

October 28, 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 -
Response to requests for information from FRPO Motion**

Please find attached Union’s responses to the information requests received in the October 20, 2016 motion filed on behalf of FRPO in the above noted proceeding. The Motion was heard by the Board on October 24, 2016. These were filed in RESS and copies were sent to the Board.

Response to Motion Request 1:

Please see Attachment 1 for the requested data for the past 3 winters. It includes the following:

Receipts from Union

Union contracts for gas supply at Ojibway. In order to reduce physical transportation needs from Dawn to Ojibway and defer building facilities, Union relies on its gas supply arriving on Design Day.

Union noted in response to Exhibit JT1.13 that over the last three years Union made no spot or monthly purchases in addition to those required to fill the contracted firm transportation capacity on PEPL.

Receipts from C1

These are transportation contracts held by other parties. Union cannot rely on these volumes. As noted in evidence at Exhibit A, Tab 4 page 4 lines 14,15 “.....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.”

As shown in the summary table provided at Exhibit B.FRPO.8 c) iii), C1 activity varies and has been as low as zero. This can also be seen in the attached data, column b).

Monthly and Daily Hubs (sum =Total receipts from HUBS)

Union previously provided total HUB data at Exhibit JT1.15. These can be firm or interruptible daily, weekly, monthly or seasonal contracts in duration depending upon unutilized pipeline capacity on Union's Panhandle System. These cannot be relied upon to serve firm demand on a Design Day. The enhanced HUB contracts are held by marketers who control and 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.

Total Receipts

This is the sum of Union, C1 and HUB receipts from Ojibway toward Dawn.

Total Deliveries (from Dawn toward Ojibway)

There are occasional firm or interruptible nominated flows (HUB contracts) for Dawn to Ojibway.

Net Nominated

This represents Total Receipts less Total Deliveries

OBA Activity

The OBA is a balancing agreement that exists between PEPL and Union to balance physical flows. It was described in the Hearing of the Motion in Transcript at Page 26, lines 6-16:

Effectively is that the actual flows represent the relationship between two parties, Union and Panhandle. So there is no ability -- and the way they keep track of the fact that there is differences in those flows is through an agreement called an operating balancing agreement where effectively they record the differences and sometimes they will nominate more, or they will nominate something else differently, so that actually over time, if more gas is being taken by Union, they will pay it back to Panhandle over time. It's an operational thing between system operators.

Measured at Ojibway

This column represents the actual flows at Ojibway as provided previously at Exhibit JT1.10

Average Ojibway Delivery Pressure (kPag)

This represents the average Ojibway delivery pressure at the Ojibway Measurement Station

Response to Motion Request 2:

Please see Attachment 2 for the requested correspondence.

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

Yours truly,

[original signed by]

Karen Hockin
Manager, Regulatory Initiatives

Encl.

c.c.: Zora Crnojacki, Board Staff
Mark Kitchen, Union Gas
Charles Keizer, Torys
All Intervenors (EB-2016-0186)

	(a) (b) (c) (d) (e) = (c) + (d) (f) = (a) + (b) + (e) (g) (h) = (f) - (g) (i) (j) = (h) + (i) (k)											
	Nominated & Scheduled											
	Receipts from UNION	Receipts from C1	Monthly HUBS	Daily HUBS	Total Receipts from HUBS	Total Receipts	Total Deliveries	Net Nominated	OBA Activity	Measured at Ojibway	Avg. Ojibway Delivery Pressure (kPag)	
November 1, 2013	38,661	74,461	23,184	0	23,184	136,306	136,306	-339	135,967	2,516		
November 2, 2013	38,661	74,461	23,184	0	23,184	136,306	136,306	5,626	141,931	2,490		
November 3, 2013	38,661	74,461	23,184	0	23,184	136,306	136,306	-34	136,272	2,468		
November 4, 2013	38,661	74,461	23,184	0	23,184	136,306	136,306	286	136,591	2,471		
November 5, 2013	38,661	74,461	23,184	0	23,184	136,306	136,306	-1,823	134,482	2,486		
November 6, 2013	38,661	74,461	23,184	0	23,184	136,306	136,306	-2,477	133,828	2,471		
November 7, 2013	38,661	74,461	23,184	0	23,184	136,306	136,306	-2,622	133,684	2,429		
November 8, 2013	38,661	74,461	21,074	0	21,074	134,196	134,196	-1,068	133,128	2,445		
November 9, 2013	38,661	74,461	21,074	0	21,074	134,196	134,196	-966	133,229	2,498		
November 10, 2013	38,661	74,461	21,074	0	21,074	134,196	134,196	-1,457	132,738	2,464		
November 11, 2013	38,661	74,461	21,074	0	21,074	134,196	134,196	-1,266	132,929	2,514		
November 12, 2013	38,661	74,461	7,358	0	7,358	120,480	120,480	8,478	128,958	2,596		
November 13, 2013	38,661	72,983	11,579	0	11,579	123,223	123,223	11,653	134,876	2,670		
November 14, 2013	38,661	74,461	17,909	0	17,909	131,031	131,031	-12,085	118,946	2,733		
November 15, 2013	38,661	74,461	23,184	0	23,184	136,306	136,306	-2,873	133,433	2,519		
November 16, 2013	38,661	74,461	23,184	0	23,184	136,306	136,306	2,425	138,730	2,470		
November 17, 2013	38,661	74,461	23,184	0	23,184	136,306	136,306	30,510	166,816	2,591		
November 18, 2013	38,661	74,461	9,468	0	9,468	122,590	122,590	5,080	127,670	2,339		
November 19, 2013	38,661	68,208	6,303	0	6,303	113,172	113,172	9,954	123,126	2,322		
November 20, 2013	38,661	74,461	17,909	0	17,909	131,031	131,031	-7,769	123,261	2,343		
November 21, 2013	38,661	74,461	12,634	0	12,634	125,756	125,756	4,716	130,471	2,379		
November 22, 2013	38,661	68,208	7,991	0	7,991	114,860	114,860	3,717	118,576	2,318		
November 23, 2013	38,661	57,825	7,358	0	7,358	103,844	103,844	3,767	107,610	2,256		
November 24, 2013	38,661	57,825	7,358	0	7,358	103,844	103,844	3,998	107,841	2,260		
November 25, 2013	38,661	57,825	7,358	0	7,358	103,844	103,844	3,929	107,772	2,275		
November 26, 2013	38,661	44,584	6,303	0	6,303	89,548	89,548	274	89,822	2,516		
November 27, 2013	38,661	57,825	22,129	0	22,129	118,615	118,615	-1,198	117,417	2,626		
November 28, 2013	38,661	57,825	22,129	0	22,129	118,615	118,615	-37	118,578	2,585		
November 29, 2013	38,661	57,825	22,129	0	22,129	118,615	118,615	-171	118,443	2,585		
November 30, 2013	38,661	57,825	22,129	0	22,129	118,615	118,615	-209	118,406	2,686		
December 1, 2013	38,602	74,461	23,184	0	23,184	136,247	136,247	-1,889	134,359	2,489		
December 2, 2013	38,602	74,461	17,909	0	17,909	130,972	130,972	7,359	138,331	2,375		
December 3, 2013	38,602	74,461	23,184	0	23,184	136,247	136,247	17,518	153,766	2,498		
December 4, 2013	38,602	74,461	23,184	0	23,184	136,247	136,247	25,092	161,340	2,583		
December 5, 2013	38,602	74,461	20,546	0	20,546	133,609	133,609	1,087	134,696	2,413		
December 6, 2013	38,602	40,119	12,634	0	12,634	91,355	91,355	3,089	91,732	2,339		
December 7, 2013	38,602	46,891	12,634	0	12,634	98,127	98,127	-1,169	91,533	2,409		
December 8, 2013	38,602	52,083	12,634	0	12,634	103,319	103,319	-7,947	95,373	2,409		
December 9, 2013	38,602	52,083	12,634	0	12,634	103,319	103,319	2,341	97,708	2,240		
December 10, 2013	38,602	-2,083	12,634	0	12,634	49,153	47,031	1,593	48,625	2,207		
December 11, 2013	38,602	19,018	12,634	0	12,634	70,254	62,537	2,988	65,525	2,250		
December 12, 2013	38,602	61,220	12,634	0	12,634	112,456	109,183	-1,268	107,915	2,609		

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	(a) (b) (c) (d) (e) = (c) + (d) (f) = (a) + (b) + (e) (g) (h) = (f) - (g) (i) (j) = (h) + (i) (k)										
	Nominated & Scheduled										
	Receipts from UNION	Receipts from C1	Monthly HUBS	Daily HUBS	Total Receipts from HUBS	Total Receipts	Total Deliveries	Net Nominated	OBA Activity	Measured at Ojibway	Avg. Ojibway Delivery Pressure (kPag)
December 13, 2013	38,602	74,461	23,184	0	23,184	136,247	8,933	127,314	1,526	128,840	2,606
December 14, 2013	38,602	74,461	23,184	0	23,184	136,247		136,247	2,008	138,255	2,698
December 15, 2013	38,602	74,461	23,184	0	23,184	136,247		136,247	-91	136,157	2,502
December 16, 2013	38,602	74,461	23,184	0	23,184	136,247		136,247	-12,763	123,484	2,541
December 17, 2013	38,602	74,461	23,184	0	23,184	136,247		136,247	-14,634	121,614	2,666
December 18, 2013	38,602	74,461	23,184	0	23,184	136,247		136,247	-2,568	133,679	2,681
December 19, 2013	38,602	74,461	23,184	0	23,184	136,247		136,247	-789	135,458	2,711
December 20, 2013	38,602	74,461	23,050	0	23,050	136,113		136,113	-11,266	124,847	2,727
December 21, 2013	38,602	74,461	21,561	23,211	44,772	157,835		157,835	-7,346	150,489	2,671
December 22, 2013	38,602	74,461	21,561	23,211	44,772	157,835		157,835	-11,971	145,865	2,683
December 23, 2013	38,602	74,461	21,561	23,211	44,772	157,835		157,835	806	158,641	2,601
December 24, 2013	38,602	74,461	23,184	26,376	49,560	162,623		162,623	-1,476	161,147	2,583
December 25, 2013	38,602	74,461	23,184	26,352	49,536	162,599		162,599	-10,190	152,410	2,604
December 26, 2013	38,602	74,461	23,184	26,367	49,551	162,614		162,614	-17,528	145,087	2,685
December 27, 2013	38,602	74,461	23,184	36,927	60,111	173,174		173,174	-6,584	166,591	2,580
December 28, 2013	38,602	74,461	17,909	36,927	54,836	167,899		167,899	3,958	171,857	2,560
December 29, 2013	38,602	74,461	17,909	36,927	54,836	167,899		167,899	3,845	171,744	2,531
December 30, 2013	38,602	74,461	17,909	36,927	54,836	167,899		167,899	4,122	172,022	2,514
December 31, 2013	38,602	74,461	23,184	36,927	60,111	173,174		173,174	-1,088	172,087	2,493
January 1, 2014	38,522	74,461	23,184	36,927	60,111	173,094		173,094	-1,355	171,740	2,466
January 2, 2014	38,522	74,461	23,184	36,927	60,111	173,094		173,094	-1,489	171,605	2,359
January 3, 2014	38,522	74,461	23,184	0	23,184	136,167		136,167	1,251	137,418	2,287
January 4, 2014	38,522	23,791	3,395	0	3,395	65,708	54,067	11,641	7,077	18,719	2,344
January 5, 2014	38,522	23,791	3,395	0	3,395	65,708	55,234	10,474	46,496	56,971	2,582
January 6, 2014	38,522	23,791	2,657	0	2,657	64,970	55,216	9,754	11,733	21,488	2,420
January 7, 2014	38,491	55,223	10,551	61,088	71,639	165,353	15,872	149,481	-18,264	131,217	2,609
January 8, 2014	38,522	36,927	21,101	0	21,101	96,550	9,560	86,990	1,399	88,389	2,476
January 9, 2014	38,522	59,822	21,101	12,977	34,078	132,422		132,422	-1,917	130,505	2,619
January 10, 2014	38,522	74,461	23,184	47,478	70,662	183,645		183,645	-12,619	171,027	2,612
January 11, 2014	38,522	74,461	23,184	47,478	70,662	183,645		183,645	-11,691	171,954	2,608
January 12, 2014	38,522	74,461	23,184	47,478	70,662	183,645		183,645	-11,326	172,319	2,604
January 13, 2014	38,522	74,461	23,184	47,478	70,662	183,645		183,645	-10,621	173,024	2,615
January 14, 2014	38,522	74,461	23,184	47,478	70,662	183,645		183,645	-6,624	177,022	2,589
January 15, 2014	38,522	74,461	23,184	47,478	70,662	183,645		183,645	-5,534	178,111	2,541
January 16, 2014	38,522	74,461	23,184	47,478	70,662	183,645		183,645	-138	183,507	2,572
January 17, 2014	38,522	74,461	23,184	47,478	70,662	183,645		183,645	-1,983	181,663	2,571
January 18, 2014	38,522	63,989	21,101	26,376	47,477	149,988		149,988	16,607	166,595	2,488
January 19, 2014	38,522	63,989	21,101	26,376	47,477	149,988		149,988	16,565	166,554	2,498
January 20, 2014	38,522	63,989	21,101	26,376	47,477	149,988		149,988	15,731	165,719	2,344
January 21, 2014	38,522	36,457	21,101	26,376	47,477	122,456		122,456	211	122,667	2,366
January 22, 2014	38,522	34,342	21,101	33,762	54,863	127,727	2,122	125,605	2,419	128,024	2,232
January 23, 2014	38,522	25,163	21,101	26,376	47,477	111,162	7,493	103,669	4,236	107,905	2,279
January 24, 2014	38,522	29,067	21,101	30,597	51,698	119,287		119,287	-1,349	117,938	2,421
January 25, 2014	38,522	42,825	21,092	0	21,092	102,439		102,439	-4,937	97,503	2,535

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	Nominated & Scheduled											
	Receipts from UNION	Receipts from C1	Monthly HUBS	Daily HUBS	Total Receipts from HUBS	Total Receipts	Total Deliveries	Net Nominated	OBA Activity	Measured at Ojibway	Avg. Ojibway Delivery Pressure (kPag)	
January 26, 2014	38,522	21,734	21,092	0	21,092	81,348	81,348	22,193	103,541	2,414		
January 27, 2014	38,522	21,734	21,092	0	21,092	81,348	81,348	22,188	103,536	2,374		
January 28, 2014	38,522	21,417	21,101	10,551	31,652	91,591	91,591	1,245	92,836	2,397		
January 29, 2014	38,522	50,168	21,101	40,831	61,932	150,622	149,541	-11,239	138,303	2,554		
January 30, 2014	38,522	69,186	23,184	36,927	60,111	167,819	167,819	102	167,922	2,549		
January 31, 2014	38,522	74,461	23,184	36,927	60,111	173,094	-173,094	-2,254	170,841	2,557		
February 1, 2014	38,493	45,003	21,100	405	21,505	105,001	105,001	64,132	169,133	2,616		
February 2, 2014	38,493	45,003	21,100	405	21,505	105,001	105,001	58,960	163,961	2,613		
February 3, 2014	38,493	45,003	21,100	405	21,505	105,001	105,001	341	105,342	2,473		
February 4, 2014	38,493	45,003	21,101	66,345	87,446	170,942	170,942	-11,319	159,624	2,599		
February 5, 2014	38,493	31,762	26,376	52,753	79,129	149,384	146,085	2,384	148,470	2,509		
February 6, 2014	38,493	21,101	15,557	77,632	93,189	152,783	152,783	-22,250	130,534	2,558		
February 7, 2014	38,493	45,003	21,101	63,304	84,405	167,901	167,901	-21,984	145,917	2,563		
February 8, 2014	38,493	34,342	15,895	52,753	68,648	141,483	141,483	-10,230	131,254	2,572		
February 9, 2014	38,493	34,342	15,895	52,753	68,648	141,483	141,483	2,762	144,246	2,529		
February 10, 2014	38,493	34,342	26,446	73,854	100,300	173,135	172,823	-10,106	162,717	2,462		
February 11, 2014	38,493	34,342	31,652	84,606	116,258	189,093	189,093	-2,118	186,976	2,369		
February 12, 2014	38,493	45,003	31,652	84,750	116,402	199,898	199,898	-4,822	195,077	2,426		
February 13, 2014	38,493	45,003	31,652	84,404	116,056	199,552	199,552	-21,533	178,020	2,480		
February 14, 2014	38,493	48,696	31,652	86,531	118,183	205,372	205,372	-20,982	184,391	2,591		
February 15, 2014	38,493	48,168	31,652	87,818	119,470	206,131	206,131	-19,942	186,190	2,587		
February 16, 2014	38,493	48,168	31,652	87,816	119,468	206,129	206,129	-10,946	195,183	2,496		
February 17, 2014	38,493	48,168	31,652	87,816	119,468	206,129	206,129	-3,643	202,487	2,472		
February 18, 2014	38,493	48,168	31,652	87,816	119,468	206,129	206,129	-11,248	194,882	2,486		
February 19, 2014	38,493	71,380	31,652	88,413	120,065	229,938	229,938	-40,553	189,386	2,514		
February 20, 2014	38,493	71,380	31,652	89,680	121,332	231,205	231,205	-50,432	180,774	2,510		
February 21, 2014	38,493	87,733	31,652	66,996	98,648	224,874	224,874	-38,633	186,242	2,531		
February 22, 2014	38,493	43,421	31,652	3,812	35,464	117,378	117,378	1,624	119,002	2,367		
February 23, 2014	38,493	43,421	31,652	3,812	35,464	117,378	117,378	398	117,776	2,275		
February 24, 2014	38,493	43,421	31,652	2,658	34,310	116,224	116,224	1,460	117,685	2,383		
February 25, 2014	38,493	47,219	31,652	0	31,652	117,364	117,364	92	117,457	2,516		
February 26, 2014	38,493	45,003	31,652	33,408	65,060	148,556	148,556	-30,971	117,586	2,465		
February 27, 2014	38,493	45,003	31,652	31,652	63,304	146,800	144,413	-2,587	141,827	2,425		
February 28, 2014	38,493	45,003	31,652	327	31,979	115,475	115,475	21,707	137,182	2,537		
March 1, 2014	38,480	59,135	21,101	0	21,101	118,716	118,716	25,872	144,588	2,605		
March 2, 2014	38,480	59,135	31,652	0	31,652	129,267	129,267	19,097	148,364	2,376		
March 3, 2014	32,643	53,887	29,014	0	29,014	115,544	115,544	13,402	128,947	2,438		
March 4, 2014	38,476	73,508	31,652	0	31,652	143,636	143,636	-2,779	140,857	2,450		
March 5, 2014	38,480	69,186	33,735	0	33,735	141,401	141,401	-3,522	137,879	2,372		
March 6, 2014	38,480	74,461	33,735	0	33,735	146,676	146,676	-1,873	144,803	2,413		
March 7, 2014	38,480	74,461	33,735	35,356	69,091	182,032	182,032	-10,848	171,184	2,502		
March 8, 2014	38,480	74,461	33,735	0	33,735	146,676	146,676	-5,879	140,797	2,388		
March 9, 2014	38,480	74,461	33,735	0	33,735	146,676	146,676	129	146,805	2,456		
March 10, 2014	38,480	74,461	33,735	0	33,735	146,676	146,676	323	146,999	2,464		

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	(a)												(b)		(c)		(d)	(e) = (c) + (d)				(f) = (a) + (b) + (e)			(g)	(h) = (f) - (g)		(i)	(j) = (h) + (i)		(k)																																																																																																																																																																																																																																																																																																																																																																																												
	Nominated & Scheduled														Daily HUBS	Monthly HUBS	Receipts from C1		Total Receipts from HUBS	Total Receipts	Total Deliveries	Net Nominated	OBA Activity	Measured at Ojibway	Avg. Ojibway Delivery Pressure (kPag)																																																																																																																																																																																																																																																																																																																																																																																																		
	Receipts from UNION	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1			Receipts from C1	Receipts from C1								Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from 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from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1	Receipts from C1

	(a) (b) (c) (d) (e) = (c) + (d) (f) = (a) + (b) + (e) (g) (h) = (f) - (g) (i) (j) = (h) + (i) (k)										
	Nominated & Scheduled										
	Receipts from UNION	Receipts from C1	Monthly HUBS	Daily HUBS	Total Receipts from HUBS	Total Receipts	Total Deliveries	Net Nominated	OBA Activity	Measured at Ojibway	Avg. Ojibway Delivery Pressure (kPag)
November 24, 2014	60,138	67,571	13,988	0	13,988	141,697	141,697	141,697	1,319	143,016	2,468
November 25, 2014	60,138	67,571	13,988	0	13,988	141,697	141,697	141,697	1,237	142,934	2,426
November 26, 2014	60,138	67,571	13,988	0	13,988	141,697	141,697	141,697	895	142,592	2,427
November 27, 2014	60,138	67,571	13,988	0	13,988	141,697	141,697	141,697	786	142,483	2,398
November 28, 2014	60,138	67,571	13,988	0	13,988	141,697	141,697	141,697	860	142,557	2,419
November 29, 2014	60,138	67,571	13,988	0	13,988	141,697	141,697	141,697	-18,744	122,953	2,671
November 30, 2014	60,138	67,571	13,988	0	13,988	141,697	141,697	141,697	-28,127	113,570	2,737
December 1, 2014	60,138	83,323	13,988	0	13,988	157,449	157,449	157,449	11,755	169,205	2,515
December 2, 2014	56,973	85,722	13,988	0	13,988	156,683	156,683	156,683	11,540	168,223	2,539
December 3, 2014	60,138	85,723	13,988	0	13,988	159,849	159,849	159,849	12,591	172,440	2,598
December 4, 2014	60,138	85,723	13,988	0	13,988	159,849	159,849	159,849	6,062	165,912	2,547
December 5, 2014	60,138	85,723	13,988	0	13,988	159,849	159,849	159,849	11,425	171,274	2,478
December 6, 2014	60,138	85,723	13,988	0	13,988	159,849	159,849	159,849	14,944	174,793	2,593
December 7, 2014	60,138	85,723	13,988	0	13,988	159,849	159,849	159,849	16,676	176,525	2,578
December 8, 2014	60,138	85,721	13,988	0	13,988	159,847	159,847	159,847	18,686	178,533	2,601
December 9, 2014	60,008	85,723	13,988	2,638	16,626	162,357	162,357	162,357	16,921	179,278	2,590
December 10, 2014	60,138	85,723	13,988	0	13,988	159,849	159,849	159,849	18,978	178,828	2,548
December 11, 2014	60,138	85,723	13,988	7,913	21,901	167,762	167,762	167,762	3,923	171,685	2,527
December 12, 2014	60,138	85,723	13,988	14,243	28,231	174,092	174,092	174,092	4,771	178,863	2,585
December 13, 2014	60,138	85,723	13,988	14,243	28,231	174,092	174,092	174,092	2,463	176,555	2,610
December 14, 2014	60,138	85,723	13,988	14,243	28,231	174,092	174,092	174,092	-4,312	169,780	2,632
December 15, 2014	60,138	85,723	13,988	14,243	28,231	174,092	174,092	174,092	-3,915	170,177	2,644
December 16, 2014	60,138	75,011	13,988	14,243	28,231	163,380	163,380	163,380	2,873	166,253	2,556
December 17, 2014	60,138	85,723	13,988	0	13,988	159,849	159,849	159,849	5,558	165,407	2,494
December 18, 2014	60,138	85,723	13,988	7,913	21,901	167,762	167,762	167,762	1,495	169,257	2,516
December 19, 2014	60,138	85,723	13,988	19,509	33,497	179,358	179,358	179,358	-10,727	168,631	2,501
December 20, 2014	60,138	85,723	13,988	8,957	22,945	168,806	168,806	168,806	427	169,234	2,514
December 21, 2014	60,138	85,723	13,988	8,958	22,946	168,807	168,807	168,807	675	169,482	2,515
December 22, 2014	58,028	85,723	13,988	8,958	22,946	166,697	166,697	166,697	-4,399	162,299	2,517
December 23, 2014	60,138	64,622	13,976	10,551	24,527	149,287	149,287	149,287	19,856	169,143	2,581
December 24, 2014	60,138	85,723	13,988	10,551	24,539	170,400	170,400	170,400	-2,664	167,736	2,585
December 25, 2014	60,138	85,723	10,228	10,551	20,779	166,640	166,640	166,640	581	167,222	2,629
December 26, 2014	60,138	85,723	10,228	10,551	20,779	166,640	166,640	166,640	-2,086	164,554	2,635
December 27, 2014	60,138	85,723	10,228	10,551	20,779	166,640	166,640	166,640	-699	165,942	2,630
December 28, 2014	60,138	85,723	10,228	10,551	20,779	166,640	166,640	166,640	517	167,157	2,511
December 29, 2014	59,637	85,723	10,228	10,551	20,779	166,139	166,139	166,139	1,979	168,118	2,468
December 30, 2014	60,138	64,622	0	5,275	5,275	130,035	130,035	130,035	-1,036	128,999	2,252
December 31, 2014	60,138	75,011	0	0	0	135,149	135,149	135,149	-13,629	121,520	2,239
January 1, 2015	60,138	76,326	0	0	0	136,464	136,464	136,464	-1,754	134,711	2,323
January 2, 2015	60,138	76,326	0	0	0	136,464	136,464	136,464	17,527	153,991	2,433
January 3, 2015	60,138	67,495	0	0	0	127,633	127,633	127,633	4,985	132,618	2,356
January 4, 2015	60,138	67,495	0	0	0	127,633	127,633	127,633	5,185	132,818	2,343
January 5, 2015	60,138	67,495	0	0	0	127,633	127,633	127,633	5,563	133,196	2,336
January 6, 2015	50,642	62,219	0	0	0	112,861	112,861	112,861	18,939	131,800	2,325

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Attachment 1
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	(a) (b) (c) (d) (e) = (c) + (d) (f) = (a) + (b) + (e) (g) (h) = (f) - (g) (i) (j) = (h) + (i) (k)										
	Nominated & Scheduled										
	Receipts from UNION	Receipts from C1	Monthly HUBS	Daily HUBS	Total Receipts from HUBS	Total Receipts	Total Deliveries	Net Nominated	OBA Activity	Measured at Ojibway	Avg. Ojibway Delivery Pressure (kPag)
January 7, 2015	49,588	5,194	0	0	0	54,782	54,782	747	55,529	2,435	
January 8, 2015	60,138	5,194	0	0	0	65,332	65,332	-529	64,804	2,537	
January 9, 2015	60,138	0	0	0	0	60,138	60,138	-497	59,641	2,424	
January 10, 2015	60,138	5,194	0	0	0	65,332	65,332	-662	64,671	2,495	
January 11, 2015	60,138	5,194	0	0	0	65,332	65,332	-642	64,691	2,553	
January 12, 2015	60,138	5,194	0	0	0	65,332	65,332	833	66,166	2,378	
January 13, 2015	60,138	20,018	0	0	0	80,156	80,156	1,246	81,402	2,525	
January 14, 2015	60,138	35,843	0	0	0	95,981	95,981	321	96,302	2,477	
January 15, 2015	60,138	67,495	13,988	0	13,988	141,621	141,621	-362	141,259	2,543	
January 16, 2015	60,138	66,197	13,988	21,101	35,089	161,424	161,424	2,549	163,973	2,427	
January 17, 2015	60,138	68,622	13,988	0	13,988	142,748	142,748	446	143,195	2,440	
January 18, 2015	60,138	68,622	13,988	0	13,988	142,748	142,748	5,358	148,106	2,450	
January 19, 2015	60,138	70,320	12,321	0	12,321	142,779	142,779	5,953	148,732	2,440	
January 20, 2015	60,138	70,320	13,965	0	13,965	144,423	144,423	4,655	149,078	2,466	
January 21, 2015	60,138	83,391	13,988	14,328	28,316	171,845	171,845	-2,764	169,081	2,555	
January 22, 2015	60,138	83,286	13,988	10,551	24,539	167,963	167,963	5,013	172,976	2,571	
January 23, 2015	60,138	83,286	13,988	10,551	24,539	167,963	167,963	5,096	173,059	2,579	
January 24, 2015	60,138	83,391	13,988	10,551	24,539	168,068	168,068	6,032	174,100	2,599	
January 25, 2015	60,138	83,391	13,988	10,551	24,539	168,068	168,068	812	168,881	2,465	
January 26, 2015	60,138	83,391	13,988	10,551	24,539	168,068	168,068	986	169,055	2,486	
January 27, 2015	60,138	83,391	13,988	10,551	24,539	168,068	168,068	827	168,895	2,454	
January 28, 2015	60,138	83,391	13,988	10,551	24,539	168,068	168,068	-12,910	155,158	2,463	
January 29, 2015	60,138	83,391	13,988	10,551	24,539	168,068	168,068	-2,386	165,683	2,524	
January 30, 2015	60,138	69,331	4,074	0	4,074	133,543	133,543	35,107	168,650	2,513	
January 31, 2015	60,138	62,301	0	0	0	122,439	122,439	45,900	168,339	2,543	
February 1, 2015	60,138	0	10,551	0	10,551	70,689	70,689	-2,160	68,529	2,349	
February 2, 2015	60,138	0	10,551	0	10,551	70,689	70,689	1,228	71,917	2,448	
February 3, 2015	60,138	0	10,551	0	10,551	70,689	70,689	1,157	71,847	2,387	
February 4, 2015	60,138	0	0	0	0	60,138	60,138	11,491	71,629	2,489	
February 5, 2015	58,661	0	0	0	0	58,661	58,661	2,377	61,038	2,300	
February 6, 2015	60,138	0	10,551	0	10,551	70,689	70,689	-155	70,534	2,404	
February 7, 2015	60,138	0	10,551	0	10,551	70,689	70,689	2,958	73,648	2,426	
February 8, 2015	60,138	0	10,551	0	10,551	70,689	70,689	-83	70,606	2,332	
February 9, 2015	60,138	0	10,551	0	10,551	70,689	70,689	204	70,893	2,365	
February 10, 2015	60,138	55,485	24,539	10,551	35,090	150,713	150,713	-6,615	144,098	2,569	
February 11, 2015	60,138	61,090	24,539	10,551	35,090	156,318	156,318	3,120	159,438	2,533	
February 12, 2015	60,138	21,090	21,649	0	21,649	102,877	102,877	3,852	106,729	2,375	
February 13, 2015	60,138	42,719	24,539	10,551	35,090	137,947	137,947	-6,563	131,385	2,570	
February 14, 2015	60,138	21,090	24,327	0	24,327	105,555	105,555	-482	105,073	2,493	
February 15, 2015	60,138	21,090	24,327	0	24,327	105,555	105,555	-1,361	104,194	2,379	
February 16, 2015	60,138	21,090	24,327	0	24,327	105,555	105,555	-1,142	104,414	2,356	
February 17, 2015	60,138	21,090	15,137	0	15,137	96,365	96,365	7,017	103,382	2,409	
February 18, 2015	60,138	26,296	10,551	0	10,551	96,985	96,985	-784	96,201	2,362	
February 19, 2015	60,138	0	17,092	0	17,092	77,230	77,230	2,219	79,449	2,188	

	(a) (b) (c) (d) (e) = (c) + (d) (f) = (a) + (b) + (e) (g) (h) = (f) - (g) (i) (j) = (h) + (i) (k)										
	Nominated & Scheduled										
	Receipts from UNION	Receipts from C1	Monthly HUBS	Daily HUBS	Total Receipts from HUBS	Total Receipts	Total Deliveries	Net Nominated	OBA Activity	Measured at Ojibway	Avg. Ojibway Delivery Pressure (kPag)
February 20, 2015	60,138	17,732	10,551	0	10,551	88,421	88,421	88,421	-1,284	87,137	2,256
February 21, 2015	60,138	7,030	10,551	3,517	14,068	81,236	81,236	81,236	-54	81,182	2,460
February 22, 2015	60,138	21,090	10,551	14,560	25,111	106,339	106,339	106,339	-4,300	102,039	2,374
February 23, 2015	60,138	21,090	10,551	5,275	15,826	97,054	97,054	97,054	1,353	98,407	2,329
February 24, 2015	60,138	10,389	10,551	0	10,551	81,078	81,078	81,078	11,125	92,203	2,439
February 25, 2015	60,138	10,389	24,464	0	24,464	94,991	94,991	94,991	-2,908	92,083	2,462
February 26, 2015	60,138	21,101	24,539	0	24,539	105,778	105,778	105,778	10,029	115,808	2,491
February 27, 2015	60,138	21,101	24,539	0	24,539	105,778	105,778	105,778	1,114	106,892	2,456
February 28, 2015	60,138	21,101	24,539	0	24,539	105,778	105,778	105,778	676	106,454	2,452
March 1, 2015	60,138	61,221	24,539	21,101	45,640	166,999	166,999	166,999	-11,347	155,652	2,631
March 2, 2015	60,127	61,221	24,539	21,101	45,640	166,988	166,988	166,988	4,802	171,789	2,520
March 3, 2015	60,138	61,221	24,539	21,101	45,640	166,999	166,999	166,999	7,050	174,049	2,565
March 4, 2015	60,138	78,102	13,988	26,376	40,364	178,604	178,604	178,604	-2,501	176,104	2,512
March 5, 2015	60,138	63,619	21,772	26,376	48,148	171,905	171,905	171,905	-7,542	164,364	2,367
March 6, 2015	60,138	61,221	26,649	20,800	47,449	168,808	168,808	168,808	-3,600	165,208	2,476
March 7, 2015	60,138	61,221	26,649	0	26,649	148,008	148,008	148,008	13,182	161,190	2,558
March 8, 2015	60,138	61,221	26,649	0	26,649	148,008	148,008	148,008	11,721	159,729	2,498
March 9, 2015	60,138	61,221	26,649	0	26,649	148,008	148,008	148,008	-444	147,564	2,475
March 10, 2015	60,138	61,221	24,539	0	24,539	145,898	145,898	145,898	651	146,549	2,461
March 11, 2015	60,138	61,221	24,539	0	24,539	145,898	145,898	145,898	1,584	147,482	2,492
March 12, 2015	60,138	61,221	24,539	0	24,539	145,898	145,898	145,898	-48	145,851	2,476
March 13, 2015	60,138	61,221	24,539	0	24,539	145,898	145,898	145,898	4,956	150,854	2,466
March 14, 2015	60,138	61,221	24,443	0	24,443	145,802	145,802	145,802	3,224	149,026	2,453
March 15, 2015	60,138	61,221	24,286	0	24,286	145,645	145,645	145,645	54	145,699	2,448
March 16, 2015	60,138	61,221	24,274	0	24,274	145,633	145,633	145,633	475	146,108	2,462
March 17, 2015	60,138	61,221	24,539	0	24,539	145,898	145,898	145,898	28	145,927	2,432
March 18, 2015	60,138	61,221	24,539	0	24,539	145,898	145,898	145,898	226	146,124	2,411
March 19, 2015	60,138	61,221	24,539	0	24,539	145,898	145,898	145,898	658	146,557	2,410
March 20, 2015	60,138	61,221	24,539	0	24,539	145,898	145,898	145,898	1,154	147,052	2,441
March 21, 2015	60,138	61,221	24,539	0	24,539	145,898	145,898	145,898	956	146,854	2,411
March 22, 2015	60,138	61,221	24,539	0	24,539	145,898	145,898	145,898	1,034	146,932	2,415
March 23, 2015	60,138	61,221	24,539	0	24,539	145,898	145,898	145,898	-2,095	143,803	2,395
March 24, 2015	60,138	61,221	24,539	0	24,539	145,898	145,898	145,898	1,608	147,506	2,468
March 25, 2015	60,138	61,221	24,539	0	24,539	145,898	145,898	145,898	1,678	147,576	2,481
March 26, 2015	60,138	61,221	24,539	0	24,539	145,898	145,898	145,898	10,161	156,059	2,462
March 27, 2015	60,138	61,221	24,539	0	24,539	145,898	145,898	145,898	11,928	157,827	2,452
March 28, 2015	60,138	61,221	24,539	0	24,539	145,898	145,898	145,898	16,448	162,347	2,483
March 29, 2015	60,138	61,221	24,539	0	24,539	145,898	145,898	145,898	20,771	166,669	2,517
March 30, 2015	60,138	61,221	24,539	0	24,539	145,898	145,898	145,898	21,392	167,291	2,548
March 31, 2015	60,138	61,221	24,539	0	24,539	145,898	145,898	145,898	20,533	166,432	2,520
November 1, 2015	60,138	41,161	0	15,826	15,826	117,125	117,125	117,125	35,546	152,671	2,566
November 2, 2015	60,132	41,161	0	15,826	15,826	117,119	117,119	117,119	3,276	120,395	2,435
November 3, 2015	60,138	41,161	0	26,377	26,377	127,676	127,676	127,676	-7,508	120,168	2,497
November 4, 2015	60,138	41,161	0	31,652	31,652	132,951	132,951	132,951	-10,844	122,107	2,580

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	(a) (b) (c) (d) (e) = (c) + (d) (f) = (a) + (b) + (e) (g) (h) = (f) - (g) (i) (j) = (h) + (i) (k)										
	Nominated & Scheduled										
	Receipts from UNION	Receipts from C1	Monthly HUBS	Daily HUBS	Total Receipts from HUBS	Total Receipts	Total Deliveries	Net Nominated	OBA Activity	Measured at Ojibway	Avg. Ojibway Delivery Pressure (kPag)
November 5, 2015	60,138	41,161	0	40,092	40,092	141,391	141,391	141,391	-1,995	139,396	2,537
November 6, 2015	60,138	41,161	0	40,092	40,092	141,391	141,391	141,391	-1,875	139,516	2,478
November 7, 2015	60,138	41,161	0	10,551	10,551	111,850	111,850	111,850	27,110	138,960	2,479
November 8, 2015	60,138	41,161	0	10,551	10,551	111,850	111,850	111,850	27,214	139,064	2,471
November 9, 2015	60,138	41,161	0	10,551	10,551	111,850	111,850	111,850	12,634	124,485	2,430
November 10, 2015	60,138	41,161	0	10,551	10,551	111,850	111,850	111,850	10,029	121,879	2,410
November 11, 2015	60,138	41,161	0	9,311	9,311	110,610	110,610	110,610	29,670	140,280	2,496
November 12, 2015	60,138	41,161	0	10,551	10,551	111,850	111,850	111,850	31,755	143,605	2,488
November 13, 2015	60,138	41,161	0	10,551	10,551	111,850	111,850	111,850	31,458	143,308	2,477
November 14, 2015	60,138	41,161	0	10,551	10,551	111,850	111,850	111,850	30,686	142,537	2,507
November 15, 2015	60,138	41,161	0	10,551	10,551	111,850	111,850	111,850	9,475	121,325	2,423
November 16, 2015	60,138	41,161	0	10,551	10,551	111,850	111,850	111,850	9,198	121,048	2,420
November 17, 2015	60,138	41,161	0	0	0	101,299	101,299	101,299	19,568	120,867	2,434
November 18, 2015	60,138	41,161	0	0	0	101,299	101,299	101,299	19,692	120,991	2,440
November 19, 2015	60,138	41,161	0	0	0	101,299	101,299	101,299	-167	101,132	2,335
November 20, 2015	60,138	41,161	0	0	0	101,299	101,299	101,299	-202	101,098	2,387
November 21, 2015	60,138	41,161	0	0	0	101,299	101,299	101,299	-375	100,925	2,338
November 22, 2015	60,138	41,161	0	0	0	101,299	101,299	101,299	-446	100,853	2,311
November 23, 2015	60,138	41,161	0	0	0	101,299	101,299	101,299	-168	101,131	2,238
November 24, 2015	60,138	41,161	0	0	0	101,299	101,299	101,299	-378	100,921	2,300
November 25, 2015	60,138	41,161	0	0	0	101,299	101,299	101,299	-226	101,073	2,540
November 26, 2015	60,138	41,161	0	0	0	101,299	101,299	101,299	-40	101,259	2,647
November 27, 2015	60,138	41,161	0	0	0	101,299	101,299	101,299	14,881	116,180	2,443
November 28, 2015	60,138	41,161	0	0	0	101,299	101,299	101,299	14,532	115,832	2,419
November 29, 2015	60,138	41,161	0	0	0	101,299	101,299	101,299	14,511	115,810	2,418
November 30, 2015	60,138	41,161	0	0	0	101,299	101,299	101,299	8,396	109,695	2,432
December 1, 2015	60,138	41,123	0	0	0	101,261	101,261	101,261	746	102,007	2,360
December 2, 2015	60,138	41,161	0	0	0	101,299	101,299	101,299	2,277	103,576	2,336
December 3, 2015	60,138	41,161	0	0	0	101,299	101,299	101,299	1,096	102,395	2,345
December 4, 2015	60,138	41,161	0	0	0	101,299	101,299	101,299	792	102,092	2,360
December 5, 2015	60,138	20,060	0	0	0	80,198	80,198	80,198	-11,590	68,608	2,298
December 6, 2015	60,138	20,060	0	0	0	80,198	80,198	80,198	-11,587	68,612	2,282
December 7, 2015	60,138	20,060	0	0	0	80,198	80,198	80,198	-11,695	68,503	2,273
December 8, 2015	60,138	32,611	0	0	0	92,749	92,749	92,749	-10,738	82,011	2,310
December 9, 2015	60,138	41,161	0	0	0	101,299	101,299	101,299	12,882	114,181	2,379
December 10, 2015	60,138	30,734	0	0	0	90,872	90,872	90,872	26,096	116,969	2,618
December 11, 2015	60,138	30,734	0	2,670	2,670	93,542	93,542	93,542	-25,302	68,240	2,373
December 12, 2015	60,138	41,122	0	0	0	101,260	101,260	101,260	-8,036	93,224	2,600
December 13, 2015	60,138	41,122	0	0	0	101,260	101,260	101,260	1,950	103,210	2,439
December 14, 2015	60,138	41,122	0	0	0	101,260	101,260	101,260	16,813	118,074	2,454
December 15, 2015	60,138	20,060	0	0	0	80,198	80,198	80,198	-174	80,024	2,318
December 16, 2015	60,138	41,123	0	0	0	101,261	101,261	101,261	-10,540	90,721	2,343
December 17, 2015	60,138	38,307	0	0	0	98,445	98,445	98,445	657	99,102	2,339
December 18, 2015	60,138	41,122	0	0	0	101,260	101,260	101,260	15	101,275	2,285

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	(a)			(b)			(c)			(d)			(e) = (c) + (d)			(f) = (a) + (b) + (e)			(g)			(h) = (f) - (g)			(i)			(j) = (h) + (i)			(k)		
	Receipts from UNION	Receipts from C1	Monthly HUBS	Daily HUBS	Total Receipts from HUBS	Total Receipts	Total Deliveries	Net Nominated	OBA Activity	Measured at Ojibway	Avg. Ojibway Delivery Pressure (kPag)																						
December 19, 2015	60,138	41,123	0	0	0	101,261	101,261	101,261	-186	101,076	2,278																						
December 20, 2015	60,138	41,123	0	0	0	101,261	101,261	101,261	-60	101,201	2,328																						
December 21, 2015	60,138	41,123	0	0	0	101,261	101,261	101,261	-157	101,104	2,397																						
December 22, 2015	60,138	41,122	0	0	0	101,260	101,260	101,260	332	101,593	2,322																						
December 23, 2015	60,138	39,825	0	0	0	99,963	99,963	99,963	-2,080	97,884	2,630																						
December 24, 2015	60,138	41,122	0	0	0	101,260	101,260	101,260	731	101,991	2,441																						
December 25, 2015	60,138	41,122	0	0	0	101,260	101,260	101,260	748	102,008	2,445																						
December 26, 2015	60,138	41,122	0	0	0	101,260	101,260	101,260	269	101,529	2,464																						
December 27, 2015	60,138	41,122	0	0	0	101,260	101,260	101,260	344	101,604	2,427																						
December 28, 2015	52,952	41,122	0	0	0	94,074	94,074	94,074	7,604	101,678	2,394																						
December 29, 2015	59,970	40,907	0	0	0	100,877	100,877	100,877	746	101,623	2,310																						
December 30, 2015	60,138	41,122	0	0	0	101,260	101,260	101,260	426	101,686	2,306																						
December 31, 2015	60,138	41,123	0	0	0	101,261	101,261	101,261	397	101,658	2,305																						
January 1, 2016	60,138	41,161	0	0	0	101,299	101,299	101,299	491	101,790	2,324																						
January 2, 2016	60,138	41,161	0	0	0	101,299	101,299	101,299	731	102,030	2,372																						
January 3, 2016	60,138	41,161	0	0	0	101,299	101,299	101,299	-259	101,041	2,299																						
January 4, 2016	60,138	41,161	0	0	0	101,299	101,299	101,299	168	101,467	2,327																						
January 5, 2016	60,138	41,137	0	0	0	101,275	101,275	101,275	4,739	106,015	2,395																						
January 6, 2016	60,138	41,161	0	0	0	101,299	101,299	101,299	-1,111	100,188	2,400																						
January 7, 2016	60,138	39,160	0	0	0	99,298	99,298	99,298	-682	98,617	2,411																						
January 8, 2016	60,138	41,161	0	0	0	101,299	101,299	101,299	3,098	104,397	2,514																						
January 9, 2016	60,138	41,161	0	0	0	101,299	101,299	101,299	130	101,429	2,623																						
January 10, 2016	60,138	41,161	0	0	0	101,299	101,299	101,299	-119	101,180	2,269																						
January 11, 2016	60,138	41,161	0	0	0	101,299	101,299	101,299	419	101,718	2,438																						
January 12, 2016	60,138	41,161	0	0	0	101,299	101,299	101,299	-10,031	91,269	2,342																						
January 13, 2016	60,138	36,515	0	0	0	96,653	96,653	96,653	-5,229	91,424	2,352																						
January 14, 2016	60,138	41,161	0	0	0	101,299	101,299	101,299	-9,910	91,390	2,597																						
January 15, 2016	60,138	41,161	0	0	0	101,299	101,299	101,299	-10,482	90,817	2,607																						
January 16, 2016	60,138	40,912	0	0	0	101,050	101,050	101,050	-5,741	95,310	2,469																						
January 17, 2016	60,138	41,161	0	0	0	101,299	101,299	101,299	112	101,411	2,339																						
January 18, 2016	60,138	41,161	0	0	0	101,299	101,299	101,299	255	101,555	2,370																						
January 19, 2016	60,138	41,161	0	0	0	101,299	101,299	101,299	33	101,332	2,353																						
January 20, 2016	60,138	41,161	0	0	0	101,299	101,299	101,299	-236	101,063	2,474																						
January 21, 2016	60,138	41,161	0	0	0	101,299	101,299	101,299	-361	100,938	2,593																						
January 22, 2016	60,138	41,161	0	0	0	101,299	101,299	101,299	-363	100,936	2,502																						
January 23, 2016	60,138	41,161	0	0	0	101,299	101,299	101,299	-895	100,404	2,507																						
January 24, 2016	60,138	41,161	0	0	0	101,299	101,299	101,299	-745	100,554	2,440																						
January 25, 2016	60,138	41,161	0	0	0	101,299	101,299	101,299	-492	100,808	2,486																						
January 26, 2016	60,138	41,161	0	0	0	101,299	101,299	101,299	-512	100,787	2,362																						
January 27, 2016	60,138	41,161	0	0	0	101,299	101,299	101,299	-442	100,857	2,403																						
January 28, 2016	60,138	41,161	0	0	0	101,299	101,299	101,299	-522	100,777	2,447																						
January 29, 2016	60,138	41,161	0	0	0	101,299	101,299	101,299	-457	100,842	2,445																						
January 30, 2016	60,138	41,161	0	0	0	101,299	101,299	101,299	-576	100,723	2,601																						
January 31, 2016	60,138	41,161	0	0	0	101,299	101,299	101,299	-611	100,688	2,597																						

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	(a) (b) (c) (d) (e) = (c) + (d) (f) = (a) + (b) + (e) (g) (h) = (f) - (g) (i) (j) = (h) + (i) (k)										
	Nominated & Scheduled										
	Receipts from UNION	Receipts from C1	Monthly HUBS	Daily HUBS	Total Receipts from HUBS	Total Receipts	Total Deliveries	Net Nominated	OBA Activity	Measured at Ojibway	Avg. Ojibway Delivery Pressure (kPag)
February 1, 2016	60,137	41,161	0	0	0	101,298	101,298	-412	100,887	2,486	
February 2, 2016	60,137	41,161	0	0	0	101,298	101,298	-338	100,961	2,521	
February 3, 2016	60,137	41,161	0	0	0	101,298	101,298	-957	100,341	2,531	
February 4, 2016	60,137	41,161	0	0	0	101,298	101,298	-248	101,050	2,398	
February 5, 2016	60,137	41,161	0	0	0	101,298	101,298	-227	101,071	2,479	
February 6, 2016	60,137	41,161	0	0	0	101,298	101,298	44	101,342	2,457	
February 7, 2016	60,137	41,161	0	0	0	101,298	101,298	248	101,546	2,572	
February 8, 2016	60,137	41,154	0	0	0	101,291	101,291	724	102,015	2,465	
February 9, 2016	60,137	41,161	0	0	0	101,298	101,298	805	102,103	2,332	
February 10, 2016	60,137	41,161	0	0	0	101,298	101,298	761	102,059	2,375	
February 11, 2016	60,137	41,161	0	0	0	101,298	101,298	770	102,068	2,538	
February 12, 2016	60,137	41,161	0	0	0	101,298	101,298	394	101,692	2,528	
February 13, 2016	60,137	41,161	0	0	0	101,298	101,298	140	101,438	2,381	
February 14, 2016	60,137	41,161	0	0	0	101,298	101,298	406	101,704	2,414	
February 15, 2016	60,137	41,161	0	0	0	101,298	101,298	213	101,511	2,545	
February 16, 2016	60,137	41,161	0	0	0	101,298	101,298	55	101,353	2,497	
February 17, 2016	60,137	41,161	0	0	0	101,298	101,298	69	101,367	2,456	
February 18, 2016	60,137	41,161	0	0	0	101,298	101,298	150	101,448	2,539	
February 19, 2016	60,137	41,161	0	0	0	101,298	101,298	-1,067	100,231	2,594	
February 20, 2016	60,137	41,161	0	0	0	101,298	101,298	109	101,407	2,425	
February 21, 2016	60,137	41,161	0	0	0	101,298	101,298	217	101,515	2,399	
February 22, 2016	60,137	41,161	0	0	0	101,298	101,298	-39	101,259	2,565	
February 23, 2016	60,137	41,161	0	0	0	101,298	101,298	75	101,373	2,456	
February 24, 2016	60,137	41,161	0	0	0	101,298	101,298	258	101,557	2,429	
February 25, 2016	60,137	41,161	0	0	0	101,298	101,298	199	101,498	2,352	
February 26, 2016	60,137	41,161	0	0	0	101,298	101,298	187	101,485	2,542	
February 27, 2016	60,137	41,161	0	0	0	101,298	101,298	298	101,596	2,637	
February 28, 2016	60,137	41,161	0	0	0	101,298	101,298	-9,086	92,212	2,713	
February 29, 2016	60,137	41,161	0	0	0	101,298	101,298	176	101,474	2,387	
March 1, 2016	60,138	27,095	0	0	0	87,233	87,233	14,271	101,504	2,427	
March 2, 2016	60,138	20,060	0	0	0	80,198	80,198	-304	79,894	2,314	
March 3, 2016	60,138	25,482	0	0	0	85,620	85,620	-2,367	83,254	2,521	
March 4, 2016	60,138	41,123	0	0	0	101,261	101,261	-316	100,946	2,454	
March 5, 2016	60,138	41,161	0	0	0	101,299	101,299	2,833	104,132	2,407	
March 6, 2016	60,138	41,161	0	0	0	101,299	101,299	4,470	105,769	2,386	
March 7, 2016	60,138	41,161	0	0	0	101,299	101,299	-2,041	99,259	2,699	
March 8, 2016	60,138	41,161	0	0	0	101,299	101,299	-4,530	96,769	2,757	
March 9, 2016	60,138	41,161	0	0	0	101,299	101,299	-61	101,238	2,727	
March 10, 2016	60,138	41,161	0	0	0	101,299	101,299	5,646	106,945	2,489	
March 11, 2016	60,138	41,161	0	0	0	101,299	101,299	11,174	112,473	2,502	
March 12, 2016	60,138	41,161	0	0	0	101,299	101,299	6,745	108,044	2,513	
March 13, 2016	60,138	41,161	0	0	0	101,299	101,299	10,917	112,216	2,453	
March 14, 2016	60,138	41,161	0	0	0	101,299	101,299	10,774	112,073	2,423	
March 15, 2016	60,138	41,161	0	36,927	36,927	138,226	138,226	17,114	155,340	2,576	

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March 19, 2016
March 20, 2016
March 21, 2016
March 22, 2016
March 23, 2016
March 24, 2016
March 25, 2016
March 26, 2016
March 27, 2016
March 28, 2016
March 29, 2016
March 30, 2016
March 31, 2016

Hockin, Karen

From: Cadotte, Jeff
Sent: July 2, 2015 1:09 PM
To: Debevc, Melissa; Drewery, Kevin
Cc: Moxley-Peltier, Michelle; Wallace, Dan
Subject: RE: Panhandle System Capacity at Ojibway for Rover
Attachments: Panhandle System Schematic.ppt

Hi Melissa, a few things to note that may help.

- 1) We are looking at a summer scenario for this situation (with the lowest available market/worst case conditions) to sell Rover year round - firm
- 2) Has horsepower been de-rated to summer temps?
- 3) Have you added in market upstream of Sandwich compressor? The 115,000 GJ/d came from ~ 35,000 GJ/d market (can't count on power market to sell firm year round) off the 16" in Windsor plus 80,000 GJ/d capability from the Sandwich unit. If you add in the market demand upstream of the compressor it will likely cause suction to drop and therefore cause min inlet constraints. It will also reduce the compression capability back to Dawn.
- 4) The additional 20,000 GJ/d is not Union Supply, it is an S&T Contract out to year 2020.
- 5) The NPS 16 can physically bring 32 MMcf/d back to Dawn, but there is no market for that volume so we aren't able to count it unless we can find a home for it. To keep the system 'whole' we should be looking to bring back to Dawn at 700 psig, which you did with one scenario on the 20" below (127 mmcf/d).

See the attached schematic.

The max we can move from Ojibway each and every day in the summer time is the guaranteed summer Windsor market plus whatever Sandwich can do. We will have to build for anything incremental above this volume to get back to Dawn. Does the Sandwich capability drop with summer weather and upstream market impacts?

It would be interesting to see how much pipeline integrity work we could avoid on the 16" if we built a new river crossing and pipe back to Sandwich, in combination with a revenue generating build with Rover.

Happy to get back together and chat if nec. Kevin did I miss anything?

Thanks
Jeff

From: Debevc, Melissa
Sent: Tuesday, June 30, 2015 2:41 PM
To: Drewery, Kevin; Cadotte, Jeff
Cc: Moxley-Peltier, Michelle; Wallace, Dan
Subject: Panhandle System Capacity at Ojibway for Rover

Hi Kevin and Jeff.

I wanted to provide an update on the Panhandle systems capability to move gas from Ojibway towards Dawn.

To set a minimum volume that can be shipped on the Ojibway to Dawn path, I removed all of the demand from the system such that the results should provide the capability of the pipeline and Sandwich compressor only.

I set up the model with the following assumptions:

- 1) Ojibway pressure 415 Psig (max)

- | | |
|--|--|
| 2) Ojibway Max Flow | 192 mmcf/d |
| 3) Dover Transmission Station | Bypassed |
| 4) Dawn NPS 16 Delivery pressure to Dawn | 300 Psig |
| 5) Sandwich Compressor | 4500 hp and Max discharge pressure 876 Psig |
| 6) Current market | 115,000 GJ/d (106 mmcf/d) |
| 7) Union Supply | 60,000 GJ/d (not sure that I have heard about the additional 20000 GJ/d yet) |
| 8) Rover requirement | 70,000 GJ/d |

The results from this model indicate:

NPS 16 could flow 32 mmcf/d to Dawn at 300 Psig

Sandwich Compressor could flow 100 mmcf/d with a suction pressure of 334 Psig and a discharge pressure of 647 Psig.

Gas on the NPS 20 would arrive at Dawn at 582 Psig

In total about 132 mmcf/d should be able to be imported at Ojibway every day.

In theory this should be enough to support Union's current 60,000 GJ/d of supply plus Rover's proposed 70,000 GJ/d of transportation (120 mmcf/d).

Even with Union's additional 20,000 GJ/d (which I am yet unaware of) the total would be 138 mmcf/d or 6 more than the pipe alone can provide and should be able to be supplied from the demand that is available.

If I set Dawn at 700 Psig, Sandwich still has the ability to overcome that pressure and deliver 700 Psig at Dawn with a slightly less volume (127 mmcf/d total)

My question to you ... Do I have the correct assumptions in the model?

Are our current operations doing something to reduce the amount of gas that can be imported at Ojibway?

Melissa Debevc P. Eng.

Principal System Planning Engineer

Union Gas Limited, a Suncor Energy Company

2550 Main Street

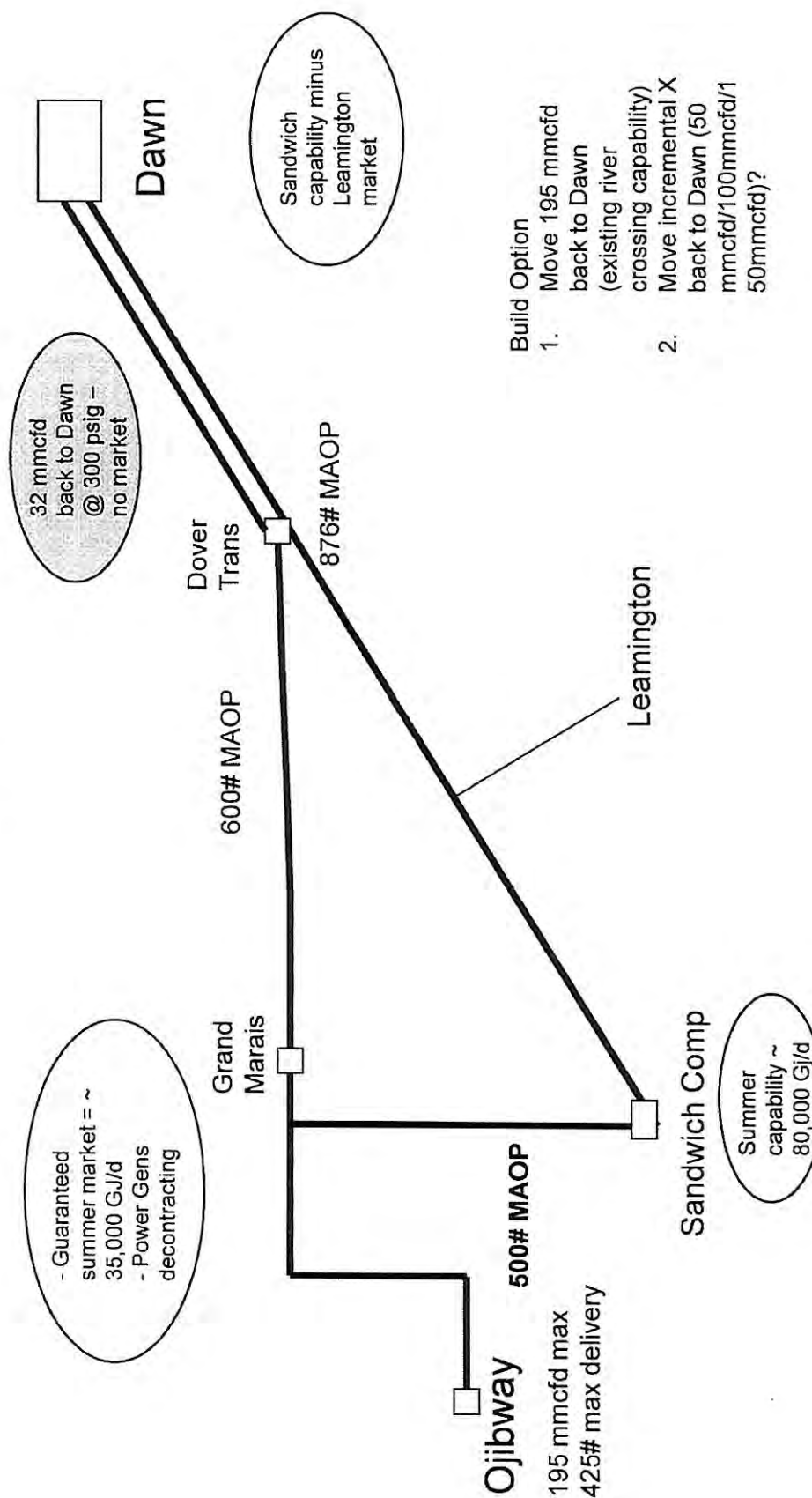
Calgary, AB T2C 1A5

866-444-2300 or 403-243-1313, ext. 5068337

2016-10-28 10:50 AM

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Panhandle System Schematic



Hockin, Karen

From: Debevc, Melissa
Sent: July 6, 2015 4:27 PM
To: Moxley-Peltier, Michelle
Subject: FW: Ojibway

FYI....Can you provide an estimate of when you will have the information ready for Dale.

He has indicated Union would build for 35 TJ/d.

Melissa Debevc P. Eng.
Principal System Planning Engineer
Union Gas Limited - Alberta Energy Services
750 Richmond Street
Calgary, Alberta T2C 1E1
Office: 403-243-6400 ext 5223507
Cell: 403-243-6401

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From: Van Der Meersch, Dale
Sent: July 6, 2015 4:08 PM
To: Debevc, Melissa
Cc: Mastronardi, Paolo
Subject: RE: Ojibway

Melissa...as part of the take away that you were doing 1) upsize the sandwich compressor 2) total replacement of the river crossing is there an option to do something where we can do something to get us enough volume to cover what we are currently short for Rover. I believe Union has a contract for 80,000 and the market can take 115,000 which leaves 35,000. Rover wanted 70,000 so can we tweak anything to get us the other 35,000?

Dale

From: Debevc, Melissa
Sent: June-30-15 3:15 PM
To: Van Der Meersch, Dale; Wallace, Dan; Bossy, Deb
Cc: Mastronardi, Paolo
Subject: RE: Ojibway

Deb is going to work on a magnitude estimate for early next week.

I will get you the capacity.

Melissa Debevc P. Eng.
Principal System Planning Engineer
Union Gas Limited - Alberta Energy Services
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Calgary, Alberta T2C 1E1
Office: 403-243-6400 ext 5223507
Cell: 403-243-6401

2015-07-01 10:00 AM

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From: Van Der Meersch, Dale
Sent: June 30, 2015 3:04 PM
To: Debevc, Melissa; Wallace, Dan
Cc: Mastronardi, Paolo
Subject: RE: Ojibway

yes

From: Debevc, Melissa
Sent: June-30-15 3:03 PM
To: Van Der Meersch, Dale; Wallace, Dan
Cc: Mastronardi, Paolo
Subject: RE: Ojibway

For a River Crossing Replacement?

Melissa Debevc P. Eng.
Principal System Planning Engineer
1000 Lakeshore Blvd. West, Suite 1000
Toronto, Ontario M6H 1B5
Canada
Tel: 416-593-1234
Fax: 416-593-1234
Email: mdebevc@toronto.ca

5-5-2015 10:00 AM
1000 Lakeshore Blvd. West, Suite 1000
Toronto, Ontario M6H 1B5
Canada

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From: Van Der Meersch, Dale
Sent: June 30, 2015 3:02 PM
To: Debevc, Melissa; Wallace, Dan
Cc: Mastronardi, Paolo
Subject: Ojibway
Importance: High

As a take away from a meeting today could you please provide the following information:

- Compare the cost difference between 20 inch and a 24 inch
- Compare the capacity difference between the two

Is this something we could get early next week?

Hockin, Karen

From: Van Der Meersch, Dale
Sent: July 15, 2015 8:35 AM
To: Cadotte, Jeff; Byng, Joan; Debevc, Melissa; Moxley-Peltier, Michelle; Wallace, Dan
Cc: Mastronardi, Paolo
Subject: Panhandle River Crossing - jrc,dvdm and jb edits.docx
Attachments: Panhandle River Crossing - jrc,dvdm and jb edits.docx

If you haven't already done so please make comments from this updated version. This version includes updates/comments from Jeff and Joan. Keep track changes on.

Thanks

Dale

Panhandle River Crossing

Background:

The Panhandle River crossings were installed in 1947. Ownership of this crossing is shared between Union Gas and Panhandle Eastern (Energy Transfer Partners), the International Border being the delineation of ownership of the two lines. The Presidential Permit for imports is ~212 TJ/d. The Panhandle River Crossing is an important component of Union's Gas Supply plan facilitating Union's ability to meet firm design day demands at the west end of Union South providing diversity and security of supply. Windsor and Union's Panhandle system cannot be supported entirely from Dawn supply.

The amount of gas which can be imported into Ontario at Ojibway is a function of the amount the local market can consume to a maximum presidential permit amount of 212 TJ/d. The current import capability into the Windsor market is 115 TJ/d in the summer starting in 2016 going forward. The market reflects a forecasted decline of approximately 35 TJ/d due to a reduction in generation load as a result of changes in contracting by the IESO (Independent Electricity System Operator) It is anticipated [REDACTED] Gas that is not consumed by the local market in Windsor is limited to the capability of the Sandwich compressor unit to transport back to Dawn (currently 80 MMcfd)

The current restrictions for gas to move beyond the Sandwich compressor are the MOP of the river crossing (425 psi) and the size of the compressor unit at Sandwich (3800HP).

The condition of the river crossing being almost 70 years old is unknown. Union would like to conduct integrity testing on the river crossing as part of its ongoing integrity program for all its facilities. The consequence of a failed integrity inspection could result in the river crossing being taken out of service immediately to potentially having the two lines placed back into service but at a reduced pressure. Placing back into service at a reduced pressure will result in reduced capacity therefore not being able to meet current contractual obligations. Repairs to the lines if necessary are not considered to be a viable option.

Current breakdown of the capacity allocation is as follows:

Total Capacity Available	115TJ/d
Union Gas Requirements (System Supply)	- 60 TJ/d
Current Long Term S&T Deal (expires 2020)	- 20 TJ/d
Capacity Available(on the shelf)	35 TJ/d

A number of scenarios were developed to illustrate what would be needed to allow incremental capacity to move beyond Sandwich to other markets and to Dawn.

Scenario 1

There is a request for 80 TJ/d from an ex-franchise customer. This analysis consists of adding enough facilities to accommodate that request. Therefore what facilities are needed to be added to meet the 45 TJ/d shortfall. (Current available 35 + 45 needed = 80 request)

The recommendation to accommodate the additional 45 TJ/d is to replace the existing river crossing with NPS 20 and increase the MOP to 500 psig. There is also the need to increase the compression at Sandwich by an incremental 1200 HP.

These facilities would accommodate the incremental 45 TJ/d at a cost of approximately \$32MM. It is assumed the river crossing would be shared at least 50/50 with Panhandle therefore, Union's share of the \$32MM estimate would be \$22MM. This is a magnitude level estimate with (+50%/-50%) with 25% contingency. This option is not being pursued at this time.

Replace River Crossing (NPS 20) and increase MOP to 500 psig	\$20,030,000
Increase Compression at Sandwich by 1200 HP	\$12,000,000
Total Project Cost	\$32,030,000

Resulting Capacity Allocation Breakdown

Total Capacity Available	160TJ/d
Union Gas Requirements (System Supply)	- 60 TJ/d
Current Long Term S&T Deal	- 20 TJ/d
New S&T Deal	-80 TJ/d
Capacity Available (on the shelf)	0 TJ/d

Scenario 2

If Union wanted to have some capacity reserved for either System Supply purposes, for S&T purposes, or to manage the risk regarding further reductions in the Windsor market, what additional facilities would be required to meet the request for 75 TJ/d and what would the resulting available capacity be.

The recommendation is to replace the river crossing with NPS20 and increase the MOP to 500 psig, loop NPS 20 from river crossing to Sandwich Transmission Station (approx 17 km) and increase the compression by 1200 HP at Sandwich.

These facilities would result in incremental capacity of 98 TJ/d at a cost of \$74.3MM. **Please note that we would be able to move more than the current presidential permit allows. It is assumed that you could increase the permit as required based on new crossing.** The same assumption applies that the river crossing would be split 50/50 with Panhandle therefore Union's cost of the project would be \$64.3MM.

Replace River Crossing (NPS 20) and increase MOP	\$20,030,000
--	--------------

to 500 psig	
Loop NPS 20 from River Crossing to Sandwich Transmission Station – approx 17km	\$43,200,000
Increase Compression at Sandwich by 3800 HP	\$12,000,000
Total Project Cost	\$74,330,000

Resulting Capacity Allocation Breakdown

Total Capacity Available	213TJ/d
Union Gas Requirements (System Supply)	- 60 TJ/d
Current Long Term S&T Deal	- 20 TJ/d
New S&T Deal	-75 TJ/d
Capacity Available (on the shelf)	58 TJ/d

It is assumed in both cases that the pressure across the river can be raised to 500 psig. If the pressure can be raised higher from the U.S. side of the border incremental capacity could be achieved with the same facilities. This should be explored when discussion occurs with Panhandle.

[NTD: A high level analysis of rate impact to follow]

[NTD: please provide a map describing the above as discussed]

[NTD: recommendation to follow]

Hockin, Karen

From: Moxley-Peltier, Michelle
Sent: July 23, 2015 7:45 AM
To: Van Der Meersch, Dale
Subject: RE: Scenario's
Attachments: C2017 Ojibway - Rover Recommendations.xlsx

Good Morning Dale,

Please find attached the recommendations provided to date.

Thanks

Michelle

Michelle Moxley-Peltier P.Eng CEM
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www.uniongas.com



From: Van Der Meersch, Dale
Sent: July-22-15 1:10 PM
To: Moxley-Peltier, Michelle
Subject: Scenario's

Michelle can you please send me both of the scenario's which you have completed so far electronically?

Thanks

Ojibway - Rover

Existing Facilities

2 x NPS 12 River Crossings + Sandwich Compressor operating at 3800hp in summer
--

Desired outcome

Import an additional 40 TJ/d at Ojibway

Recommendations:

			Final Cost
1	Use existing River Crossing (2 x NPS 12)	\$ -	
	Loop NPS 20 from River Crossing to junction of NPS 16 and NPS 20 - 10km in length	\$ 27,000,000	\$ 39,000,000
	Increase Compression at Sandwich (1200HP)	\$ 12,000,000	
2	Replace River Crossing (NPS 20) and increase MOP to 500psig	\$ 20,030,000	
	Increase Compression at Sandwich (1200HP)	\$ 12,000,000	\$ 32,030,000
3	Replace River Crossing (NPS 24) and increase Mop to 500psig	\$ 20,920,000	
	Increase Compression at Sandwich (1200HP)	\$ 12,000,000	\$ 32,920,000

Ojibway - Rover

Existing Facilities

2 x NPS 12 River Crossings + Sandwich Compressor operating at 3800hp in summer

Desired outcome

To maximize Ojibway imports by replacing existing river crossing with an NPS 20 and increasing the MOP

Pressure:	Incremental Imports:	Recommendations:	Final Cost
500 psig	89.5mmcf/d 97,737 GJ/d	Replace River Crossing (NPS 20) and increase MOP to 500psig	\$ 20,030,000
		Loop NPS 20 from River Crossing to Sandwich Transmission Station - 17km in length	\$ 43,200,000
		Increase Compression at Sandwich (1200HP incremental)	\$ 12,000,000
500 psig	110.7mmcf/d 120,930 GJ/d	Replace River Crossing (NPS 20) and increase MOP to 500psig	\$ 20,030,000
		Loop NPS 20 from River Crossing to Sandwich Transmission Station - 17km in length	\$ 43,200,000
		Increase Compression at Sandwich (3800HP incremental)	\$ 24,000,000
600 psig	119.1mmcf/d 130,009 GJ/d	Replace River Crossing (NPS 20) and increase MOP to 600psig	\$ 20,030,000
		Loop NPS 20 from River Crossing to Sandwich Transmission Station - 17km in length	\$ 43,200,000
		Add Regulation at Ojibway Measurement Station	\$ 5,850,000
		Increase Compression at Sandwich (1200HP incremental)	\$ 12,000,000
600 psig	145.2mmcf/d 158,575 GJ/d	Replace River Crossing (NPS 20) and increase MOP to 600psig	\$ 20,030,000
		Loop NPS 20 from River Crossing to Sandwich Transmission Station - 17km in length	\$ 43,200,000
		Add Regulation at Ojibway Measurement Station	\$ 5,850,000
		Increase Compression at Sandwich (5200HP incremental)	\$ 33,250,000
700 psig	136.8mmcf/d 149,357 GJ/d	Replace River Crossing (NPS 20) and increase MOP to 700psig	\$ 20,030,000
		Loop NPS 20 from River Crossing to Sandwich Transmission Station - 17km in length	\$ 43,200,000
		Add Regulation at Ojibway Measurement Station	\$ 5,850,000
		Increase Compression at Sandwich (1200HP incremental)	\$ 12,000,000
700 psig	170.57mmcf/d 186,237 GJ/d	Replace River Crossing (NPS 20) and increase MOP to 700psig	\$ 20,030,000
		Loop NPS 20 from River Crossing to Sandwich Transmission Station - 17km in length	\$ 43,200,000
		Add Regulation at Ojibway Measurement Station	\$ 5,850,000
		Increase Compression at Sandwich (6200HP incremental)	\$ 33,250,000

Note: The above recommendations assumed all flow back to Dawn on the NPS 16 was used in the Heat Exchanger or Sarnia IP market.

Hockin, Karen

From: Bossy, Deb
Sent: July 28, 2015 3:56 PM
To: Moxley-Peltier, Michelle
Cc: Wallace, Dan
Subject: RE: Rush Request: July 28, 2015 - Magnitude Estimates - Panhandle - NPS 20 River Crossing - Rover
Attachments: 2015 07 23 Panhandle River Crossing NPS20_Rover_Opt1-5.pdf

Hi Michelle, please find attached magnitude estimates and a summary for the scenarios you requested.

Thanks, Deb

From: Moxley-Peltier, Michelle
Sent: July-24-15 9:41 AM
To: Bossy, Deb
Cc: Duphette, Pat
Subject: Rush Request: July 28, 2015 - Magnitude Estimates - Panhandle - NPS 20 River Crossing - Rover

Good Morning Deb,

Response Required: Tuesday July 28, 2015

As per our conversation yesterday, I am forwarding you a number of requests for Magnitude Estimates for the Panhandle – NPS 20 River Crossing – Rover Project. Business development is in negotiations with an ex-franchise customer to transport a minimum of 80TJ/d of gas on the Panhandle System from Ojibway to Dawn. I have developed five (5) options requiring Magnitude level cost estimates. Each option has a different combination of River Crossing, pipeline looping, and added compression at Sandwich Transmission.

Business Development has arranged a meeting with the client for early next week. Please let me know if you are unable to provide the following magnitude estimates by 3pm on Tuesday July 28th.

- Option 1
 - NPS 20 River Crossing with tie into Ojibway Measurement Station
 - Add an incremental 1200HP of compression at Sandwich Compressor
- Option 2
 - NPS 20 River Crossing with tie into Ojibway Measurement Station
 - Add an incremental 1200HP of compression at Sandwich Compressor
 - Loop 16.5km of Panhandle from Ojibway Measurement to Sandwich Transmission NPS 20
- Option 3
 - NPS 20 River Crossing with tie into Ojibway Measurement Station
 - Add an incremental 3512HP of compression at Sandwich Compressor (or closest increment)
 - Loop 16.5km of Panhandle from Ojibway Measurement to Sandwich Transmission NPS 20
- Option 4
 - NPS 20 River Crossing with tie into Ojibway Measurement Station
 - Add an incremental 1200HP of compression at Sandwich Compressor
 - Loop 17.92km of Panhandle from Ojibway Measurement to Sandwich Transmission NPS 20
- Option 5
 - NPS 20 River Crossing with tie into Ojibway Measurement Station
 - Add an incremental 3682HP of compression at Sandwich Compressor (or closest increment)
 - Loop 17.92km of Panhandle from Ojibway Measurement to Sandwich Transmission NPS 20

Please review the attached document and let me know if you require additional background information.

Thanks

Michelle

Michelle Moxley-Peltier P.Eng CEM
System Planning Engineer | Major Projects
Union Gas Limited | A Spectra Energy Company
745 Richmond St | P.O. Box 2001
Chatham ON N7M 5J5
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www.uniongas.com



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Scope & Estimate Summary
for In-Service Year
Magnitude (+50% / -25%)

Project: **Panhandle - NPS 20 River Crossing - Rover**

In-Service Date: **2018/1/01** Area(s): **Windsor, ON**

Option-Version: **(see below)** Requestor: **Michelle Moxley-Peltier**

Date: **2015/07/23** Estimator: **Deb Bossy**

Project Description:

Construction of NPS20 steel pipeline + add compression at existing Sandwich Trans. Station (see details below).
(Note: An ex-franchise customer requests transportation of 80TJ/d landing at Ojibway and moving eastward to Dawn.)

Scenario Details			Other Details	
Estimate Date	Option-Version	Pipeline Details		
2015/07/23	Opt1-PR04_M1	= 2.4 km NPS 20 + 1200 hp	River crossing (US to Ojibway Stn)	
2015/07/23	Opt2-PR05_M1	= 16.9 km NPS 20 + 1200 hp	River crossing (US to Ojibway Stn) + looping Panhandle NPS 16	
2015/07/23	Opt3-PR06_M1	= 16.9 km NPS 20 + 3512 hp	River crossing (US to Ojibway Stn) + looping Panhandle NPS 16	
2015/07/23	Opt4-PR07_M1	= 18.4 km NPS 20 + 1200 hp	River crossing (US to Ojibway Stn) + via I/O lands (by Pkwy's/Expy's)	
2015/07/23	Opt5-PR08_M1	= 18.4 km NPS 20 + 3682 hp	River crossing (US to Ojibway Stn) + via I/O lands (by Pkwy's/Expy's)	

IMPORTANT: see individual quotes for specific Notes / Assumptions.

	Opt1-PR04_M1	Opt2-PR05_M1	Opt3-PR06_M1	Opt4-PR07_M1	Opt5-PR08_M1	0
Incremental Pipeline Looping / Relay						
NPS 20 River Crossing	Estimated Cost 2018\$ \$14,500,000	Estimated Cost 2018\$ \$14,000,000	Estimated Cost 2018\$ \$14,000,000	Estimated Cost 2018\$ \$14,000,000	Estimated Cost 2018\$ \$14,000,000	Estimated Cost 2018\$ \$0
NPS 20 River Crossing (abandonment)	\$0	\$0	\$0	\$0	\$0	\$0
NPS 20 Crossing tie-in to Ojibway Stn.	\$4,500,000	\$4,000,000	\$4,000,000	\$4,000,000	\$4,000,000	\$0
NPS 20 Ojibway Stn. To Sandwich Stn	\$0	\$37,000,000	\$37,000,000	\$41,000,000	\$41,000,000	\$0
Adders: land	\$0	\$11,000,000	\$11,000,000	\$15,000,000	\$15,000,000	\$0
Adders: built up / urban	\$0	\$18,000,000	\$18,000,000	\$0	\$0	\$0
Adders: major road & park crossings	\$0	\$2,000,000	\$2,000,000	\$3,000,000	\$3,000,000	\$0
Sub-Total Pipeline:	\$19,000,000	\$86,000,000	\$86,000,000	\$77,000,000	\$77,000,000	\$0
Incremental Compression						
Add Compression to Sandwich Trans	\$14,500,000	\$14,000,000	\$22,000,000	\$14,000,000	\$23,000,000	\$0
Sub-Total Compression:	\$14,500,000	\$14,000,000	\$22,000,000	\$14,000,000	\$23,000,000	\$0
Measurement / Regulation and Miscellaneous						
Ojibway Measurement Station Mod's	\$1,500,000	\$1,000,000	\$1,000,000	\$1,000,000	\$1,000,000	\$0
Sandwich Transmission Station Mod's	\$0	\$1,000,000	\$1,000,000	\$1,000,000	\$1,000,000	\$0
Sub-Total Measurement/Misc:	\$1,500,000	\$2,000,000	\$2,000,000	\$2,000,000	\$2,000,000	\$0
TOTAL Estimated Cost:	\$35,000,000	\$102,000,000	\$110,000,000	\$93,000,000	\$102,000,000	\$0
Rangeability +50%	\$52,500,000	\$153,000,000	\$165,000,000	\$140,000,000	\$153,000,000	\$0
Rangeability -25%	\$26,500,000	\$77,000,000	\$83,000,000	\$70,000,000	\$77,000,000	\$0



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Scope & Estimate Summary

Magnitude (+50% / -25%)

Project: **Panhandle - NPS 20 River Crossing - Rover**

In-Service Date: **2018/11/01** Area(s): **Windsor, ON**

Option-Version: **Opt1=PR04_M1** Requestor: **Michelle Moxley-Peltier**

Date: **2015/07/23** Estimator: **Deb Bossy**

Project Description: Construction of NPS20 steel pipeline + add 1200 hp compression at existing Sandwich Trans. Station. Pipeline = 1.1km river crossing (incl. abandonment of 2 x NPS 12 x 1.1km) + 1.3km from river crossing to Ojibway Stn.

(Note: An ex-franchise customer requests transportation of 80TJ/d landing at Ojibway and moving eastward to Dawn.)

Option 1:

This option will include:
- replacing the existing Detroit River Crossing with a single NPS 20 River Crossing
- adding 1200 horsepower of compression at Sandwich Transmission

Pipeline:

River Crossing
- Start Point on the US side of the Detroit River.
- End Point at the Ojibway Measurement Station



Incremental Pipeline Looping / Relay

Pipeline Segment	Length (m)	Diameter (NPS)	\$/m	Comments/Notes	Estimated Cost 2015\$	Estimated Cost 2018\$
NPS 20 River Crossing	1,100	20	\$11,850		\$13,050,000	\$14,500,000
NPS 20 River Crossing (abandonment)		2 x 12	\$150	Grout and cap 2 x NPS 12 lines (1,100m/ea)	\$150,000	\$0
NPS 20 Crossing tie-in to Ojibway Stn.	1,300	20	\$3,000		\$3,900,000	\$4,500,000
Adders: land				n/a (included above)		\$0
Adders: built up / urban				n/a (included above)		\$0
Adders: major road & park crossings				n/a		\$0
Sub-Total Pipeline:	2,400				\$17,100,000	\$19,000,000

Incremental Compression

Compressor Station	HP	Type	Comments/Notes	Estimated Cost 2015\$	Estimated Cost 2018\$
Add Compression to Sandwich Trans	1,200		Incremental 1200 HP to be added to existing compression	\$13,200,000	\$14,500,000
Sub-Total Compression:	1,200			\$13,200,000	\$14,500,000

Measurement / Regulation and Miscellaneous

Location	Load (m3/h)	Inlet (kPa)	Delivery (kPa)	Comments/Notes	Estimated Cost 2015\$	Estimated Cost 2018\$
Ojibway Measurement Station Mod's	N/A			Complete tie in for new diameter River Crossing	\$1,200,000	\$1,500,000
						\$0
						\$0
						\$0
Sub-Total Measurement/Misc:					\$1,200,000	\$1,500,000

TOTAL Estimated Cost:

Estimated Cash Flow Per Year	2016	2017	2018	2019	Rangeability +50%	\$52,500,000
	\$500,000	\$1,000,000	\$33,000,000	\$500,000	Rangeability -25%	\$26,500,000

Notes / Assumptions

Contingency is factored into the cost at 20%. All costs are in 2015 Canadian Dollars (CDN) escalated at 3% per year Rounded to nearest \$500K.

- 1) Desktop estimate (using high level mapping and single line sketches) not reviewed by design.
- 2) Price does not include cost of unforeseen site conditions (e.g., hazardous waste, major archeological)
- 3) Aid to construct not included
- 4) All ROW at "non-standard" 25 m temporary easement
- 5) Lands costs for pipeline @ \$225K/acre

- 6)
- 7)
- 8)
- 9)
- 10)



uniongas
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Scope & Estimate Summary

Magnitude (+50% / -25%)

Project: **Panhandle - NPS 20 River Crossing - Rover**
In-Service Date: **2018/11/01** Area(s): **Windsor, ON**
Option-Version: **Opt2=PR05_M1** Requestor: **Michelle Moxley-Peltier**
Date: **2015/07/23** Estimator: **Deb Bossy**

Project Description: Construction of NPS20 steel pipeline + add 1200 hp compression at existing Sandwich Trans. Station. Pipeline = 1.1km river crossing (incl. abandonment of 2 x NPS 12 x 1.1km) + 1.3km from river crossing to Ojibway Stn. + 14.5km from Ojibway Stn. to Sandwich Trans. Stn. (looping the existing NPS 16 Panhandle line). (Note: An ex-franchise customer requests transportation of 80TJ/d landing at Ojibway and moving eastward to Dawn.)



Option 2:

This option will include:
- Replacing the existing Detroit River Crossing with a single NPS 20 River Crossing
- Adding 1200 horsepower of compression at Sandwich Transmission
- Loop the existing NPS 16 Panhandle between the River Crossing and Sandwich Transmission with 16.5km of NPS 20 pipe

Pipelines:

River Crossing

- Start Point on the US side of the Detroit River.
- End Point at the Ojibway Measurement Station

Panhandle Loop

- Start Point at the Ojibway Measurement Station
- End Point at Sandwich Transmission

Incremental Pipeline Looping / Relay

Pipeline Segment	Length (m)	Diameter (NPS)	\$/m	Comments/Notes	Estimated Cost 2015\$	Estimated Cost 2018\$
NPS 20 River Crossing	1,100	20	\$11,850		\$13,050,000	\$14,000,000
NPS 20 River Crossing (abandonment)		2 x 12	\$150	Grout and cap 2 x NPS 12 lines (1,100m/ea)	\$150,000	\$0
NPS 20 Crossing tie-in to Ojibway Stn.	1,300	20	\$3,000		\$3,900,000	\$4,000,000
NPS 20 Ojibway Stn. to Sandwich Stn.	14,500	20	\$2,350		\$34,100,000	\$37,000,000
Adders: land (TLU for 14.0km portion)				Using 25m ROW	\$10,100,000	\$11,000,000
Adders: built up / urban				Approx. 7,150m	\$16,800,000	\$18,000,000
Adders: major road & park crossings				6 major roads + 2 parks	\$2,100,000	\$2,000,000
Sub-Total Pipeline:	16,900				\$80,200,000	\$86,000,000

Incremental Compression

Compressor Station	HP	Type	Comments/Notes	Estimated Cost 2015\$	Estimated Cost 2018\$
Add Compression to Sandwich Trans	1,200		Incremental 1200 HP to be added to existing compression	\$13,200,000	\$14,000,000
					\$0
Sub-Total Compression:	1,200			\$13,200,000	\$14,000,000

Measurement / Regulation and Miscellaneous

Location	Load (m3/h)	Inlet (kPa)	Delivery (kPa)	Comments/Notes	Estimated Cost 2015\$	Estimated Cost 2018\$
Ojibway Measurement Station Mod's	N/A			Complete tie in for new diameter River Crossing	\$1,200,000	\$1,000,000
Sandwich Transmission Station Mod's	N/A			Complete tie in for new NPS 20 pipe	\$600,000	\$1,000,000
						\$0
						\$0
Sub-Total Measurement/Misc:					\$1,800,000	\$2,000,000

TOTAL Estimated Cost:

Estimated Cash Flow Per Year	2016	2017	2018	2019	Rangeability +50%	Rangeability -25%
	\$1,000,000	\$3,000,000	\$97,000,000	\$1,000,000	\$95,200,000	\$102,000,000
					\$153,000,000	\$77,000,000

Notes / Assumptions

Contingency is factored into the cost at 20%. All costs are in 2015 Canadian Dollars (CAD) escalated at 3% per year. Rounded to nearest \$1M.

- 1) Desktop estimate (using high level mapping and single line sketches) not reviewed by design.
- 2) Price does not include cost of unforeseen site conditions (e.g., hazardous waste, major archeological)
- 3) Aid to construct not included
- 4) All ROW at "non-standard" 25 m temporary easement
- 5) Lands costs for pipeline @ \$225K/acre
- 6) ROW along railway may not be sufficient but was NOT included in costing.
- 7)
- 8)
- 9)
- 10)



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Scope & Estimate Summary Magnitude (+50% / -25%)

Project: Panhandle - NPS 20 River Crossing - Rover
In-Service Date: 2018/11/01 Area(s): Windsor, ON
Option-Version: Opt3=PR06_M1 Requestor: Michelle Moxley-Peltier
Date: 2015/07/23 Estimator: Deb Bossy

Project Description: Construction of NPS20 steel pipeline + add 3512 hp compression at existing Sandwich Trans. Station. Pipeline = 1.1km river crossing (incl. abandonment of 2 x NPS 12 x 1.1km) + 1.3km from river crossing to Ojibway Stn. + 14.5km from Ojibway Stn. to Sandwich Trans. Stn. (looping the existing NPS 16 Panhandle line). (Note: An ex-franchise customer requests transportation of 80TJ/d landing at Ojibway and moving eastward to Dawn.)



Option 3:

This option will include:
- Replacing the existing Detroit River Crossing with a single NPS 20 River Crossing
- Adding 3512 horsepower of compression at Sandwich Transmission
- Loop the existing NPS 16 Panhandle between the River Crossing and Sandwich Transmission with 16.5km of NPS 20 pipe

Pipelines:

River Crossing
- Start Point on the US side of the Detroit River.
- End Point at the Ojibway Measurement Station

Panhandle Loop
- Start Point at the Ojibway Measurement Station
- End Point at Sandwich Transmission

Incremental Pipeline Looping / Relay

Pipeline Segment	Length (m)	Diameter (NPS)	\$/m	Comments/Notes	Estimated Cost 2015\$	Estimated Cost 2018\$
NPS 20 River Crossing	1,100	20	\$11,850		\$13,050,000	\$14,000,000
NPS 20 River Crossing (abandonment)		2 x 12	\$150	Grout and cap 2 x NPS 12 lines (1,100m/ea)	\$150,000	\$0
NPS 20 Crossing tie-in to Ojibway Stn.	1,300	20	\$3,000		\$3,900,000	\$4,000,000
NPS 20 Ojibway Stn. to Sandwich Stn.	14,500	20	\$2,350		\$34,100,000	\$37,000,000
Adders: land (TLU for 14.0km portion)				Using 25m ROW	\$10,100,000	\$11,000,000
Adders: built up / urban				Approx. 7,150m	\$16,800,000	\$18,000,000
Adders: major road & park crossings				6 major roads + 2 parks	\$2,100,000	\$2,000,000
Sub-Total Pipeline:	16,900				\$80,200,000	\$86,000,000

Incremental Compression

Compressor Station	HP	Type	Comments/Notes	Estimated Cost 2015\$	Estimated Cost 2018\$
Add Compression to Sandwich Trans	3,512		Incremental 3512 HP to be added to existing compression	\$20,500,000	\$22,000,000
Sub-Total Compression:	3,512			\$20,500,000	\$22,000,000

Measurement / Regulation and Miscellaneous

Location	Load (m3/h)	Inlet (kPa)	Delivery (kPa)	Comments/Notes	Estimated Cost 2015\$	Estimated Cost 2018\$
Ojibway Measurement Station Mod's	N/A			Complete tie in for new diameter River Crossing	\$1,200,000	\$1,000,000
Sandwich Transmission Station Mod's	N/A			Complete tie in for new NPS 20 pipe	\$600,000	\$1,000,000
						\$0
						\$0
Sub-Total Measurement/Misc:					\$1,800,000	\$2,000,000

TOTAL Estimated Cost:

Estimated Cash Flow Per Year	2016	2017	2018	2019	Rangeability +50%	Rangeability -25%
	\$1,000,000	\$3,000,000	\$105,000,000	\$1,000,000	\$165,000,000	\$83,000,000

Notes / Assumptions

Contingency is factored into the cost at 20%. All costs are in 2015 Canadian Dollars (CDN) escalated at 3% per year. Rounded to nearest \$M.

- 1) Desktop estimate (using high level mapping and single line sketches) not reviewed by design.
- 2) Price does not include cost of unforeseen site conditions (e.g., hazardous waste, major archeological)
- 3) Aid to construct not included
- 4) All ROW at "non-standard" 25 m temporary easement
- 5) Lands costs for pipeline @ \$225K/acre
- 6) ROW along railway may not be sufficient but was NOT included in costing
- 7)
- 8)
- 9)
- 10)



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Scope & Estimate Summary

Magnitude (+50% / -25%)

Project: **Panhandle - NPS 20 River Crossing - Rover**

In-Service Date: **2018/11/01** Area(s): **Windsor, ON**

Option-Version: **Opt5=PR08_M1** Requestor: **Michelle Moxley-Peltier**

Date: **2015/07/23** Estimator: **Deb Bossy**

Project Description: Construction of NPS20 steel pipeline + add 3682 hp compression at existing Sandwich Trans. Station. Pipeline = 1.1km river crossing (incl. abandonment of 2 x NPS12 x 1.1km) + 1.3km from river crossing to Ojibway Stn. + 16.0km from Ojibway Stn. to Sandwich Trans.Stn. (paralleling Ojibway Pkwy/ EC Row Expy/ Huron Church Rd (Herb Gray Pkwy)/ Talbot Rd (Hwy#3)). (Note: An ex-franchise customer requests transportation of 80TJ/d landing at Ojibway and moving eastward to Dawn.)



Option 5:

This option will include:

- Replacing the existing Detroit River Crossing with a single NPS 20 River Crossing
- Adding 3682 horsepower of compression at Sandwich Transmission
- Loop the existing NPS 16 Panhandle between the River Crossing and Sandwich Transmission with 17.92km of NPS 20 pipe

Pipelines:

River Crossing

- Start Point on the US side of the Detroit River.
- End Point at the Ojibway Measurement Station

Panhandle Loop

- Start Point at the Ojibway Measurement Station
- End Point at Sandwich Transmission

Incremental Pipeline Looping / Relay

Pipeline Segment	Length (m)	Diameter (NPS)	\$/m	Comments/Notes	Estimated Cost 2015\$	Estimated Cost 2018\$
NPS 20 River Crossing	1,100	20	\$11,850		\$13,050,000	\$14,000,000
NPS 20 River Crossing (abandonment)		2 x 12	\$150	Grout and cap 2 x NPS 12 lines (1,100m/ea)	\$150,000	\$0
NPS 20 Crossing tie-in to Ojibway Stn.	1,300	20	\$3,000		\$3,900,000	\$4,000,000
NPS 20 Ojibway Stn. to Sandwich Stn.	16,000	20	\$2,350		\$37,600,000	\$41,000,000
Adders: land (TLU for 16.0km portion)				Using 25m ROW	\$13,350,000	\$15,000,000
Adders: built up / urban				n/a (assumed all ROW in utility corridor)	\$0	\$0
Adders: major road & park crossings				5 major roads, 1 flood diversion, + constricted park ROW	\$2,400,000	\$3,000,000
Sub-Total Pipeline:	18,400				\$70,450,000	\$77,000,000

Incremental Compression

Compressor Station	HP	Type	Comments/Notes	Estimated Cost 2015\$	Estimated Cost 2018\$
Add Compression to Sandwich Trans	3,682		Incremental 3682 HP to be added to existing compression	\$21,500,000	\$23,000,000
Sub-Total Compression:	3,682			\$21,500,000	\$23,000,000

Measurement / Regulation and Miscellaneous

Location	Load (m3/h)	Inlet (kPa)	Delivery (kPa)	Comments/Notes	Estimated Cost 2015\$	Estimated Cost 2018\$
Ojibway Measurement Station Mod's	N/A			Complete tie in for new diameter River Crossing	\$1,200,000	\$1,000,000
Sandwich Transmission Station Mod's	N/A			Complete tie in for new NPS 20 pipe	\$600,000	\$1,000,000
						\$0
						\$0
Sub-Total Measurement/Misc:					\$1,800,000	\$2,000,000

TOTAL Estimated Cost:

Estimated Cash Flow Per Year	2016	2017	2018	2019	Rangeability +50%	Rangeability -25%
	\$1,000,000	\$3,000,000	\$97,000,000	\$1,000,000	\$93,750,000	\$102,000,000
						\$153,000,000
						\$77,000,000

Notes / Assumptions

Contingency is factored into the cost at 20%. All costs are in 2015 Canadian Dollars (CAD) escalated at 3% per year. Rounded to nearest \$M.

- 1) Desktop estimate (using high level mapping and single line sketches) not reviewed by design.
- 2) Price does not include cost of unforeseen site conditions (e.g., hazardous waste, major archeological)
- 3) Aid to construct not included
- 4) All ROW at "non-standard" 25 m temporary easement
- 5) Lands costs for pipeline @ \$225K/acre + 20% (assuming Infrastructure Ontario land used for all ROW)

Hockin, Karen

From: Moxley-Peltier, Michelle
Sent: August 7, 2015 1:45 PM
To: Van Der Meersch, Dale
Cc: Mastronardi, Paolo; Cadotte, Jeff; Debevc, Melissa; Wallace, Dan
Subject: RE: River Crossing Cost Estimates

Good Afternoon,

I have completed two additional analyses to supply Rover with an incremental 40TJ/d.

Assumption 1: Ojibway imports are received at 375psig at the River Crossing.

Results: Union cannot receive the incremental 40TJ/d at a delivery pressure of 375psig.

	Incremental Imports:	Recommendations:
1	3.08mmcf/d 3.4 TJ/d	Replace River Crossing (NPS 20) - run river crossing at 375psig
		Add 1025HP Compression at Sandwich
2	26.46mmcf/d 28.9 TJ/d	Replace River Crossing (NPS 20) - run river crossing at 375psig
		Loop NPS 20 from River Crossing to Sandwich Transmission Station along existing path - 16.5km in length
		Add 1840HP Compression at Sandwich
3	25.55mmcf/d 27.9 TJ/d	Replace River Crossing (NPS 20) - run river crossing at 375psig
		Loop NPS 20 from River Crossing to Sandwich Transmission Station along new path - 17.92km in length
		Add 1807HP Compression at Sandwich

Assumption 2: Ojibway imports are received at 425psig at the River Crossing.

Results: Union can receive the incremental 40TJ/d at a delivery pressure of 425psig. Additional compression is required at Sandwich

	Incremental Imports:	Recommendations:
1	22.53mmcf/d 24.6 TJ/d	Replace River Crossing (NPS 20) - run river crossing at 425psig
		Add 1706HP Compression at Sandwich
2	48.99mmcf/d 53.5 TJ/d	Replace River Crossing (NPS 20) - run river crossing at 425psig
		Loop NPS 20 from River Crossing to Sandwich Transmission Station along existing path - 16.5km in length
		Add 2609HP Compression at Sandwich
3	47.99mmcf/d 52.4 TJ/d	Replace River Crossing (NPS 20) - run river crossing at 425psig
		Loop NPS 20 from River Crossing to Sandwich Transmission Station along new path - 17.92km in length
		Add 2577HP Compression at Sandwich

Thanks

Michelle

Michelle Moxley-Peltier P.Eng CEM
System Planning Engineer | Major Projects
Union Gas Limited | A Spectra Energy Company
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Email: mmoxley@uniongas.com |
www.uniongas.com



From: Van Der Meersch, Dale
Sent: August-04-15 2:00 PM
To: Moxley-Peltier, Michelle
Cc: Mastronardi, Paolo; Cadotte, Jeff
Subject: FW: River Crossing Cost Estimates
Importance: High

Is this something you can run please as a sensitivity?

From: Van Der Meersch, Dale
Sent: July-29-15 3:49 PM
To: Cadotte, Jeff; Moxley-Peltier, Michelle; Wallace, Dan
Cc: Mastronardi, Paolo; Debevc, Melissa
Subject: FW: River Crossing Cost Estimates
Importance: High

Good point Jeff.

Michelle can you please run a case where you use 375 psig instead of the 500 psig assumption? I can't remember why we thought 500 psig was a good idea.

From: Cadotte, Jeff
Sent: July-29-15 3:42 PM
To: Van Der Meersch, Dale
Cc: Mastronardi, Paolo
Subject: RE: River Crossing Cost Estimates

Dale, another thought for this analysis after talking with a few folks. We are making a pretty big assumption that we can get 500 psig at the River.

We should also look at a base case, which uses prevailing line pressure that we see today from PEPL. My apologies I didn't think of this sooner.

I did a trend over the last two seasons with the average being about 375 psig. Can you have Michelle take a look at what facilities would be required based on this actual pressure to serve the 40 TJ/d? We likely want to start here with discussions with PEPL.

They may have to build significantly on their side to serve 500 psig.

Thanks
Jeff

From: Van Der Meersch, Dale
Sent: Wednesday, July 29, 2015 3:16 PM
To: Moxley-Peltier, Michelle; Mastronardi, Paolo; Cadotte, Jeff; Wallace, Dan
Cc: Debevc, Melissa
Subject: RE: River Crossing Cost Estimates

One further analysis please. What would the capacity created be if only the river crossing were to be completed and the MOP upgraded to 500#? Therefore assuming no incremental compression at Sandwich.

Thanks

Dale

From: Moxley-Peltier, Michelle
Sent: July-29-15 8:19 AM
To: Van Der Meersch, Dale; Mastronardi, Paolo; Cadotte, Jeff; Wallace, Dan
Cc: Debevc, Melissa
Subject: River Crossing Cost Estimates

Good Morning,

Please find attached the cost estimates for the 5 options reviewed on Monday.

The following assumptions were included:

- No additional costs to abandon existing river crossing
- Options 4 and 5 assumed the pipeline route was via I/O lands and areas w/o urban build up

Thanks

Michelle

Michelle Moxley-Peltier P.Eng CEM
System Planning Engineer | Major Projects
Union Gas Limited | A Spectra Energy Company
745 Richmond St | P.O. Box 2001
Chatham ON N7M 5J5
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Email: mmoxley@uniongas.com
www.uniongas.com



Bechard, Shelley

From: Piatt, Patti
Sent: August-07-15 3:47 PM
To: Redford, Jim
Cc: Mastronardi, Paolo; Montgomery, Jacquie
Subject: Re: PANHANDLE MEETING TAKE AWAYS
Attachments: image001.jpg

Thanks for the summary Jim. I was also going to send Beth/John information about Dawn (stats, index of customers, etc suitable for sharing with other shoppers/producers)

ET was going to confirm their requested capacity given our 35000 existing capacity limit and their interest to support a project beyond that. I don't believe they committed to a time for this but I will follow up in a week.

Sent from my iPhone

On Aug 7, 2015, at 9:29 AM, Redford, Jim <JRedford@uniongas.com> wrote:

Here are what I recorded as our take aways from yesterday's Panhandle Meetings:

- The Integrity Management Plan needs to be completed now and reviewed to ensure it covers decision tree and risk analysis. **PAOLO**
- Do we have the ability to offer a winter only service (above 35 TJ/d) and what would the terms of that service be (capacity, duration, etc.)? **PAOLO/PATTI**
- What is the capacity of one 12" line under the river (at 425 psig MOP = current conditions)? Does it exceed 115 TJ/d? **PAOLO**
- What is the cost and rate to provide 75 mmcf/d of Ojibway to Dawn capacity for Panhandle? **PAOLO**
- What is the cost and rate to handle 175 mmcf/d total deliveries at Ojibway (115 mmcf/d Ojibway to Dawn plus ~60 mmcf/d delivery at Ojibway for in-franchise)? **PAOLO**
- Is the river crossing replacement included in the expansion costs? Is the river crossing replacement maintenance capital under all circumstances? Can the river crossing replacement be a separate project from any work required to provide more than 35 TJ/d of firm capacity? **PAOLO**

We promised a response in September to these items. Paolo – I assume you will have Dale assist with the gathering and analysis of this information.

Jim Redford, P. Eng.
**Director Business Development &
Upstream Regulation**
Union Gas Limited | A Spectra Energy
Company
50 Keil Drive North | Chatham, ON N7M
5M1
Direct Tel: 519.436.4577 Cell: 519-365-
0510

From: [Reid, John](#)
To: [Mastronardi, Paolo](#)
Cc: [Colton, Joey](#)
Subject: Re: Ojibway to Dawn Transport Discussion - ETP Meeting Followup
Date: September-10-15 9:47:04 AM

The 390 (not 375) is after the river crossing on the Cdn side (ie it already takes into account the losses through the crossing).

John

On Sep 10, 2015, at 8:01 AM, Mastronardi, Paolo <pmastronardi@spectraenergy.com> wrote:

John, met with a few people here. One point of clarification, on the 375 psi are delivering that to us at the middle of the river (cdn side) or is 375 psi at the beginning of the river.

Paolo Mastronardi
Business Development Manager
Union Gas Limited, a Spectra Energy Company
Direct - 519.436.5264 | Cell - 519.359.3190
AOLIM - MastronUnion

From: Reid, John [<mailto:John.Reid@energytransfer.com>]
Sent: September 4, 2015 9:53 AM
To: Mastronardi, Paolo
Cc: Colton, Joey
Subject: FW: Ojibway to Dawn Transport Discussion - ETP Meeting Followup

Paolo,

Our facilities guys have finished running all their models. Using our 425 psi MAOP at the US side of the river, we can push ~175 MM/d through the current crossing hitting you guys on the CAN side of the crossing at ~390 psi. We could flow more volume, but then the pressure would drop.

I hope this helps. Sorry for the delay in getting it to you.

John

From: Reid, John
Sent: Wednesday, August 26, 2015 2:13 PM
To: 'Mastronardi, Paolo' <pmastronardi@spectraenergy.com>
Subject: RE: Ojibway to Dawn Transport Discussion - ETP Meeting Followup

Paolo,

We are re-running some model on our end to see how much volume and at what pressure's we can get those volumes to the river crossing. Our facilities guys think they will have those results by the end of the week.

John

From: Mastronardi, Paolo [<mailto:pmastronardi@spectraenergy.com>]
Sent: Tuesday, August 18, 2015 1:02 PM
To: Reid, John <John.Reid@energytransfer.com>
Subject: RE: Ojibway to Dawn Transport Discussion - ETP Meeting Followup

John thx for the response. I did recall you were out

Question – is there willingness to eliminate that restriction on your end?
I remember a quick conversation on a booster compressor etc.
I guess the other piece is whether ETP was willing to support a build. I know we are planning to provide some rates to you, not sure if that was the only deciding factor.

Paolo Mastronardi
Business Development Manager
Union Gas Limited a Spectra Energy Company
Direct - 519.436.5264 | Cell - 519.359.3190
AOLIM - MastronUnion

From: Reid, John [<mailto:John.Reid@energytransfer.com>]
Sent: August 18, 2015 11:41 AM
To: Mastronardi, Paolo
Subject: RE: Ojibway to Dawn Transport Discussion - ETP Meeting Followup

Paolo,

Sorry for the delay in getting back to you. I was off for a couple days last week and didn't get a chance to chase this down.

I met with our head of gas control, and he confirmed that the 375 psig is the best number to use. We have MAOP restrictions of 425 psig in that area, and by the time it gets to the river, 375 psig is about right. He said some days it might be 390, and some days 360, but 375 sounded about right as an average.

Thanks,

John

From: Mastronardi, Paolo [<mailto:pmastronardi@spectraenergy.com>]

Sent: Wednesday, August 12, 2015 4:52 PM

To: Reid, John

Cc: Mastronardi, Paolo

Subject: Ojibway to Dawn Transport Discussion - ETP Meeting Followup

John, just following up on the meeting we had last week.

Just a reminder that you were going to review what pressure PEPL can deliver to Union at Ojibway.

I am thinking based on existing facilities, and would there be an opportunity to provide higher pressures based on new facilities/upgrades (there was a quick talk about booster compressor).

Once we have an idea that will make it easier to scope out.

I am going to run a scenario based on what Union see's in terms of an average delivery pressure in the summer. If you recall I mentioned 375 psi.

When do you think this info would become available?

Paolo Mastronardi

Business Development Manager

Union Gas Limited, a Spectra Energy Company

Direct - 519.436.5264 | Cell - 519.359.3190

AOLIM - MastronUnion

Private and confidential as detailed [here](#). If you cannot access hyperlink, please e-mail sender.

Private and confidential as detailed [here](#). If you cannot access hyperlink, please e-mail sender.

Private and confidential as detailed [here](#). If you cannot access hyperlink, please e-mail sender.

PROPOSAL TO ENERGY TRANSFER PARTNERS ("ETP")

NOVEMBER 2, 2015

Union and ETP each have transportation capacity requirements on the other's pipeline systems.

Union currently contracts for 60 TJ/d from ETP on PEPL and Trunkline to November 1, 2017. Union requires 60 TJ/d of transportation capacity on the ETP (PEPL) system to Ojibway on an ongoing basis. Union currently has Right of First Refusal (ROFR) rights on 35 TJ/d of the ETP (PEPL) capacity.

ETP has requested 75-80 TJ/d of transportation capacity on Union's system from Ojibway to Dawn. Currently, on a long term basis Union is only able to provide 35 TJ/d of firm year-round transportation capacity to ETP from Ojibway to Dawn without significant expansion of its facilities. ETP has indicated that it is not interested in supporting a significant facilities expansion on Union's system. ETP is not able to provide an increased delivery pressure of 500 psig which would significantly reduce the scope of Union's expansion facilities.

The availability of capacity assumes that both of the twin 12" River Crossing pipelines are in service. No internal inspection has been completed since installation in 1947.

Proposal

The following package of commitments is intended to address the needs of both parties to the extent practical:

Union and ETP Commitment

- Execute in-line inspection program on 12" River Crossing pipelines (see attached)

Union Commitments

- Contract incremental 25 TJ/d of renewable Putnam (or a point to be determined further southwest) to Ojibway transportation capacity on PEPL for a 5 year term at posted tolls starting November 1, 2017
- Continue to renew 35 TJ/d of existing transportation capacity on PEPL

ETP Commitments

- Contract new 35 TJ/d of renewable Ojibway to Dawn transportation capacity on Union for up to a 15 year term at posted C1 tolls starting June 1, 2017*

Comment [RJ1]: ET would be interested in purchasing capacity that would support a build, as long as it made economic sense. Union has not provided the estimate of what would be required.

Comment [RJ2]: The 425# MAOP of the river crossing is the limiting factor here. We could provide more pressure, but a new river crossing would be required

Comment [RJ3]: These would need to be addressed and calculated based on capital costs incurred by both parties, but I suspect the terms would need to be similar (ie longer than 5 years)

Comment [RJ4]: These would need to be addressed and calculated based on capital costs incurred by both parties

*Only one River Crossing pipeline will be available for service at June 1, 2017. The quantity will be reduced to 25 TJ/d until such time that both 12" River Crossing pipelines are in service or the River Crossing replacement has been completed.

- Contract new 25 TJ/d of renewable Ojibway to Dawn transportation capacity on Union for the months of December, January and February on Union for up to a 15 year term at posted C1 tolls starting December 1, 2017**

**This contract will be available to start when both 12" River Crossing pipelines are in service or the River Crossing replacement has been completed.

If the results of the in-line inspection program requires the replacement of the River Crossing pipelines then the term of all Union (and ETP) Commitments increase to 10 years.

RIVER CROSSING INTEGRITY PLAN

NOVEMBER 2, 2015

Background

The twin 12" River Crossing pipelines were installed in 1947. Ownership of the River Crossing pipeline is shared between Union and ETP with the International Border being the delineation of ownership.

The River Crossing pipelines are approximately two-thirds to three-quarters of a mile long. The River crossing pipelines operate at a 425 psig MOP with an average seasonal operating pressure of approximately 375 psig. The operation pressure has ranged from 350 psig to 410 psig depending on prevailing pipeline pressures. The pipeline MOP is approximately 16% of the Specified Minimum Yield Strength.

The capacity of the twin 12" River Crossing pipelines supports the Presidential Permit for imports into Canada of ~212 TJ/d. However, a single 12" River Crossing pipeline can provide approximately 105 TJ/d of capacity. This is less capacity than the firm commitments contemplated under the proposal. There has been no in-line inspection of the twin 12" River Crossing pipelines to date.

In-Line Inspection

In-line inspection is expected to cost approximately \$2.2 million CAD to complete which would include cleaning of the pipelines, running the in-line inspection tools and analyzing the data, and, if required, pressure testing and drying the pipelines. Pressure testing may be required to prove the integrity of the twin 12" River Crossing pipelines if the in-line inspection data is of poor quality.

A breakdown of the estimated costs is shown below:

In-Line Inspection Activities	Cost (millions CAD)
Cleaning	\$1.5
In-Line Inspection	\$0.4
Pressure Test and Drying (only required if inspection data is of poor quality)	\$0.3
Total Per 12" River Crossing Pipeline	\$2.2

Comment [RJ5]: Can you confirm if the price is \$2.2MM total or per line

These costs will be shared equally between Union and ETP.

Union and ETP will also be required to each cover their costs to prepare the twin 12" River Crossing pipelines for the in-line inspection. These activities will include, but not be limited to, the installation of launchers and receivers and the disposal of any liquids/waste.

The in-line inspection will be conducted one River Crossing pipeline at a time leaving the other line in operation. Union would propose to commence the program in February 2017 with results of the in-line inspection on the first River Crossing pipeline expected to be available in June 2017. An indicative schedule is shown below.

Task Name – First River Crossing Pipeline	Start	Finish
Install Launching/Receiving Facilities	20-Mar-17	14-Apr-17
Mechanical Cleaning / Pigging	17-Apr-17	28-Apr-17
Chemical Cleaning	01-May-17	26-May-17
In-Line Inspection (MFL Caliper)	29-May-17	02-Jun-17
Initial Data Analysis	05-Jun-17	09-Jun-17
In-Line Inspection Report	12-Jun-17	14-Jul-17
Pressure Testing and Drying (only if required)	12-Jun-17	07-Jul-17

The in-line inspection of the second River Crossing pipeline would only be undertaken if those results were satisfactory (i.e. no River Crossing replacement required). The results of the in-line inspection on the second River Crossing pipeline are expected to be available in December 2017.

Task Name – Second River Crossing Pipeline	Start	Finish
Install Launching/Receiving Facilities	14-Jul-17	11-Aug-17
Mechanical Cleaning / Pigging	14-Aug-17	25-Aug-17
Chemical Cleaning	28-Aug-17	22-Sep-17
In-Line Inspection (MFL Caliper)	25-Sep-17	29-Sep-17
Initial Data Analysis	02-Oct-17	06-Oct-17
In-Line Inspection Report	09-Oct-17	10-Nov-17
Pressure Testing and Drying (only if required)	09-Oct-17	03-Nov-17

If the results of the in-line inspection or pressure testing are positive for both of the twin 12" River Crossing pipelines then the pipelines will continue to operate.

A River Crossing replacement will be required if:

1. The results of the in-line inspections were conclusive and included a significant anomaly on either of the twin 12" River Crossing pipelines that cannot be repaired.
2. The hydrostatic pressure testing of either of the twin 12" River Crossing pipelines fails.

Until the River Crossing replacement is installed, one River Crossing pipeline will continue to operate.

Shorts, Chris

From: Shorts, Chris
Sent: May-05-16 11:11 AM
To: Piatt, Patti; Redford, Jim; O'Hara, Clancy
Cc: Mastronardi, Paolo
Subject: FW: ETP Meeting in Detroit

Paolo and I met with Beth Hickey, John Reid and Bryan Hill in Detroit Monday evening and discussed:

- 1) Organizational Changes at Union
- 2) The Panhandle Reinforcement project
 - a. Provided the slides from the Stakeholder presentation
 - b. Discussed the drivers being the local in franchise markets including greenhouse
- 3) The need for capacity on PEPL for Union for our 10 that we have now and are assuming will continue
 - a. The ROFR has been filed
 - b. Will likely need to bid long haul tolls for a period of longer than 10 years (will be competing with Rover who is willing to bid 20 years for everything PEPL has left to Ojibway but at short haul tolls in the 15 to 17 cent range)
- 4) Also discussed the need for an additional 10 or so for a 2 year period to cover immediate needs in the market area
 - a. Again if we need more it will be subject to an open season and the competition will be Rover at 20 years
 - b. ETP can negotiate something prior to the ROFR closing to influence the Rover bid (ie needs to be done prior to June 15)
- 5) ETP not interested in expansion on their side but if required they will
- 6) We confirmed we didn't want anything more than 70 a day (the 60 long term and 10 short term) required
- 7) River crossing still not high on their radar [REDACTED]
 - a. Not crazy about pigging since they feel it is throwing good money at bad, both engineering groups feel that data may not be reliable anyway
 - b. They understand integrity but will need dollars to help support any work
 - c. Will need to nail down commitment on the entire portion of the capacity we want and for what term
 - d. This likely means a combination of short and long haul for a 10 to 15 year term to create more revenue that 20 year short haul
 - e. Would like a commercial agreement in place that would deal with river crossing, capacity on Union's System and PEPL System. This agreement will assist with capital required and term of transportation contracts required to recover the capital outlay.
- 8) If they cannot get the 75 a day they wanted they will need to go back to Rover and their shippers and find an alternative.
 - a. They didn't seem to interested in the 35 a day and said if Union wanted it they may back off (would still require long term commitment)
- 9) We did review the River crossing proposal and we both agreed to freshen the numbers
- 10) We need to understand our desire to a deal for 70 long term and what we would expect in return as it relates to the river crossing

Next Steps to reconvene in about a week to check back on progress...
Chris



Chris Shorts
Director, Business Development & Upstream Regulation
cshorts@uniongas.com
Office (519) 436-4668 Cell (519) 365-0536
fax (519) 436-5461

Shorts, Chris

From: Reid, John <John.Reid@energytransfer.com>
Sent: May-19-16 10:16 AM
To: Shorts, Chris
Cc: Hill, Bryan D.
Subject: Energy Transfer Proposal for Union Gas
Attachments: Union Gas River Crossing Supply Proposal 51816.docx

Chris,

Please find attached a proposal from Energy Transfer regarding upstream transportation for the Windsor market and how that relates to the Ojibway River Crossing. I am sending this to you as you seem to be "leading the charge", but please forward to Cheryl as well.

I look forward to discussing this with you at your convenience.

Thanks,

John

John Reid | Sr. Director – Business Development
Energy Transfer | 1300 Main St. | Houston, TX 77002
P: 713.989.7143 | C: 713.444.1483 | IM: johnreid126
Email: john.reid@energytransfer.com

Private and confidential as detailed [here](#). If you cannot access hyperlink, please e-mail sender.



Chris Shorts
Director, Business Development and Upstream Regulation
Union Gas Limited

May 17, 2016

Chris,

Energy Transfer is pleased to offer the following proposal to Union Gas Ltd. for capacity to continue to serve your Windsor market utilizing the Panhandle and Trunkline assets. Under the proposal below, Energy Transfer would commit to the following:

1. Energy Transfer agrees to fix the tariff rate for the term of the contracts.
2. Energy Transfer and Union execute an in-line inspection program on the 12" river crossing pipelines. The costs will be shared equally between Energy Transfer and Union (\$2.2 Million total estimated).
3. If the results of the in-line inspections are conclusive and included a significant anomaly on either of the twin 12" river crossing pipelines that cannot be repaired, a new river crossing replacement pipeline would be required. The costs for the replacement River Crossing will be shared equally between Energy Transfer and Union (\$24 Million total estimated).

Proposal Details:

1. Union extends their current 57,000 Dth/d of capacity on PEPL and Trunkline until 10/31/26 as follows:
 - 25,000 Dth/d – PEPL FZ to Ojibway is renewed on 11-1-2017 for a term of **9 years** at **tariff rate**
 - 20,000 Dth/d – TGC FZ to PEPL/BRBN and PEPL/BRBN to Ojibway capacity is renewed on 11-1-2017 for a term of **9 years** at **tariff rates**
 - 2,000 Dth/d – PEPL FZ to Ojibway is renewed on 11-1-2017 for a term of **9 years** at **tariff rate**
 - 10,000 Dth/d – PEPL FZ to Ojibway is renewed on 11-1-2016 for a term of **10 years** at **tariff rate**
2. Union signs up for an additional 38,000 Dth/d of PEPL FZ to Ojibway capacity starting on November 1, 2016 for a term of **10 years** at **tariff rate**. This will get total capacity commitment to 95,000 Dth/d.

I look forward to discussing this proposal in more detail. Please call me at 713-989-7143 at your convenience.

This proposal is valid through June 30, 2016 and is subject to available capacity and approval from Energy Transfer executive management. Fuel, commodity and other specifics are governed by the respective FERC GAS TARIFF's

Sincerely,

John Reid
Senior Director
Energy Transfer

Shorts, Chris

From: Reid, John <John.Reid@energytransfer.com>
Sent: May-24-16 11:07 AM
To: Shorts, Chris
Cc: Colton, Joey
Subject: Union Ojibway Capacity

Chris,

Based on our recent discussions with you, we are updating our PEPL system capacity at the Ojibway point. You had mentioned your "yearly" takeaway number as being 115,000 Dth/d (or was that GJ's?). Can you please provide the number for both the summer and winter seasons so we can update our systems?

Thanks,

John

John Reid | Sr. Director – Business Development
Energy Transfer | 1300 Main St. | Houston, TX 77002
P: 713.989.7143 | C: 713.444.1483 | IM: johnreid126
Email: john.reid@energytransfer.com

Private and confidential as detailed [here](#). If you cannot access hyperlink, please e-mail sender.

Shorts, Chris

From: Reid, John <John.Reid@energytransfer.com>
Sent: June-22-16 3:50 PM
To: Shorts, Chris
Cc: Colton, Joey; Hill, Bryan D.
Subject: RE: Energy Transfer Proposal for Union Gas

Chris,

Sorry for taking so long to respond to this email. As you know I have been off on vacation for a couple of weeks.

We are still re-running our numbers and double checking our expected capital costs on the river crossing (if required), but with where our numbers look right now, we will be able to accommodate the items you mention below, namely:

1. Extend Union's current 57,000 Dth/d for a longer (~10 years as proposed) term with ROFR/Renewal rights
2. A lesser incremental volume (~15,000 Dth/d) for a shorter term as opposed to 38,000 Dth/d for 10 years as proposed
3. PEPL FZ to Union/Ojibway for all of the volume

Once I get confirmation of our numbers, I will send you a new, revised proposal. Give me a call at your convenience so we can discuss next steps on moving this forward.

Thanks,

John

From: Shorts, Chris [<mailto:CShorts@uniongas.com>]
Sent: Wednesday, June 01, 2016 5:29 PM
To: Reid, John <John.Reid@energytransfer.com>
Subject: RE: Energy Transfer Proposal for Union Gas

John, as per our conversations, we really appreciate the offer and I want to provide you some feedback.

- 1) Our main concern is the continuation of the 57,000 Dth/d for a longer term and ensuring we have ROFR/Renewal rights on it
- 2) Given the constraints on our system and where the incremental load growth is materializing, we cannot take the 38,000 Dth/d on a long term basis
- 3) I am not comfortable with the PEPL Trunkline long haul commitment, although the PEPL only long haul path from the field zone would be more palatable
- 4) As per our original request we may be interested in about 15,000 Dth/d PEPL capacity on a short term basis (ie 2-3 years)

Let me know if you feel you can work this in...

Thanks

Chris

From: Reid, John [<mailto:John.Reid@energytransfer.com>]
Sent: May-19-16 10:16 AM
To: Shorts, Chris
Cc: Hill, Bryan D.
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I look forward to discussing this with you at your convenience.

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Shorts, Chris

From: Shorts, Chris
Sent: June-29-16 1:12 PM
To: Reid, John
Cc: Colton, Joey; Hill, Bryan D.
Subject: RE: Energy Transfer Proposal for Union Gas

John, we did meet internally and I found I we hired a 3rd party consultant to provide some advice and they are just going through the findings now. I assume that since we have strayed away from the original offer that the June 30th deadline is somewhat irrelevant. Please let me know if we can still work on this post June 30th

Thanks
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Let me know if you feel you can work this in...

Thanks

Chris

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Shorts, Chris

From: Reid, John <John.Reid@energytransfer.com>
Sent: July-26-16 4:24 PM
To: Shorts, Chris
Subject: RE: Energy Transfer Proposal for Union Gas

Fair enough. But you can transact the ramp-up in volumes? ie there's no ROFR on who may hold the capacity today?

From: Shorts, Chris [mailto:CShorts@uniongas.com]
Sent: Tuesday, July 26, 2016 3:15 PM
To: Reid, John <John.Reid@energytransfer.com>
Subject: RE: Energy Transfer Proposal for Union Gas

John, I am saying yes because I believe I can convince people to take some rounding risk to ensure our 22 is accessible longer term. There is no one here right now to confirm but I am confident I can convince them....just wanted to caveat it that way....hopefully I can fully confirm our abilities shortly...
Nothing like a goal to get them convinced....

From: Shorts, Chris
Sent: July-26-16 4:05 PM
To: 'Reid, John'
Subject: RE: Energy Transfer Proposal for Union Gas

Yes we will make the 15 and 35 work, for the time periods you proposed...

From: Reid, John [mailto:John.Reid@energytransfer.com]
Sent: July-26-16 3:57 PM
To: Shorts, Chris
Subject: RE: Energy Transfer Proposal for Union Gas

What about my first question – would you guys do the ramp-up contract? Could you squeeze 15,000 Dth and 35,000 Dth as I proposed?

From: Shorts, Chris [mailto:CShorts@uniongas.com]
Sent: Tuesday, July 26, 2016 2:53 PM
To: Reid, John <John.Reid@energytransfer.com>
Subject: RE: Energy Transfer Proposal for Union Gas

John the 115 is TJ not Dth/d, so if we convert all that is
115 total
60 Union
21
21
Equals 13 TJ/d left over.....it can change by a little bit year to year given the Windsor market etc....

From: Reid, John [mailto:John.Reid@energytransfer.com]
Sent: July-26-16 2:13 PM
To: Shorts, Chris
Subject: FW: Energy Transfer Proposal for Union Gas

Chris – I would also be happy with 18,000 Dth for the first piece. That's the number that my math shows should be available as follows:

115,000 Dth/d point capacity
-57,000 Dth/d for Union
-20,000, Dth/d for Other C1
-20,000 Dth/d for delivered service

Remainder: 18,000 Dth/d

Can you please confirm the numbers?

Thanks

From: Reid, John
Sent: Tuesday, July 26, 2016 12:56 PM
To: 'Shorts, Chris' <CShorts@uniongas.com>
Subject: RE: Energy Transfer Proposal for Union Gas

Chris,

We are still working on the proposal. As part of our presentation, we are putting in what we will be contracting for from you on the C1 Ojib to Dawn. Would you guys sell us the "shaped" transport in a contract now (ie a contract with the ramp-up over time)? We would be looking for slightly more rounded numbers as follows:

15,000 Dth/d Nov 1, 2017 to October 31, 2019
35,000 Dth/d Nov 1, 2019 to October 31, 2032 (or thereabouts)

Let me know – thanks.

From: Shorts, Chris [mailto:CShorts@uniongas.com]
Sent: Thursday, July 07, 2016 5:50 PM
To: Reid, John <John.Reid@energytransfer.com>
Cc: Newbury, Cheryl <CNewbury@uniongas.com>; Liberty, Erin <eliberty@uniongas.com>; McClacherty, Shawn <smcclacherty@uniongas.com>
Subject: RE: Energy Transfer Proposal for Union Gas

John, I verified the numbers and given some changes on our system only about 13,000 is available firm all year around now with 32,000 available winter only starting Nov 1, 2017. It looks like the 32,000 firm all year around won't be available until Nov 1, 2019, and that goes up for Nov 1, 2020 to in excess of the 35,000...

Sorry for any confusion...

Chris

From: Shorts, Chris
Sent: July-07-16 1:18 PM
To: 'Reid, John'
Cc: Newbury, Cheryl; Liberty, Erin; McClacherty, Shawn
Subject: RE: Energy Transfer Proposal for Union Gas

John, I should have also included the other issue we discussed, in that this should allow us to provide approx. 35,000 Dth/d of Ojibway to Dawn C1 capacity to PEPL all year around, although we may require gas to be delivered on this path for the heart of the winter for a period of time.
Chris

From: Shorts, Chris
Sent: July-07-16 10:03 AM
To: 'Reid, John'
Cc: Newbury, Cheryl; Liberty, Erin; McClacherty, Shawn
Subject: RE: Energy Transfer Proposal for Union Gas

John, as per our discussion, Union is not in a position to consider the potential River Crossing work as part of its discussions at this point in time with ETP, but would like to term/sure up the 22,000 Dth/d that Union currently has under contract that does not have renewal/ROFR rights. This would mean Union would hold the remaining 35,000 Dth/d that it has with renewal/ROFR to potentially be available to be used to help justify any river crossing work in the future.

As such, Union is interested in obtaining the 22,000 longer term and is willing to contract for a 5 year term starting Nov 1, 2017 at max tariff rates, with approx. 15,000 Dth/d as short haul (Putnam/Lebanon interconnect) to Ojibway and 7,000 Dth/d long haul PEPL Field Zone to Ojibway. If possible our preference would be to lock in the tariff rate at current levels for the 5 year term and still have renewal/ROFR rights.

Union would rather contract now to provide PEPL with assurance related to the revenue and Union with assurance to access and cost, rather than to rely on the open season PEPL is currently having....

Please let me know your thoughts related to this request...

Thanks

Chris

From: Reid, John [<mailto:John.Reid@energytransfer.com>]
Sent: July-07-16 9:28 AM
To: Shorts, Chris
Subject: RE: Energy Transfer Proposal for Union Gas

Chris – could you please send me an email about your revised request for transport that we discussed yesterday?

Thanks

From: Shorts, Chris [<mailto:CShorts@uniongas.com>]
Sent: Thursday, June 30, 2016 1:00 PM
To: Reid, John <John.Reid@energytransfer.com>
Cc: Newbury, Cheryl <CNewbury@uniongas.com>; Hill, Bryan D. <Bryan.Hill@energytransfer.com>
Subject: RE: Energy Transfer Proposal for Union Gas

Thanks John....

Chris

From: Reid, John [<mailto:John.Reid@energytransfer.com>]
Sent: June-30-16 1:32 PM
To: Shorts, Chris
Cc: Newbury, Cheryl; Hill, Bryan D.
Subject: RE: Energy Transfer Proposal for Union Gas

Chris,

You can still work on this past June 30th, that's fine. I would like to get this wrapped up as soon as we can though.

We can extend the offer through until July 15th.

Thanks,

John

From: Shorts, Chris [mailto:CShorts@uniongas.com]
Sent: Wednesday, June 29, 2016 12:12 PM
To: Reid, John <John.Reid@energytransfer.com>
Cc: Colton, Joey <Joey.Colton@energytransfer.com>; Hill, Bryan D. <Bryan.Hill@energytransfer.com>
Subject: RE: Energy Transfer Proposal for Union Gas

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Chris

From: Reid, John [mailto:John.Reid@energytransfer.com]
Sent: June-22-16 3:50 PM
To: Shorts, Chris
Cc: Colton, Joey; Hill, Bryan D.
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Email: john.reid@energytransfer.com

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Shorts, Chris

From: Reid, John <John.Reid@energytransfer.com>
Sent: August-08-16 10:40 AM
To: Shorts, Chris
Subject: Fwd: Energy Transfer Proposal for Union Gas

Any updates Chris?

Thanks.

Begin forwarded message:

From: "Reid, John" <John.Reid@energytransfer.com>
Date: July 27, 2016 at 2:21:59 PM CDT
To: "Shorts, Chris" <CShorts@uniongas.com>
Cc: "Newbury, Cheryl" <CNewbury@uniongas.com>, "Liberty, Erin" <eliberty@uniongas.com>, "McClacherty, Shawn" <smcclacherty@uniongas.com>, "Hill, Bryan D." <Bryan.Hill@energytransfer.com>, "Colton, Joey" <Joey.Colton@energytransfer.com>
Subject: RE: Energy Transfer Proposal for Union Gas

Chris,

Please find attached a new proposal based on the email below and our discussions to date on Union and Energy Transfer's requirements. This proposal is subject to management approval.

Please note that this new proposal does not support any work or capital related to the river crossing.

Please let me know when you have time to discuss.

Thanks,

John

From: Shorts, Chris [mailto:CShorts@uniongas.com]
Sent: Thursday, July 07, 2016 9:03 AM
To: Reid, John <John.Reid@energytransfer.com>
Cc: Newbury, Cheryl <CNewbury@uniongas.com>; Liberty, Erin <eliberty@uniongas.com>; McClacherty, Shawn <smcclacherty@uniongas.com>
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From: Reid, John [<mailto:John.Reid@energytransfer.com>]
Sent: July-07-16 9:28 AM
To: Shorts, Chris
Subject: RE: Energy Transfer Proposal for Union Gas

Chris – could you please send me an email about your revised request for transport that we discussed yesterday?

Thanks

From: Shorts, Chris [<mailto:CShorts@uniongas.com>]
Sent: Thursday, June 30, 2016 1:00 PM
To: Reid, John <John.Reid@energytransfer.com>
Cc: Newbury, Cheryl <CNewbury@uniongas.com>; Hill, Bryan D. <Bryan.Hill@energytransfer.com>
Subject: RE: Energy Transfer Proposal for Union Gas

Thanks John....

Chris

From: Reid, John [<mailto:John.Reid@energytransfer.com>]
Sent: June-30-16 1:32 PM
To: Shorts, Chris
Cc: Newbury, Cheryl; Hill, Bryan D.
Subject: RE: Energy Transfer Proposal for Union Gas

Chris,

You can still work on this past June 30th, that's fine. I would like to get this wrapped up as soon as we can though.

We can extend the offer through until July 15th.

Thanks,

John

From: Shorts, Chris [<mailto:CShorts@uniongas.com>]
Sent: Wednesday, June 29, 2016 12:12 PM
To: Reid, John <John.Reid@energytransfer.com>

Cc: Colton, Joey <Joey.Colton@energytransfer.com>; Hill, Bryan D. <Bryan.Hill@energytransfer.com>
Subject: RE: Energy Transfer Proposal for Union Gas

John, we did meet internally and I found I we hired a 3rd party consultant to provide some advice and they are just going through the findings now. I assume that since we have strayed away from the original offer that the June 30th deadline is somewhat irrelevant. Please let me know if we can still work on this post June 30th

Thanks

Chris

From: Reid, John [<mailto:John.Reid@energytransfer.com>]

Sent: June-22-16 3:50 PM

To: Shorts, Chris

Cc: Colton, Joey; Hill, Bryan D.

Subject: RE: Energy Transfer Proposal for Union Gas

Chris,

Sorry for taking so long to respond to this email. As you know I have been off on vacation for a couple of weeks.

We are still re-running our numbers and double checking our expected capital costs on the river crossing (if required), but with where our numbers look right now, we will be able to accommodate the items you mention below, namely:

1. Extend Union's current 57,000 Dth/d for a longer (~10 years as proposed) term with ROFR/Renewal rights
2. A lesser incremental volume (~15,000 Dth/d) for a shorter term as opposed to 38,000 Dth/d for 10 years as proposed
3. PEPL FZ to Union/Ojibway for all of the volume

Once I get confirmation of our numbers, I will send you a new, revised proposal. Give me a call at your convenience so we can discuss next steps on moving this forward.

Thanks,

John

From: Shorts, Chris [<mailto:CShorts@uniongas.com>]

Sent: Wednesday, June 01, 2016 5:29 PM

To: Reid, John <John.Reid@energytransfer.com>

Subject: RE: Energy Transfer Proposal for Union Gas

John, as per our conversations, we really appreciate the offer and I want to provide you some feedback.

- 1) Our main concern is the continuation of the 57,000 Dth/d for a longer term and ensuring we have ROFR/Renewal rights on it
- 2) Given the constraints on our system and where the incremental load growth is materializing, we cannot take the 38,000 Dth/d on a long term basis
- 3) I am not comfortable with the PEPL Trunkline long haul commitment, although the PEPL only long haul path from the field zone would be more palatable
- 4) As per our original request we may be interested in about 15,000 Dth/d PEPL capacity on a short term basis (ie 2-3 years)

Let me know if you feel you can work this in...
Thanks
Chris

From: Reid, John [<mailto:John.Reid@energytransfer.com>]
Sent: May-19-16 10:16 AM
To: Shorts, Chris
Cc: Hill, Bryan D.
Subject: Energy Transfer Proposal for Union Gas

Chris,

Please find attached a proposal from Energy Transfer regarding upstream transportation for the Windsor market and how that relates to the Ojibway River Crossing. I am sending this to you as you seem to be "leading the charge", but please forward to Cheryl as well.

I look forward to discussing this with you at your convenience.

Thanks,

John

John Reid | Sr. Director – Business Development
Energy Transfer | 1300 Main St. | Houston, TX 77002
P: 713.989.7143 | C: 713.444.1483 | IM: johnreid126
Email: john.reid@energytransfer.com

Private and confidential as detailed [here](#). If you cannot access hyperlink, please e-mail sender.
<Union Gas Proposal 72816.docx>



Chris Shorts
Director, Business Development and Upstream Regulation
Union Gas Limited

July 28, 2016

Chris,

Energy Transfer is pleased to offer the following proposal to Union Gas Ltd. for capacity to continue to serve your Windsor market utilizing the Panhandle and Trunkline assets. Under the proposal below, Energy Transfer agrees to fix the tariff rate for the term of the contracts.

Proposal Details:

1. Union extends their current 57,000 Dth/d of capacity on PEPL and Trunkline until 10/31/32 as follows:
 - 25,000 Dth/d – PEPL FZ to Ojibway is renewed on 11-1-2017 for a term of **15 years at tariff rate**
 - 20,000 Dth/d – TGC FZ to PEPL/BRBN and PEPL/BRBN to Ojibway capacity is renewed as PEPL FZ to Ojibway on 11-1-2017 for a term of **15 years at tariff rates**
 - 2,000 Dth/d – PEPL FZ to Ojibway is renewed on 11-1-2017 for a term of **15 years at tariff rate**
 - 10,000 Dth/d – PEPL FZ to Ojibway is renewed on 11-1-2017 for a term of **15 years at tariff rate**
2. Energy Transfer contracts for Union C1 Ojibway to Dawn transport as follows:
 - 15,000 Dth/d with a term of Rover in-service (currently expected to be 11-1-2017) to 10/31/2019 at **C1 tariff rate**
 - 35,000 Dth/d with a term of 11-1-2019 to **15 years** from in-service at **C1 tariff rate**

Please call me at 713-989-7143 at your convenience to discuss this in more detail.

This proposal is valid through August 15, 2016 and is subject to available capacity and approval from Energy Transfer executive management. Fuel, commodity and other specifics are governed by the respective FERC GAS TARIFF's

Sincerely,

John Reid
Senior Director
Energy Transfer

Shorts, Chris

From: Reid, John <John.Reid@energytransfer.com>
Sent: September-22-16 11:15 AM
To: Shorts, Chris
Subject: RE: Panhandle Capacity

Chris,

Is Union still able to offer Energy Transfer the 35k/d of Ojibway to Dawn C1 transport?

Thanks

From: Shorts, Chris [mailto:CShorts@uniongas.com]
Sent: Friday, September 16, 2016 2:23 PM
To: Reid, John <John.Reid@energytransfer.com>
Cc: Newbury, Cheryl <CNewbury@uniongas.com>
Subject: Re: Panhandle Capacity

John we have run the numbers and I just don't see us in a position to commit to a 10 year term at this point. I think we may have to wait for the regulatory process to run its course. I appreciate you guys looking into options. I am just boarding a plane to Calgary as I have to be at an NEB hearing all of next week. I will call you when I get a chance.

Appreciate your efforts.

Chris

Sent from my iPhone

On Sep 16, 2016, at 11:19 AM, Reid, John <John.Reid@energytransfer.com> wrote:

Chris,

Any update on this? It's been a few weeks, and I would really like to get this resolved.

Thanks,

John

From: Reid, John
Sent: Wednesday, August 24, 2016 9:54 AM
To: Shorts, Chris <CShorts@uniongas.com>; Newbury, Cheryl <CNewbury@uniongas.com>
Subject: Panhandle Capacity

Chris/Cheryl,

We have discussed this internally and ran our models. The increased capacity of 35k/d on the Ojibway to Dawn C1 does help our economics, but does not get us to a point where we could do down to a 5 year term. We could drop from the previously proposed 15 year term to a 10 year term on the PEPL FZ longhaul (57k/d).

Please let me know your thoughts.

Thanks,

John

-----Original Message-----

From: Shorts, Chris

Sent: August-11-16 10:24 PM

To: john.reid@energytransfer.com

Subject: Panhandle capacity

John we have been working to see if we could provide 35 a day for the full 15 years starting Nov 1, 2017. Although I don't have a final answer from the planners, I was hoping you could see if that coupled with a 5 year commitment to the PEPL filed zone long haul may be of interest.

Chris

From: Reid, John [<mailto:John.Reid@energytransfer.com>]

Sent: August-16-16 4:09 PM

To: Shorts, Chris

Subject: Test

John Reid | Sr. Director – Business Development
Energy Transfer | 1300 Main St. | Houston, TX 77002
P: 713.989.7143 | C: 713.444.1483 | IM: johnreid126
Email: john.reid@energytransfer.com

Private and confidential as detailed [here](#). If you cannot access hyperlink, please e-mail sender.