveries from TCPL: less the customer’s Firm Daily Contract Demand, all multiplied by the Days of Interruption called during the period of November 1 to March 31, will be automatically authorized until the following July 1.

Unauthorized

If in any month, the customer has gas in storage in excess of the contracted Maximum Storage Space, and which has not been authorized by Union or provided for under a short term supplemental storage service, such an event will constitute an occurrence of Unauthorized Overrun. The Unauthorized Overrun rate will be $6.000 per GJ applied to the greatest excess for each occurrence.

If on any Day the gas storage balance for the account of the customer is less than zero, the Unauthorized Overrun charge will apply for each GJ of gas below a zero inventory level and this amount of gas shall be deemed not to have been withdrawn from storage. The gas shall be deemed to have been sold to the customer at the highest spot price at Dawn in the month of occurrence and the month following occurrence as identified in the Canadian Gas Price Reporter and shall not be less than Union’s approved weighted average cost of gas If the customer has contracted to provide its own deliverability inventory, the zero inventory level shall be deemed to mean twenty percent (20%) of the Annual Firm Storage Space.

2. Injection, Withdrawals and Transportation

Authorized

The following Overrun rates are applied to any quantities transported, injected or withdrawn in excess of 103% of the Contract parameters. Overrun will be authorized by Union at its sole discretion.

Automatic authorization of Injection Overrun will be given during all Days a customer has been interrupted.

	Union Providing Fuel	For Customers Providing Their Own Compressor Fuel Firm or Interruptible Service	
	Firm or Interruptible Service	Fuel Ratio	Commodity Charge
Storage Injections	\$0.096/GJ	0.860%	\$0.058/GJ
Storage Withdrawals	\$0.096/GJ	0.860%	\$0.058/GJ
Transportation	1.2262 ¢/m³	0.303%	1.1746 ¢/m³

Unauthorized

For all quantities on any Day in excess of 103% of the customer's contractual rights, for which authorization has not been received, the customer will be charged 4.4473 ¢ per m³ or \$1.146 per GJ, as appropriate.

Unauthorized Overrun Non-Compliance Rate:
Unauthorized overrun gas taken any month during a period when a notice of interruption is in effect shall be paid for at the rate of 231.3000 ¢ per m³ (\$60 per GJ) for the transportation service.

3. Storage / Balancing Service

Authorized

The following Overrun rates are applied to any quantities stored in excess of the Contract parameters. Overrun will be authorized by Union Gas at its sole discretion.

	Firm Service Rate/GJ
Space	\$6.000
Injection / Withdrawal Maximum	\$6.000

OTHER SERVICES & CHARGES:

1. **Monthly Charge**

In addition to the rates and charges described previously for each Point of Consumption, a Monthly Charge shall be applied as follows:

Monthly Charge	$1,924.04

2. **Diversion of Gas**

The availability of the right to divert gas will be based on Union's ability to accommodate the diversion. The price to be charged for the right to divert shall be determined through negotiation.

3. **Delivery Obligations**

Unless otherwise authorized by Union, all other customers who are delivering gas to Union under direct purchase arrangements must obligate to deliver at a point(s) specified by Union and must acquire and maintain firm transportation on all upstream pipeline systems. Customers initiating direct purchase arrangements, who previously received Gas Supply service, must also accept, unless otherwise authorized by Union, an assignment from Union of transportation capacity on upstream pipeline systems.

4. **Additional Service Information**

Additional information on Union's T1 service offering can be found at:
www.uniongas.com/business/account-services/unionline/contracts-rates/T1-service-features

The additional information consists of, but is not limited to, the following:

i. Storage space and deliverability entitlement;
ii. The determination of gas supply receipt points and delivery obligations;
iii. The nomination schedule;
iv. The management of multiple redelivery points by a common fuel manager; and
v. The availability of supplemental transactional services including title transfers.

5. **Parkway Delivery Commitment Incentive ("PDCI")**

For all Parkway Delivery Obligation ("PDO") volumes delivered to Union.	Rate/GJ
PDCI Effective November 1, 2016	$(0.134)

(D) Delayed Payment

The monthly late payment charge equal to 1.5% per month or 18% per annum (for an approximate effective rate of 19.56% per annum) multiplied by the total of all unpaid charges will be added to the bill if full payment is not received by the late payment effective date, which is 20 days after the bill has been issued.

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STORAGE AND TRANSPORTATION RATES
FOR CONTRACT CARRIAGE CUSTOMERS

(A) Availability

Available to customers in Union's Southern Delivery Zone.

(B) Applicability

To a customer:

a) who has a daily firm contracted demand of at least 140 870 m^3. Firm and/or interruptible daily contracted demand of less than 140,870 m^3 cannot be combined for the purposes of qualifying for this rate class; and

b) who enters into a Carriage Service Contract with Union for the transportation or the storage and transportation of Gas for use at facilities located within Union's gas franchise area; and

c) who has meters with electronic recording at each Point of Consumption; and

d) who has site specific energy measuring equipment that will be used in determining energy balances; and

e) for whom Union has determined transportation and/or storage capacity is available.

For the purposes of qualifying for a rate class, the total quantities of gas consumed or expected to be consumed on the customer's contiguous property will be used, irrespective of the number of meters installed.

(C) Rates

The following rates shall be charged for all quantities contracted or handled as appropriate. The identified rates represent maximum prices for service. These rates may change periodically. Multi-year prices may also be negotiated, which may be higher than the identified rates.

STORAGE SERVICE:

			For Customers Providing Their Own Compressor Fuel	
	Demand Charge Rate/GJ/mo	Commodity Charge Rate/GJ	Fuel Ratio	Commodity Charge Rate/GJ
a) Annual Firm Storage Space				
Applied to contracted Maximum				
Annual Storage Space	$0.011			
b) Annual Firm Injection/Withdrawal Right:				
Applied to the contracted Maximum				
Annual Firm Injection/Withdrawal Right				
Union provides deliverability Inventory	$1.531			
Customer provides deliverability Inventory (4)	$1.195			
c) Incremental Firm Injection Right:				
Applied to the contracted Maximum				
Incremental Firm Injection Right	$1.195			
d) Annual Interruptible Withdrawal Right:				
Applied to the contracted Maximum				
Annual Interruptible Withdrawal Right	$1.195			

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	Demand Charge Rate/GJ/mo	Commodity Charge Rate/GJ	For Customers Providing Their Own Compressor Fuel: Fuel Ratio	For Customers Providing Their Own Compressor Fuel: Commodity Charge Rate/GJ
e) Withdrawal Commodity Paid on all quantities withdrawn from storage up to the Maximum Daily Storage Withdrawal Quantity		$0.026	0.403%	$0.008
f) Injection Commodity Paid on all quantities injected into storage up to the Maximum Daily Storage Injection Quantity		$0.026	0.403%	$0.008
g) Short Term Storage / Balancing Service Maximum		$6.000		

Notes:

1. Demand charges for Annual Services are paid monthly during the term of the contract for not less than one year unless Union, in its sole discretion, accepts a term of less than one year. Demand charges apply whether Union or the customer provides the fuel.

2. Annual Firm Injection Rights are equal to 100% of their respective Annual Firm Withdrawal Rights. Injection Rights in excess of the Annual Firm Injection Rights will be charged at the Incremental Firm Injection Right.

3. Annual Firm Storage Space

The maximum storage space available to a customer at the rates specified herein is determined by one of the following storage allocation methodologies:

3.1 Aggregate Excess

Aggregate excess is the difference between the customer's total 151-day winter consumption (November 1 through March 31) and the customer's average daily consumption (Daily Contract Quantity) for the contract year multiplied by 151 days of winter. This calculation will be done using two years of historical data (with 25% weighting for each year) and one year of forecast data (with 50% weighting). If a customer is new, or an existing customer is undergoing a significant change in operations, the allocation will be based on forecast consumption only, as negotiated between Union and the customer. Once sufficient historical information is available for the customer, the standard calculation will be done. At each contract renewal, the aggregate excess calculation will be performed to set the new space allocation.

3.2 Obligated daily contract quantity multiple of 15
Obligated daily contract quantity is the firm daily quantity of gas which the customer must deliver to Union. The 15 x obligated daily contract quantity calculation will be done using the daily contract quantity for the upcoming contract year. At each contract renewal, the 15 x obligated daily contract quantity calculation will be performed to set the new space allocation.

3.3 For new, large (daily firm transportation demand requirements in excess of 1,200,000 m^3/day) gas fired power generation customers, storage space is determined by peak hourly consumption x 24 x 4 days. Should the customer elect firm deliverability less than their maximum entitlement (see Note 4.2), the maximum storage space available at the rates specified herein is 10 x firm storage deliverability contracted, not to exceed peak hourly consumption x 24 x 4 days.

Customers may contract for less than their maximum entitlement of firm storage space.

4. Annual Injection/Withdrawal Right

   The maximum level of deliverability available to a customer at the rates specified herein is determined by one of the following methodologies:

   4.1 The greater of obligated daily contract quantity or firm daily contract demand less obligated daily contract quantity.

   4.2 For new, large (daily firm transportation demand requirements in excess of 1,200,000 m^3/day) gas fired power generation customers, the maximum entitlement of firm storage deliverability is 24 times the customer's peak hourly consumption, with 1.2% firm deliverability available at the rates specified herein.

   Customers may contract for less than their maximum entitlement of deliverability. A customer may contract up to this maximum entitlement with a combination of firm and interruptible deliverability as specified in Section (C) Storage Service.

5. Additional storage space or deliverability, in excess of the allocated entitlements per Notes 3 and 4, may be available at market prices.

6. Storage Space and Withdrawal Rights are not assignable to any other party without the prior written consent of Union.

7. Deliverability Inventory being defined as 20% of annual storage space.

8. Short Term Storage / Balancing Service is:
   i) a combined space and interruptible deliverability service for short-term or off-peak storage in Union's storage facilities, or
   ii) short-term firm deliverability, or
   iii) a component of an operational balancing service offered.

   In negotiating the rate to be charged for service, the matters that are to be considered include:
   i) The minimum amount of storage service to which a customer is willing to commit,
   ii) Whether the customer is contracting for firm or interruptible service during Union's peak or non-peak periods,
   iii) Utilization of facilities, and
   iv) Competition

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TRANSPORTATION CHARGES:

	Demand Charge Rate/m^3/mo	Commodity Charge Rate/m^3	For Customers Providing Their Own Compressor Fuel: Fuel Ratio (5) (6)	For Customers Providing Their Own Compressor Fuel: Commodity Charge Rate/m^3
a) Annual Firm Transportation Demand Applied to the Firm Daily Contract Demand				
First 140,870 m^3 per month	21.8329 ¢			
All over 140,870 m^3 per month	11.5485 ¢			
b) Firm Transportation Commodity Paid on all firm quantities redelivered to the customer's Point(s) of Consumption Commodity Charge (All volumes)		0.0561 ¢	0.282%	0.0082 ¢
c) Interruptible Transportation Commodity Paid on all interruptible quantities redelivered to the customer's Point(s) of Consumption Maximum		4.8305 ¢	0.282%	4.7826 ¢

Notes:

1. All demand charges are paid monthly during the term of the contract for not less than one year unless Union, at its sole discretion, accepts a term of less than one year. Demand charges apply whether Union or the customer provides the fuel.

2. Effective January 1, 2007, new customers and existing customers with incremental daily firm demand requirements in excess of 1,200,000 m^3/day and who are directly connected to i) the Dawn-Trafalgar transmission system in close proximity to Parkway or ii) a third party pipeline, have the option to pay for service using a Billing Contract Demand. The Billing Contract Demand shall be determined by Union such that the annual revenues over the term of the contract will recover the invested capital, return on capital and operating and maintenance costs associated with the dedicated service in accordance with Union's system expansion policy. The firm transportation demand charge will be applied to the Billing Contract Demand. For customers choosing the Billing Contract Demand option, the authorized transportation overrun rate will apply to all volumes in excess of the Billing Contract Demand but less than the daily firm demand requirement.

3. In negotiating the rate to be charged for the transportation of gas under Interruptible Transportation, the matters that are to be considered include:

   a) The amount of the interruptible transportation for which customer is willing to contract,

   b) The anticipated load factor for the interruptible transportation quantities,

   c) Interruptible or curtailment provisions, and

   d) Competition.

4. In each contract year, the customer shall pay for a Minimum Interruptible Transportation Activity level as specified in the Contract. Overrun activity will not contribute to the minimum activity level.

5. Transportation fuel ratios do not apply to customers served from dedicated facilities directly connected to third party transmission systems with custody transfer metering at the interconnect.

6. Firm transportation fuel ratio does not apply to new customers or existing customers with incremental daily firm demand requirements in excess of 1,200,000 m^3/day that contract for M12 Dawn to Parkway transportation service equivalent to 100% of their daily firm demand requirement. If a customer with a daily firm demand requirement in excess of 1,200,000 m^3/day contracts for M12 Dawn to Parkway transportation service at less than 100% of their firm daily demand requirement, the firm transportation fuel ratio will be applicable to daily volumes not transported under the M12 transportation contract.

7. Either Union or a customer, or potential customer, may apply to the Ontario Energy Board to fix rates and other charges different from the rates and other charges specified herein if the changed rates and other charges are considered by either party to be necessary, desirable and in the public interest.

SUPPLEMENTAL CHARGES:

Rates for supplemental services are provided in Schedule “A”.

Notes:

1. All demand charges are paid monthly during the term of the contract for not less than one year unless Union, in its sole discretion, accepts a term of less than one year.

OVERRUN SERVICE:

1. Annual Storage Space

Authorized

Authorized Overrun is provided as Storage/Balancing Service. It is payable on all quantities on any Day in excess of the customer’s contracted Maximum Storage Space. Overrun will be authorized by Union at is sole discretion. Storage Space Overrun equal to the customer’s firm deliveries from TCPL: less the customer’s Firm Daily Contract Demand, all multiplied by the Days of Interruption called during the period of November 1 to March 31, will be automatically authorized until the following July 1.

Unauthorized

If in any month, the customer has gas in storage in excess of the contracted Maximum Storage Space, and which has not been authorized by Union or provided for under a short term supplemental storage service, such an event will constitute an occurrence of Unauthorized Overrun. The Unauthorized Overrun rate will be $6.000 per GJ applied to the greatest excess for each occurrence.

If on any Day the gas storage balance for the account of the customer is less than zero, the Unauthorized Overrun charge will apply for each GJ of gas below a zero inventory level and this amount of gas shall be deemed not to have been withdrawn from storage. The gas shall be deemed to have been sold to the customer at the highest spot price at Dawn in the month of occurrence and the month following occurrence as identified in the Canadian Gas Price Reporter and shall not be less than Union’s approved weighted average cost of gas If the customer has contracted to provide its own deliverability inventory, the zero inventory level shall be deemed to mean twenty percent (20%) of the Annual Firm Storage Space.

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2. Injection, Withdrawals and Transportation

Authorized

The following Overrun rates are applied to any quantities transported, injected or withdrawn in excess of 103% of the Contract parameters. Overrun will be authorized by Union at its sole discretion.

Automatic authorization of Injection Overrun will be given during all Days a customer has been interrupted.

	Union Providing Fuel	For Customers Providing Their Own Compressor Fuel Firm or Interruptible Service	
	Firm or Interruptible Service	Fuel Ratio	Commodity Charge
Storage Injections	\$0.096/GJ	0.860%	\$0.058/GJ
Storage Withdrawals	\$0.096/GJ	0.860%	\$0.058/GJ
Transportation	0.7739 ¢/m³	0.282%	0.7260 ¢/m³

Unauthorized

For all quantities on any Day in excess of 103% of the customer's contractual rights, for which authorization has not been received, the customer will be charged 4.4473 ¢ per m³ or \$1.146 per GJ, as appropriate.

Unauthorized Overrun Non-Compliance Rate:
Unauthorized overrun gas taken any month during a period when a notice of interruption is in effect shall be paid for at the rate of 231.3000 ¢ per m³ (\$60 per GJ) for the transportation service.

3. Storage / Balancing Service

Authorized

The following Overrun rates are applied to any quantities stored in excess of the Contract parameters. Overrun will be authorized by Union Gas at its sole discretion.

	Firm Service Rate/GJ
Space	\$6.000
Injection / Withdrawal Maximum	\$6.000

OTHER SERVICES & CHARGES:

1. **Monthly Charge**

In addition to the rates and charges described previously for each Point of Consumption, a Monthly Charge shall be applied as follows:

Monthly Charge	$5,751.12

2. **Diversion of Gas**

The availability of the right to divert gas will be based on Union's ability to accommodate the diversion. The price to be charged for the right to divert shall be determined through negotiation.

3. **Delivery Obligations**

Effective January 1, 2007, new customers and existing customers with incremental daily firm demand requirements in excess of 1,200,000 m^3/day who are delivering gas to Union under direct purchase arrangements may be entitled to non-obligated deliveries. The delivery options available to customers are detailed at www.uniongas.com/business/account-services/unionline/contracts-rates/T1-service-features

Unless otherwise authorized by Union, all other customers who are delivering gas to Union under direct purchase arrangements must obligate to deliver at a point(s) specified by Union and must acquire and maintain firm transportation on all upstream pipeline systems. Customers initiating direct purchase arrangements, who previously received Gas Supply service, must also accept, unless otherwise authorized by Union, an assignment from Union of transportation capacity on upstream pipeline systems.

4. **Nominations**

Effective January 1, 2007, new customers and existing customers with incremental daily firm demand requirements in excess of 1,200,000 m^3/day who have non obligated deliveries may contract to use Union's 5 additional nomination windows (13 in total) for the purposes of delivering gas to Union. These windows are in addition to the standard NAESB and TCPL STS nomination windows. Customers taking the additional nomination window service will pay an additional monthly demand charge of $0.068/GJ/day/month multiplied by the non-obligated daily contract quantity.

5. **Additional Service Information**

Additional information on Union's T2 service offering can be found at:
www.uniongas.com/business/account-services/unionline/contracts-rates/T1-service-features

The additional information consists of, but is not limited to, the following:

i. Storage space and deliverability entitlement;
ii. The determination of gas supply receipt points and delivery obligations;
iii. The nomination schedule;
iv. The management of multiple redelivery points by a common fuel manager; and
v. The availability of supplemental transactional services including title transfers.

6. **Parkway Delivery Commitment Incentive ("PDCI")**

For all Parkway Delivery Obligation ("PDO") volumes delivered to Union.	Rate/GJ
PDCI Effective November 1, 2016	$(0.134)

(D) Delayed Payment

The monthly late payment charge equal to 1.5% per month or 18% per annum (for an approximate effective rate of 19.56% per annum) multiplied by the total of all unpaid charges will be added to the bill if full payment is not received by the late payment effective date, which is 20 days after the bill has been issued.

UNION GAS LIMITED
Firm and Interruptible Average Unit Rates by Rate Class

Line No.	Particulars	Firm Service Revenue ($000's)	Firm Service Volume (10^3m^3)	Firm Service Unit Rate (cents/m^3)	Interruptible Service Revenue ($000's)	Interruptible Service Volume (10^3m^3)	Interruptible Service Unit Rate (cents/m^3)	Average Firm Unit Rate (cents/m^3)	Average Interruptible Unit Rate (cents/m^3)	Estimated Interruptible Rate Discount (cents/m^3)	Estimated Interruptible Rate Discount (%)
		(a)	(b)	(c) = (a/b)	(d)	(e)	(f) = (d/e)	(g)	(h)	(i) = (h-g)	(j) = (i/g)
	Rate M4 & Rate M5 (1)										
1	2016	12,795	362,270	3.5318	12,653	466,611	2.7116	3.5318	2.7116	(0.8201)	-23.2%
2	2015	12,629	381,593	3.3096	12,847	495,144	2.5945	3.3096	2.5945	(0.7151)	-21.6%
3	2014	12,445	404,678	3.0753	12,920	517,747	2.4954	3.0753	2.4954	(0.5799)	-18.9%
4	2013	12,149	404,678	3.0022	12,586	517,747	2.4309	3.0022	2.4309	(0.5713)	-19.0%
5	2012	12,251	462,743	2.6476	6,573	307,765	2.1356	2.6476	2.1356	(0.5120)	-19.3%
	Rate M7										
6	2016	4,313	122,354	3.5254	55	3,997	1.3761	3.5254	1.3761	(2.1493)	-61.0%
7	2015	4,223	135,227	3.1230	58	4,418	1.3118	3.1230	1.3118	(1.8113)	-58.0%
8	2014	4,125	142,488	2.8953	60	4,655	1.2819	2.8953	1.2819	(1.6134)	-55.7%
9	2013	4,013	142,488	2.8167	58	4,655	1.2367	2.8167	1.2367	(1.5800)	-56.1%
10	2012	5,865	258,271	2.2707	103	10,930	0.9402	2.2707	0.9402	(1.3305)	-58.6%
	Rate T1 (2) (3)										
11	2016	7,509	457,370	1.6417	781	59,595	1.3103	1.6417	1.3103	(0.3314)	-20.2%
12	2015	7,365	468,507	1.5721	785	61,046	1.2862	1.5721	1.2862	(0.2858)	-18.2%
13	2014	7,245	485,700	1.4916	784	63,286	1.2390	1.4916	1.2390	(0.2526)	-16.9%
14	2013	7,194	485,700	1.4812	781	63,286	1.2341	1.4812	1.2341	(0.2471)	-16.7%
15	2012	35,333	4,539,481	0.7783	2,235	255,288	0.8755	0.7783	0.8755	0.0972	12.5%
	Rate T2 (2) (3)										
16	2016	30,560	4,295,031	0.7115	3,367	340,506	0.9889	0.7115	0.9889	0.2774	39.0%
17	2015	29,291	4,384,983	0.6680	3,397	347,637	0.9771	0.6680	0.9771	0.3091	46.3%
18	2014	28,526	4,521,813	0.6309	3,399	358,485	0.9481	0.6309	0.9481	0.3173	50.3%
19	2013	28,288	4,521,813	0.6256	3,387	358,485	0.9447	0.6256	0.9447	0.3191	51.0%

Notes:
(1) Based on firm Rate M4 and interruptible Rate M5.
(2) Rate T1 includes Rate T2 customers prior to 2013.
(3) Excludes monthly customer charge.

UNION GAS LIMITED
Estimated Firm and Interruptible Demand Unit Rates
Based on 2013 Board-Approved Transmission and Distribution Demand Revenue Requirement and Design Day Demands

		Firm Service			Interruptible Service			Estimated Interruptible Discount	
Line No.	Particulars	Revenue (1) Requirement ($000's)	Design Day Demand ($10^3m^3/d$)	Unit Rate (cents/m^3)	Revenue (1) Requirement ($000's)	Design Day Demand ($10^3m^3/d$)	Unit Rate (cents/m^3)	(cents/m^3)	(%)
		(a)	(b)	(c) = (a/b*100)	(d)	(e)	(f) = (d/e*100)	(g) = (f-c)	(h) = (g/c)
1	Rate M4 & Rate M5	10,513	3,113	337.70	10,374	3,801	272.97	(64.73)	-19.2%
2	Rate M7	3,540	1,128	313.88	40	152	26.31	(287.58)	-91.6%
3	Rate T1	8,199	2,654	308.88	355	390	90.88	(218.01)	-70.6%
4	Rate T2	25,484	19,541	130.42	1,590	5,498	28.92	(101.50)	-77.8%

Notes:
(1) 2013 Board-approved transmission and distribution demand revenue requirement, including system integrity.

UNION GAS LIMITED

Answer to Interrogatory from
Industrial Gas Users Association ("IGUA")

Reference: Exhibit A, Tab 8, p.15, lines 8-10.

The evidence describes the C1 demand flows on Design Day, if any, from Ojibway to Dawn.

Exhibit A, Tab 5, p.5, lines 1-4.

The evidence describes how Union has been able to manage (i.e. limit) physical interruptions on the Panhandle system as a result of C1 Ojibway to Dawn transportation activity.

a) Are there alternative paths available to move gas from St. Clair to Dawn, other than on Union's Panhandle system?

b) Has Union considered contracting space on any such alternative paths, and moving C1 customers' gas on such alternative paths, and thus freeing up capacity at Ojibway into Union's franchise, as an alternative, in whole or in part, to the proposed project? If not, why not?

c) Would such an alternative be practical, and if not, why not?

Response:

a) The St. Clair to Dawn path is independent from the Panhandle System. The Ojibway to Dawn C1 transportation service is provided using the Panhandle System.

b) There is no direct physical connection between the St. Clair to Dawn path and the Panhandle System at Dawn except within the Dawn Yard. There are no alternative paths to move the contracted firm C1 transportation capacity from Ojibway to Dawn. C1 contract holders specifically contract the path they desire on Union based on their upstream or connecting capabilities. For example, a C1 customer who holds transportation capacity to Ojibway on PEPL and wants to get to Dawn will contract for that path on Union, while a customer who holds capacity to DTE/St Clair and wants to get to Dawn will contract for C1 transportation on Union on the St. Clair to Dawn path to get to Dawn.

c) Please see part b) above.

UNION GAS LIMITED

Answer to Interrogatory from
Industrial Gas Users Association ("IGUA")

Reference: The Leamington area greenhouses have also been publicly advocating electricity system reinforcement to provide them with the ability to light their greenhouses and thus enhance their growing operations.

a) How would the cost of heating Leamington area greenhouses with electricity compare to the cost of the Panhandle expansion proposed?

b) How much carbon emission would be avoided if Leamington area greenhouses were electrically heated rather than gas heated?

c) How much carbon emission will be avoided by heating Leamington area greenhouses with natural gas rather than propane or fuel oil?

d) Has Union considered the cost of replacing Leamington area greenhouse heating systems with on-site photovoltaics or other alternative energy options, as compared to the cost of the proposed Panhandle expansion?

Response:

a) Union has no way of estimating the incremental electricity infrastructure cost to serve the equivalent incremental gas load with electricity.

b) 1 GJ of energy from electricity would result in approximately 0.014 tCO2e, whereas 1 GJ from natural gas would result in 0.049 tCO2e. Greenhouse volumes in 2015 were 13,460,000 GJ. The net reduction in tCO2e would be 471,100 tCO2e. However, this does not take into account the CO2 which is used within the greenhouses.

c) The conversion from propane to natural gas would result in a 19% reduction in tonnes carbon dioxide (CO_2) emissions and the conversion from fuel oil to natural gas would result in a 30% reduction in tonnes CO_2 emissions. By displacing these two fuel sources to heat greenhouses, these emissions of carbon would be avoided. See the table below.

Estimated Annual tCO2e Impact from Greenhouses Consuming Oil or Propane Rather than Natural Gas

Item	Value
Estimated Annual Consumption of a 25 Acre Greenhouse (GJ)	170,000
tCO2e/GJ	
No. 6 Fuel Oil	0.0741
Propane	0.0610
tCO2e Emitted From Alternate Fuels	
No. 6 Fuel Oil	12,597
Propane	10,370
Less Incremental Natural Gas Consumption	
tCO2e/GJ of Natural Gas	0.0490
Total tCO2e	8,330
Net impact of Alternate Fuel (tCO2e)	
No. 6 Fuel Oil	4,267
Diesel	6,103

d) Union has not considered the cost of replacing Leamington area greenhouse heating sytems with on-site photovoltaics or other alternative energy options as compared to the cost of the Panhandle Reinforcement Project.

With respect to photovoltaics, or semi-transparent solar panels attached to the roof of the greenhouse, greenhouse operations require energy for space heating in the evening and also require CO2 for their crops. Natural gas is well suited to both of these applications as the CO2 produced through the combustion of natural gas can be captured and used within the greenhouse. Further, on warm days, any excess heat generated during the day when CO2 is required, but all of the heat generated is not, can be stored in hot water tanks and then used within the greenhouse during the evening.

UNION GAS LIMITED

Answer to Interrogatory from
London Property Management Association ("LPMA")

Reference: Exhibit A, Tab 3, p. 4-5

Please explain why Union is requesting a deferral account to track the variance between the revenue requirement included in rates for the project and the actual revenue requirement, rather than the net delivery revenue requirement as defined in the EB-2013-0202 Settlement Agreement dated July 31, 2013.

Response:

Union's proposed deferral account to track the variance between the revenue requirement included in rates and the actual revenue requirement will be the net revenue requirement, which includes incremental revenue associated with the transmission margin included in delivery rates. As shown at Exhibit A, Tab 8, Schedule 1, column b) the forecasted 2018 incremental project revenue is $1.572 million, which is deducted from the total revenue requirement of $27.179 million, resulting in a net revenue requirement of $25.607 million. This approach is consistent with the EB-2013-0202 Settlement Agreement and capital pass-through projects previously approved by the Board.

UNION GAS LIMITED

Answer to Interrogatory from
London Property Management Association ("LPMA")

Reference: Exhibit A, Tab 3, p. 7

a) Please explain why Union chose a 20 year depreciation period rather than a 13 year period which would coincide with the length of time between the in service date of 2017 to the date of 2030 noted in the evidence.

b) Please confirm that the use of shorter depreciation period reflects the potential economic life of the pipeline rather than the physical life of the asset. If this cannot be confirmed, please explain what the 20 year life is based on.

Response:

a) Please see the response at Exhibit B.APPrO.7 a).

b) Confirmed.

UNION GAS LIMITED

Answer to Interrogatory from
London Property Management Association ("LPMA")

Reference: Exhibit A, Tab 3, p.8

a) Please explain why the rate impacts for Union Gas south customers appear to be different depending on whether or not a rate class has Panhandle demands.

b) Please explain which Union south rate classes do not have Panhandle demands.

c) Why is there no rate impact shown in Table 3.1 for rate M5? Is it because there is no Panhandle System design day demand allocated to this rate class?

Response:

a) The Union South rate impacts vary based on each rate class' proportion of 2013 Board-approved and incremental Project-related Panhandle System Design Day demands, and the increase in the revenue requirement of the rate class related to the Project costs relative to the revenue requirement of the rate class prior to adding the Project costs.

b) The Union South in-franchise rate classes that do not have Panhandle System Design Day demands include Rate M9, Rate M10 and Rate T3.

c) Rate M5 is not shown in Table 3-1 as the bill impact is negative. Included in Union's proposed allocation factor is a small allocation to Rate M5A based on Panhandle System Design Day demands included as part of the 2013 Board-approved allocator. There is no incremental firm Rate M5 Panhandle System Design Day demands related to the Project.

Please see Exhibit A, Tab 8, Schedule 6, p.2 for the estimated rate impact for Rate M5 for Union's proposal using 20-year depreciation rates and Exhibit A, Appendix B, Schedule 6, p.2 for the estimated rate impact for Rate M5A for Union's proposal using 2013 Board-approved depreciation rates.

UNION GAS LIMITED

Answer to Interrogatory from
London Property Management Association ("LPMA")

Reference: Exhibit A, Tab 3, p. 8-9

Union indicates that the project revenue requirement for 2017 and 2018 is about $5 million and $27.2 million, respectively, based on the proposal to depreciate the assets over 20 years.

The EB-2013-0202 Settlement Agreement states that in the calculation of the net delivery revenue requirement the depreciation expense will be calculated using 2013 Board-approved depreciation rates.

a) Please calculate the net delivery revenue requirement using the 2013 Board-approved depreciation rates for each of 2017 and 2018.

b) Please provide the estimated revenue increases associated with the additional firm capacity available in each of 2017 and 2018. Please also show the increase in revenue of customers switching from interruptible to firm service as a result of the increase in firm capacity available as a result of the project.

c) Please show the breakdown of the $1.6 million in incremental revenue noted on page 9 for 2018 based on the question in part (b) above.

Response:

a) Please see Exhibit A, Appendix B, Schedule 1.

b/c)

Please see Exhibit A, Tab 7, Schedule 3.

The schedule details the transmission portion of the rate associated with the Panhandle transmission facilities. As with other facilities filings, Union segments the customer margins to match the type and timing of the investments. In this case transmission facilities are constructed and the DCF recognizes the transmission portion of the customer revenue.

Incremental distribution revenues will occur in the case where incremental distribution capital is invested and new customers attach. At this time Union does not have sufficient information to detail the incremental distribution capital or revenue.

Customers who are currently on interruptible service that are forecast to convert to firm service will also provide some incremental revenue. That incremental revenue associated with those customers is recognized in the DCF through the recognition of the transmission portion of the margin.

UNION GAS LIMITED

Answer to Interrogatory from
London Property Management Association ("LPMA")

Reference: Exhibit A, Tab 3, p.9

Is the $27.2 million in revenue requirement shown for 2018 the largest revenue requirement compared to future years? In other words, does the 2018 revenue requirement reflect all assets being in service at the beginning of 2018 and thus included in rate base for the full year? If not, what is the projected revenue requirement in 2019?

Response:

The largest revenue requirement occurs in 2019 at $28.4 million.

UNION GAS LIMITED

Answer to Interrogatory from
London Property Management Association ("LPMA")

Reference: Exhibit A, Tab 3, p.9-10.

Union indicates that it is proposing to use an interim allocation of the project costs which is different than the 2013 Board-approved cost allocation methodology used for existing Panhandle System costs. This interim allocation is based on in-franchise Panhandle System Design Day demands, updated to include the incremental design day demands.

a) Does Union propose to change the allocation of these costs as part of its next rebasing application to the interim methodology proposed in this application, or could there be some other proposal brought forward at that time? Please explain fully.

b) If this is an interim allocation methodology during the remainder of the IRM term, does this mean that Union or other parties could seek to change the allocation on a retroactive basis when the deferral account is reviewed for disposition? Please explain fully.

Response:

a) As part of its 2019 Rebasing proceeding, Union will review and propose a cost allocation methodology for all Panhandle System and St. Clair System costs. Union's proposal at that time may be different than the interim cost allocation methodology proposed in this application.

b) The intent of receiving the Board's approval of an interim allocation methodology as part of this proceeding is to allocate the Project costs in rates and dispose of the deferral balance using the approved cost allocation methodology during the remainder of the IRM term. Any approved changes to the cost allocation of the Panhandle System and St. Clair System as part of Union's 2019 Rebasing proceeding will be handled prospectively beginning in 2019.

UNION GAS LIMITED

Answer to Interrogatory from
London Property Management Association ("LPMA")

Reference: Exhibit A, Tab 3, p.10

At lines 4 through 7, Union provides the impacts on the revenue requirement based on the interim cost allocation methodology being proposed. Please provide the figures for each of Union south, Union north and ex-franchise customers if Union maintained the current 2013 Board-approved cost allocation methodology.

Response:

If Union maintained its current 2013 Board-approved cost allocation methodology for the Project, the impact on the revenue requirement would be: (i) an increase of approximately $21.7 million allocated to Union South in-franchise rate classes, (ii) an increase of approximately $4.6 million allocated to ex-franchise rate classes and (iii) a decrease of approximately $0.7 million allocated to Union North in-franchise rate classes. The revenue requirement impacts using the 2013 Board-approved cost allocation methodology are shown at Exhibit A, Tab 8, Schedule 5, column (d).

UNION GAS LIMITED

Answer to Interrogatory from
London Property Management Association ("LPMA")

Reference: Exhibit A, Tab 4

a) Has Union expanded its distribution system capacity in order to serve new loads in the areas served by the Panhandle System in the last five years? If yes, please provide details, include the costs, whether an aid to construction was required from any party or parties (including contracting for a long term or higher firm CD).

b) In EB-2016-0004 Union described an Advancement Charge where material new customer attachments result in a need to accelerate future reinforcements to within three years following the year the attachment is put into service. Did Union include any advancement charges in any of the aid to construction calculations for projects in the Panhandle System area over the past five years? If yes, please provide details. If no, please explain fully why not.

Response:

a) The Panhandle System encompasses the area between Windsor and Dawn. In the past five years Union has completed hundreds of "projects" which are primarily of a minor nature consisting of short line extensions, new housing subdivisions, and individual customer expansions. Project economics were done based on EBO 188 wherein an aid may or may not have been required depending on cost and revenues. Contract sized customers are given options for commitment to revenue via contract term or an aid to construct if needed. It would be onerous to research records to assess all data over the prior five years. As an indication of scale, only two projects were large enough to require an OEB filing.

   The two larger projects were the distribution expansions serving the Leamington area EB-2013-0365 (Leamington Phase 1) and EB 2016-0013 (Leamington Phase 2). Details pertaining to these expansion projects are referenced in the pre-filed evidence.

b) The expansions did not accelerate the need for future upstream distribution reinforcements. No Advancement Charges were applied.

UNION GAS LIMITED

Answer to Interrogatory from
London Property Management Association ("LPMA")

Reference: Exhibit A, Tab 4, p.2

a) Please provide the Panhandle System design day demand for the current system and for the proposed system.

b) Please provide the actual and forecasted Panhandle System firm design day demand for the period 1996 through 2034. If possible please break these figures into the portion served by the Dawn to Dover Transmission station and for the portion serviced by the Ojibway to Dover Transmission station. If the design day demand information is not available based on this breakdown, please provide it based on any other breakdown that may be available.

c) What is the firm peak day capacity available through the Ojibway Valve Station?

Response:

a) The Panhandle System Design Day demand for Winter 16/17 (Current System) and Winter 21/22 (Proposed System) can be found at Exhibit A, Tab 5, p.8, Table 5-1 – Design Day (TJ/d) under the row titled: System Demand (43.1 IOFF) (TJ/d) under Rate Class "Total".

b) The actual and Design Day demands served by the Panhandle System are provided in the table below. It is assumed the Union supply arriving at Ojibway remains at 60 TJ/d for the forecast period. As noted in Exhibit B.LPMA.11a), Union will control 58 TJ/d effective November 1, 2017 which will require an additional 2 TJ/d to be delivered from Dawn.

Panhandle System Firm Design Day Demand							
Winter	Firm Design Day Demand	Dawn Supply	Union Ojibway Supply	Winter	Firm Design Day Demand	Dawn Supply	Union Ojibway Supply
	(TJ/d)	(TJ/d)	(TJ/d)		(TJ/d)	(TJ/d)	(TJ/d)
99/00	475	475	0	17/18	623	563	60
00/01	487	487	0	18/19	638	578	60
01/02	464	464	0	19/20	651	591	60
02/03	465	465	0	20/21	661	601	60
03/04	487	487	0	21/22	671	611	60
04/05	423	423	0	22/23	684	624	60
05/06	426	426	0	23/24	691	631	60
06/07	426	426	0	24/25	698	638	60
07/08	437	437	0	25/26	706	646	60
08/09	433	433	0	26/27	716	656	60
09/10	465	465	0	27/28	720	660	60
10/11	438	438	0	28/29	727	667	60
11/12	474	474	0	29/30	734	674	60
12/13	490	490	0	30/31	741	581	60
13/14	515	465	60	31/32	749	589	60
14/15	527	477	60	32/33	756	696	60
15/16	528	478	60	33/34	763	703	60
16/17	565	515	60	34/35	770	710	60

c) The maximum volume of gas that can be imported through the Ojibway Valve Station is 210 TJ/d and is limited by the Presidential Permit of the river crossing. The Panhandle System's ability to accept firm gas is less. Please see the response at Exhibit B.FRPO.6.

UNION GAS LIMITED

Answer to Interrogatory from
London Property Management Association ("LPMA")

Reference: Exhibit A, Tab 4, p. 4

Please explain more fully why Union cannot rely on the C1 contracted volumes at Ojibway when designing the system.

Response:

a) Please see the responses at Exhibit B.BOMA.2 c) and Exhibit B.Staff.3 a).

UNION GAS LIMITED

Answer to Interrogatory from
London Property Management Association ("LPMA")

Reference: Exhibit A, Tab 4, p. 4

The evidence indicates that Union has the capability to accept 115 TJ/d on an annual basis (summer limitation). The evidence also states that approximately 60 TJ/d of the demand on the Panhandle System is served through Union's gas supply delivered at Ojibway on design day.

a) Please confirm that the difference between the figures of 60 TJ/d and 115 TJ/d is the amount controlled by the two ex-franchise C1 shippers. If this is not confirmed, please explain fully the difference between these figures.

b) Please confirm that the ex-franchise C1 shipper volumes that arrive during the winter, and in particular, on a peak day are consumed in the Panhandle System area and Union provides an equivalent amount of gas to these shippers at Dawn. If this is not confirmed, please explain fully.

c) Please explain the summer month limitation on the imports of 115 TJ/d at Ojibway.

d) What is the maximum capability to accept imports at Ojibway during the winter months? How much of this is controlled by Union and how much is controlled by the ex-franchise shippers or others?

Response:

a) Not confirmed. Effective November 1, 2017 only one firm C1 transportation contract will be active between Ojibway and Dawn at a quantity of approximately 21 TJ/d.

   In addition, effective November 1, 2017, Union's gas supply contracts will no longer total 60 TJ/d due to contract changes. Union's gas supply contracts will then total 58 TJ/d. This 58 TJ/d is made up of Union's 37 TJ/d of PEPL capacity that does contain Right Of First Refusal rights and 21 TJ/d of new third party supply at Ojibway. Union was unsuccessful in securing contracts to replace the expiring 23 TJ/d of PEPL transportation capacity that did not have Right Of First Refusal rights. Please see the response at Exhibit B.Staff.3 a).

   Based on the above changes, the difference between the 115 TJ/d capability to receive gas at Ojibway and the 79 TJ/d (gas supply and C1 contracts) represents uncontracted Ojibway to Dawn capacity (36 TJ/d) that can be sold to ex-franchise customers or utilized by the utility.

Any uncontracted Ojibway to Dawn capacity would not provide a benefit to Union's Panhandle System without firm transporation capacity on PEPL and the associated firm gas deliveries to Ojibway. Based on PEPL's open season response, incremental capacity to Ojibway is unavailable. As outlined at Exhibit B.FRPO.2 c), relying on incremental gas supply at a non liquid point (Ojibway) brings additional risk related to price, term and availability.

b) Confirmed.

c) Please see the response at Exhbit B.FRPO.6 b).

d) The maximum firm winter import limitation is 140 TJ/d. This is based on the minimum expected winter demand in the Windsor area and is the maximum firm amount Union could accept at Ojibway over the winter period.

   As outlined in part a) above, the total contracted deliveries from Ojibway to Dawn is 79 TJ/d, of which 58 TJ/d will be controlled by Union and 21 TJ/d is controlled by C1 shippers. The remaining 61 TJ/d represents uncontracted Ojibway to Dawn winter capacity that can be sold to ex-franchise customers or utilized by the utility.

UNION GAS LIMITED

Answer to Interrogatory from
London Property Management Association ("LPMA")

Reference: Exhibit A, Tab 6, p. 2

Did Union consider a new pipeline that would go from Dawn to the city of Chatham directly, thereby relieving the Panhandle System from supplying the city and freeing up capacity on the Panhandle System? If not, please explain why not?

Response:

No. Union would need to construct 27 km of pipeline from Dawn to Dover Centre to disconnect the lateral feeding the City of Chatham from the Panhandle System.

The NPS 16 pipeline capacity is limited by its MOP downstream of Dover Transmission Station. Having a higher inlet pressure upstream of Dover Transmission Station does not increase the system capacity downstream of the station. In other words, offloading the NPS 16 pipeline upstream of Dover Transmission Station only provides capacity to serve additional demand on the NPS 16 pipeline upstream of Dover Transmission Station.

UNION GAS LIMITED

Answer to Interrogatory from
London Property Management Association ("LPMA")

Reference: Exhibit A, Tab 6, p. 8

The evidence states that for any commercial service to be considered viable, the service must be firm with ongoing renewal rights and renewal notice of at least three years, 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.

a) Given that Union's application only contemplates about 18 months from the time of application to when the project would be in service, please explain why Union's gas supply planning principles should be applicable in this instance.

b) Could Union contract for the use of the 21 TJ/d held by third parties for a maximum number of days in the winter by arranging a swap for any gas delivered by the third parties at Ojibway with gas at Dawn? Please explain fully.

Response:

a) Union's Gas Supply Planning Principles are noted for the evaluation of the commercial alternatives, not physical facilities alternatives. The market growth on the Panhandle System has increased relatively rapidly, dictating an accelerated timeline for the Project. Regardless of the timeline, providing reliable, secure and diverse supplies to Union's customers at a prudent cost is relevant.

b) Union has secured natural gas delivered to Ojibway from the third party holding the only firm C1 transportation contract from Ojibway to Dawn post November 1, 2017. The term of this deal is from November 1, 2016 to October 31, 2019. To Union's understanding, that third party does not hold upstream transportation capacity with an Ojibway delivery point in excess of 21 TJ/d. Please see the response at Exhibit B.Staff.3 a) and Exhibit B.LPMA.11 a).

UNION GAS LIMITED

Answer to Interrogatory from
London Property Management Association ("LPMA")

Reference: Exhibit A, Tab 7

Please provide a version of Tables 7-1 and 7-2 that uses a NPV calculation over a 40 year term.

Response:

Union's evidence was filed based on 20 years. The tables below have columns added for 40 years.

A minor correction has also been made to the Alternative 2 NPV at 20 years. It is corrected to $(207) million from $(205) million as noted in evidence (Exhibit A, Tab 7, pp.5-6). This figure is shown in the last line of each of Table 7-1 and Table 7-2.

Table 7-1
Stage 1 NPV of Proposal and Alternatives ($ Millions)

Item	Description	NPV (20 yrs)	NPV (40 yrs)
	Proposed Facilities (Includes New 40km NPS 36")	$(212)	$(205)
Alt 1	New 40Km NPS 30" Pipeline, Retain existing NPS 16" in service	$(224)	$(222)
Alt 2	New Pipelines + Incremental Gas Supply @ Ojibway	$(207)	$(201)

Table 7-2
Stage 1 NPV of Proposal and Alternative 2 ($ Millions)

Description	Term 20 Yr NPV Assets 5 Yrs	Term 40 Yr NPV Assets 5 Yrs	Term 20 Yr NPV Assets 6 Yrs	Term 40 Yr NPV Assets 6 Yrs
Proposed Facilities	$(212)	$(205)	$(239)	$(232)
Alternative 2	$(207)	$(201)	$(271)	$(265)

UNION GAS LIMITED

Answer to Interrogatory from
London Property Management Association ("LPMA")

Reference: Exhibit A, Tab 7, p. 4

a) Please explain why only transmission margins are used in the calculation of the incremental cash inflows. In particular, why are incremental distribution margins not included?

b) Will the incremental distribution margins that occur as a result of the project be used to justify the expansion of any distribution projects? Please explain fully.

c) Please confirm that the incremental revenue used in the calculation of the net delivery revenue requirement, as defined in the EB-2013-0202 Settlement Agreement, includes not only the transmission margin, but also the distribution margin and storage margin. If this cannot be confirmed, please explain fully.

Response:

a) Please see the response at Exhibit B.LPMA.4.

b) Yes, please see the response at Exhibit B.LPMA.4 for the discussion.

c) Not confirmed.

Page 6 of the Settlement Agreement:

> *In this Agreement, the term "net delivery revenue requirement impacts" is used in a number of places. As used in this Agreement, that term means the annual costs of a project or initiative, including operating costs, depreciation, cost of incremental debt, return, and related taxes, net of any incremental delivery revenues arising from, associated with, or enabled by the project or initiative.*

Union was unable to find any references in the Settlement Agreement or appendices to the transmission and storage margins being included in the calculation of the net delivery revenue requirement. By way of example, the calculation of net revenue requirement for the 2015 Parkway Growth Project (Appendix G to the Settlement Agreement) includes incremental project revenue determined per EB-2013-0074, Schedule 9-4.

Schedule 9-4 is a segmented margin approach where there is a distinction that the "Dawn Compression Margin" is excluded in the revenue calculation.

The Panhandle Reinforcement Project is a transmission project and the segmented margin approach for this Project is consistent with the method used in the Brantford to Kirkwall/Parkway D Project (EB-2013-0074) and each capital pass-through project since then. Specifically, in this case there is a matching of the transmission capital investment to the transmission portion of a customer's margin attributed to the investment.

UNION GAS LIMITED

Answer to Interrogatory from
London Property Management Association ("LPMA")

Reference: Exhibit A, Tab 8, p. 5, Exhibit A, Tab 7, Schedule 4 and Exhibit A, Tab 8, Schedule 1

a) Please explain the difference in the revenues shown in Exhibit A, Tab 7, Schedule 4 and in Exhibit A, Tab 8, Schedule 1.

b) Please explain fully why the incremental distribution revenues associated with the ability to serve more firm loads and to convert interruptible loads to firm are not included in the net delivery revenue requirement.

Response:

a) The revenue for the two schedules is the same. The amount in each period is reported differently because the DCF is a project year and the revenue requirement schedule is a calendar year.

The data in Exhibit A, Tab 7, Schedule 4 represents "project year" revenue (12 month period November 1st to October 31st). The data in Exhibit A, Tab 8, Schedule 1 is calendar year figures. Calendar year 2017 is a two month period from (November 1, 2017 to December 31, 2017.

Calendar year 2018 has 10 months of 2017 "project year 1" and 2 months of 2018 "project year 2". Union's project year DCF reports have always been 12 month periods.

A reconciliation of project year revenue to calendar year revenue is as follows:

	2017	2018
Project Year 1 Revenue	$1,502	$1,502
Divide by Total Months in a Project Year	/ 12	/ 12
Multiply by Total Months in Calendar Year	x 2	x 10
Calendar Year Revenue - A	$ 250	$1,252
Project Year 2 Revenue	$1,921	$1,921
Divide by Total Months in a Project Year	/ 12	/ 12
Multiply by Total Months in Calendar Year	x 0	x 2
Calendar Year Revenue - B	$ 0	$ 320
Total Calendar Year Revenue (A + B)	**$ 250**	**$1,572**

b) Please see the response at Exhibit B.LPMA.4.

UNION GAS LIMITED

Answer to Interrogatory from
London Property Management Association ("LPMA")

Reference: Exhibit A, Tab 8, p. 5

Union has proposed a depreciation rate based on 20 years in place of the 2013 Board approved depreciation rates that would result in the use of 50 years.

a) Please confirm that this difference will impact rates through the depreciation rate used, the cost of capital and income taxes through the rate base, but will have no impact on O&M costs or property taxes or on incremental revenues. If this cannot be confirmed, please explain fully.

b) For the portion of the rates that are impacted by the change in depreciation rates (i.e. depreciation expense, cost of capital, income taxes) please provide the net present value of the revenue requirement for each of the following:

i) based on the 20 year depreciation rate, and
ii) based on the 50 year depreciation rate.

Please show the NPV at the end of each 10 years, 20 years, 30 years, 40 years and 50 years for both of the above calculations.

Response:

a) Not confirmed. The difference in depreciation rates will not have an impact on Union's cost of capital. Union's cost of capital is the weighted average cost of capital ("WACC") that is used to calculate the required return component of revenue requirement. The difference in depreciation rates will impact rates through depreciation expense, which in turn will change the undepreciated rate base which in turn affects the dollar value of the return on rate base, and income taxes.

b) For the purpose of this response, Union interpreted the request to calculate revenue requirement using a 50 year depreciation rate to mean using the Board approved depreciation rates. Please see Attachment 1 which outlines the cumulative net present value of revenue requirement for the 20 year depreciation rate and the Board approved depreciation rates at the end of 10, 20, 30, 40, and 50 years. For context, Union has also shown the value of the rate base at the end of each of the referenced periods. For example, using Board approved depreciation rates, the NPV of the revenue requirement after 20 years is not comparable to the NPV of revenue requirement using 20 year depreciation because there is an undepreciated rate base not yet recovered in the NPV figure using the approved depreciation rates.

Line	($ millions)	At End of 10 Years	20 Years	30 Years	40 Years	50 Years
	Cumulative Net Present Value of Revenue Requirement Items:					
1	20 Year Depreciation Rate	169	248	249	249	249
2	OEB Approved Depreciation Rates	114	181	212	224	228
	Undepreciated Rate Base as of end of:					
3	20 Year Depreciation Rate	139	9	1	1	1
4	OEB Approved Depreciation Rates	211	157	103	50	7

Note: Half year rule for depreciation applies in all cases. For example $ 8 Million depreciation is attributed to year 21 in the 20 year depreciation case.

Revenue requirement for this response is isolated to only the following items per the IR Request
Return on Rate Base
Depreciation Expense
Income Taxes

Lines 1 and 2 are not comparable without consideration of the recovery of undepreciated rate base as represented in lines 3 and 4

The slight rise in NPV for line 1 from 20 years to 50 years is the NPV of the return on the land costs which are not subject to depreciation

The IR request was to use 50 year depreciation rates. The response is based on OEB approved rates

Depreciation Rates	20 Years	OEB Approved Depreciation Rate
Land Rights (75% deductible)	5.0%	1.76%
Transmission - Structures and Improvements	5.0%	2.03%
Transmission - Mains	5.0%	1.98%
Transmission - Measuring & Reg	5.0%	2.60%

UNION GAS LIMITED

Answer to Interrogatory from
London Property Management Association ("LPMA")

Reference: Exhibit A, Tab 8, p. 11

a) Does the proposed change in the allocation of the Panhandle System costs result in a change in the allocation of the St. Clair System? Please explain fully. If it does result in a change, please provide a table similar to Table 8-3 that shows the change by rate class. If it does not result in a change, please explain why, for example, M1 rate customers would still be allocated 21% or 22% of the St. Clair System costs, when their design day demand is closer to 7% on that system.

b) The evidence indicates, as an example, that the T2 allocation of the Panhandle System costs would decrease from 42% to 23%. Please confirm that based on the information in Exhibit A, Tab 8, Schedule 2 that the T2 allocation for the St. Clair System would increase from 42% to 82%. Please confirm that this change has been reflected in the interim proposal. If it has not, please explain fully why the allocation of the St. Clair System costs should not be changed when the Panhandle System costs are changed, given that they currently share an allocation.

Response:

a) Union's interim proposal applies only to the Project costs for the remainder of the IRM term. The allocation of existing Panhandle System and St. Clair System costs continue to use the 2013 Board-approved cost allocation methodology as per EB-2011-0210. Union is not proposing a change to the 2013 Board-approved cost allocation methodology for existing costs as Union's rates are subject to an Incentive Regulation Mechanism during the 2014-2018 period. Union will review the cost allocation and rate design for all Panhandle System and St. Clair System costs as part of its 2019 Rebasing proceeding.

b) Union confirms that based on the 2013 Sarnia Industrial Line Design Day demands shown at Exhibit A, Tab 8, Schedule 2, line 6, the Rate T2 proportion is approximately 82%.

   The allocation of the existing St. Clair System costs is not changed in Union's proposal consistent with Union's proposal to maintain the allocation of the existing Panhandle System costs using the 2013 Board-approved cost allocation methodology.

UNION GAS LIMITED

Answer to Interrogatory from
London Property Management Association ("LPMA")

Reference: Exhibit A, Tab 8, Table 8-8

Please provide a table that shows, by rate class, the allocation of the Panhandle and St. Clair System costs based on the following allocation methodologies:

a) Continuation of the 2013 Board-approved methodology, adjusted for the incremental capacity (i.e maintain one allocator, but apply it to the larger design day - it is not clear if this reflects what is included in the Board approved column in Table 8-8),

b) As proposed by Union, and

c) As proposed by Union, but also with an interim change in the allocator for the St. Clair System that would parallel the change proposed for the Panhandle System (i.e. the allocator would be based only on the St. Clair System design day demands). This part is not required if Union has already incorporated a change in the St. Clair System allocator as part of its proposal.

Response:

The total Ojibway/St. Clair Demand costs of $35.5 million are calculated as the 2013 costs of $7.1 million, plus the Project costs of $27.4 million, plus a shift in costs from other functions of $1.0 million ($1.6 million from the Project-related shift in costs reduced by a $0.6 million shift in costs related to the 2013 costs).

a) Please see Attachment 1, column (a). The 2013 and Project-related Ojibway/St. Clair Demand costs are allocated based on 2013 Board-approved methodology, updated for the Project per Exhibit A, Tab 8, Schedule 2, lines 9-18.

b) Please see Attachment 1, column (b). The Project-related Ojibway/St. Clair Demand costs are allocated based on 2013 Panhandle Design Day demands, updated for the incremental Project Design Day demands, per Exhibit A, Tab 8, Schedule 2, lines 22-25. The 2013 costs are allocated based on 2013 Board-approved methodology.

c) Please see Attachment 1, column (c). The 2013 St. Clair System costs are allocated in proportion to 2013 St. Clair Design Day demands; 2013 Panhandle System costs are allocated in proportion to 2013 Panhandle Design Day demands including long-term ex-franchise contract demands; and, Project-related Ojibway/St. Clair Demand costs are allocated in proportion to 2013 Panhandle Design Day demands updated to include the incremental Project Design Day demands.

UNION GAS LIMITED
Allocation of Panhandle and St. Clair System Costs Including Project by Rate Class

Line No.	Particulars ($000's)	Board-Approved Cost Allocation	Proposed Cost Allocation	Proposed Cost Allocation with Change to St. Clair Allocator
		(a)	(b)	(c)
	In-franchise South			
1	Rate M1	7,494	13,070	13,476
2	Rate M2	2,549	4,446	4,582
3	Rate M4	2,323	4,289	4,364
4	Rate M5	35	69	72
5	Rate M7	669	1,211	1,221
6	Rate M9	-	-	-
7	Rate M10	-	0	-
8	Rate T1	2,024	1,756	1,740
9	Rate T2	14,953	9,451	9,169
10	Rate T3	-	-	-
11	Total In-franchise South	30,046	34,291	34,624
	Ex-franchise			
12	Rate C1	4,478	963	688
13	Rate M16	937	207	149
14	Total Ex-franchise	5,415	1,170	838
15	Total In-franchise North	-	-	-
16	Total Costs	35,461	35,461	35,461

UNION GAS LIMITED

Answer to Interrogatory from
London Property Management Association ("LPMA")

Reference: Exhibit A, Tab 8, p. 12

a) Please explain why the C1 and M16 rate classes should not see a change in the level of costs allocated to them. In particular, please confirm that these rate classes would now represent a lower proportion of the Panhandle System costs using the current Board-approved allocator as shown in Exhibit A, Tab 8, Schedule 2, but this lower proportion would be applied against a higher cost. If this cannot be confirmed, please explain fully including why these two rate classes should not pay incremental costs associated with the assets they use, just like in-franchise customers.

b) Does Union's proposal effectively freeze the costs allocated to the C1 and M16 rate classes based on the 2013 Board-approved allocation methodology? If so, would this also be on an interim basis until Union's 2019 rebasing application?

Response:

a) Not confirmed. Under Union's proposal, the Board-approved allocation factor, as shown at Exhibit A, Tab 8, Schedule 2, would remain unchanged and would continue to be applied to the existing 2013 Board-approved costs included in rates. Union would apply the proposed allocation factor to the Project costs for the 2017 and 2018 Project years. The proposed Project allocation factor, provided at Exhibit A, Tab 8, Schedule 2, line 21 and line 25, excludes Rate C1 and Rate M16.

   As described at Exhibit A, Tab 8, pp. 12-16, Union has not allocated Project-related demand costs to Rate C1 and Rate M16 because of i) cost causation principles and the Rate C1 and Rate M16 customers' use of the Panhandle System on Design Day and ii) the current rate design process that provides in-franchise customers with a benefit from ex-franchise transmission revenue generated on the Panhandle System and St. Clair System.

   i) Cost Causation Principles and Design Day

      On Design Day, the Project facilities provide Union with additional capacity to serve in-franchise demands that flow westerly from Dawn. The Rate C1 contracts on the Panhandle System flow easterly from Ojibway to Dawn. Although these demands are not considered on Design Day because these customers have no contractual obligation to supply gas to Union's system, to the extent the customers are flowing gas on Design Day, the demand would flow easterly to Dawn (counter flow).

Consistent with Rate C1, the Rate M16 west of Dawn demands are also not considered on Design Day because the customer has no contractual obligation to supply gas to Union's system. To the extent the customer is flowing gas on Design Day, it is expected it would be counter flow based on the winter operations of the customer.

Rate C1 and Rate M16 customers do not require the Project facilities on Design Day. Accordingly, Union has not allocated Project-related demand costs to these customers.

ii) In-franchise Benefit of Ex-franchise Transmission Revenue

Union's current approved rates include a credit to Union South in-franchise rate classes related to ex-franchise revenue in excess of allocated costs for ex-franchise storage and transportation services. This credit includes the Rate C1 margin associated with the Panhandle System. If Union were to increase the allocated costs to Rate C1, it is unlikely that ex-franchise customers would continue to contract for the same level of firm long-term service on the Panhandle System. During Union's IRM term, this increase in costs allocated to Rate C1 would decrease the costs allocated to Union South in-franchise customers without the associated offsetting ex-franchise Rate C1 revenue.

Accordingly, a change in the costs allocated to Rate C1 would result in a benefit for Union South in-franchise customers that would not be supported by incremental firm long-term ex-franchise Rate C1 revenue during the remainder of Union's IRM term.

b) As described in part a), Union's proposal does not allocate Project-related demand costs to Rate C1 and Rate M16. Union will adjust Rate C1 and Rate M16 rates for the impact to other functional classifications as a result of the Project and other approved changes during the IRM term as agreed to in Union's 2014-2018 IRM Settlement Agreement. As part of Union's 2019 Rebasing proceeding, Union will review the cost allocation and rate design for all Panhandle System costs, including the allocation of the costs to Rate C1 and Rate M16.

UNION GAS LIMITED

Answer to Interrogatory from
London Property Management Association ("LPMA")

Reference: Exhibit A, Tab 8, Table 8-9

a) Please provide a version of Table 8-9 that reflects Union's allocation proposal, but is based on a 50 year depreciation rate.

b) Please provide a version of Table 8-9 that reflects Union's 20 year depreciation proposal, but reflects no change in the cost allocation, other than to reflect the increase in design day demands as shown in the top half of Exhibit A, Tab 8, Schedule 2.

c) If necessary, please provide a version on Table 8-9 that reflects Union's proposals with respect to allocation and depreciation, but also reflects a change in the allocator for the St. Clair System as noted in Interrogatory #19 above.

Response:

a)

Table 1
Union South In-franchise
Estimated 2018 Sales Service and Direct Purchase Bill Impacts
Based on Union's Proposed Project Cost Allocation and
Board-Approved Depreciation Rates of Approximately 50 Years

Line No.	Rate Class	Sales Service	Direct Purchase
		(a)	(b)
1	Rate M1	1%	2%
2	Rate M2	1%	4-6%
3	Rate M4	3-4%	16-18%
4	Rate M5	(0)%	(0)-(1)%
5	Rate M7	1-3%	11-12%
6	Rate M9	(0)%	(0)%
7	Rate M10	(0)%	(1)%
8	Rate T1	1%	10-11%
9	Rate T2	1%	13-15%
10	Rate T3	0%	0%

b)

Table 2
Union South In-franchise
Estimated 2018 Sales Service and Direct Purchase Bill Impacts
Based on Board-Approved Cost Allocation Updated for the Project and
Proposed 20 Year Depreciation Rates

Line No.	Rate Class	Sales Service	Direct Purchase
		(a)	(b)
1	Rate M1	1%	1%
2	Rate M2	1%	3-4%
3	Rate M4	2%	9-10%
4	Rate M5	(0)%	(0)%
5	Rate M7	1-2%	5-6%
6	Rate M9	0%	0%
7	Rate M10	(0)%	(1)%
8	Rate T1	2%	17-19%
9	Rate T2	1-2%	34-37%
10	Rate T3	0%	0%

c)

Table 3
Union South In-franchise
Estimated 2018 Sales Service and Direct Purchase Bill Impacts
Based on Union's Proposed Cost Allocation and Proposed 20 Year Depreciation Rates
Updated to Include an Allocation Change for the St. Clair System

Line No.	Rate Class	Sales Service	Direct Purchase
		(a)	(b)
1	Rate M1	1%	2%
2	Rate M2	2%	7-8%
3	Rate M4	4-6%	25-27%
4	Rate M5	(0)%	(0)%
5	Rate M7	2-5%	17-20%
6	Rate M9	0%	0%
7	Rate M10	(0)%	(1)%
8	Rate T1	2%	14-16%
9	Rate T2	1%	17-19%
10	Rate T3	0%	0%

UNION GAS LIMITED

Answer to Interrogatory from
London Property Management Association ("LPMA")

Reference: Exhibit A, Tab 8, p. 23

a) Please confirm that the actual net delivery revenue requirement would include the actual debt costs associated with the incremental debt as the then prevailing market rate, in place of the 4% estimated used by Union. If this cannot be confirmed, please explain fully.

b) Union proposes to record any variance between what is approved in rates for the Project and the actual annual revenue requirement of the Project in a new deferral account. Please confirm that the "actual annual revenue requirement" in this instance and in the deferral account shown in Exhibit A, Tab 8, Schedule 8, means the actual net delivery revenue requirement as defined in the EB-2013-0202 Settlement Agreement. If this cannot be confirmed, please explain fully the difference in the two terms.

Response:

a) Confirmed subject to clarification. The question says…."the incremental debt at the **then prevailing market rate**…." (emphasis added"). The incremental debt will be Union's actual debt cost as issued in Calendar 2017 (the in service year). This is the same approach used for the other capital pass through projects.

b) Confirmed. Please see the response at Exhibit B.LPMA.1.

UNION GAS LIMITED

Answer to Interrogatory from
London Property Management Association ("LPMA")

Reference: Exhibit A, Tab 8, Schedule 6

Please provide, if required, a table similar to Schedule 6 that reflects a change in the allocator for St. Clair System costs as noted in Interrogatory #19 above.

Response:

Please see Attachment 1.

UNION GAS LIMITED
Calculation of Sales Service and Direct Purchase Impacts for Typical Small and Large Customers - Union North
Based on Proposed Cost Allocation and 20 Year Depreciation Rates Updated to Include an Allocation Change for the St. Clair System

		EB-2016-0040 Approved 01-Apr-16 (1)		EB-2016-0186 Proposed With Change St.Clair Allocator 01-Jan-18		Impact		
Line No.	Particulars	Annual Bill ($) (a)	Unit Rate (cents/m^3) (b)	Annual Bill ($) (c)	Unit Rate (cents/m^3) (d)	Unit Rate Change (cents/m^3) (e) = (d-b)	Annual Bill Change ($) (f) = (c-a)	Annual Bill Change (%) (g) = (f/a)
	Small Rate 01							
1	Delivery Charges	435	19.7552	434	19.7048	(0.0504)	(1.11)	-0.3%
2	Gas Supply Charges	481	21.8483	481	21.8454	(0.0029)	(0.06)	0.0%
3	Total Bill	915	41.6035	914	41.5502	(0.0533)	(1.17)	-0.1%
4	Sales Service Impact						(1.17)	-0.1%
5	Bundled-T (Direct Purchase) Impact						(1.17)	-0.2%
	Small Rate 10							
6	Delivery Charges	4,232	7.0530	4,217	7.0288	(0.0242)	(14.51)	-0.3%
7	Gas Supply Charges	13,109	21.8483	13,107	21.8454	(0.0029)	(1.73)	0.0%
8	Total Bill	17,341	28.9013	17,325	28.8742	(0.0271)	(16.24)	-0.1%
9	Sales Service Impact						(16.24)	-0.1%
10	Bundled-T (Direct Purchase) Impact						(16.24)	-0.1%
	Large Rate 10							
11	Delivery Charges	13,579	5.4315	13,541	5.4164	(0.0150)	(37.62)	-0.3%
12	Gas Supply Charges	54,621	21.8483	54,614	21.8454	(0.0029)	(7.20)	0.0%
13	Total Bill	68,199	27.2798	68,155	27.2618	(0.0179)	(44.82)	-0.1%
14	Sales Service Impact						(44.82)	-0.1%
15	Bundled-T (Direct Purchase) Impact						(44.82)	-0.1%
	Small Rate 20							
16	Delivery Charges	73,272	2.4424	72,937	2.4312	(0.0112)	(334.73)	-0.5%
17	Gas Supply Charges	573,432	19.1144	573,347	19.1116	(0.0029)	(85.68)	0.0%
18	Total Bill	646,704	21.5568	646,284	21.5428	(0.0140)	(420.41)	-0.1%
19	Sales Service Impact						(420.41)	-0.1%
20	Bundled-T (Direct Purchase) Impact						(420.41)	-0.1%
	Large Rate 20							
21	Delivery Charges	281,495	1.8766	280,472	1.8698	(0.0068)	(1,022.33)	-0.4%
22	Gas Supply Charges	2,659,156	17.7277	2,658,789	17.7253	(0.0024)	(367.21)	0.0%
23	Total Bill	2,940,651	19.6043	2,939,261	19.5951	(0.0093)	(1,389.54)	0.0%
24	Sales Service Impact						(1,389.54)	0.0%
25	Bundled-T (Direct Purchase) Impact						(1,389.54)	-0.1%
	Average Rate 25							
26	Delivery Charges	62,814	2.7611	62,598	2.7516	(0.0095)	(216.15)	-0.3%
27	Gas Supply Charges	303,844	13.3558	303,844	13.3558	-	-	0.0%
28	Total Bill	366,658	16.1168	366,442	16.1073	(0.0095)	(216.15)	-0.1%
29	Sales Service Impact						(216.15)	-0.1%
30	T-Service (Direct Purchase) Impact						(216.15)	-0.3%
	Small Rate 100							
31	Delivery Charges	260,184	0.9636	259,444	0.9609	(0.0027)	(739.80)	-0.3%
32	Gas Supply Charges	5,353,074	19.8262	5,353,074	19.8262	-	-	0.0%
33	Total Bill	5,613,258	20.7898	5,612,518	20.7871	(0.0027)	(739.80)	0.0%
34	Sales Service Impact						(739.80)	0.0%
35	T-Service (Direct Purchase) Impact						(739.80)	-0.3%
	Large Rate 100							
36	Delivery Charges	2,106,720	0.8778	2,101,477	0.8756	(0.0022)	(5,242.80)	-0.2%
37	Gas Supply Charges	46,488,914	19.3704	46,488,914	19.3704	-	-	0.0%
38	Total Bill	48,595,635	20.2482	48,590,392	20.2460	(0.0022)	(5,242.80)	0.0%
39	Sales Service Impact						(5,242.80)	0.0%
40	T-Service (Direct Purchase) Impact						(5,242.80)	-0.2%

Notes:
(1) Reflects Board-approved rates per Appendix A in Union's April 2016 QRAM filing (EB-2016-0040).

UNION GAS LIMITED
Calculation of Sales Service and Direct Purchase Impacts for Typical Small and Large Customers - Union South
Based on 20 Year Depreciation Rate Proposal Updated to Include an Allocation Change for the St. Clair System

Line No.	Particulars	EB-2016-0040 Approved 01-Apr-16 (1) Annual Bill ($) (a)	EB-2016-0040 Approved 01-Apr-16 (1) Unit Rate (cents/m^3) (b)	EB-2016-0186 Proposed With Change St.Clair Allocator 01-Jan-18 Annual Bill ($) (c)	EB-2016-0186 Proposed With Change St.Clair Allocator 01-Jan-18 Unit Rate (cents/m^3) (d)	Impact Unit Rate Change (cents/m^3) (e) = (d-b)	Impact Annual Bill Change ($) (f) = (c-a)	Impact Annual Bill Change (%) (g) = (f/a)
	Small Rate M1							
1	Delivery Charges	346	15.7046	354	16.0839	0.3793	8.34	2.4%
2	Gas Supply Charges	299	13.5856	299	13.5856	-	-	0.0%
3	Total Bill	644	29.2902	653	29.6695	0.3793	8.34	1.3%
4	Sales Service Impact						8.34	1.3%
5	Direct Purchase Impact						8.34	2.4%
	Small Rate M2							
6	Delivery Charges	3,297	5.4947	3,510	5.8499	0.3552	213.13	6.5%
7	Gas Supply Charges	8,151	13.5856	8,151	13.5856	-	-	0.0%
8	Total Bill	11,448	19.0803	11,661	19.4355	0.3552	213.13	1.9%
9	Sales Service Impact						213.13	1.9%
10	Direct Purchase Impact						213.13	6.5%
	Large Rate M2							
11	Delivery Charges	10,642	4.2566	11,491	4.5965	0.3399	849.63	8.0%
12	Gas Supply Charges	33,964	13.5856	33,964	13.5856	-	-	0.0%
13	Total Bill	44,606	17.8422	45,455	18.1821	0.3399	849.63	1.9%
14	Sales Service Impact						849.63	1.9%
15	Direct Purchase Impact						849.63	8.0%
	Small Rate M4							
16	Delivery Charges	37,374	4.2713	46,654	5.3319	1.0606	9,280.09	24.8%
17	Gas Supply Charges	118,874	13.5856	118,874	13.5856	-	-	0.0%
18	Total Bill	156,248	17.8569	165,528	18.9175	1.0606	9,280.09	5.9%
19	Sales Service Impact						9,280.09	5.9%
20	Direct Purchase Impact						9,280.09	24.8%
	Large Rate M4							
21	Delivery Charges	277,378	2.3115	353,133	2.9428	0.6313	75,754.46	27.3%
22	Gas Supply Charges	1,630,272	13.5856	1,630,272	13.5856	-	-	0.0%
23	Total Bill	1,907,650	15.8971	1,983,405	16.5284	0.6313	75,754.46	4.0%
24	Sales Service Impact						75,754.46	4.0%
25	Direct Purchase Impact						75,754.46	27.3%
	Small Rate M5							
26	Delivery Charges	30,596	3.7086	30,512	3.6984	(0.0102)	(84.11)	-0.3%
27	Gas Supply Charges	112,081	13.5856	112,081	13.5856	-	-	0.0%
28	Total Bill	142,677	17.2942	142,593	17.2840	(0.0102)	(84.11)	-0.1%
29	Sales Service Impact						(84.11)	-0.1%
30	Direct Purchase Impact						(84.11)	-0.3%
	Large Rate M5							
31	Delivery Charges	169,794	2.6122	169,431	2.6066	(0.0056)	(362.18)	-0.2%
32	Gas Supply Charges	883,064	13.5856	883,064	13.5856	-	-	0.0%
33	Total Bill	1,052,858	16.1978	1,052,495	16.1922	(0.0056)	(362.18)	0.0%
34	Sales Service Impact						(362.18)	0.0%
35	Direct Purchase Impact						(362.18)	-0.2%
	Small Rate M7							
36	Delivery Charges	656,550	1.8237	768,978	2.1361	0.3123	112,428.36	17.1%
37	Gas Supply Charges	4,890,816	13.5856	4,890,816	13.5856	-	-	0.0%
38	Total Bill	5,547,366	15.4093	5,659,794	15.7217	0.3123	112,428.36	2.0%
39	Sales Service Impact						112,428.36	2.0%
40	Direct Purchase Impact						112,428.36	17.1%
	Large Rate M7							
41	Delivery Charges	2,513,626	4.8339	3,004,222	5.7774	0.9435	490,596.48	19.5%
42	Gas Supply Charges	7,064,512	13.5856	7,064,512	13.5856	-	-	0.0%
43	Total Bill	9,578,138	18.4195	10,068,734	19.3630	0.9435	490,596.48	5.1%
44	Sales Service Impact						490,596.48	5.1%
45	Direct Purchase Impact						490,596.48	19.5%

Notes:
(1) Reflects Board-approved rates per Appendix A in Union's April 2016 QRAM filing (EB-2016-0040).

UNION GAS LIMITED
Calculation of Sales Service and Direct Purchase Impacts for Typical Small and Large Customers - Union South
Based on 20 Year Depreciation Rate Proposal Updated to Include an Allocation Change for the St. Clair System

Line No.	Particulars	EB-2016-0040 Approved 01-Apr-16 (1) Annual Bill ($) (a)	Unit Rate (cents/m³) (b)	EB-2016-0186 Proposed With Change St.Clair Allocator 01-Jan-18 Annual Bill ($) (c)	Unit Rate (cents/m³) (d)	Impact Unit Rate Change (cents/m³) (e) = (d-b)	Annual Bill Change ($) (f) = (c-a)	(%) (g) = (f/a)
	Large Rate M9							
1	Delivery Charges	384,526	1.9057	384,883	1.9074	0.0018	357.04	0.1%
2	Gas Supply Charges	2,741,302	13.5856	2,741,302	13.5856	-	-	0.0%
3	Total Bill	3,125,829	15.4913	3,126,186	15.4930	0.0018	357.04	0.0%
4	Sales Service Impact						357.04	0.0%
5	Direct Purchase Impact						357.04	0.1%
	Average Rate M10							
6	Delivery Charges	5,570	5.8937	5,536	5.8584	(0.0353)	(33.36)	-0.6%
7	Gas Supply Charges	12,838	13.5856	12,838	13.5856	-	-	0.0%
8	Total Bill	18,408	19.4793	18,375	19.4440	(0.0353)	(33.36)	-0.2%
9	Sales Service Impact						(33.36)	-0.2%
10	Direct Purchase Impact						(33.36)	-0.6%
	Small Rate T1							
11	Delivery Charges	132,068	1.7523	149,966	1.9897	0.2375	17,898.38	13.6%
12	Gas Supply Charges	1,023,947	13.5856	1,023,947	13.5856	-	-	0.0%
13	Total Bill	1,156,015	15.3379	1,173,913	15.5753	0.2375	17,898.38	1.5%
14	Sales Service Impact						17,898.38	1.5%
15	Direct Purchase Impact						17,898.38	13.6%
	Average Rate T1							
16	Delivery Charges	201,822	1.7450	231,323	2.0000	0.2551	29,501.49	14.6%
17	Gas Supply Charges	1,571,302	13.5856	1,571,302	13.5856	-	-	0.0%
18	Total Bill	1,773,124	15.3306	1,802,625	15.5856	0.2551	29,501.49	1.7%
19	Sales Service Impact						29,501.49	1.7%
20	Direct Purchase Impact						29,501.49	14.6%
	Large Rate T1							
21	Delivery Charges	445,903	1.7402	516,011	2.0138	0.2736	70,108.30	15.7%
22	Gas Supply Charges	3,481,185	13.5856	3,481,185	13.5856	-	-	0.0%
23	Total Bill	3,927,088	15.3258	3,997,196	15.5994	0.2736	70,108.30	1.8%
24	Sales Service Impact						70,108.30	1.8%
25	Direct Purchase Impact						70,108.30	15.7%
	Small Rate T2							
26	Delivery Charges	511,030	0.8624	598,575	1.0102	0.1477	87,545.29	17.1%
27	Gas Supply Charges	8,050,283	13.5856	8,050,283	13.5856	-	-	0.0%
28	Total Bill	8,561,313	14.4480	8,648,858	14.5958	0.1477	87,545.29	1.0%
29	Sales Service Impact						87,545.29	1.0%
30	Direct Purchase Impact						87,545.29	17.1%
	Average Rate T2							
31	Delivery Charges	1,186,197	0.5997	1,407,447	0.7116	0.1119	221,249.52	18.7%
32	Gas Supply Charges	26,870,938	13.5856	26,870,938	13.5856	-	-	0.0%
33	Total Bill	28,057,135	14.1853	28,278,385	14.2972	0.1119	221,249.52	0.8%
34	Sales Service Impact						221,249.52	0.8%
35	Direct Purchase Impact						221,249.52	18.7%
	Large Rate T2							
36	Delivery Charges	1,936,196	0.5232	2,305,665	0.6230	0.0998	369,468.61	19.1%
37	Gas Supply Charges	50,278,811	13.5856	50,278,811	13.5856	-	-	0.0%
38	Total Bill	52,215,008	14.1088	52,584,476	14.2086	0.0998	369,468.61	0.7%
39	Sales Service Impact						369,468.61	0.7%
40	Direct Purchase Impact						369,468.61	19.1%
	Large Rate T3							
41	Delivery Charges	3,552,739	1.3027	3,565,851	1.3076	0.0048	13,112.16	0.4%
42	Gas Supply Charges	37,049,561	13.5856	37,049,561	13.5856	-	-	0.0%
43	Total Bill	40,602,300	14.8883	40,615,413	14.8932	0.0048	13,112.16	0.0%
44	Sales Service Impact						13,112.16	0.0%
45	Direct Purchase Impact						13,112.16	0.4%

Notes:
(1) Reflects Board-approved rates per Appendix A in Union's April 2016 QRAM filing (EB-2016-0040).

UNION GAS LIMITED

Answer to Interrogatory from
London Property Management Association ("LPMA")

Reference: Exhibit A, Tab 8, Schedule 6 & Exhibit A, Appendix B, Schedule 6

Please provide a table that shows the dollar impacts and % change for delivery charges only for each rate class based on each of the following:

a) Union's proposal

b) Union's proposal for depreciation rates, but no change to the Board-approved allocation methodology, other than to update it for the increase in design day demand

c) Union's proposal for allocation, but maintaining the current Board-approved depreciation rates

d) Union's proposal, but with the change for the St. Clair System allocator, if this change is not already incorporated into Union's proposal.

Response:

a) Please see Attachment 1, p.1.

b) Please see Attachment 1, p.2.

c) Please see Attachment 1, p.3.

d) Please see Attachment 1, p.4.

UNION GAS LIMITED
Proposed Delivery Charges and Annual Bill Impacts for Typical Small and Large Customers

Line No.	Particulars	Delivery Charges EB-2016-0040 Approved 01-Apr-16 (1) ($)	Delivery Charges EB-2016-0186 Proposed 01-Jan-18 ($)	Delivery Charge Impact ($)	Delivery Charge Impact (%)
		(a)	(b)	(c) = (b - a)	(d) = (c / a)
	Union North				
1	Rate 01 - Small	435	434	(1.11)	-0.3%
2	Rate 10 - Small	4,232	4,217	(14.51)	-0.3%
3	Rate 10 - Large	13,579	13,541	(37.62)	-0.3%
4	Rate 20 - Small	73,272	72,937	(334.73)	-0.5%
5	Rate 20 - Large	281,495	280,472	(1,022.33)	-0.4%
6	Rate 25 - Average	62,814	62,598	(216.15)	-0.3%
7	Rate 100 - Small	260,184	259,444	(739.80)	-0.3%
8	Rate 100 - Large	2,106,720	2,101,477	(5,242.80)	-0.2%
	Union South				
9	Rate M1 - Small	346	354	8.03	2.3%
10	Rate M2 - Small	3,297	3,503	205.71	6.2%
11	Rate M2 - Large	10,642	11,462	820.27	7.7%
12	Rate M4 - Small	37,374	46,440	9,065.95	24.3%
13	Rate M4 - Large	277,378	351,384	74,006.01	26.7%
14	Rate M5 - Small	30,596	30,512	(84.11)	-0.3%
15	Rate M5 - Large	169,794	169,431	(362.18)	-0.2%
16	Rate M7 - Small	656,550	767,507	110,957.22	16.9%
17	Rate M7 - Large	2,513,626	2,997,803	484,176.96	19.3%
18	Rate M9 - Large	384,526	384,883	357.04	0.1%
19	Rate M10 - Average	5,570	5,536	(33.36)	-0.6%
20	Rate T1 - Small	132,068	150,193	18,124.88	13.7%
21	Rate T1 - Average	201,822	231,696	29,874.43	14.8%
22	Rate T1 - Large	445,903	516,897	70,993.82	15.9%
23	Rate T2 - Small	511,030	602,656	91,625.96	17.9%
24	Rate T2 - Average	1,186,197	1,417,724	231,526.53	19.5%
25	Rate T2 - Large	1,936,196	2,322,811	386,614.64	20.0%
26	Rate T3 - Large	3,552,739	3,565,851	13,112.16	0.4%

Notes:
(1) Reflects Board-approved rates per Appendix A in Union's April 2016 QRAM filing (EB-2016-0040).

UNION GAS LIMITED
Delivery Charges and Impacts for Typical Small and Large Customers
Based on Board-Approved Cost Allocation Updated for the Project and Proposed 20 Year Depreciation Rates

Line No.	Particulars	Delivery Charges EB-2016-0040 Approved 01-Apr-16 (1) ($)	Delivery Charges EB-2016-0186 Proposed 01-Jan-18 ($)	Delivery Charge Impact ($)	Delivery Charge Impact (%)
		(a)	(b)	(c) = (b - a)	(d) = (c / a)
	Union North				
1	Rate 01 - Small	435	434	(1.11)	-0.3%
2	Rate 10 - Small	4,232	4,217	(14.51)	-0.3%
3	Rate 10 - Large	13,579	13,541	(37.62)	-0.3%
4	Rate 20 - Small	73,272	72,937	(334.73)	-0.5%
5	Rate 20 - Large	281,495	280,472	(1,022.33)	-0.4%
6	Rate 25 - Average	62,814	62,598	(216.15)	-0.3%
7	Rate 100 - Small	260,184	259,444	(739.80)	-0.3%
8	Rate 100 - Large	2,106,720	2,101,477	(5,242.80)	-0.2%
	Union South				
9	Rate M1 - Small	346	349	3.79	1.1%
10	Rate M2 - Small	3,297	3,399	102.65	3.1%
11	Rate M2 - Large	10,642	11,055	413.62	3.9%
12	Rate M4 - Small	37,374	40,768	3,394.38	9.1%
13	Rate M4 - Large	277,378	305,085	27,706.42	10.0%
14	Rate M5 - Small	30,596	30,512	(84.11)	-0.3%
15	Rate M5 - Large	169,794	169,431	(362.18)	-0.2%
16	Rate M7 - Small	656,550	692,051	35,501.40	5.4%
17	Rate M7 - Large	2,513,626	2,668,541	154,915.20	6.2%
18	Rate M9 - Large	384,526	384,883	357.04	0.1%
19	Rate M10 - Average	5,570	5,536	(33.36)	-0.6%
20	Rate T1 - Small	132,068	154,055	21,987.38	16.6%
21	Rate T1 - Average	201,822	238,053	36,231.50	18.0%
22	Rate T1 - Large	445,903	531,984	86,080.88	19.3%
23	Rate T2 - Small	511,030	682,281	171,251.08	33.5%
24	Rate T2 - Average	1,186,197	1,618,258	432,060.83	36.4%
25	Rate T2 - Large	1,936,196	2,657,380	721,183.96	37.2%
26	Rate T3 - Large	3,552,739	3,565,851	13,112.16	0.4%

Notes:
(1) Reflects Board-approved rates per Appendix A in Union's April 2016 QRAM filing (EB-2016-0040).

UNION GAS LIMITED
Delivery Charges and Impacts for Typical Small and Large Customers
Based on Union's Proposed Cost Allocation and Board-Approved Depreciation Rates of Approximately 50 Years

Line No.	Particulars	Delivery Charges EB-2016-0040 Approved 01-Apr-16 (1) ($)	Delivery Charges EB-2016-0186 Proposed 01-Jan-18 ($)	Delivery Charge Impact ($)	Delivery Charge Impact (%)
		(a)	(b)	(c) = (b - a)	(d) = (c / a)
	Union North				
1	Rate 01 - Small	435	433	(2.03)	-0.5%
2	Rate 10 - Small	4,232	4,205	(27.23)	-0.6%
3	Rate 10 - Large	13,579	13,504	(74.43)	-0.5%
4	Rate 20 - Small	73,272	72,659	(612.86)	-0.8%
5	Rate 20 - Large	281,495	279,512	(1,983.10)	-0.7%
6	Rate 25 - Average	62,814	62,409	(405.28)	-0.6%
7	Rate 100 - Small	260,184	258,790	(1,394.52)	-0.5%
8	Rate 100 - Large	2,106,720	2,096,428	(10,292.52)	-0.5%
	Union South				
9	Rate M1 - Small	346	351	5.15	1.5%
10	Rate M2 - Small	3,297	3,441	144.01	4.4%
11	Rate M2 - Large	10,642	11,224	582.48	5.5%
12	Rate M4 - Small	37,374	43,475	6,100.85	16.3%
13	Rate M4 - Large	277,378	327,180	49,801.44	18.0%
14	Rate M5 - Small	30,596	30,440	(155.83)	-0.5%
15	Rate M5 - Large	169,794	169,031	(763.06)	-0.4%
16	Rate M7 - Small	656,550	725,798	69,248.52	10.5%
17	Rate M7 - Large	2,513,626	2,815,801	302,175.36	12.0%
18	Rate M9 - Large	384,526	383,685	(841.18)	-0.2%
19	Rate M10 - Average	5,570	5,490	(79.29)	-1.4%
20	Rate T1 - Small	132,068	144,975	12,907.02	9.8%
21	Rate T1 - Average	201,822	223,132	21,310.75	10.6%
22	Rate T1 - Large	445,903	496,624	50,720.74	11.4%
23	Rate T2 - Small	511,030	577,949	66,918.71	13.1%
24	Rate T2 - Average	1,186,197	1,356,166	169,968.86	14.3%
25	Rate T2 - Large	1,936,196	2,220,402	284,206.07	14.7%
26	Rate T3 - Large	3,552,739	3,555,805	3,066.36	0.1%

Notes:
(1) Reflects Board-approved rates per Appendix A in Union's April 2016 QRAM filing (EB-2016-0040).

UNION GAS LIMITED
Delivery Charges and Impact for Typical Small and Large Customers
Based on Union's Proposed Cost Allocation and Proposed 20 Year Depreciation Rates
Updated to Include an Allocation Change for the St. Clair System

Line No.	Particulars	Delivery Charges EB-2016-0040 Approved 01-Apr-16 (1) ($) (a)	Delivery Charges EB-2016-0186 Proposed 01-Jan-18 ($) (b)	Delivery Charge Impact ($) (c) = (b - a)	Delivery Charge Impact (%) (d) = (c / a)
	Union North				
1	Rate 01 - Small	435	434	(1.11)	-0.3%
2	Rate 10 - Small	4,232	4,217	(14.51)	-0.3%
3	Rate 10 - Large	13,579	13,541	(37.62)	-0.3%
4	Rate 20 - Small	73,272	72,937	(334.73)	-0.5%
5	Rate 20 - Large	281,495	280,472	(1,022.33)	-0.4%
6	Rate 25 - Average	62,814	62,598	(216.15)	-0.3%
7	Rate 100 - Small	260,184	259,444	(739.80)	-0.3%
8	Rate 100 - Large	2,106,720	2,101,477	(5,242.80)	-0.2%
	Union South				
9	Rate M1 - Small	346	354	8.34	2.4%
10	Rate M2 - Small	3,297	3,510	213.13	6.5%
11	Rate M2 - Large	10,642	11,491	849.63	8.0%
12	Rate M4 - Small	37,374	46,654	9,280.09	24.8%
13	Rate M4 - Large	277,378	353,133	75,754.46	27.3%
14	Rate M5 - Small	30,596	30,512	(84.11)	-0.3%
15	Rate M5 - Large	169,794	169,431	(362.18)	-0.2%
16	Rate M7 - Small	656,550	768,978	112,428.36	17.1%
17	Rate M7 - Large	2,513,626	3,004,222	490,596.48	19.5%
18	Rate M9 - Large	384,526	384,883	357.04	0.1%
19	Rate M10 - Average	5,570	5,536	(33.36)	-0.6%
20	Rate T1 - Small	132,068	149,966	17,898.38	13.6%
21	Rate T1 - Average	201,822	231,323	29,501.49	14.6%
22	Rate T1 - Large	445,903	516,011	70,108.30	15.7%
23	Rate T2 - Small	511,030	598,575	87,545.29	17.1%
24	Rate T2 - Average	1,186,197	1,407,447	221,249.52	18.7%
25	Rate T2 - Large	1,936,196	2,305,665	369,468.61	19.1%
26	Rate T3 - Large	3,552,739	3,565,851	13,112.16	0.4%

Notes:
(1) Reflects Board-approved rates per Appendix A in Union's April 2016 QRAM filing (EB-2016-0040).

UNION GAS LIMITED

Answer to Interrogatory from
School Energy Coalition ("SEC")

Reference: Exhibit A

Please provide copies of all materials that were provided to Union's senior management team, and if applicable, its parent company's Board of Directors, for the approval to undertake, either collectively or individually, any aspects of the capital projects that underlie this application.

Response:

Please see Attachment 1.

Spectra Energy

Panhandle Reinforcement Project

Project Funding Increase Request

April 2016

Panhandle Reinforcement Project
Strategic Rationale

Spectra Energy

Union's Panhandle Transmission System serves a diverse customer base between Chatham and Windsor. This region has recently seen significant growth such that the Panhandle Transmission System will be at capacity in 2017. The Panhandle Reinforcement Project will allow Union to meet residential, commercial and industrial demand in this region for the next five years (2017-2021).

Fundamentals

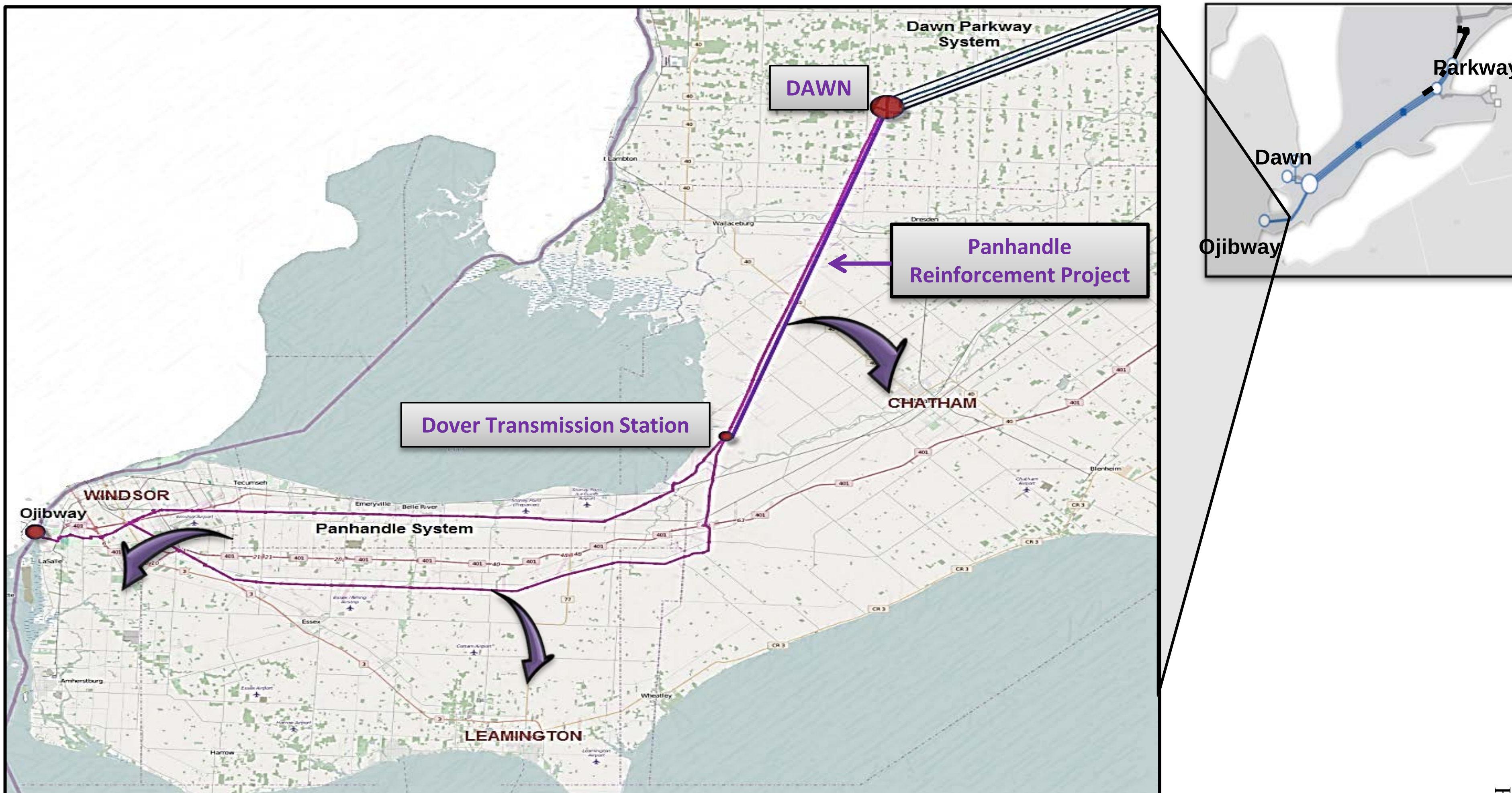
- Most efficient project to meet 2017-2021 demands
- Beyond 2021, this project will allow Union's Panhandle Transmission System to grow efficiently
- Eliminates forecasted operating and maintenance costs on a section of the existing 16" pipeline

Market Opportunity

- Increased market demand over next five years requires ~107,000 GJ/d of transportation capacity
- Attach 100 new acres of greenhouses annually plus meet outstanding requests for firm service
- Enables the conversion of Chrysler's fleet of 80 trucks to CNG and other clean energy growth
- Access to natural gas attracts and retains industry within the province and the Chatham to Windsor area

Panhandle Reinforcement Project
Project Map

Spectra Energy



Panhandle Reinforcement Project
Transaction Overview

Spectra Energy

Project Description / Scope of Work:

Panhandle Reinforcement Project provides ~100,000 MMBtu/d (107,000 GJ/d) of transmission capacity along Union's Panhandle Transmission System

- Replace 23 miles (40 kilometres) of existing 16 " pipe with a new 36 " pipe
- Transmission Station Modifications & Upgrades
- Dawn Yard Modifications

Target In-service date: November 1, 2017

Estimated CapEx: $265 MM CAD
Meets capital pass through threshold under Incentive Regulatory Mechanism (IRM) framework

Deal Terms:

Customers:
- Union's in-franchise customers (residential, commercial and industrial)
- No financial backstopping of project development costs

Operations:
- Union Gas Limited

Rates:
- Regulated rate of return project (~5.8%)
- Costs added to infranchise and exfranchise distribution rates as of the in-service date (rate methodology under review)

Project Funding Status

- Current PFA $0.5 MM CAD
  - Environmental Assessment and Lands
- Forecast cancellation costs to exceed current PFA in April 2016
- Project requires an increase to PFA for further project development activities
  - Long-Lead Material Order
  - Environmental Field Studies
  - Land Acquisition
  - Engineering Design
  - Stakeholder Engagement

Cancellation Cost Schedule

Spectra Energy

2017 Panhandle Reinforcement Project Cumulative Cancellation Cost (CAD millions)		
Date	**Total**	
April 2016	\$3.5	Pipe Order
May 2016	\$4.5	
June 2016	\$6	Regulatory Filing
July 2016	\$8.5	
August 2016	\$12	
September 2016	\$16	FRC/TRC Endorsement
October 2016	\$33	SE BoD Approval
November 2016	\$37	
December 2016	\$42.5	
January 2017	\$46	
February 2017	\$49.5	
March 2017	\$62.5	OEB Approval

Construction Start – May 2, 2017
In-Service – November 1, 2017

Cost Breakdown @ October 2016

Cost Element	Cancellation Costs (million CAD)	Mitigated Cancellation Costs (million CAD)
Pipe	$14	$0 - $11
Material	$5	$0-$4
Lands	$3	$3
Engineering & Design	$3	$3
Environmental	$2	$2
Contingency	$2	$0-$2
Stakeholder	$1	$0.5 -$1
Company/Employee Expense	$1	$1
Miscellaneous Labour	$1	$1
Other	$1	$1
Total	**$33**	**$11.5 -$29**

- Mitigation range assumes 20% cost recovery on pipe and material (resale on open market) to full cost recovery (utilization with SE). Range assumptions require verification.

Next Steps

- **Now** - Increase PFA to $6 MM CAD to support project development activities to the end of June 2016 *(aligns with regulatory filing)*
  - Continue to manage spending and commitments where possible
- **June 2016** - Seek further PFA increase to $33 MM CAD to support project development activities to the end of October 2016
- **September 2016** - Seek FRC and TRC endorsement
- **October 2016** - Seek SE Board of Directors full project funding approval
- The requested project funding for 2016 is incremental to the approved capital expansion budget (funding through budget substitution)

Appendix: Capital Expenditure Details

Capital Expenditure	*(Millions of $CAD)*
Panhandle Reinforcement Project	
Prime Contractor	$126
Company Materials	$28
Company Labour & Expenses	$8
Outside Services	$25
Lands	$31
Sub-Total	**$218**
Contingency	$44
IDC	$3
Total Cost	**$ 265**

Panhandle Reinforcement Project

Project Funding Increase Request

July 2016

Panhandle Reinforcement Project
Strategic Rationale

Union's Panhandle Transmission System serves a diverse customer base between Chatham and Windsor. This region has recently seen significant growth such that the Panhandle Transmission System will be at capacity in 2017. The Panhandle Reinforcement Project will allow Union to meet forecast residential, commercial and industrial demand in this region for the next five years (2017-2021).

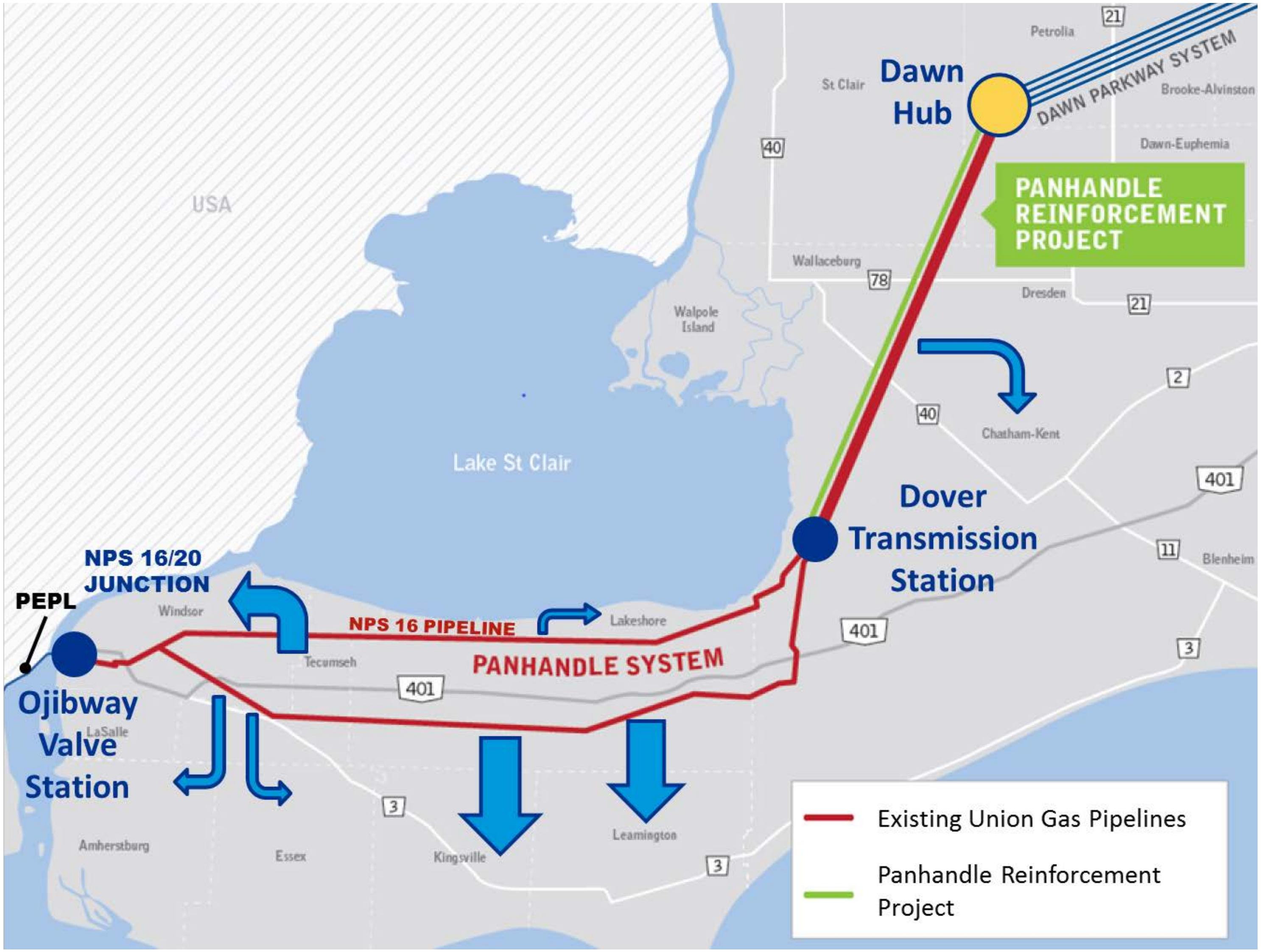
Fundamentals

- Most efficient project to meet forecast 2017-2021 demands
- Beyond 2021, this project will allow Union's Panhandle Transmission System to grow efficiently
- Eliminates operating and maintenance costs on a section of the existing 16" pipeline

Market Opportunity

- Forecasting increased infranchise demand over next five years, requiring ~100,000 MMBtu/d of transportation capacity
- No capacity turned back in May 2016 Reverse Open Season
- Can attach 100 new acres of greenhouses annually plus meet outstanding requests from previous Open Season
- Enables the conversion of Chrysler's fleet of 80 trucks to CNG and other clean energy growth
- Access to natural gas attracts and retains industry within the province and the Chatham to Windsor corridor

Panhandle Reinforcement Project
Project Map



Panhandle Reinforcement Project
Transaction Overview

Project Description / Scope of Work:

Panhandle Reinforcement Project provides ~100,000 MMBtu/d (106,000 GJ/d) of transmission capacity along Union's Panhandle Transmission System

- Replace 23 miles (40 kilometres) of existing 16 " pipe with a new 36 " pipe
- Transmission Station Modifications & Upgrades
- Dawn Yard Modifications

Target In-service date: November 1, 2017

Estimated CapEx: $265 MM CAD
Meets capital pass through threshold under Incentive Regulatory Mechanism (IRM) framework

Deal Terms:

Customers:
- Capacity required for Union's in-franchise customers (residential, commercial and industrial), attached to the Panhandle Transmission System
- Will contract to secure firm industrial market during Regulatory proceeding
- No financial backstopping of project development costs

Operations:
- Union Gas Limited

Rates:
- Regulated rate of return project (~5.8%)
- Proposing change to recover costs over a 20 year useful life (normally 40-50 years)
- Costs added to infranchise rates as of the in-service date

Other Project Alternatives Evaluated

1) New 30” Pipe from Dawn

- No capital cost advantage
- NPV cost is higher given 16” pipeline needs ongoing integrity work (maintenance capital)

2) LNG or CNG Peak Supply

- LNG facility at Comber has higher cost considering capital and O&M
- Not possible to construct before 2018 or 2019 (can’t meet required timeline)
- CNG would require over 500 trucks on a design day (not practical)

3) More Ojibway Supply plus Pipe

- Increasing Ojibway deliveries provides system benefit in Windsor area but limited benefit to system in Leamington/Kingsville area
- Requires new pipe in Windsor as well as new pipe west from Dawn
- Forecast Ojibway supply to be more expensive than Dawn purchases
- Long-term NPV cost higher than proposed 36” lift and lay project

Project Funding Status

- Current PFA $6.0 MM CAD
  - Environmental Assessment and Lands
- Forecast cancellation costs to exceed current PFA as early as July 2016
- Project requires an increase to current PFA for further project development activities
  - Material Order
  - Environmental Field Studies
  - Land Acquisition
  - Engineering Design
  - Stakeholder Engagement
- Full funding approval to be requested at SE Board of Directors meeting in October 2016

Cancellation Cost Schedule

Spectra Energy

2017 Panhandle Reinforcement Project Cumulative Cancellation Cost (CAD millions)	
Date	**Total**
June 2016	$3.9
July 2016	$5.5
August 2016	$8.7
September 2016	$12.2
October 2016	$27
November 2016	$32.6
December 2016	$36.0
January 2017	$38.4
February 2017	$43.1
March 2017	$55.8
April 2017	$68.3
May 2017	$101.7

Regulatory Filing

FRC/TRC Endorsement

SE BoD Approval

Target OEB Approval

Construction Start – May 2017
In-Service – November 1, 2017

Cost Breakdown @ October 2016

Cost Element	Forecasted Gross Cancellation Costs (million CAD)	Mitigated Cancellation Costs – High Case (million CAD)	Mitigated Cancellation Costs – Low Case (million CAD)
Pipe	$12.5	$8.7	$0
Material	$3.4	$2.4	$0
Lands	$3.3	$3.3	$3.3
Engineering & Design	$3.2	$3.2	$3.2
Environmental	$1.6	$1.6	$1.6
Contingency	$1.4	$1.4	$0
Stakeholder	$0.2	$0.2	$0.2
Company/Employee Expense	$0.6	$0.6	$0.6
Other	$0.8	$0.8	$0.8
Total	**$27**	**$22.2**	**$9.7**

- Total gross cash flow of $8.8 million CAD at October 2016
- Mitigation range assumes 30% (low case) cost recovery on pipe and material (resale on open market) to 100% cost recovery (high case – utilizing all ordered pipe for SE project @ full book value)
- If project is denied by the OEB, Union would attempt to recover net mitigated costs from ratepayers (currently no deferral account recovery mechanism in place)

Project Milestones

Project Activity	Target Date
Public Open House Sessions	February 2016
Long Lead Material Order	May 2016
Environmental Assessment Report	June 2016
OEB Application	June 2016
FRC/TRC/BOD Approval	September 14/September 19/ October 19, 2016
OEB Approval	March 2017
Permit Approvals Received	April 2017
Land Rights Obtained	May 2017
Construction Start	May 2017
Target In-Service	November 2017

Risk Management

Spectra Energy

Category	Risk Description	Action Plan
B, REG	Financial commitment of ~$56MM prior to OEB Decision (March 2017). If the project is not approved, Union will be financially exposed and could be responsible for cancellation costs.	Manage and monitor spend schedule. Investigate mitigation opportunities to reduce impact like re-use of pipe and materials (third party or within Spectra). Execute firm contracts with industrial customers as soon as possible. Execute comprehensive stakeholder engagement plan. Regulatory to investigate strategy to attempt to recover net costs if project is denied.
S, REG	A delayed OEB decision would delay the start of construction to meet a 2017 in-service date. Potential issues contributing to an OEB decision delay include : 1) cap and trade and related Climate Change Action Plan impacts; 2) physical and gas supply alternatives and 3) rate impacts	File comprehensive evidence to support facilities, need, alternatives, importance/benefits to Ontario economy/industry/customers. Review short-term options to meet all or a portion of the 2017 market if pipeline is delayed to 2018. Execute advocacy plan with key stakeholders to seek project support (municipalities, industry associations, intervenors, customers). Expedite OEB facility application.

Risk Category: Safety, E (Environmental), REG (Regulatory), REP (Reputation), S (Schedule), B (Budget)

Risk Management

Spectra Energy

Category	Risk Description	Action Plan
S,B	Completion of Field Studies. There are approximately 100 landowners along pipeline route. Without early land access along the easement and temporary land use areas, the design and environmental studies required for permit applications cannot be completed. This could impact construction schedule and project cost.	Meeting with landowners early with a focus on key properties in sensitive areas – Secured 102 properties with 10 properties (8 landowners) outstanding. Strategy in place for outstanding properties, including early access order application to OEB for right of entry. Access to the existing permanent easement is already available.
S,B	New permanent easement and/or temporary land rights are required from approximately 100 landowners. If all land rights are not secured, the project schedule does not allow enough time for expropriation to meet the 2017 in-service date. This will require temporary tie-overs and construction in 2018.	Meet with landowners to negotiate a settlement. If land rights cannot be obtained, Engineering to determine if construction can be completed within the boundaries of the existing easement, including any temporary tie-ins. Expedite expropriation applications wherever possible.

Risk Category: Safety, E (Environmental), REG (Regulatory), REP (Reputation), S (Schedule), B (Budget)

Next Steps

- **Now** - Increase PFA to $27 MM CAD to support project development activities to the end of October 2016
  - Continue to manage spending and commitments where possible
- **September 2016** - Seek FRC and TRC endorsement
- **October 2016** - Seek SE Board of Directors full project funding approval
- The requested project funding for 2016 is incremental to the approved capital expansion budget (funding through budget substitution)

Appendix: Capital Expenditure Details

Capital Expenditure	(Millions of $CAD)
Panhandle Reinforcement Project	
Prime Contractor	$126
Company Materials	$28
Company Labour & Expenses	$8
Outside Services	$25
Lands	$31
Sub-Total	**$218**
Contingency	$44
IDC	$3
Total Cost	**$ 265**

UNION GAS LIMITED

Answer to Interrogatory from
School Energy Coalition ("SEC")

Reference: Exhibit A

Please provide a copy of any internal business case created for this project.

Response:

Please see Attachment 1.

Panhandle Reinforcement Project

Business Case

February 2016

Panhandle Reinforcement Project
Strategic Rationale

Union's Panhandle Transmission System serves a diverse customer area between the Chatham and Windsor corridor which has significantly grown over the past 5 years and will be at capacity in 2017. The Panhandle Reinforcement Project will meet the current and future residential, commercial and industrial distribution growth, including the rapidly growing greenhouse market for the next fives years (2017-2021).

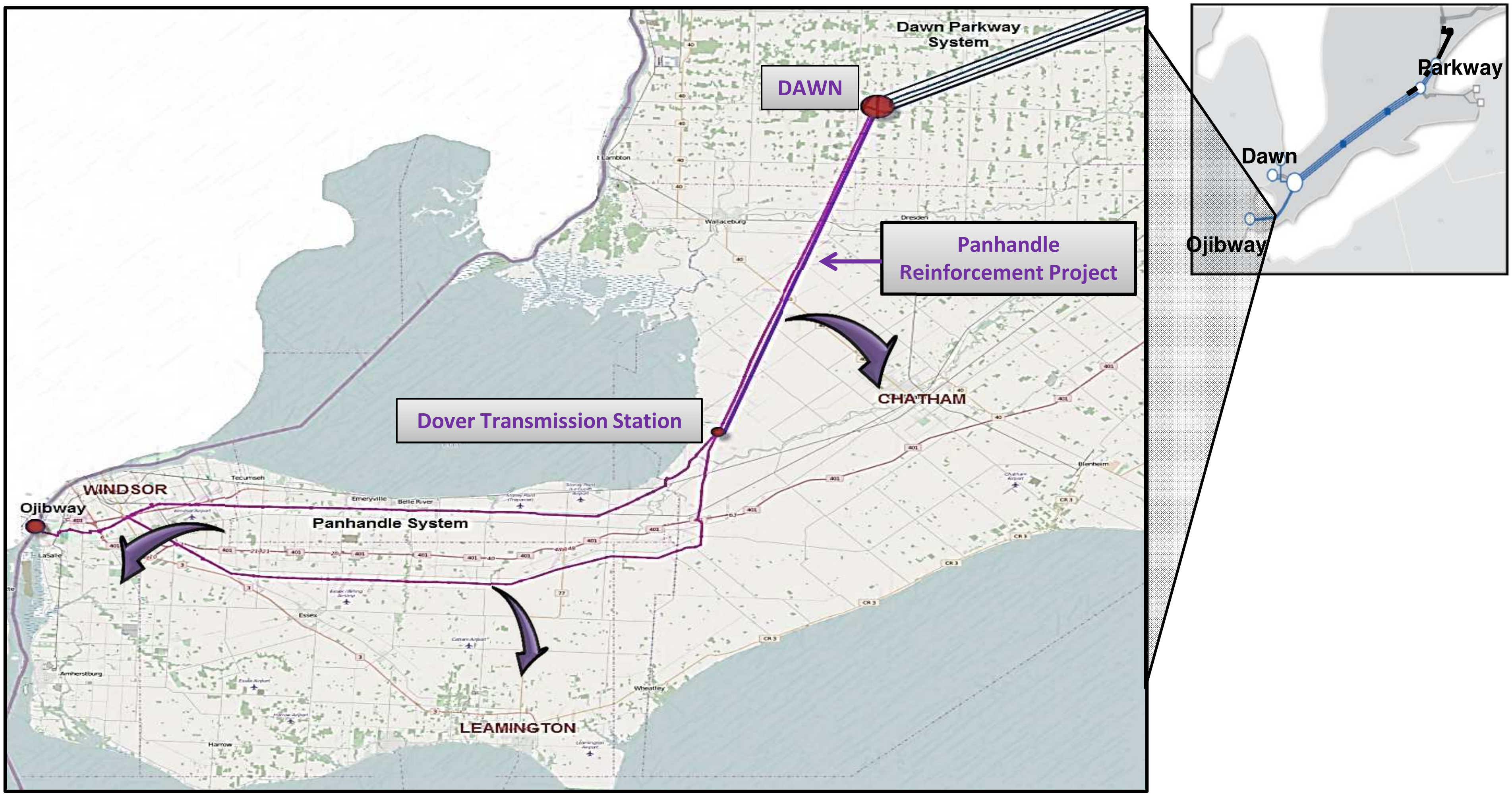
Fundamentals

- The current Panhandle Transmission System is at capacity
- Provides sufficient capacity to meet a growing firm in-franchise market for 5 years
- On a long term perspective, this transmission project will allow for future growth of Union's distribution pipeline system
- Eliminates forecasted operating and maintenance costs on existing 16" pipeline

Market Opportunity

- Increased market demand of firm transportation services of ~105,000 GJ/d to meet growth over 5 years
- Attach 100 new acres of greenhouses annually plus meet outstanding requests from open season (Leamington Expansion)
- Enables the conversion of Chrysler's fleet of 80 trucks to CNG
- Attracts and retains industry within the province and franchise area

Panhandle Reinforcement Project
Project Map



Panhandle Reinforcement Project
Transaction Overview

Spectra Energy

Project Description / Scope of Work:

Panhandle Reinforcement Project provides ~100,000 MMBtu/d (105,000 GJ/d) of transmission capacity along the Union's Panhandle Transmission System

- Replacing 23 miles (40 Km) of existing 16 " pipe with a new 36 " pipe
- Station Modifications & Upgrades
- Dawn Modifications

Target In-service date: November 1, 2017

Estimated CapEx: $265 MM CAD
Meets capital pass through threshold under Incentive Regulatory Mechanism (IRM) framework

Deal Terms:

Customers:
- Union's in-franchise customers
- No financial backstopping – not customer/market specific justified across entire Panhandle Transmission System

Operations:
- Union Gas Limited

Rates:
- Regulated rate of return project

Feasibility Capital Expenditure Details

Capital Expenditure	(Millions of $CAD)
Panhandle Reinforcement Project	
Prime Contractor	$125.7
Company Materials	$28.1
Company Labour & Expenses	$7.6
Outside Services	$25.0
Lands	$31.6
Sub-Total	**$218.0**
Contingency	$43.5
IDC	$3.0
Total Cost	**$ 264.5**

Cancellation Cost Schedule

2017 Panhandle Reinforcement Project

Cumulative Cancellation Cost Forecast (CAD millions)

Date	Total	
March 2016	$0.9	
April 2016	$3.5	Pipeline Order
May 2016	$4.5	
June 2016	$6.0	Regulatory Filing
July 2016	$8.3	
August 2016	$11.9	
September 2016	$15.9	FRC/TRC Endorsement
October 2016	$33.2	SE BoD Approval
November 2016	$37.0	
December 2016	$42.7	
January 2017	$46.2	
February 2017	$49.4	
March 2017	$62.7	OEB Approval

Commitments will exceed current pre-spend approval of $0.5MM in March 2016
On a cash basis $0.5 MM current pre-spend approval will exceed in April 2016

Risk Management

Category	Risk Description	Action Plan
B	Financial commitment of ~$63MM prior to OEB Decision (March 2017). If the project is not approved, Union will be financially exposed.	• Expedite OEB facility application (June 2016) • Manage and monitor spend schedule • Stakeholder outreach focusing on the importance and benefits of this project
S, R	The project schedule has a regulatory approval milestone of March 2017 in order to start construction by 2017. It is possible that the decision will be delayed/denied by OEB due to issues like 1) cap & trade, 2) physical and commercial alternatives, 3) rate impacts to in-franchise and ex-franchise shippers, which will negatively impact the start of construction.	• File comprehensive evidence to support facilities, need, alternatives, importance to Ontario economy/industry and impact of project not moving forward. Identify the project is a good our infranchise and exfranchise shippers. • Begin advocacy presentations with key stakeholders
S	There are approximately 109 landowners along 40 km pipeline route. It is likely that without early land access along the easement and temporary land use areas to complete the three season species at risk studies for the required permit applications, the construction start date may be delayed.	• Targeting to meet with landowners early (immediately after open house) • Focus on key properties in sensitive areas • Access the permanent easement already available • For Landowners who refuse to provide consent submit an application to the OEB for an Access order, which could may impact schedule

Risk Category: B (Budget), E (Environmental), S (Schedule), R (Regulatory), Safety (Safety)

Risk Management

Category	Risk Description	Action Plan
S, B	Environmental permitting needs to be completed in 26 weeks (normally requires 35-40 weeks) for the required three season studies. With the expected species at risk (mussels and snakes) along the easement, it is possible that the project schedule will be negatively impacted (permit applications, construction schedule).	• Focus on early stakeholder outreach with agencies and municipalities. • Increased capital to mitigate species at risk
S	Completion of the archaeological surveys will be on a compressed timeline. It is likely that if access to the easement and working areas is refused by landowners, or if landowners are unwilling/unable to plough the areas prior to the survey, the project schedule will be negatively impacted.	• Consider multiple archaeology consultants to expedite field work and reporting • Secure third party ploughers to prepare fields • Pay for crop loss where required to ensure all fields are ploughed • For Landowners who refuse to provide consent submit an application to the OEB for an Access order, which could may impact schedule
S, B	New permanent easement and/or temporary land use is required from approximately 109 landowners. If land rights are not secured, it is highly likely that the project will not meet the in-service date as the schedule does not allow for expropriation.	• Evaluate whether construction can proceed without requested land rights. If work around is achievable on a portion of the route, this will require Vary Application to OEB.

Risk Category: B (Budget), E (Environmental), S (Schedule), R (Regulatory), Safety (Safety)

Project Timeline

Project Activity	Target Date
Monte Carlo Analysis	March 1 ,2016
Long Lead Material Order – Pipeline	April 1, 2016
Environmental Assessment Report	May 26, 2016
OEB Application	June 3, 2016
FRC/TRC Endorsement	September 14/19, 2016
BOD Endorsement	October 19, 2016
OEB Approval	March 2017
Construction Start	May 2, 2017
In-Service	November 2017

UNION GAS LIMITED

Answer to Interrogatory from
School Energy Coalition ("SEC")

Reference: Exhibit A, Tab 4, p.3

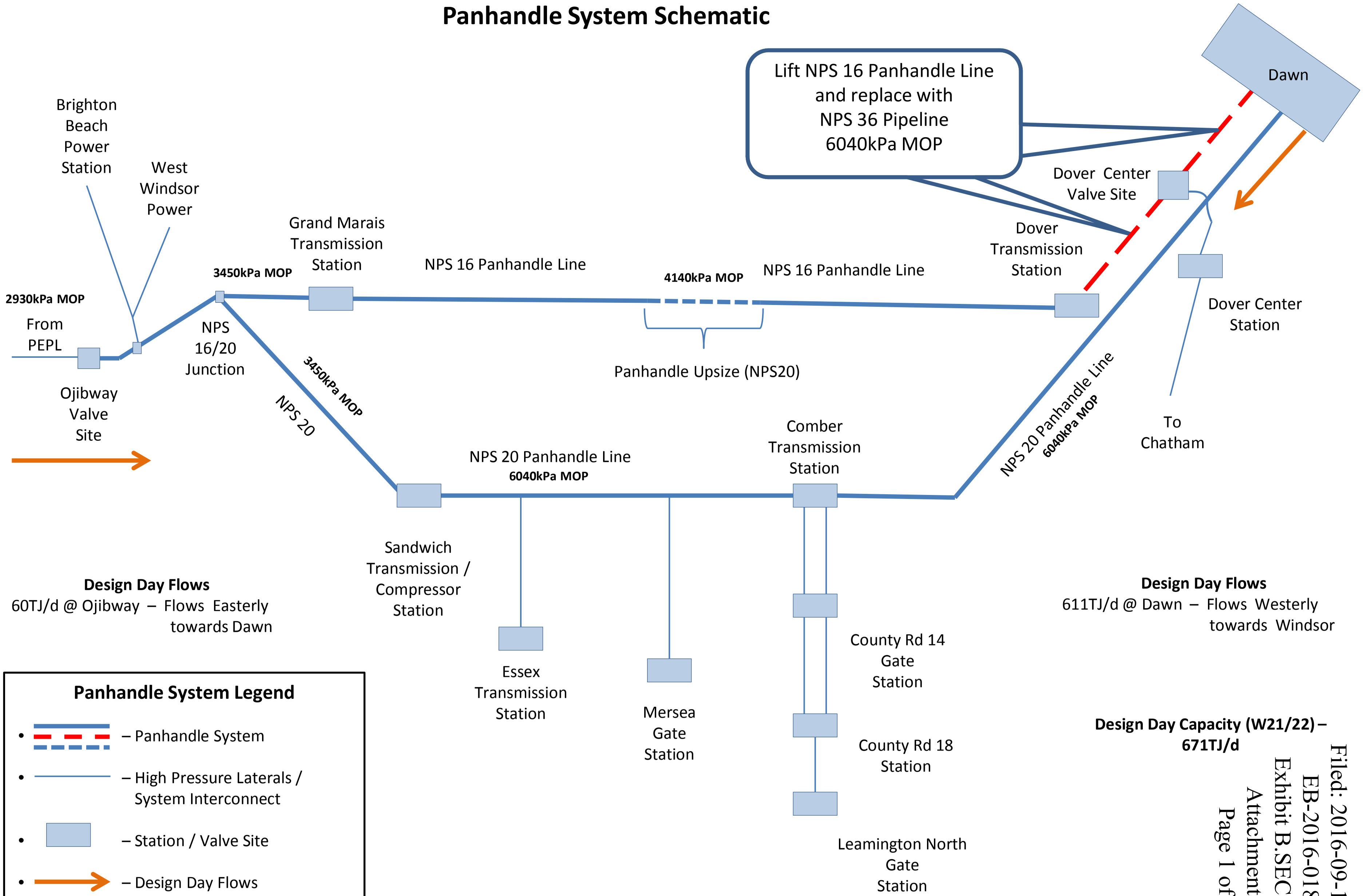
Please provide a version of this schematic diagram showing peak day capacity and flow direction.

Response:

Please see Attachment 1.

Panhandle Reinforcement Project

Panhandle System Schematic



UNION GAS LIMITED

Answer to Interrogatory from
School Energy Coalition ("SEC")

Reference: Exhibit A, Tab 6, p.5

Please provide details regarding the avoided future integrity costs for the NPS 16 pipeline from Dawn to Dover by construction of the proposed facilities. Please quantify those avoided integrity costs.

Response:

The cost details are described and quantified by type and frequency at Exhibit A, Tab 6, Schedule 2. Please see Attachment 1 which sums the costs by year.

Forecasted Cost to maintain 16" Btw Dawn and Dover Trans

Ptax Costs is excluded, Ptax for the 36" line is net of avoided 16" Ptax

					2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
	Figures $ 000's unless other wise noted				1	2	3	4	5	6	7	8	9	10	11	12	13	14
	Inflation per Yr	2.00%	%p.a															
	Inflation Factor		Factor		1.0000	1.0200	1.0404	1.0612	1.0824	1.1041	1.1262	1.1487	1.1717	1.1951	1.2190	1.2434	1.2682	1.2936
	Case 1: Retain 16" in Tranmission Service																	
	Capex																	
				TOTAL														
1	Class Relocations cost			5,627	-	1,020	-	-	-	-	-	-	-	-	-	1,243	-	-
2	Aerial Crossings cost			400	400	-	-	-	-	-	-	-	-	-	-	-	-	-
3	Depth of Cover cost			5,061	1,200	1,224	-	-	-	-	-	-	-	478	-	-	-	-
4	Capex for Dig/pig cycle			30,509	2,700	-	-	-	-	-	-	4,135	-	-	-	-	-	-
5	Capex for TopSide Dents: digs = 8			1,440	1,440	-	-	-	-	-	-	-	-	-	-	-	-	-
6	Total Capex Case 1: Retain 16" in Tranmission Servic			43,037	5,740	2,244	-	-	-	-	-	4,135	-	478	-	1,243	-	-
	O&M Cost																	
7	O&M for TopSide Dents: digs = 8			160	160	-	-	-	-	-	-	-	-	-	-	-	-	-
8	O&M for Dig/pig cycle			3,390	300	-	-	-	-	-	-	459	-	-	-	-	-	-
9	Other O&M: Surveys cost			283	3	3	3	3	3	3	3	3	3	27	3	3	3	3
10	Ptax (excluded in this case)																	
11	Total O&M Case 1: Retain 16" in Tranmission Service			3,833	463	3	3	3	3	3	3	462	3	27	3	3	3	3
12	Simple sum				6,203	2,247	3	3	3	3	3	4,598	3	505	3	1,246	3	3
13	Cumulative sum				6,203	8,449	8,452	8,454	8,457	8,460	8,463	13,060	13,063	13,568	13,571	14,818	14,821	14,824
14	Discount Rate		5.10%															
15	NPV @ 20 years	20	12,054															
16	NPV @ 30 years	30	15,054															
17	NPV @ 40 years	40	16,199															

Forecasted Cost to maintain 16" Btw Dawn and Dover Trans

Ptax Costs is excluded, Ptax for the 36" line is net of avoided 16"

					2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044
	Figures $ 000's unless other wise noted				15	16	17	18	19	20	21	22	23	24	25	26	27	28
	Inflation per Yr	2.00%	%p.a															
	Inflation Factor		Factor		1.3195	1.3459	1.3728	1.4002	1.4282	1.4568	1.4859	1.5157	1.5460	1.5769	1.6084	1.6406	1.6734	1.7069
Case 1: Retain 16" in Tranmission Service																		
Capex																		
				TOTAL														
1	Class Relocations cost			5,627	-	-	-	-	-	-	-	1,516	-	-	-	-	-	-
2	Aerial Crossings cost			400	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	Depth of Cover cost			5,061	-	-	-	-	-	583	-	-	-	-	-	-	-	-
4	Capex for Dig/pig cycle			30,509	4,750	-	-	-	-	-	-	5,456	-	-	-	-	-	-
5	Capex for TopSide Dents: digs = 8			1,440	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	Total Capex Case 1: Retain 16" in Tranmission Servic			43,037	4,750	-	-	-	-	583	-	6,972	-	-	-	-	-	-
O&M Cost																		
7	O&M for TopSide Dents: digs = 8			160	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	O&M for Dig/pig cycle			3,390	528	-	-	-	-	-	-	606	-	-	-	-	-	-
9	Other O&M: Surveys cost			283	3	3	3	4	4	33	4	4	4	4	4	4	4	4
10	Ptax (excluded in this case)																	
11	Total O&M Case 1: Retain 16" in Tranmission Service			3,833	531	3	3	4	4	33	4	610	4	4	4	4	4	4
12	Simple sum				5,281	3	3	4	4	616	4	7,582	4	4	4	4	4	4
13	Cumulative sum				20,105	20,109	20,112	20,116	20,119	20,735	20,738	28,320	28,324	28,328	28,332	28,336	28,341	28,345
14	Discount Rate		5.10%															
15	NPV @ 20 years	20	12,054															
16	NPV @ 30 years	30	15,054															
17	NPV @ 40 years	40	16,199															

Forecasted Cost to maintain 16" Btw Dawn and Dover Trans

Ptax Costs is excluded, Ptax for the 36" line is net of avoided 16"

					2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056
	Figures $ 000's unless other wise noted				29	30	31	32	33	34	35	36	37	38	39	40
	Inflation per Yr	2.00%	%p.a													
	Inflation Factor		Factor		1.7410	1.7758	1.8114	1.8476	1.8845	1.9222	1.9607	1.9999	2.0399	2.0807	2.1223	2.1647
	Case 1: Retain 16" in Tranmission Service															
	Capex															
				TOTAL												
1	Class Relocations cost			5,627	-	-	-	1,848	-	-	-	-	-	-	-	-
2	Aerial Crossings cost			400	-	-	-	-	-	-	-	-	-	-	-	-
3	Depth of Cover cost			5,061	-	710	-	-	-	-	-	-	-	-	-	866
4	Capex for Dig/pig cycle			30,509	6,268	-	-	-	-	-	-	7,200	-	-	-	-
5	Capex for TopSide Dents: digs = 8			1,440	-	-	-	-	-	-	-	-	-	-	-	-
6	Total Capex Case 1: Retain 16" in Tranmission Servic			43,037	6,268	710	-	1,848	-	-	-	7,200	-	-	-	866
	O&M Cost															
7	O&M for TopSide Dents: digs = 8			160	-	-	-	-	-	-	-	-	-	-	-	-
8	O&M for Dig/pig cycle			3,390	696	-	-	-	-	-	-	800	-	-	-	-
9	Other O&M: Surveys cost			283	4	40	5	5	5	5	5	5	5	5	5	49
10	Ptax (excluded in this case)															
11	Total O&M Case 1: Retain 16" in Tranmission Service			3,833	701	40	5	5	5	5	5	805	5	5	5	49
12	Simple sum				6,968	750	5	1,852	5	5	5	8,005	5	5	5	915
13	Cumulative sum				35,313	36,064	36,068	37,920	37,925	37,930	37,935	45,939	45,944	45,950	45,955	46,869
14	Discount Rate		5.10%													
15	NPV @ 20 years	20	12,054													
16	NPV @ 30 years	30	15,054													
17	NPV @ 40 years	40	16,199													

UNION GAS LIMITED

Answer to Interrogatory from
School Energy Coalition ("SEC")

Reference: Exhibit A, Tab 7

Please provide schedule 3-6 in Microsoft Excel format with inputs and formulas intact.

Response:

The reference to Schedule 3-6 in the question is in error. There is no Schedule 3-6 in evidence. Based on the Reference cited for this question, Union has interpreted the request to mean Exhibit A, Tab 7, Schedule 3.

Union has provided an Excel version (see Excel Attachment 1) to SEC via email copying the Board. Should any other interested parties wish to receive the document please contact Union directly.

Calculation of Revenue (Transmission Margins)

PanHandle Looping (36" Lift and Lay)
InService Date: Nov-01-2017

Project Year ($000's)		1	2	3	4	5	6	7	8	9	10
Transmission costs are recovered from Contract rate classes based on Firm Contract Demand (CD)											
Transmission costs are recovered from general service based on quantity consumed											
Contract Methodology: Total CD * 12 *Transmission Margin											
Transmission Margin $/M3 / month	0.1068										
Contract Demand 10^3m^3		1,147	1,450	1,704	1,905	2,086	2,086	2,086	2,086	2,086	2,086
Transmission Margin Contract Class		$1,470	$1,857	$2,184	$2,441	$2,673	$2,673	$2,673	$2,673	$2,673	$2,673
General Service Methodology: Quantity * General Service Transmission Margin											
Transmission Margin $/M3 consumed	0.0119										
General Service Annual Quantity 10^3 M^3		2,684	5,369	8,053	10,738	13,422	13,422	13,422	13,422	13,422	13,422
Transmission Margin General Service Class		$32	$64	$96	$128	$160	$160	$160	$160	$160	$160
Revenue Summary											
Transmission Margin Contract Class		$1,470	$1,857	$2,184	$2,441	$2,673	$2,673	$2,673	$2,673	$2,673	$2,673
Transmission Margin General Service Class		$32	$64	$96	$128	$160	$160	$160	$160	$160	$160
Total Revenue		$1,502	$1,921	$2,280	$2,569	$2,833	$2,833	$2,833	$2,833	$2,833	$2,833

UNION GAS LIMITED

Answer to Interrogatory from
School Energy Coalition ("SEC")

Reference: Exhibit A, Tab 7, p.3

Please provide a similar schedule showing calculation of distribution revenue margins.

Response:

Please see the response at Exhibit B.LPMA.4.

UNION GAS LIMITED

Answer to Interrogatory from
School Energy Coalition ("SEC")

Reference: Exhibit A, Tab 7, p.5

Regarding the Stage 2 fuel savings calculations:

a) Please provide the source or basis for the assumptions used for the fuel mix for general service and contract customers.

b) Please provide the gas and alternative fuel price data used and the source of that information.

Response:

a) The Stage 2 analysis assumed fuel mix percent by fuel type and is an estimate by Union based on its view of the markets.

b) The sources of data and conversion of alternative fuel prices into equivalent $/m^3$ of natural gas is provided, please see Attachment 1.

Prices used for Stage 2 Energy Savings
Table 1 is a summary table derived from Tables below

Table 1 (Summary)

Line	Price Comparison	$ CAD/GJ	$CAD/ M^3 Equivelant heat value of an m3 of natural gas
1	Natural Gas - Average Ontario Landed 2016	4.84	0.1878
2	Heating Oil	15.75	0.6113
3	No. 6 Oil	9.45	0.3666
4	Diesel	15.05	0.5840
5	Propane	14.00	0.5433
6	Electricity	31.01	1.2036

Alt Fuel Price Conversion and Comparison (Average 2015 Prices

Table 2 Heating Oil (Sarnia)

Line	Conversion from Cents/Litre Oil to CAD/GJ	
1	Cents/Litre	57.8
2	Litre/m3	1000
3	GJ/m3	36.72
4	CAD/GJ	15.8

Table 3 No 6 Oil (NY Harbor); (Bloomberg)

Line		
1	12 Month Average June 2015 to May 2016	
2	CAD/GJ	$ 9.45

Table 4 Diesel (Sarnia)

Line	Conversion from Cents/Litre Diesel to CAD/GJ	
1	Cents/Litre	58.2
2	Litre/m3	1000
3	GJ/m3	38.68
4	CAD/GJ	15.05

Table 5 UGL QRAM Gas Prices

Line	Ontario Landed From QRAM	CAD/GJ
1	EB-2015-0187 - July 2015	$ 5.15
2	EB-2015-0255 - October	$ 5.14
3	EB-2015-0340 - January 2016	$ 4.69
4	EB-2016-0040 - April	$ 4.38
5	Average July 2015 to April 2016	$ 4.84
6	Natural Gas Conversion from GJ/103m3 to m3/GJ	
7	Heat Value (GJ/103m3)	$ 38.81
8	m3/GJ	$ 25.77

Table 6 Propane (Windsor)

Line	Conversion from Cents/Litre Propane to CAD/GJ	
1	Cents/Litre	35.74
2	Litre/m3	1000
3	GJ/m3	25.53
4	CAD/GJ	13.99861

Table 7 Electricity

			($ per MWh)			
Line	(a)	Units (b)	Low / Weekend (c)	Mid (d)	Peak (e)	(f)
1	Date May 1 2016	($ per MWh)	$ 87.00	$ 132.00	$ 180.00	
2	Convert to $/ GJ	$/ GJ	$ 24.17	$ 36.67	$ 50.00	Line 1 / Line 6 factor
3	Weighting of TOU Rates		64%	18%	18%	
4	Weighted Average Rate $/GJ	$ 31.01	Wt Ave Line 2 & 3			
5	Weighted Average Rate $/ M3 Gas Equiv	$ 1.20	Line 4 / Line 7			
6	Factor $/mwh to $/ GJ	3.6000				
7	Factor $/ GJ to $/ M3 Gas Equivalent	25.77				

Data Sources

Heating Oil	http://www.nrcan.gc.ca/energy/fuel-prices/crude/17087
Diesel	http://www2.nrcan.gc.ca/eneene/sources/pripri/wholesale_bycity_e.cfm?ProductID=13&LocationID=66&LocationID=8&LocationID=39&LocationID=20&LocationID=58&LocationID=17&Average=3&testing=Select&PriceYear=2015
Propane	http://www2.nrcan.gc.ca/eneene/sources/pripri/prices_bycity_e.cfm?PriceYear=2015&ProductID=6&LocationID=19#PriceGraph
Electricity From OEB website	http://www.ontarioenergyboard.ca/oeb/Consumers/Electricity/Electricity%20Prices/Historical%20Electricity%20Prices

UNION GAS LIMITED

Answer to Interrogatory from
School Energy Coalition ("SEC")

Reference: Exhibit A, Tab 3, p.6-8

Please describe all discussions Union has had with the Government of Ontario, subsequent to the release of the Climate Change Action Plan, regarding its content. Please provide copies of all such communications and any documents exchanged.

Response:

Union does not believe this question is relevant to the application. Union's application takes into account Ontario's CCAP. Union's views as to how government policy should or should not be implemented are not government policy and are not relevant to the leave to construct of the Panhandle Project.

UNION GAS LIMITED

Answer to Interrogatory from
School Energy Coalition ("SEC")

Reference: Exhibit A, Tab 3, p.7

Union states that the "choice of 20 years recognizes the changes being proposed by 2030 (when the CCAP indicates changes to the building code will be made for new small buildings "net carbon zero" targets) and is based on management's judgments."

a) Please explain why Union believes the changes to the building codes regarding new small buildings will be the specific cause of risk to utilization of the proposed project that would require such a large change in the useful life of the asset.

b) Please provide Union's forecast of Panhandle System demand, with and without the impact of the CCPA, for each year between 2017 and 2037. If Union has not undertaken a forecast to date, please provide an estimate. Please provide all assumptions made.

c) Please explain what considerations were made by management in undertaking its judgement.

Response:

a) Please see the response at Exhibit B.Staff.4 c).

b) Please see the response at Exhibit B.Staff.4 c).

c) Please see the responses at Exhibit B.BOMA.17 a) and Exhibit B.BOMA.18 a) ii.

UNION GAS LIMITED

Answer to Interrogatory from
School Energy Coalition ("SEC")

Reference: Exhibit A, Tab 7, p.1

Please provide the basis for the capital cost estimates set out in Schedule 1.

Response:

Union followed its normal process for developing cost estimates as outlined in Attachment 1.

Labour cost for mainline construction is based on courtesy quotes obtained from third parties and comparisons to similar recent Union projects.

The mainline material estimate is based on mill quotations.

Station labour costs are based on unit price comparisons to recent Union station projects having similar scope and size. All station material estimates are based on historical pricing.

Contingency for the project is 15% of the capital cost.

UNION GAS LIMITED

Answer to Interrogatory from
Consumers Council of Canada ("CCC")

Ref: Section 11, p. 100/121 and Schedule 11.1

The evidence sets out the estimated capital cost for all of the facilities related to the Parkway West project. Please explain the process used to develop the budget. Will Union be providing an update to the budget as it was filed in January 2013? For each of the components set out in Schedule 11.1 please explain how were the contingency amounts developed?

Response:

Union Gas' Estimate/Budget development typically follow the stages below. Each revision expands, details, and refines the previous level of estimate to obtain a higher degree of accuracy and ultimately the final budget.

1. **Magnitude Estimate**
   High-level estimate - Completed solely by Cost Estimators, with limited Subject Matter Expert input. Scope at conceptual level, with limited project parameters defined. Contingency set at 20%.

2. **Feasibility Estimate**
   Refined magnitude estimate - Completed by Cost Estimators with Subject Matter Expert input. Scope more defined, with limited project parameters defined by in-house Design and Construction Team. Contingency set at 20%.

3. **Pre-Budget Estimate**
   Detailed project estimate/budget - Completed by Cost Estimators with full Subject Matter Expert input. Scope fully defined, with detailed Bill of Materials available, site visits conducted and contractor/vendor quotes received. Contingency set at 15%.

4. **Budget Estimate**
   Final project estimate/budget - Completed by Cost Estimators with full Subject Matter Expert input. Scope finalized, detailed construction Bill of Materials, final site and routes selected and final quotes/target pricing for construction and materials contractor/vendor quotes received. Contingency set at 10%.

Union is not planning to file an update to the cost estimate provided in January. However, if there are material changes to the budget or scope, Union will file an update.

The components set out in schedule 11.1 are based on a Pre-Budget level estimate, and as such were assigned a 15% contingency. The exception was the land costs with no contingency, as options had been exercised and prices are fixed.

UNION GAS LIMITED

Answer to Interrogatory from
School Energy Coalition ("SEC")

Reference: Exhibit A, Tab 8, p.6

Please provide a similar schedule showing bill impacts of the proposed project using the 2013 Board-Approved cost allocation methodology instead of the proposed allocation.

Response:

Please see Attachment 1.

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

Line No.	Particulars	EB-2016-0040 Approved 01-Apr-16 (1) Annual Bill ($) (a)	Unit Rate (cents/m³) (b)	EB-2016-0186 Updated (2) 01-Jan-18 Annual Bill ($) (c)	Unit Rate (cents/m³) (d)	Impact Unit Rate Change (cents/m³) (e) = (d-b)	Annual Bill Change ($) (f) = (c-a)	(%) (g) = (f/a)
	Small Rate 01							
1	Delivery Charges	435	19.7552	434	19.7048	(0.0504)	(1.11)	-0.3%
2	Gas Supply Charges	481	21.8483	481	21.8454	(0.0029)	(0.06)	0.0%
3	Total Bill	915	41.6035	914	41.5502	(0.0533)	(1.17)	-0.1%
4	Sales Service Impact						(1.17)	-0.1%
5	Bundled-T (Direct Purchase) Impact						(1.17)	-0.2%
	Small Rate 10							
6	Delivery Charges	4,232	7.0530	4,217	7.0288	(0.0242)	(14.51)	-0.3%
7	Gas Supply Charges	13,109	21.8483	13,107	21.8454	(0.0029)	(1.73)	0.0%
8	Total Bill	17,341	28.9013	17,325	28.8742	(0.0271)	(16.24)	-0.1%
9	Sales Service Impact						(16.24)	-0.1%
10	Bundled-T (Direct Purchase) Impact						(16.24)	-0.1%
	Large Rate 10							
11	Delivery Charges	13,579	5.4315	13,541	5.4164	(0.0150)	(37.62)	-0.3%
12	Gas Supply Charges	54,621	21.8483	54,614	21.8454	(0.0029)	(7.20)	0.0%
13	Total Bill	68,199	27.2798	68,155	27.2618	(0.0179)	(44.82)	-0.1%
14	Sales Service Impact						(44.82)	-0.1%
15	Bundled-T (Direct Purchase) Impact						(44.82)	-0.1%
	Small Rate 20							
16	Delivery Charges	73,272	2.4424	72,937	2.4312	(0.0112)	(334.73)	-0.5%
17	Gas Supply Charges	573,432	19.1144	573,347	19.1116	(0.0029)	(85.68)	0.0%
18	Total Bill	646,704	21.5568	646,284	21.5428	(0.0140)	(420.41)	-0.1%
19	Sales Service Impact						(420.41)	-0.1%
20	Bundled-T (Direct Purchase) Impact						(420.41)	-0.1%
	Large Rate 20							
21	Delivery Charges	281,495	1.8766	280,472	1.8698	(0.0068)	(1,022.33)	-0.4%
22	Gas Supply Charges	2,659,156	17.7277	2,658,789	17.7253	(0.0024)	(367.21)	0.0%
23	Total Bill	2,940,651	19.6043	2,939,261	19.5951	(0.0093)	(1,389.54)	0.0%
24	Sales Service Impact						(1,389.54)	0.0%
25	Bundled-T (Direct Purchase) Impact						(1,389.54)	-0.1%
	Average Rate 25							
26	Delivery Charges	62,814	2.7611	62,598	2.7516	(0.0095)	(216.15)	-0.3%
27	Gas Supply Charges	303,844	13.3558	303,844	13.3558	-	-	0.0%
28	Total Bill	366,658	16.1168	366,442	16.1073	(0.0095)	(216.15)	-0.1%
29	Sales Service Impact						(216.15)	-0.1%
30	T-Service (Direct Purchase) Impact						(216.15)	-0.3%
	Small Rate 100							
31	Delivery Charges	260,184	0.9636	259,444	0.9609	(0.0027)	(739.80)	-0.3%
32	Gas Supply Charges	5,353,074	19.8262	5,353,074	19.8262	-	-	0.0%
33	Total Bill	5,613,258	20.7898	5,612,518	20.7871	(0.0027)	(739.80)	0.0%
34	Sales Service Impact						(739.80)	0.0%
35	T-Service (Direct Purchase) Impact						(739.80)	-0.3%
	Large Rate 100							
36	Delivery Charges	2,106,720	0.8778	2,101,477	0.8756	(0.0022)	(5,242.80)	-0.2%
37	Gas Supply Charges	46,488,914	19.3704	46,488,914	19.3704	-	-	0.0%
38	Total Bill	48,595,635	20.2482	48,590,392	20.2460	(0.0022)	(5,242.80)	0.0%
39	Sales Service Impact						(5,242.80)	0.0%
40	T-Service (Direct Purchase) Impact						(5,242.80)	-0.2%

Notes:
(1) Reflects Board-approved rates per Appendix A in Union's April 2016 QRAM filing (EB-2016-0040).
(2) Based on Board-approved Cost Allocation updated for the Project and Proposed 20 Year Depreciation Rates.

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

		EB-2016-0040 Approved 01-Apr-16 (1)		EB-2016-0186 Updated (2) 01-Jan-18		Impact		
Line No.	Particulars	Annual Bill ($)	Unit Rate (cents/m^3)	Annual Bill ($)	Unit Rate (cents/m^3)	Unit Rate Change (cents/m^3)	Annual Bill Change ($)	Annual Bill Change (%)
		(a)	(b)	(c)	(d)	(e) = (d-b)	(f) = (c-a)	(g) = (f/a)
	Small Rate M1							
1	Delivery Charges	346	15.7046	349	15.8770	0.1724	3.79	1.1%
2	Gas Supply Charges	299	13.5856	299	13.5856	-	-	0.0%
3	Total Bill	644	29.2902	648	29.4626	0.1724	3.79	0.6%
4	Sales Service Impact						3.79	0.6%
5	Direct Purchase Impact						3.79	1.1%
	Small Rate M2							
6	Delivery Charges	3,297	5.4947	3,399	5.6658	0.1711	102.65	3.1%
7	Gas Supply Charges	8,151	13.5856	8,151	13.5856	-	-	0.0%
8	Total Bill	11,448	19.0803	11,551	19.2514	0.1711	102.65	0.9%
9	Sales Service Impact						102.65	0.9%
10	Direct Purchase Impact						102.65	3.1%
	Large Rate M2							
11	Delivery Charges	10,642	4.2566	11,055	4.4221	0.1654	413.62	3.9%
12	Gas Supply Charges	33,964	13.5856	33,964	13.5856	-	-	0.0%
13	Total Bill	44,606	17.8422	45,019	18.0077	0.1654	413.62	0.9%
14	Sales Service Impact						413.62	0.9%
15	Direct Purchase Impact						413.62	3.9%
	Small Rate M4							
16	Delivery Charges	37,374	4.2713	40,768	4.6592	0.3879	3,394.38	9.1%
17	Gas Supply Charges	118,874	13.5856	118,874	13.5856	-	-	0.0%
18	Total Bill	156,248	17.8569	159,642	18.2448	0.3879	3,394.38	2.2%
19	Sales Service Impact						3,394.38	2.2%
20	Direct Purchase Impact						3,394.38	9.1%
	Large Rate M4							
21	Delivery Charges	277,378	2.3115	305,085	2.5424	0.2309	27,706.42	10.0%
22	Gas Supply Charges	1,630,272	13.5856	1,630,272	13.5856	-	-	0.0%
23	Total Bill	1,907,650	15.8971	1,935,357	16.1280	0.2309	27,706.42	1.5%
24	Sales Service Impact						27,706.42	1.5%
25	Direct Purchase Impact						27,706.42	10.0%
	Small Rate M5							
26	Delivery Charges	30,596	3.7086	30,512	3.6984	(0.0102)	(84.11)	-0.3%
27	Gas Supply Charges	112,081	13.5856	112,081	13.5856	-	-	0.0%
28	Total Bill	142,677	17.2942	142,593	17.2840	(0.0102)	(84.11)	-0.1%
29	Sales Service Impact						(84.11)	-0.1%
30	Direct Purchase Impact						(84.11)	-0.3%
	Large Rate M5							
31	Delivery Charges	169,794	2.6122	169,431	2.6066	(0.0056)	(362.18)	-0.2%
32	Gas Supply Charges	883,064	13.5856	883,064	13.5856	-	-	0.0%
33	Total Bill	1,052,858	16.1978	1,052,495	16.1922	(0.0056)	(362.18)	0.0%
34	Sales Service Impact						(362.18)	0.0%
35	Direct Purchase Impact						(362.18)	-0.2%
	Small Rate M7							
36	Delivery Charges	656,550	1.8237	692,051	1.9224	0.0986	35,501.40	5.4%
37	Gas Supply Charges	4,890,816	13.5856	4,890,816	13.5856	-	-	0.0%
38	Total Bill	5,547,366	15.4093	5,582,867	15.5080	0.0986	35,501.40	0.6%
39	Sales Service Impact						35,501.40	0.6%
40	Direct Purchase Impact						35,501.40	5.4%
	Large Rate M7							
41	Delivery Charges	2,513,626	4.8339	2,668,541	5.1318	0.2979	154,915.20	6.2%
42	Gas Supply Charges	7,064,512	13.5856	7,064,512	13.5856	-	-	0.0%
43	Total Bill	9,578,138	18.4195	9,733,053	18.7174	0.2979	154,915.20	1.6%
44	Sales Service Impact						154,915.20	1.6%
45	Direct Purchase Impact						154,915.20	6.2%

Notes:
(1) Reflects Board-approved rates per Appendix A in Union's April 2016 QRAM filing (EB-2016-0040).
(2) Based on Board-approved Cost Allocation updated for the Project and Proposed 20 Year Depreciation Rates.

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

Line No.	Particulars	EB-2016-0040 Approved 01-Apr-16 (1) Annual Bill ($) (a)	Unit Rate (cents/m^3) (b)	EB-2016-0186 Updated (2) 01-Jan-18 Annual Bill ($) (c)	Unit Rate (cents/m^3) (d)	Impact Unit Rate Change (cents/m^3) (e) = (d-b)	Annual Bill Change ($) (f) = (c-a)	(%) (g) = (f/a)
	Large Rate M9							
1	Delivery Charges	384,526	1.9057	384,883	1.9074	0.0018	357.04	0.1%
2	Gas Supply Charges	2,741,302	13.5856	2,741,302	13.5856	-	-	0.0%
3	Total Bill	3,125,829	15.4913	3,126,186	15.4930	0.0018	357.04	0.0%
4	Sales Service Impact						357.04	0.0%
5	Direct Purchase Impact						357.04	0.1%
	Average Rate M10							
6	Delivery Charges	5,570	5.8937	5,536	5.8584	(0.0353)	(33.36)	-0.6%
7	Gas Supply Charges	12,838	13.5856	12,838	13.5856	-	-	0.0%
8	Total Bill	18,408	19.4793	18,375	19.4440	(0.0353)	(33.36)	-0.2%
9	Sales Service Impact						(33.36)	-0.2%
10	Direct Purchase Impact						(33.36)	-0.6%
	Small Rate T1							
11	Delivery Charges	132,068	1.7523	154,055	2.0440	0.2917	21,987.38	16.6%
12	Gas Supply Charges	1,023,947	13.5856	1,023,947	13.5856	-	-	0.0%
13	Total Bill	1,156,015	15.3379	1,178,002	15.6296	0.2917	21,987.38	1.9%
14	Sales Service Impact						21,987.38	1.9%
15	Direct Purchase Impact						21,987.38	16.6%
	Average Rate T1							
16	Delivery Charges	201,822	1.7450	238,053	2.0582	0.3133	36,231.50	18.0%
17	Gas Supply Charges	1,571,302	13.5856	1,571,302	13.5856	-	-	0.0%
18	Total Bill	1,773,124	15.3306	1,809,355	15.6438	0.3133	36,231.50	2.0%
19	Sales Service Impact						36,231.50	2.0%
20	Direct Purchase Impact						36,231.50	18.0%
	Large Rate T1							
21	Delivery Charges	445,903	1.7402	531,984	2.0761	0.3359	86,080.88	19.3%
22	Gas Supply Charges	3,481,185	13.5856	3,481,185	13.5856	-	-	0.0%
23	Total Bill	3,927,088	15.3258	4,013,169	15.6617	0.3359	86,080.88	2.2%
24	Sales Service Impact						86,080.88	2.2%
25	Direct Purchase Impact						86,080.88	19.3%
	Small Rate T2							
26	Delivery Charges	511,030	0.8624	682,281	1.1514	0.2890	171,251.08	33.5%
27	Gas Supply Charges	8,050,283	13.5856	8,050,283	13.5856	-	-	0.0%
28	Total Bill	8,561,313	14.4480	8,732,564	14.7370	0.2890	171,251.08	2.0%
29	Sales Service Impact						171,251.08	2.0%
30	Direct Purchase Impact						171,251.08	33.5%
	Average Rate T2							
31	Delivery Charges	1,186,197	0.5997	1,618,258	0.8182	0.2184	432,060.83	36.4%
32	Gas Supply Charges	26,870,938	13.5856	26,870,938	13.5856	-	-	0.0%
33	Total Bill	28,057,135	14.1853	28,489,196	14.4038	0.2184	432,060.83	1.5%
34	Sales Service Impact						432,060.83	1.5%
35	Direct Purchase Impact						432,060.83	36.4%
	Large Rate T2							
36	Delivery Charges	1,936,196	0.5232	2,657,380	0.7180	0.1949	721,183.96	37.2%
37	Gas Supply Charges	50,278,811	13.5856	50,278,811	13.5856	-	-	0.0%
38	Total Bill	52,215,008	14.1088	52,936,191	14.3036	0.1949	721,183.96	1.4%
39	Sales Service Impact						721,183.96	1.4%
40	Direct Purchase Impact						721,183.96	37.2%
	Large Rate T3							
41	Delivery Charges	3,552,739	1.3027	3,565,851	1.3076	0.0048	13,112.16	0.4%
42	Gas Supply Charges	37,049,561	13.5856	37,049,561	13.5856	-	-	0.0%
43	Total Bill	40,602,300	14.8883	40,615,413	14.8932	0.0048	13,112.16	0.0%
44	Sales Service Impact						13,112.16	0.0%
45	Direct Purchase Impact						13,112.16	0.4%

Notes:
(1) Reflects Board-approved rates per Appendix A in Union's April 2016 QRAM filing (EB-2016-0040).
(2) Based on Board-approved Cost Allocation updated for the Project and Proposed 20 Year Depreciation Rates.

UNION GAS LIMITED

Answer to Interrogatory from
School Energy Coalition ("SEC")

Reference: Exhibit A, Tab 4, p.5

Please provide details regarding the two ex-franchise shippers who have transportation contracts from Ojibway to Dawn. Please explain why Union cannot rely on these volumes when designing the system.

Response:

Please see the response at Exhibit B.FRPO.4 a) for a list of firm C1 transportation contracts.

Please see the response at Exhibt B.BOMA.2 c) which addresses why Union cannot rely on these volumes when designing the Panhandle System.

UNION GAS LIMITED

Answer to Interrogatory from
School Energy Coalition ("SEC")

Reference: Exhibit A, Tab 6, p.9

Please provide a copy of all communications with Panhandle Eastern Pipeline Company regarding incremental deliveries to Ojibway.

Response:

Union has included in Attachment 2 to Exhibit B.Staff.3, communications with PEPL regarding Union's attempt to obtain 23 TJ/d of incremental firm transportation capacity to replace capacity Union did not have ROFR rights on through a recent PEPL open season.

Union and PEPL continue to discuss the possibility of further deliveries to Ojibway (beyond the 37 TJ/d of upstream capacity on PEPL that comes with ROFR rights). To date Union has been unsuccessful through negotiations and the aforementioned open season. Union continues to focus on shorter term (5 years or less) commitments for any firm incremental transportation capacity that may become available to Ojibway.

UNION GAS LIMITED

Answer to Interrogatory from
Vulnerable Energy Consumers Coalition (VECC)

Reference: Exhibit A, Tab 5, p.15

Preamble: Union is proposing a 20 year useful life for the purpose of the revenue requirement calculation rather than the 50 year life generally used for similar project. This change is based on supposed increase in risk due to the recently announced Ontario Cap and Trade program.

a) Union provides substantive evidence as to the benefits of natural gas especially as applied to the greenhouse and other operations served off the Panhandle System. Please explain why in light of the evidence provided at Exhibit A, Tab 5, and which supports the demand forecast for this project, one can then conclude that these forecast demands are non-sustainable?

b) Please provide any studies (quantitative or otherwise) that were undertaken in support of the shorter depreciation period.

c) Please provide a list of programs currently operating (as opposed to announced) by the Government of Ontario that will impact this project.

d) In light of Union's evidence on the benefits of greenhouses using natural gas to ingest $CO_{2,;}$ the policy goals of reduction of highway traffic and the use of natural gas as a vehicle fuel (see for example, Exhibit A, Tab 5, pg.20) why Government policy should not be seen as reducing the risk of future demands for gas on the Panhandle system.

Response:

a) Please see the response at Exhibit B.Staff.4 c).

b) Please see the response at Exhibit B.APPrO.7 a).

c) Union is not aware of any currently operating government programs that will impact the Project.

d) Please see the response at Exhibit B.Staff.4 c).

UNION GAS LIMITED

Answer to Interrogatory from
Vulnerable Energy Consumers Coalition (VECC)

Reference: Exhibit A, Tab5

a) What rate classes do Greenhouse market operators generally fall into?

b) How many customers served on the Panhandle System are currently on interruptible service?

c) How many of these customers have requested firm service?

d) What portion of the incremental demands are due to (actual or forecast) the change in service from interruptible to firm?

e) Does any hospital within the affected area currently take interruptible service?

Response:

a) Greenhouse operators fall into the following rate classes: Rate M2, Rate M4, Rate M5, Rate M7 and Rate T1.

b) Please see the response at Exhibit B.IGUA.1 f).

c) As indicated at p.3 of the pre-filed evidence for the Leamington Expansion Project (EB-2016-0013), 62 customers expressed interest in firm service and were offered a prorated share of the firm capacity available. The remaining share of the initial requested firm capacity forms a part of the forecast that supports this Project. As well, additional greenhouse load is forecasted post 2017 based on recent expansion activity in the area.

d) Please see the response at Exhibit B.APPrO.2 a).

e) There are three hospitals in the affected area that have interruptible service. The total interruptible hourly load is 2,295 m^3/hour. This represents 99.5% of the hourly gas needs for these hospitals. All three have provided letters of support for the Panhandle Reinforcement Project.

Hospital 1: Firm Hourly Quantity: 11 Interruptible Hourly Quantity: 945

Hospital 2: Firm Hourly Quantity: 0 Interruptible Hourly Quantity: 750

Hospital 3: Firm Hourly Quantity: 0 Interruptible Hourly Quantity: 600

UNION GAS LIMITED

Answer to Interrogatory from
Vulnerable Energy Consumers Coalition (VECC)

Reference: Exhibit A, Tab 4, p.2 and Tab 5, p.2

a) Union dates that the firm Design day demand is forecasted to grow by 19% by 2021. What is the expected annual total volume growth on the Panhandle system for the same period?

b) What is the basis for the forecast of 1200 residential customer attachments in years 2016 through 20121 (i.e. how was the amount derived)?

Response:

a) The total incremental annual growth on the Panhandle System by 2021 is expected to be 316,733 10^3m^3/year.

b) Please see the response at Exhibit B.Staff.7 a).

UNION GAS LIMITED

Answer to Interrogatory from
Vulnerable Energy Consumers Coalition (VECC)

Reference: Exhibit A, Tab 5, p.4

a) Please explain more fully how the 2016 Leamington Expansion Project (Phase I and EB-2016-0013) impact this project. Specifically please explain how the design day requirement (565 TJ/d – Table 5-1) was affected by the Leamington Project(s).

b) Was this project identified at the time of the Leamington Applications? If not please explain why not?

Response:

a) The 2013 Leamington Expansion Pipeline Project and the 2016 Leamington Expansion Project were stand-alone projects constructed to remove the constraint of a small diameter pipe (NPS 8) between the NPS 20 Panhandle Line and consuming markets in the Leamington / Kingsville area, increasing the ability to serve additional firm demand. Removing the constraint specific to serving these customers delayed the need for the Project and increased the Project's capacity. Once the Project is in-service, the constraint in servicing firm demand in this market will again become the distribution facilities.

   2013 Leamington Expansion Pipeline Project added 37 TJ/d of capacity to the Panhandle System, while 2016 Leamington Expansion Pipeline Project added 36 TJ/d of Panhandle System capacity. Please reference Exhibit A, Tab 5, p.8, Table 5-1.

b) Please see the response at Exhibit B.Staff.1.

UNION GAS LIMITED

Answer to Interrogatory from
Vulnerable Energy Consumers Coalition (VECC)

Reference: Exhibit A, Tab 6, p.11

a) Given the proposition to decrease the depreciation period due to perceived higher risk why would it not be desirable to increase capacity for deliveries from Ojibway and at least until such time as the risks of Ontario Cap & Trade policies become better understood?

b) If Union were to contract for the additional 34 TJ/d firm renewable capacity at Ojibway could the proposed project be deferred and for what period of time?

c) Please explain why the 3 projects described at page 11 would be required if the incremental capacity at Ojibway was contracted for. Specifically explain why a 27 km NPS 36 pipeline would be required from Dawn to Dover Centre. Please also explain why under this option more kilometers of pipeline would needed than under the proposed project (55 km vs 40km). Please also explain the need for a new station.

Response:

a) The Proposed Project is expected to be fully utilized within five (5) years of being in-service. Union does not expect the Ontario Cap and Trade policies to dramatically impact the forecasted demand outlook within the initial five year period. Please see the response at Exhibit B.Staff 4 c).

Additional Ojibway deliveries and upstream firm PEPL transportation capacity options are limited and pose significant risks as cited at Exhibit A, Tab 6, pp.10-11. As discussed in the response at Exhibit B.APPrO.3 b) ii., at this time Union is not able to secure incremental Ojibway receipts or firm transportation capacity upstream of Ojibway. The analysis with respect to alternatives using incremental Ojibway supply is provided at Exhibit A, Tab 6, pp.7-13. The Proposed Project was considered the most economic alternative.

b) At this time, an additional 34 TJ/d of incremental firm upstream transportation capacity is not available through PEPL. Please see the response at Exhibit B.APPrO.3 b) ii. If an additional 34 TJ/d of firm renewable transportation capacity was available to Ojibway (from either a short haul receipt point or Panhandle Field Zone), there is not enough capacity to serve the forecast incremental demand for Winter 2017/18 (58 TJ/d). The Project would still be required in 2017. Please also see the response at Exhibit B.Staff.3.

c) Under the alternative New Pipeline with Incremental Deliveries at Ojibway, additional supply alone will not support the forecasted incremental demand of 106 TJ/d. The remaining capacity needs to be served by Dawn, hence the need for 27 km of NPS 36 pipeline under this alternative.

Under this alternative, the incremental Ojibway supply and building 27 km of NPS 36 pipeline still does not raise the pressures into the Leamington/Kingsville market laterals as much as the Project, hence the need for the additional facilities as described in the reference.

Please see the response at Exhibit B.BOMA.7 for the requirement for the lateral into the Town of Kingsville. A new station is required to tie this lateral into the distribution system.

Reinforcement upstream of McCormick Station, which is fed by a lateral just west of Sandwich Transmission Station, is required because the regulated pressure at Sandwich Transmission needs to be set lower in order to accept higher Ojibway supply. The minimum inlet pressure into McCormick Station cannot be maintained without this reinforcement.

UNION GAS LIMITED

Answer to Interrogatory from
Vulnerable Energy Consumers Coalition (VECC)

Reference: Exhibit A, Tab 4, p.4

Union states that "The amount of natural gas Union can accept from PEPL 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 Tecumseh."

a) Please explain more fully the reasons for the described restriction

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Response:

Please see the response at Exhibit B.FRPO.6 b).

UNION GAS LIMITED

Answer to Interrogatory from
Vulnerable Energy Consumers Coalition (VECC)

Reference: Exhibit A, Tab 6, p.9-10

a) Please explain how the premium of $0.30/GJ for gas supplied at Ojibway as compared to source at Dawn was derived.

Response:

One of the tools Union uses to evaluate gas supply alternatives is landed costs analysis. The premium referenced is the difference between the landed cost at Ojibway using Panhandle long haul and the cost to purchase gas supply at Dawn. The “approximate $0.30/GJ” noted at Exhibit A, Tab 6, p. 9, line 22 represents the $0.34/GJ difference calculated using the figures from column k in the table below ($5.70 - $5.36 = $0.34/GJ). The landed cost analysis was prepared using 10 year commodity price forecasts for November 2017 through October 2027 from ICF’s second quarter data and was completed on May 16, 2016.

The figures in Attachment 1 above are derived using the landed cost methodology agreed to in the EB-2005-0520 Settlement Agreement.

The landed cost for Ojibway delivered supply does not include any costs to move the supply from Ojibway to Dawn. Please see the response at Exhibit B.Staff.3 for details on additional facilties requirements associated with incremental Ojibway deliveries.

Route	Point of Supply	Basis Differential $US/mmBtu	Supply Cost $US/mmBtu	Unitized Demand Charge $US/mmBtu	Commodity Charge $US/mmBtu	Fuel Charge $US/mmBtu	100% LF Transportation Inclusive of Fuel $US/mmBtu	Landed Cost $US/mmBtu	**Landed Cost $Cdn/G**	Point of Delivery
(A)	(B)	(C)	(D) = Nymex + C	(E)	(F)	(G)	(I) = E + F + G	(J) = D + I	**(K)**	(L)
Dawn	Dawn	-0.010	4.5094	0.0000	0.0000	0.0000	0.0000	$4.51	**$5.36**	Dawn
Panhandle Longhaul	Panhandle Field Zone	-0.345	4.1752	0.4244	0.0437	0.1505	0.6186	$4.79	**$5.70**	Ojibway

UNION GAS LIMITED

Answer to Interrogatory from
Vulnerable Energy Consumers Coalition (VECC)

Reference: Exhibit A, Tab 8, p.12

a) Please provide the Dawn –Ojibway C1 and M16 contract volumes for 2014 through 2016.

b) Please provide the same forecast for 2016-2020.

Response:

a) Please see the response at Exhibit.B.FRPO.4 a) for the list of firm C1 transportation contracts in place from 2014 to 2016.

   Please see the response at Exhibit.B.IGUA.3 b) for the list of M16 transportation contracts in place from 2014 to 2016.

b) Union forecasts the following firm C1 Ojibway to Dawn transportation contracts during the period 2016 to 2020.

Forecast Ojibway to Dawn firm Transportation Capacity 2016-2020		
Term Start	Term End	Quantity (GJ/d)
November 1, 2015	October 31, 2020	21,016
April 1, 2016	April 30, 2017	21,101

   Union forecasts that the existing M16 transportation contract will be the only M16 transportation contract in effect between 2016 and 2020 that utilizes the Panhandle System.

UNION GAS LIMITED

Answer to Interrogatory from
Vulnerable Energy Consumers Coalition (VECC)

a) Given the cost differential as between the cost of service for Dawn and Ojibway as compared to St. Clair and Bluewater why would it not serve cost causality to derive new (and presumably different) rates for the each of the respective transport services?

Response:

a) Union is not proposing a change to the 2013 Board-approved cost allocation methodology for existing costs as Union's rates are subject to IRM during the 2014-2018 period. Any cost differential on the Panhandle System and St. Clair System, prior to the addition of the Project facilities, was approved in Union's 2013 Cost of Service proceeding. Union will review the cost allocation and rate design for all Panhandle System and St. Clair System costs as part of its 2019 Rebasing proceeding.

   In the interim, Union is proposing this approach during the IRM term for the Project to ensure the allocation of costs and rate impacts reflect the principles of cost causality.

UNION GAS LIMITED

Answer to Interrogatory from
Vulnerable Energy Consumers Coalition (VECC)

Reference: Exhibit A, Tab 8, p.16

a) Please provide the ex-franchise transportation margins for 2013 through 2015. Please also provide the amount of margin that was credited to in-franchise customers and the amount for each year related to Panhandle and St. Clair Systems.

b) Is a margin forecast built into current rates and if so what is that amount.

Response:

a) The amount of ex-franchise transportation margin included in 2013-2015 rates is based on Union's 2013 Cost of Service. The ex-franchise transportation margin credited to in-franchise customers was $9.6 million, of which approximately $3.4 million is related to short-term and long-term transportation on the Panhandle System and St. Clair System. The detail of the $9.6 million of ex-franchise transportation margin included in in-franchise rates is provided at Attachment 1. The detail of the ex-franchise transportation margin for the Panhandle System and St. Clair System is provided at Exhibit B.BOMA.11, Attachment 1, p. 1.

b) Please see part a).

UNION GAS LIMITED
Summary of Ex-Franchise Transportation Margin Included in 2013-2015 In-Franchise Rates

Line No.	Particulars ($000s)	2013 Approved Forecast Revenue (1)	2013 Approved Allocated Cost (2)	Total Margin Included in 2013-2015 In-Franchise Rates
		(a)	(b)	(c) = (a - b)
	Long-Term Transportation			
1	M12 Long-term Transportation	120,604	125,384	(4,781)
2	M12-X	13,896	11,623	2,272
3	F24-T	359	359	0
4	M12 Fuel	22,674	22,673	1
5	C1 Long-term Transportation	6,954	1,669	5,286
6	C1 Fuel	626	632	(6)
7	M13	411	211	200
8	M16	736	451	286
9	Heritage Pool M16 Transmission Charge (3)			56
10	Total Long-Term Transportation	166,260	163,002	3,314
	Short-Term Transportation			
11	Short-term Transportation	11,067	5,843	5,224
12	Other Transactional	1,067	-	1,067
13	Total Short-Term Transportation	12,134	5,843	6,291
14	Total Ex-franchise Transportation Margin	178,394	168,844	9,605

Notes:
(1) EB-2011-0210, Rate Order, Working Papers, Schedule 14, p. 9 - 11, column (g).
(2) EB-2011-0210, Rate Order, Working Papers, Schedule 14, p. 9 - 11, column (e).
(3) EB-2011-0210, Rate Order, Working Papers, Schedule 39, line 4.

UNION GAS LIMITED

Answer to Interrogatory from
Vulnerable Energy Consumers Coalition (VECC)

Reference: Exhibit A, Tab 8, p.17, Table 8-6

a) At Table 8-6 it shows that Rate M1will provide just 2.3% of the projected incremental revenues for the project in 2018. Table 8-3 shows that 40% of the costs will be allocated to the Rate M1 class. Other classes, specifically M4, M7 and T1 customers appears to be the biggest users of the incremental capacity (based on revenues) and yet are allocated relatively small portions of the costs. Please explain why this outcome is not demonstrative of the misalignment of cost and benefits for this project.

Response:

Union's cost allocation proposal is based on the 2013 Board-approved Panhandle System Design Day demands updated to include the incremental Project Design Day demands as shown at Exhibit A, Tab 8, Table 8-3. This cost allocation proposal represents all Design Day demands on the Panhandle System and not limited to incremental demands created by the Project. The incremental Project revenue at Exhibit A, Tab 8, Table 8-6 represents the revenue generated by the incremental demands created by the Project only. The incremental Project demands by rate class are not in proportion to the total Panhandle System demands creating different proportions of a rate classes' percent of the total.

Union's cost allocation proposal is consistent with the principles of cost causation and rate class ratemaking. Union's proposal allocates the Project costs to all rate classes that benefit from the use of the Panhandle System on Design Day including existing demands.

UNION GAS LIMITED

Answer to Interrogatory from
Vulnerable Energy Consumers Coalition (VECC)

Reference: Exhibit A, Tab 10, Schedule 3

a) Given that the proposed pipeline is on existing easement and replacement of a current pipe what factors contribute to the significant environmental assessment costs? Specifically address the Archeology and Environmental Assessment costs.

Response:

a) The Environmental Assessment was designed and completed in accordance with the OEB Environmental Guidelines for the Location, Construction and Operation of Hydrocarbon Pipelines and Facilities in Ontario (2011). The Environmental Assessment process and basic costs remain the same regardless of the route of the pipeline. The length of the proposed pipeline had some bearing on the cost of the Environmental Assessment which impacted the amount of information required to gather, review and analyze as well as necessitating public information sessions at two locations.

   Archaeological Assessments were not required as part of the approvals and construction practices of the day when the NPS 16 pipeline was installed in 1951. Given the lack of previous Archaeological Assessments costs were based on complete archaeological surveys to meet current Ministry of Tourism, Culture and Sport guidelines with accommodation for possible archaeological finds.