TransCanada
In business to deliver

450 1st Street
S.W. Calgary,
Alberta, Canada
T2P 5H1

Tel: (403) 920-5903
Fax: (403) 920-2357

December 14, 2015

All Customers
Other Interested Parties

Re: 2015 Annual Plan

NOVA Gas Transmission Ltd ("NGTL") has posted its 2015Annual Plan on TransCanada Pipelines Limited's website at:

http://www.transcanada.com/customerexpress/5525.html

Customers and other interested parties are encouraged to communicate their suggestions and comments to NGTL regarding the development of the NGTL System to me at (403) 920-7186.

Yours truly,
NOVA Gas Transmission Ltd.
A wholly owned subsidiary of TransCanada Pipelines Limited

Norm Bowman
Vice -President
Commercial Services & System Design

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

EXECUTIVE SUMMARY

The 2015 Annual Plan provides NOVA Gas Transmission Ltd.'s (NGTL's) customers and other interested parties an overview of potential NGTL System facilities that are expected to be applied for in the 2015/16 Gas Year. The 2015 Annual Plan describes NGTL's long-term outlook for receipts, deliveries, peak expected flows, design flow requirements and proposed facilities expected to be in-service by the beginning of the 2018/19 Gas Year. This 2015 Annual Plan is based on NGTL's June 2015 Design Forecast of receipts and deliveries.

Since the release of the 2014 Annual Plan, TransCanada Pipelines Limited (TransCanada) has identified a number of NGTL System facility projects. NGTL's Tolls, Tariff, Facility and Procedures (TTFP) Committee has been notified of these facilities, and they are summarized in *Appendix 2: Facility Status Update*.

NGTL provides commercial services under the NGTL Tariff using the combined assets of the NGTL System and the ATCO Pipelines (AP) System. NGTL follows facility planning processes to identify facilities required for the combined assets in the NGTL and AP footprints. For an overview of these processes, see the *Facilities Design Methodology* document. NGTL files facility applications with the National Energy Board (NEB) for facility additions on the NGTL System within the NGTL footprint. AP files facility applications with the Alberta Utilities Commission (AUC) for facility additions on the AP System within the AP footprint.

The facilities identified in this Annual Plan were presented to the TTFP Committee on December 7, 2015. New facilities proposed after issuance of this Annual Plan will be shown in the *2016 Facility Status Update*, which can be accessed at http://www.transcanada.com/customerexpress/871.html.

For the 11 facilities projects identified in the 2015 Annual Plan, see Table E-1.

Table E-1: Proposed Facilities Additions

Project Area	Proposed Facilities	Annual Plan Reference	Description	Target In-Service Date	Regulator	Capital Cost ($ Millions)
Mainline	James River Interchange Modifications	Chapter 2	Bypass of Existing Control Valves	Aug 2016	NEB	6
Mainline	Lodgepole C/S Unit Addition	Chapter 2	5 MW	Nov 2016	NEB	62
Peace River	Hythe Lateral Loop No. 2	Chapter 3	13 km NPS 20	Q4 2017	NEB	41
Peace River	Cutbank River Lateral Loop No. 2 (Red Rock Section)	Chapter 3	18 km NPS 24	Q2 2018	NEB	65
North and East	Woodenhouse C/S Unit Addition	Chapter 2	30 MW	Nov 2018	NEB	136
North and East	Buffalo Creek C/S Unit Addition	Chapter 2	30 MW	Nov 2018	NEB	139
Peace River	Meikle River C/S Series Modifications	Chapter 2	Modifications to Enable Series Operation	Nov 2018	NEB	16
North and East	North Central Corridor Loop (North Star Section 1)	Chapter 2	32 km NPS 48	Nov 2018	NEB	200
Peace River	Northwest Mainline loop (Peace River Crossing)	Chapter 2	4 km NPS 36	Nov 2018	NEB	40
North and East	South Kirby Expansion Project	Chapter 2	39 km NPS 24	Nov 2018	NEB	137
Mainline	Western Alberta Mainline Loop	Chapter 2	33 km NPS 42	Nov 2018	NEB	240
					Total	**1,082**

The Woodenhouse compressor addition, Buffalo Creek compressor additions, Meikle River compressor series modifications, North Central Corridor pipeline loop, and Northwest Mainline pipeline loop are required to transport additional aggregate system supply from the Peace River Project Area to meet additional aggregate system demand, primarily in the North and East Project Area.

The James River interchange modification is required to transport additional supply to the growing demand at the Alberta-British Columbia Export point.

The South Kirby Expansion Project is required to meet demand requirements in the North of Bens Design Area.

The Lodgepole compressor addition is required to transport additional supply into the Greater Edmonton Area to meet growing residential and industrial demand.

The Cutbank River Lateral Loop No. 2 (Red Rock Section), and the Hythe Lateral Loop No. 2 are required to transport growing supply in the Lower Peace River Design Area.

This 2015 Annual Plan includes the following sections:

- Executive Summary
- Chapter 1: Design Forecast
- Chapter 2: Design Flow and Mainline Facilities
- Chapter 3: Extensions, Lateral Loops and Meter Stations
- Appendix 1: Glossary of Terms
- Appendix 2: Facility Status Update
- Appendix 3: System Map (expected in March 2016)

Electronic versions of the Annual Plan and the *Facilities Design Methodology* document can be accessed at http://www.transcanada.com/customerexpress/871.html.

Customers and other interested parties are encouraged to communicate their suggestions, comments and questions to NGTL regarding the 2015 Annual Plan to:

- Darryn Rouillard, Manager, Mainline Planning West (403) 920-6341
- Murray Ferraton, Manager, Customer Solutions (403) 920-5323
- Karen Hill, Manager, Receipt and Delivery Forecasting (403) 920-5622
- Norm Bowman, Vice President, Commercial Services, Optimization and Design (403) 920-7186

1.0 DESIGN FORECAST

1.1 INTRODUCTION

This Annual Plan is based on the June 2015 Design Forecast of receipts and deliveries for the NGTL System. An overview of the June 2015 Design Forecast was presented at the November 10, 2015 TTFP meeting.

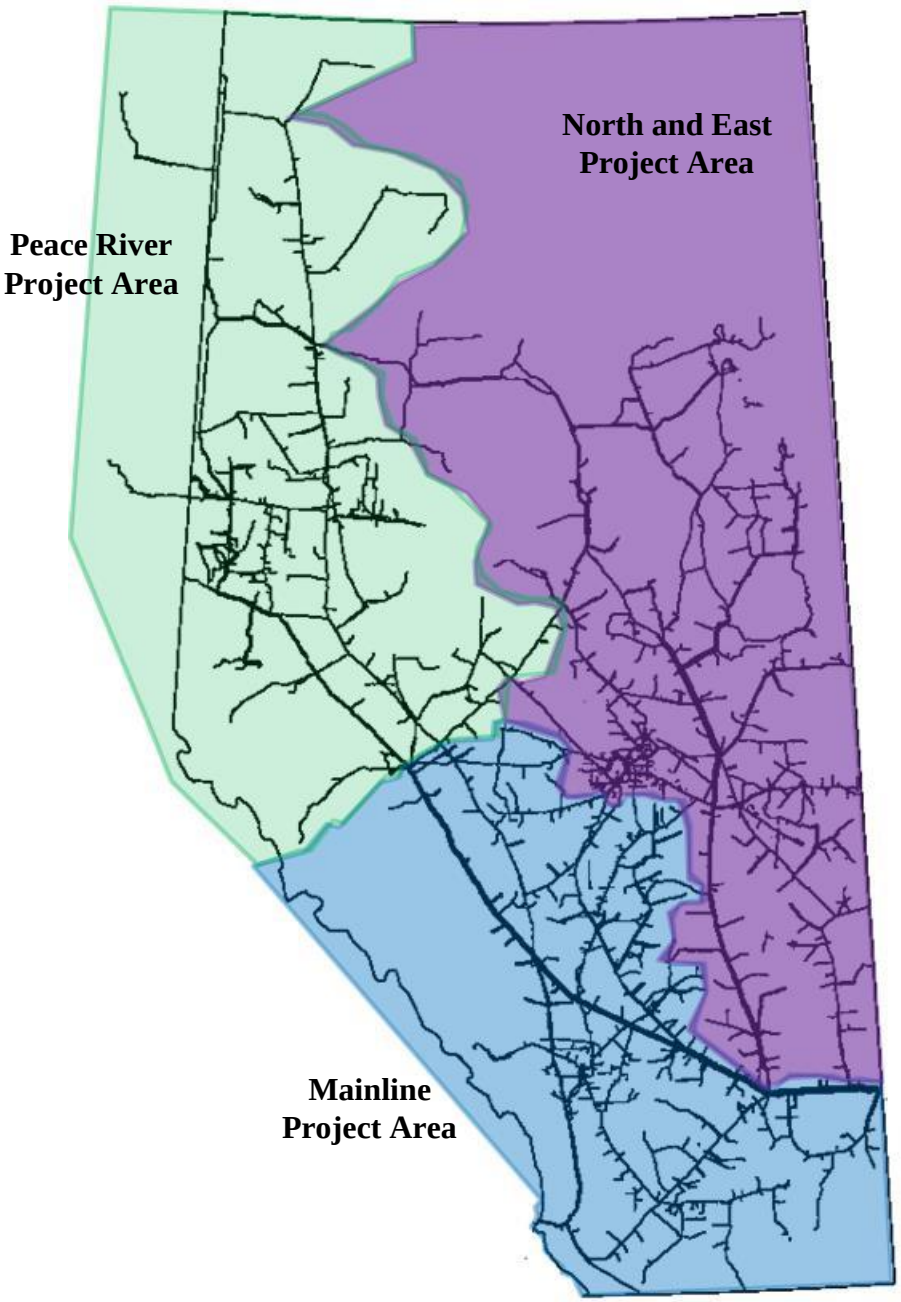
For information on forecasting methodology, see *Facilities Design Methodology*, Section 4.4: Design Forecast Methodology, which can be accessed at http://www.transcanada.com/customerexpress/871.html.

This section describes:

- economic assumptions used in developing the 2015 Design Forecast
- receipt and delivery forecast for the NGTL System
- supply contribution, including winter withdrawal from storage facilities, used in design process

In order to highlight the regional forecast differences on the NGTL System, this section references the three Project Areas as per the NGTL tariff. Figure 1-1 depicts the three Project Areas.

Figure 1-1: NGTL Project Areas



1.2 ECONOMIC ASSUMPTIONS

1.2.1 General Assumptions

The following assumptions, developed in early 2015, reflect broader trends in the North American economy and energy markets, and underlie the forecast of receipts and deliveries:

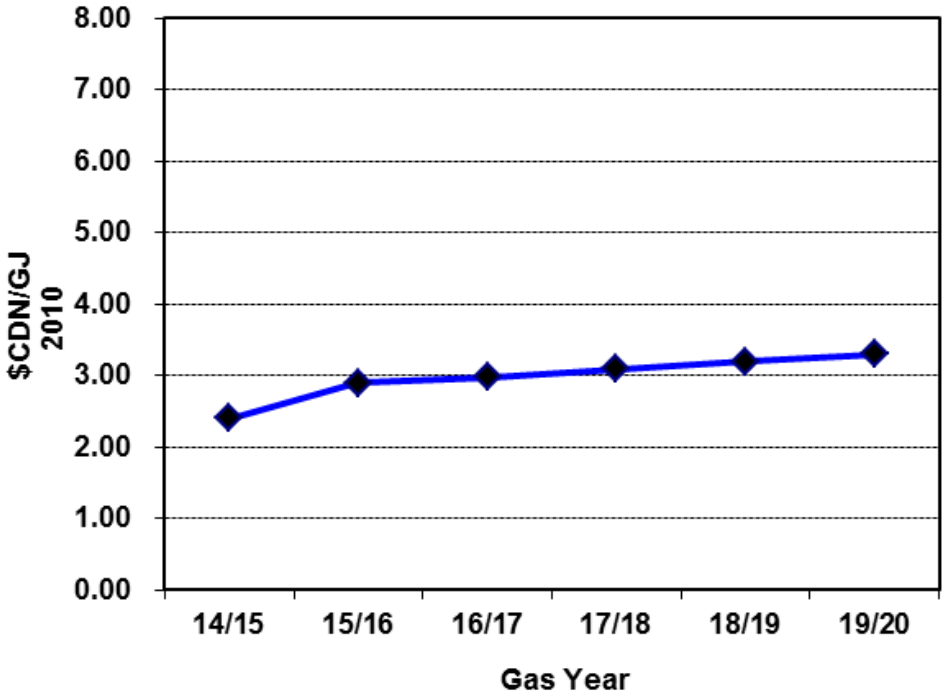
- Impressive gas supply growth, primarily from US shales, continues to overhang the North American market. E&P companies have been very successful at producing more gas at lower costs as they reduce drilling times, expand horizontal lateral lengths, increase fracture stages and generally develop better understanding of the resource. Substantial pipeline and processing infrastructure changes have allowed lower cost gas supplies from the Marcellus/Utica shale areas to push into more markets. This has led to a significant downgrade in the short-term forecast for natural gas prices compared to previous expectations, especially for 2015. Due to ongoing gas supply growth and much larger volumes of gas in storage, prices will have to be much lower against coal during the summer injection season to encourage gas demand growth in the electric generation sector. This is the only market that is large enough to potentially absorb the overhang and prevent a record level of gas storage entering the 2015/16 winter heating season, with further negative price consequences.
- Over the next several years, North American natural gas demand will increase as the U.S. and Canadian economies recover, coal plant retirements persist, and gas consuming sectors expand, incented by the low gas prices. In the longer term, gas demand is expected to rise with continued economic and population growth in both the U.S. and Canada. Canadian industrial gas demand is expected to be driven primarily by the gas needs of the oil sands sector in Alberta. U.S. gas demand growth is broadly based, increasing in the electricity generation and industrial sectors as well as for LNG exports.
- LNG export projects are being developed in both the U.S. and Canada. Those in the U.S. will begin just after the middle of the decade and those from Canada beginning at the end of this decade. These projects will serve as a substantial source of incremental demand and help balance the ongoing rapid growth in gas supply.

- As gas demand and gas supply move to a better balance, natural gas prices will rise.
- However, even with strong growth in shale and tight gas production, there continues to be a need for a significant proportion of supply from conventional resources to meet North American gas demand requirements. The NYMEX gas price forecast exhibits a gradual rise from today's level toward an equilibrium price of $US 4.35/MMBtu in real 2010 $US by 2025. This level of prices will allow additional volumes of conventional gas to be produced, in conjunction with unconventional shale gas to meet market demands.

1.2.2 Average Field Price

TransCanada's NYMEX gas price forecast was used to develop the Average Field Price, which represents the estimated price of natural gas at a point just before receipt onto the NGTL System. The gas price forecast, shown in Figure 1-2, was developed in January 2015 and reflects the general assumptions from Section 1.2.1.

Figure 1-2: Average Field Price



The Average Field Price during 2015 will be subject to the same forces as NYMEX gas, with prices dropping to an average of $2.41 Cdn/GJ in real 2010 $ for the year. Alberta prices are then forecast to follow the gradual improvement in the NYMEX price, reaching the long term equilibrium price of $3.78 Cdn/GJ real $2010 by 2025.

The gas price forecast affects the receipt and delivery forecast, and is used as input into the economic analysis for new facilities. The level of the gas price affects anticipated producer activity to support continuing production from connected supplies, connection of unconnected reserves, and the discovery and development of new reserves.

1.3 GAS DELIVERY FORECAST

Deliveries to markets in the NGTL System are forecasted to rise, primarily due to industrial demand in the oil sands sector. Gas demand from oil sands related projects is influenced by factors such as the amount of oil produced, the price of oil and gas, the process used to produce oil and the technological improvements employed over time. At major Export Points, contract demand and throughput has increased slightly compared to

recent years, but is still not at previous levels due to changing market conditions and ability of downstream markets to access alternative supply sources. However, as outlined in Table 1-1, export deliveries are forecasted to decline in the years leading up to 2018/19 when Canadian LNG exports are expected to commence.

Several sources of information were considered in developing the gas delivery forecast. First, operators of downstream facilities such as connecting pipelines, local distribution companies (LDCs) and industrial plants were requested to provide a forecast of their maximum, average and minimum requirements for deliveries from the NGTL System over the next 10 years. The forecasts were analyzed and compared with historical flow patterns at NGTL Delivery Points. In cases where NGTL's analysis differed substantially from the operator's forecast, NGTL contacted the operator and either the operator's forecast was revised or NGTL adjusted its analysis. In cases where the operator did not provide a forecast, NGTL based its forecast on historical flows and growth rates for specific demand sectors.

1.3.1 Average Annual Delivery Forecast

Forecast deliveries are expressed as an average daily flow. The Average Annual Delivery Forecast is the aggregate forecast deliveries for the NGTL System. The Average Annual Delivery Forecast, for Gas Years 2015/16 through 2019/20 are listed by Delivery Type in Table 1-1 and further detailed by Project Area in Table 1-2.

Table 1-1: System Average Annual Delivery Forecast by Delivery Type

Delivery Type	June 2015 Design Forecast ($10^6m^3/d$)				
	2015/16	**2016/17**	**2017/18**	**2018/19**	**2019/20**
Export	163.4	151.9	149.7	166.8	184.2
Intra Basin	137.3	144.5	151.6	156.1	165.5
Total System	**300.7**	**296.5**	**301.2**	**322.9**	**349.7**
Delivery Type	**June 2015 Design Forecast (Bcf/d)**				
	2015/16	**2016/17**	**2017/18**	**2018/19**	**2019/20**
Export	5.77	5.36	5.28	5.89	6.50
Intra Basin	4.85	5.10	5.35	5.51	5.84
Total System	**10.62**	**10.47**	**10.63**	**11.40**	**12.34**

Note**:**
Totals have been rounded.
Volumes expressed as an average daily flow for each gas year, at 101.325 kPa and 15°C.

Table 1-2: Intra Basin Deliveries – Average Annual Delivery Forecast by Project Area

Project Area	June 2015 Design Forecast ($10^6m^3/d$)				
	2015/16	**2016/17**	**2017/18**	**2018/19**	**2019/20**
Peace River	2.8	3.1	3.3	4.5	5.2
North and East	94.0	98.2	104.8	107.0	113.2
Mainline	40.6	43.2	43.5	44.5	47.1
Total	**137.3**	**144.5**	**151.6**	**156.1**	**165.5**
Project Area	**June 2015 Design Forecast (Bcf/d)**				
	2015/16	**2016/17**	**2017/18**	**2018/19**	**2019/20**
Peace River	0.10	0.11	0.12	0.16	0.18
North and East	3.32	3.47	3.70	3.78	4.00
Mainline	1.43	1.52	1.53	1.57	1.66
Total	**4.85**	**5.10**	**5.35**	**5.51**	**5.84**

Note**:**
Totals have been rounded.
Volumes expressed as an average daily flow for each Gas Year.

1.3.2 Maximum Day Delivery Forecast

Peak deliveries (Maximum Day Delivery) are also forecast for the NGTL Delivery Points and are based on customer input, market conditions, firm transportation contracts and historical flows.

A summary of the June 2015 Design Forecast winter and summer Maximum Day Delivery by Project Area for Intra Basin Deliveries is provided in Table 1-3 for winter and Table 1-4 for summer.

Table 1-3: Winter Maximum Day Intra-Basin Delivery Forecast

	June 2015 Design Forecast ($10^6m^3/d$)				
Project Area	**2015/16**	**2016/17**	**2017/18**	**2018/19**	**2019/20**
Peace River	9.3	9.9	10.1	10.2	10.3
North and East	160.5	169.5	177.2	182.3	194.8
Mainline	87.1	90.1	90.7	91.6	95.5
Total	**257.0**	**269.4**	**278.0**	**284.2**	**300.6**
	June 2015 Design Forecast (Bcf/d)				
Project Area	**2015/16**	**2016/17**	**2017/18**	**2018/19**	**2019/20**
Peace River	0.33	0.35	0.36	0.36	0.36
North and East	5.67	5.98	6.25	6.44	6.88
Mainline	3.08	3.18	3.20	3.23	3.37
Total	**9.07**	**9.51**	**9.81**	**10.03**	**10.61**

Note:
Totals have been rounded

Table 1-4: Summer Maximum Day Intra-Basin Delivery Forecast

	June 2015 Design Forecast ($10^6m^3/d$)				
Project Area	**2015/16**	**2016/17**	**2017/18**	**2018/19**	**2019/20**
Peace River	8.2	8.7	8.8	8.9	9.0
North and East	134.8	143.1	159.0	155.1	166.9
Mainline	67.3	70.5	71.4	72.2	72.8
Total	**210.3**	**222.2**	**230.2**	**236.3**	**248.9**
	June 2015 Design Forecast (Bcf/d)				
Project Area	**2015/16**	**2016/17**	**2017/18**	**2018/19**	**2019/20**
Peace River	0.29	0.31	0.31	0.31	0.32
North and East	4.76	5.05	5.30	5.48	5.89
Mainline	2.38	2.49	2.52	2.55	2.57
Total	**7.43**	**7.84**	**8.13**	**8.34**	**8.79**

Note:
Totals have been rounded.

1.4 RECEIPT FORECAST

NGTL develops its Receipt Forecast on an average annual basis that is based on two general approaches:

- For conventional production, NGTL typically uses an internal pool-based forecasting model that incorporates established reserve estimates and actual production records from government sources. For discovered resources, the model uses current production rates and reservoir modeling, supplemented by internal analysis to estimate future production. To estimate the future supply from undiscovered resources, NGTL bases its assessment on play- and pool-based resource estimates.
- For unconventional resources such as shale gas, NGTL typically uses well-based forecasting methods and models, supplemented with information from customers, to generate forecasts of future production. Factors such as total number of drilling locations available, well production profiles and pace of development are considered along with material and equipment availability, potential capital requirements and access constraints when developing a forecast of supply.

Exploration activity focused on unconventional gas has resulted in an expectation of over 2.5 bcf/d of incremental volumes of shale and tight gas entering the NGTL System in the Peace River Project Area by the 2019/20 Gas Year. Incremental shale and tight gas supply is expected to more than offset declines in production from connected established reserves, resulting in an increase in overall production levels in the WCSB over the next five years.

Three sources of gas supply used for the June 2015 Design Forecast are:

- Connected and Unconnected Reserves – supply from established conventional and unconventional reserves upstream of Receipt Points;
- Reserve Additions – supply from undiscovered resources, including conventional and unconventional resources; and
- Interconnections – supply from interconnections with other pipeline systems.

Gas supplied from storage facilities was not included in the data presented in this section. For information pertaining to gas supply from Commercial Storage Facilities, see Section 1.6.

1.4.1 Average Receipt Forecast

The Average Receipt Forecast is the forecast aggregate receipts for the NGTL System for the 2015/16 through 2019/20 Gas Years. A summary of System Average Receipts by Gas Year and Project Area is expressed as an average daily flow and shown in Table 1-5.

Table 1-5: System Average Receipts

Project Area	June 2015 Design Forecast ($10^6 m^3/d$)				
	2015/16	**2016/17**	**2017/18**	**2018/19**	**2019/20**
Peace River	168.8	172.3	185.7	211.2	244.1
North and East	16.3	14.4	13.4	12.0	10.7
Mainline	113.6	104.2	97.1	93.2	88.6
Total	298.6	291.0	296.2	316.4	343.4
Project Area	**June 2015 Design Forecast (Bcf/d)**				
	2015/16	**2016/17**	**2017/18**	**2018/19**	**2019/20**
Peace River	5.96	6.08	6.56	7.45	8.62
North and East	0.58	0.51	0.47	0.42	0.38
Mainline	4.01	3.68	3.43	3.29	3.13
Total	10.54	10.27	10.45	11.17	12.12

Note:
Totals have been rounded.

1.5 SUPPLY DEMAND BALANCE

Supply received on to the NGTL System is balanced with System deliveries (net of gas in storage). System deliveries by destination are shown in Figure 1-3, while System receipts by Project Area are shown in Figure 1-4.

Figure 1-3: System Deliveries by Destination

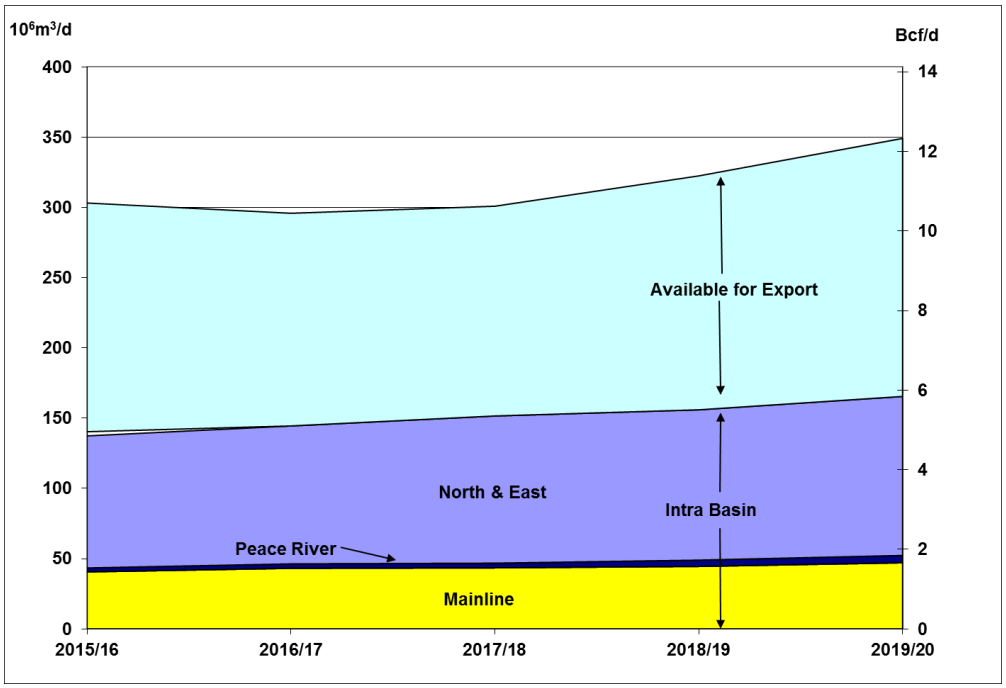
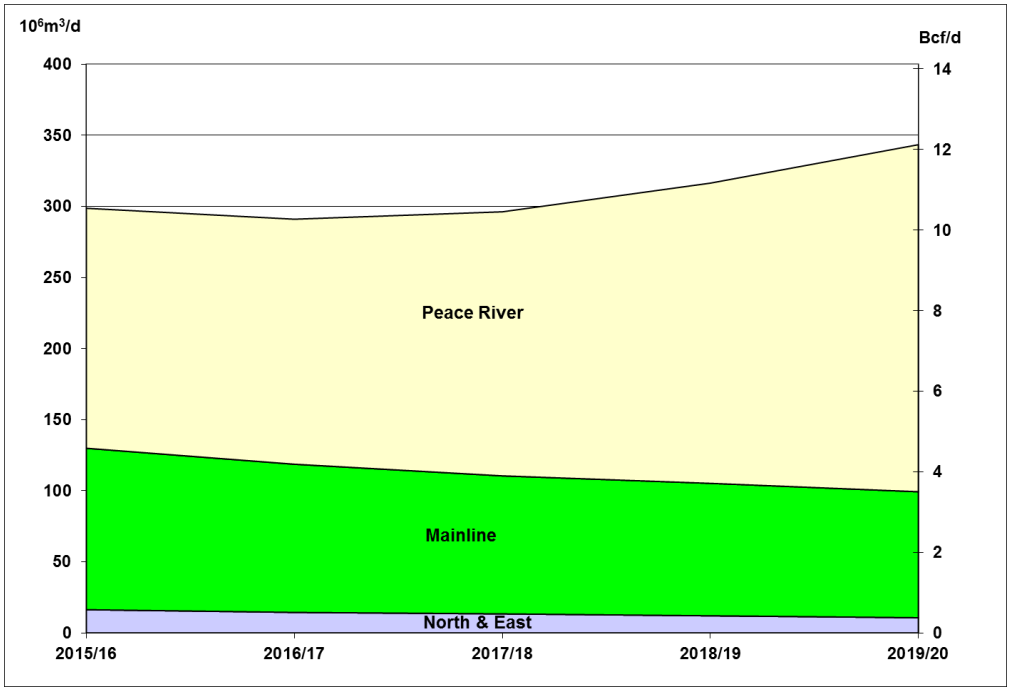


Figure 1-4: System Receipts by Project Area



1.6 STORAGE FACILITIES

1.6.1 Commercial Storage

There are nine commercial storage facilities connected to the NGTL System (AECO 'C', Big Eddy, Carbon, Chancellor, Crossfield East #2, January Creek, Rat Creek West, Severn Creek and Warwick Southeast Meter Stations). The total deliverability from Storage Facilities is significant, but actual maximum day receipts from storage are dependent on a number of factors, including market conditions, level of working gas in each storage facility, compression power at each storage facility and NGTL System operations.

For design purposes, a supply contribution from Storage Facilities is used to meet peak day winter delivery requirements and provide for a better correlation between forecast design flow requirements and historical actual flows for the winter period. Historical withdrawals during recent winter periods for each Storage Facility were used to determine a reasonable expected rate of withdrawal for future winter seasons.

For the receipt meter capacity for each of the connected commercial storage facilities, see Table 1-6.

Table 1-6: Receipt Meter Capacity from Commercial Storage Facilities

Storage Facility	Receipt Meter Capacity from Commercial Storage Facilities – 2014/15	
	$10^6m^3/d$	Bcf/d
AECO C	50.7	1.79
Big Eddy	35.4	1.25
Carbon	13.8	0.49
Chancellor	35.2	1.24
Crossfield East 2	14.1	0.50
January Creek	14.1	0.50
Rat Creek West	2.9	0.10
Severn Creek	5.6	0.20
Warwick Southeast	6.1	0.22
Total	**177.9**	**6.29**

Note:
Storage is considered an interruptible supply source.
Totals have been rounded.

1.6.2 Peak Shaving Storage

The Fort Saskatchewan Salt Caverns are a peak shaving storage facility in the greater Edmonton area within the ATCO Pipeline footprint, in North of Bens Lake Design Area of the NGTL System. Similar to Commercial Storage Facilities, the total deliverability from the peak shaving Storage Facility is significant, but the actual maximum day receipt from storage depends on a number of factors, including market conditions, level of working gas, compression power at the storage facility and NGTL System operations.

For design purposes, a maximum withdrawal rate of 6500 $10^3m^3/d$ (230 MMcf/d) was used to meet the peak expected winter season delivery requirements.

2.0 DESIGN FLOWS AND MAINLINE FACILITIES

2.1 INTRODUCTION

This section contains the proposed natural gas transportation mainline facilities to be applied for on the NGTL System in the 2015/16 Gas Year to meet the design flow requirements. Included is information regarding size, routes, locations and cost estimates.

The design flows are presented for design areas where new mainline facilities are required. Design flows are based on the June 2015 design forecast presented in Section 1, and were determined using the methodology described in *Facilities Design Methodology*, Section 3.5: Mainline Facilities Flow Determination. This document can be accessed at http://www.transcanada.com/customerexpress/871.html.

This section includes a comparison of historical flows to the design flows. Additionally, the current design capability is shown for the Gas Year when facilities are required in each applicable design area. Where there is a shortfall between design flow and the existing design capability, a facility solution has been proposed. A facility application to the regulator for construction and operation is triggered by Firm Transportation (FT) contracts in excess of design capability and submitted to ensure the facility is in place in time to meet the FT requirements. Aggregated FT contract levels are also presented to indicate commercial underpinning of the proposed facilities.

Historically, this section of the Annual Plan was structured to present proposed facilities by geographical region. This year's version presents facilities grouped by common purpose. Proposed facilities that are triggered by and serve common purposes are not new to the NGTL System, but they are becoming increasingly extended across the geographical boundaries of the traditional design areas. Presentation of the proposed facilities in this manner is intended to improve the clarity of their requirement and commercial underpinning.

An overview of the design flows and proposed facilities resulting from the June 2015 design forecast were presented at the TTFP meeting on December 7, 2015.

For a summary of the status of mainline facilities that have been proposed, applied for, under construction or placed in-service since the December 2014 Annual Plan, see *Appendix 2: Facility Status Update*.

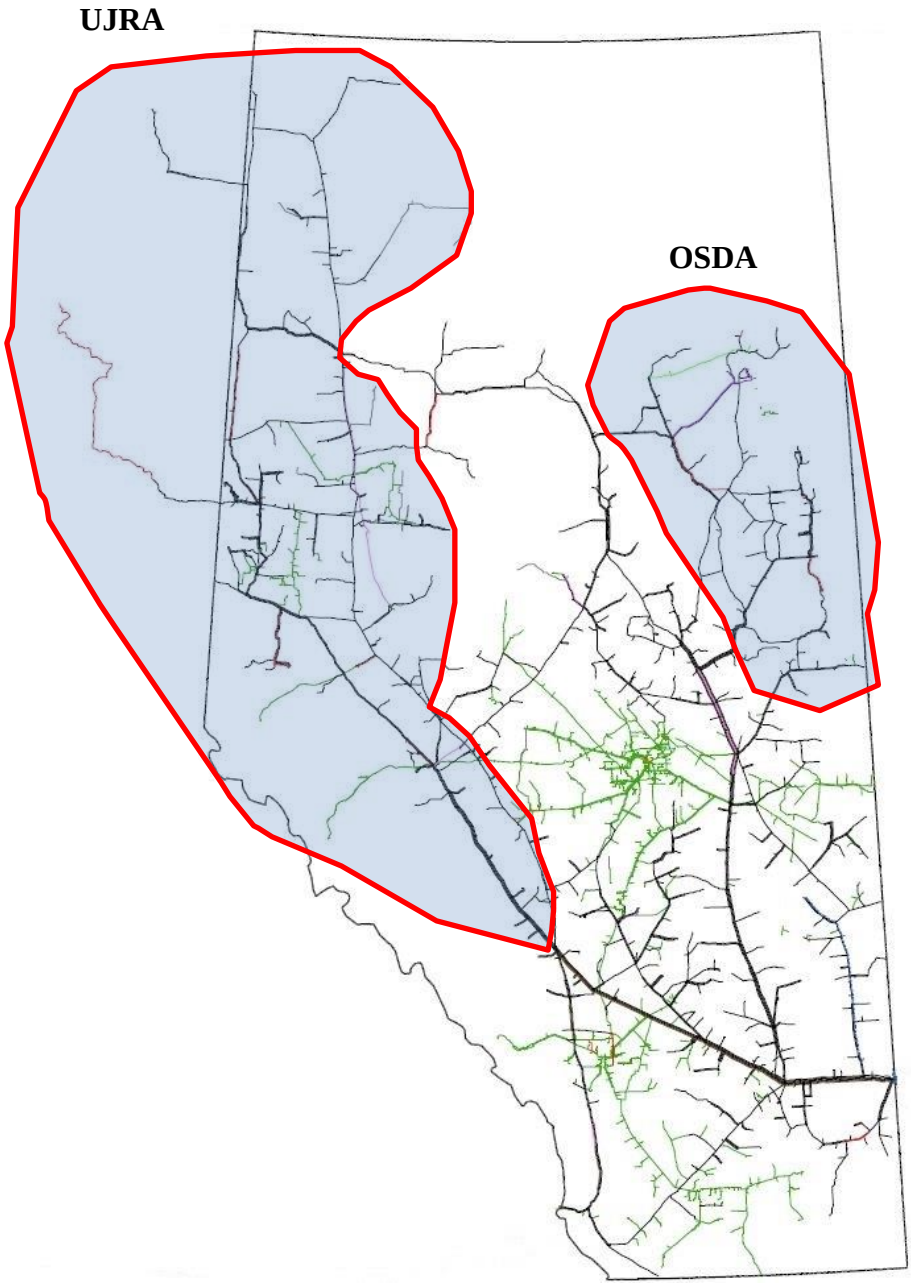
2.2 FACILITIES FOR AGGREGATE SYSTEM REQUIREMENTS

As described in Section 1, aggregate system demand continues to grow in the North and East Project Area while aggregate system supply continues to grow and shift towards the Peace River Project Area. In order to better communicate the requirement and commercial underpinning of the facilities proposed to address this aggregate system flow shift, two geographical regions are defined. The Oilsands Delivery Area (OSDA), is a subset of the North and East Project Area. The OSDA contains a majority of the growing oilsands demands and thus provides a concise picture of the aggregate System demand requirement. The Upstream James River Area (UJRA), is a region that includes the entire Peace River Project Area as well as the Edson Mainline Design Area. The UJRA contains a majority of the System supply and is the only region in the System where supply is growing, and thus provides the most complete picture of the aggregate System supply requirement. Figure 2-1 shows these two areas. Facilities are required to handle the prevailing design condition for each of these areas:

1. Flow-Within – When OSDA receipts are at a minimum and deliveries are at a maximum. System facilities must be capable of transporting enough gas to the OSDA to meet deliveries within the area.

2. Flow-Through – When UJRA receipts are at a maximum and deliveries are at a minimum. System facilities must be capable of transporting the excess gas out of UJRA to deliveries throughout the system.

Figure 2-1: System Demand and Supply Growth Areas

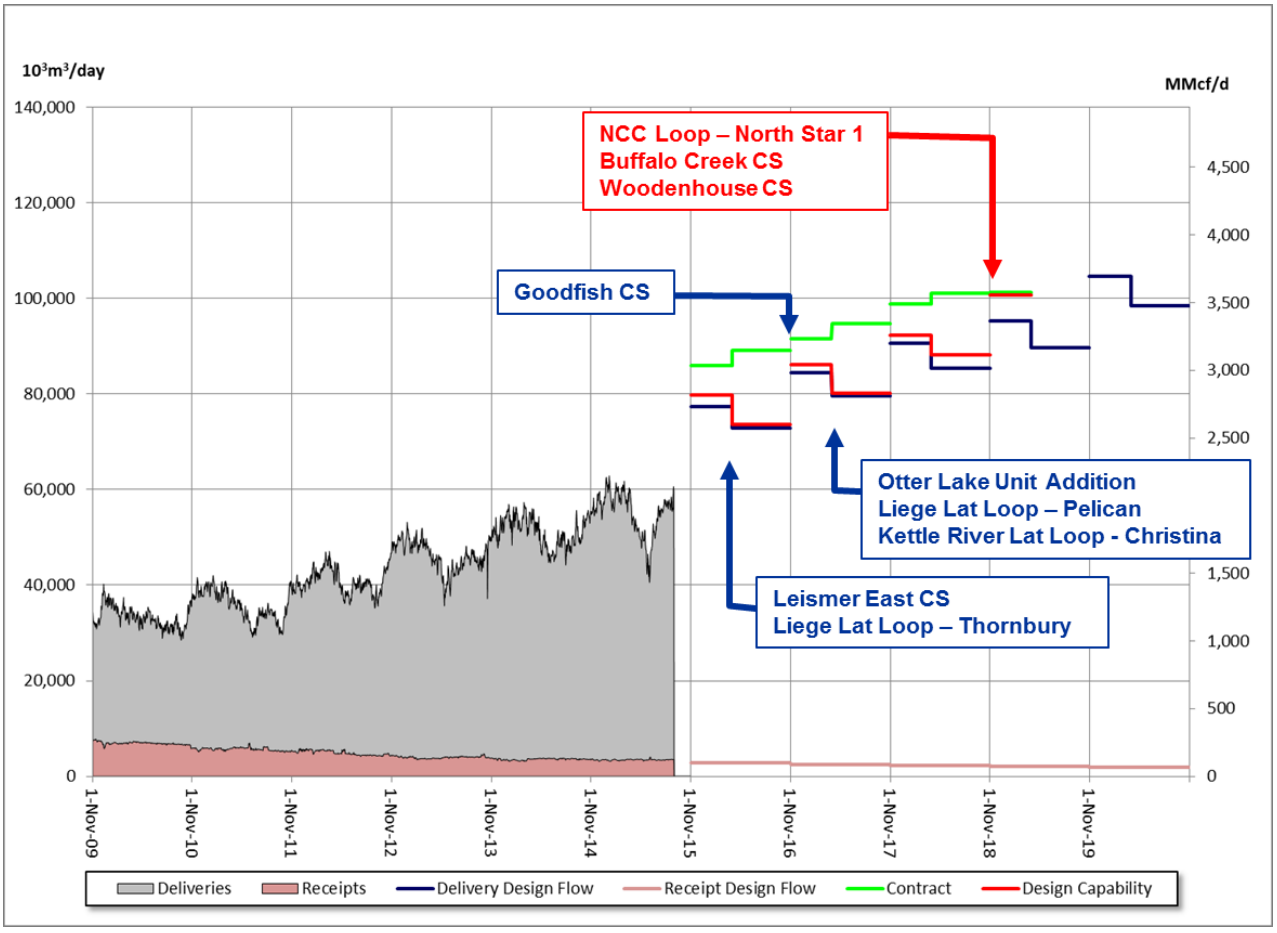


2.2.1 Design Flows - OSDA

The design flows for the flow-within design condition in the OSDA are the net effect of the maximum deliveries in the area less the minimum local receipts. Continued delivery growth will be accommodated by five proposed facilities.

Figure 2-2 shows historical flows, design flows, contract levels and design capability for the Oilsands Delivery Area. Delivery design flow rises throughout this forecast period, attributable primarily to increasing oilsands deliveries. Previously proposed facilities are highlighted blue in Figure 2-2 to provide a correlation to the increasing design capability. Three of the five newly proposed facilities are located in the North and East Project Area, and are highlighted red in Figure 2-2 to indicate their requirement.

Figure 2-2: OSDA Design Chart

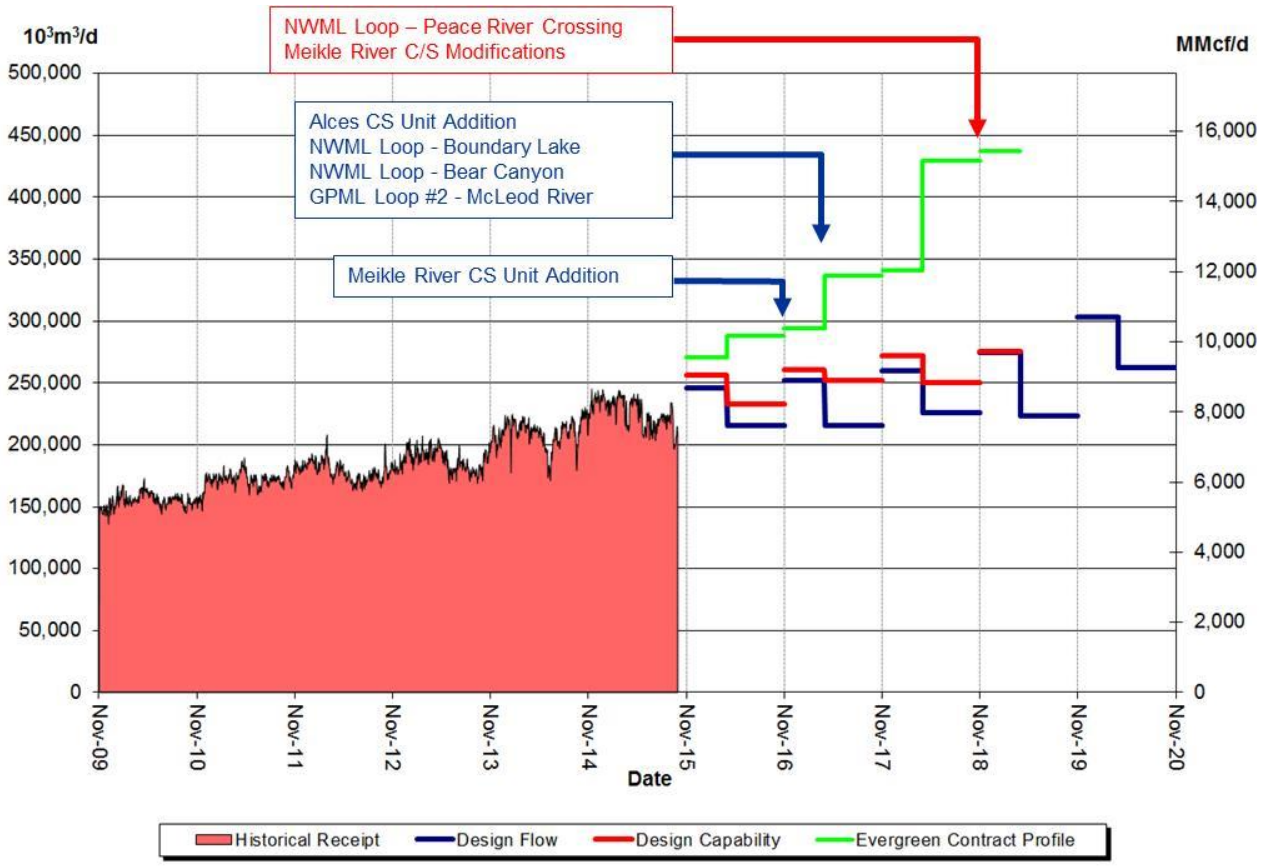


2.2.2 Design Flows- UJRA

The design flows for the flow-through design condition in the UJRA are the net effect of the maximum local receipts less minimum deliveries in the area. Continued receipt growth will be accommodated by the same five proposed facilities required to meet the OSDA flow-within design flow requirements shown in Section 2.2.1. The proposed facilities are selected to meet both design conditions; providing incremental capability for gas to be delivered to the OSDA and incremental capability for gas to be transported out of the UJRA.

Figure 2-3 shows historical receipts, receipt design flow, contract levels and design capability for the UJRA. Receipt design flow rises throughout this forecast period, attributable primarily to increasing supply in the Peace River Project Area. Previously proposed facilities are highlighted blue in Figure 2-3 to provide a correlation to the increasing design capability. Two of the five newly proposed facilities are located in the Peace River Project Area, and are highlighted red in Figure 2-3 to indicate their requirement.

Figure 2-3: UJRA Design Chart

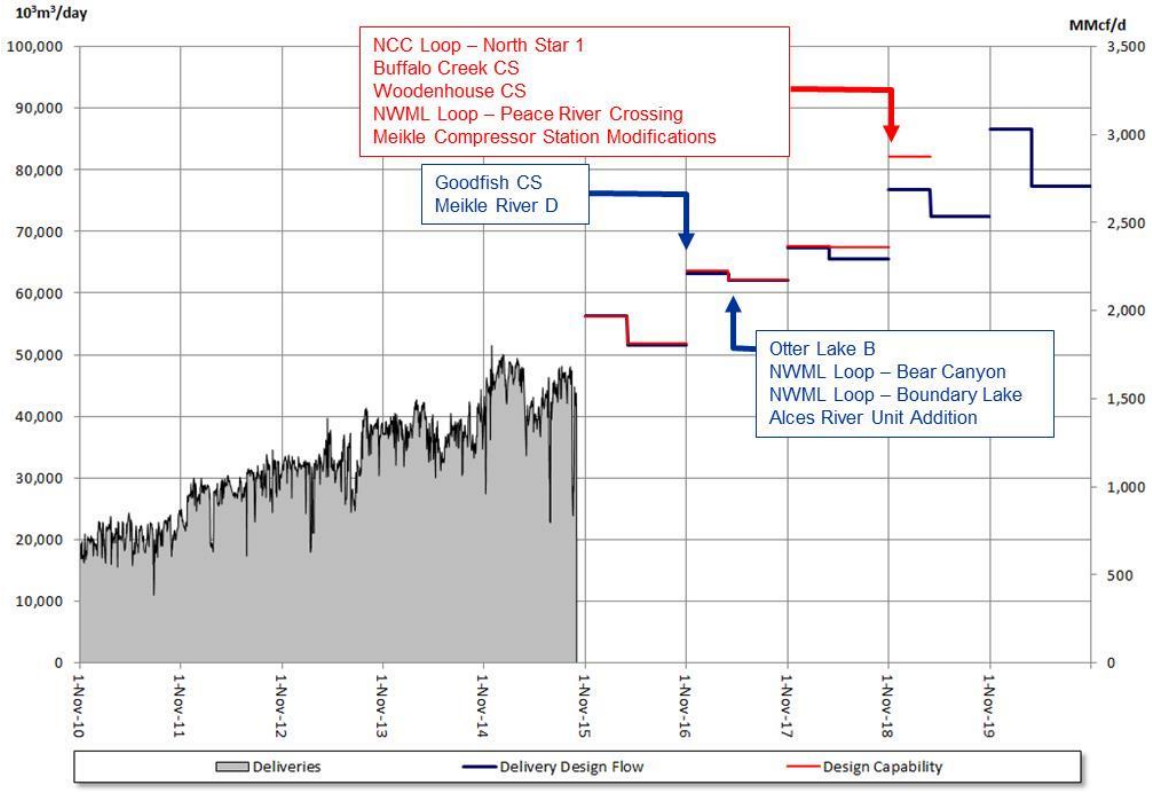


2.2.3 Design Flows – North Central Corridor

Sections 2.2.1 and 2.2.2 described the aggregate System demand and supply requirements for the proposed facilities, respectively. This section is intended to provide further clarity regarding the aggregate requirement, by presenting design flows for the North Central Corridor (NCC). The NCC is the pipeline corridor that starts at the Meikle River compressor station and ends at the Buffalo Creek compressor station (see Figure 2-5 for these compressor locations). It is a major flow path connecting the increasing demands in the OSDA with increasing supply in the UJRA. All five proposed facilities serve the purpose of increasing NCC capability, thereby serving the aggregate demand and supply requirements of the System.

Figure 2-4 shows historical flows, design flow, and design capability of the NCC. Design flow rises throughout this forecast period, attributable to both the increasing supply in the UJRA and increasing demand in the OSDA. Previously proposed facilities are highlighted blue in Figure 2-4 to provide a correlation to the increasing design capability. All five newly proposed facilities are highlighted red in Figure 2-4 to indicate their requirement.

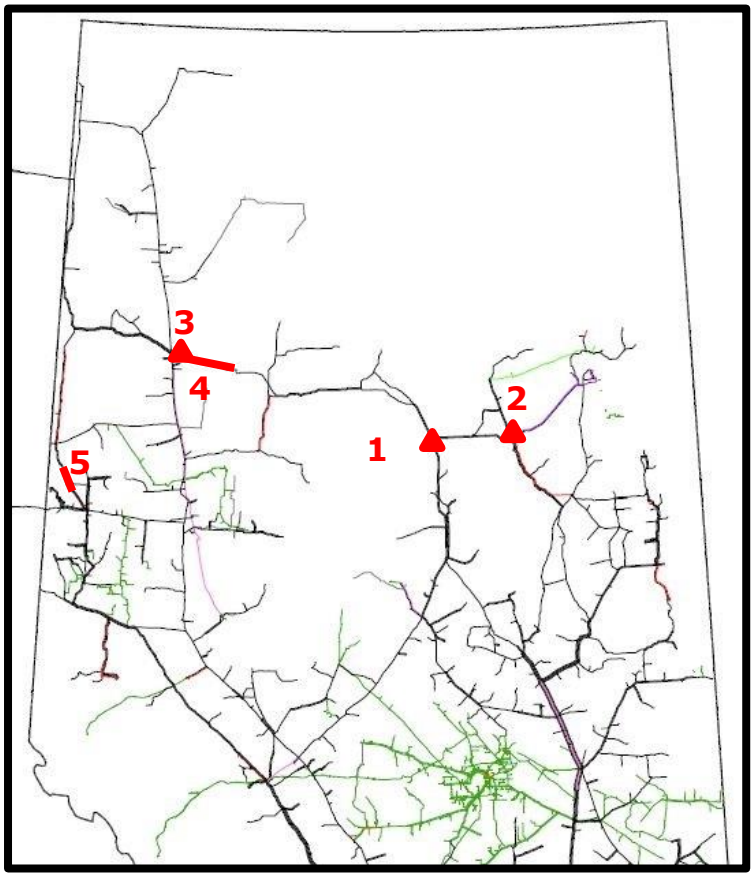
Figure 2-4: NCC Design Chart



2.2.4 Proposed Facilities for Aggregate System Requirements

Figure 2-5 shows the locations of the proposed facilities required to meet the aggregate system requirements resulting from the OSDA flow-within design condition and the UJRA flow-through design condition.

Figure 2-5: Proposed Facilities for Aggregate System Requirements



Applications for the proposed facilities are expected to be filed with the NEB in gas year 2015/2016 and the facilities are proposed to be in-service in 2018. For details on each of the proposed facilities, see Table 2-1.

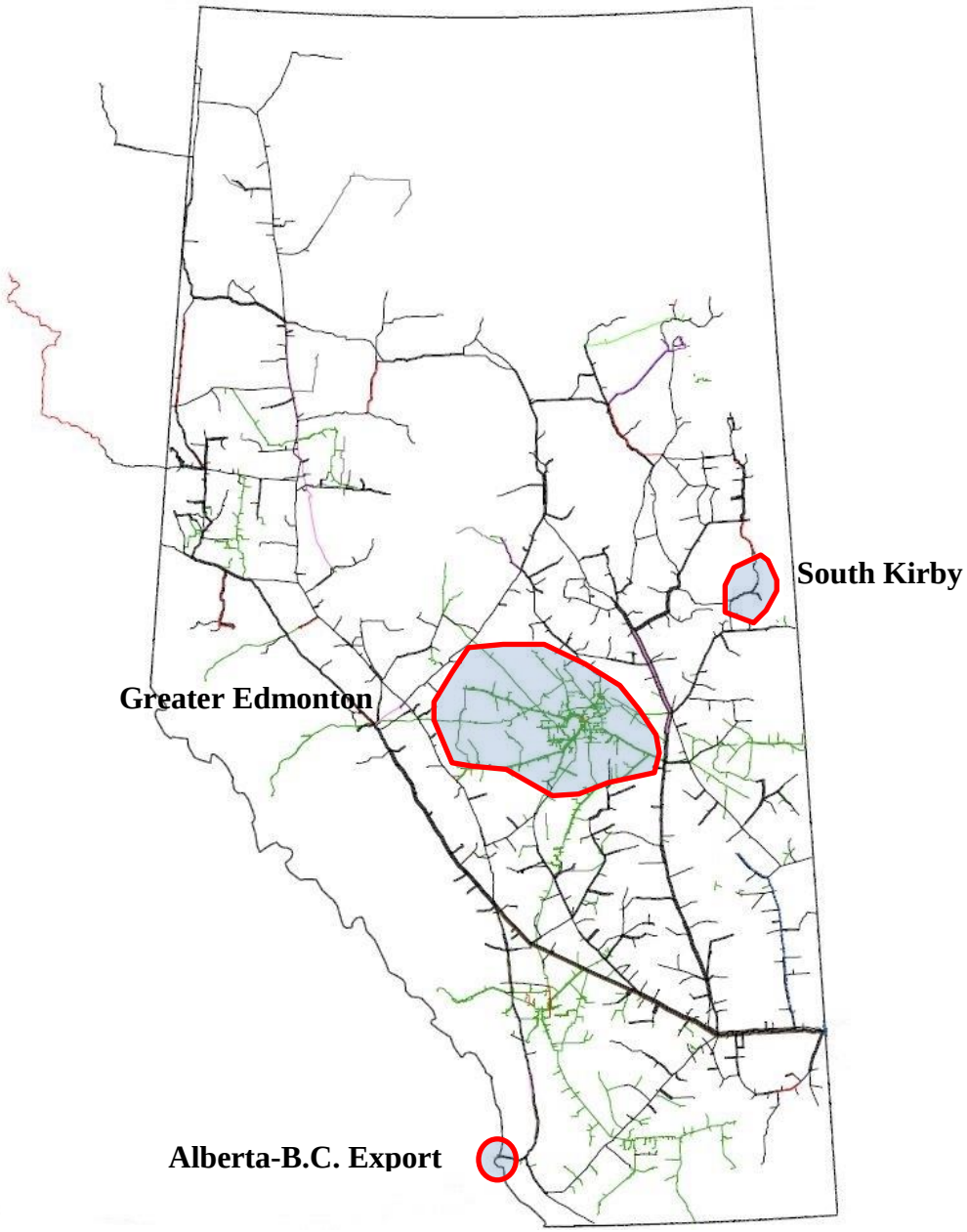
Table 2-1: Proposed Facilities for Aggregate System Requirements

Map Location	Applied-For Facility	Description	Target In-Service Date	Forecast Cost ($Millions)
1	Woodenhouse C/S Unit Addition	30 MW	Nov 2018	136
2	Buffalo Creek C/S Unit Addition	30 MW	Nov 2018	139
3	Meikle River C/S Series Modifications	Enable Series Operation	Nov 2018	16
4	NCC Loop (North Star Section 1)	32 km NPS 48	Nov 2018	200
5	NWML Loop (Peace River Crossing)	4 km NPS 36	Nov 2018	40
			Total	**531**

2.3 FACILITIES FOR SPECIFIC AREA DEMANDS

Proposed facilities are required to meet the gas deliveries in three specific areas: South Kirby, Alberta-B.C. Export, and Greater Edmonton. Figure 2-6 shows these specific areas.

Figure 2-6: Specific Demand Areas

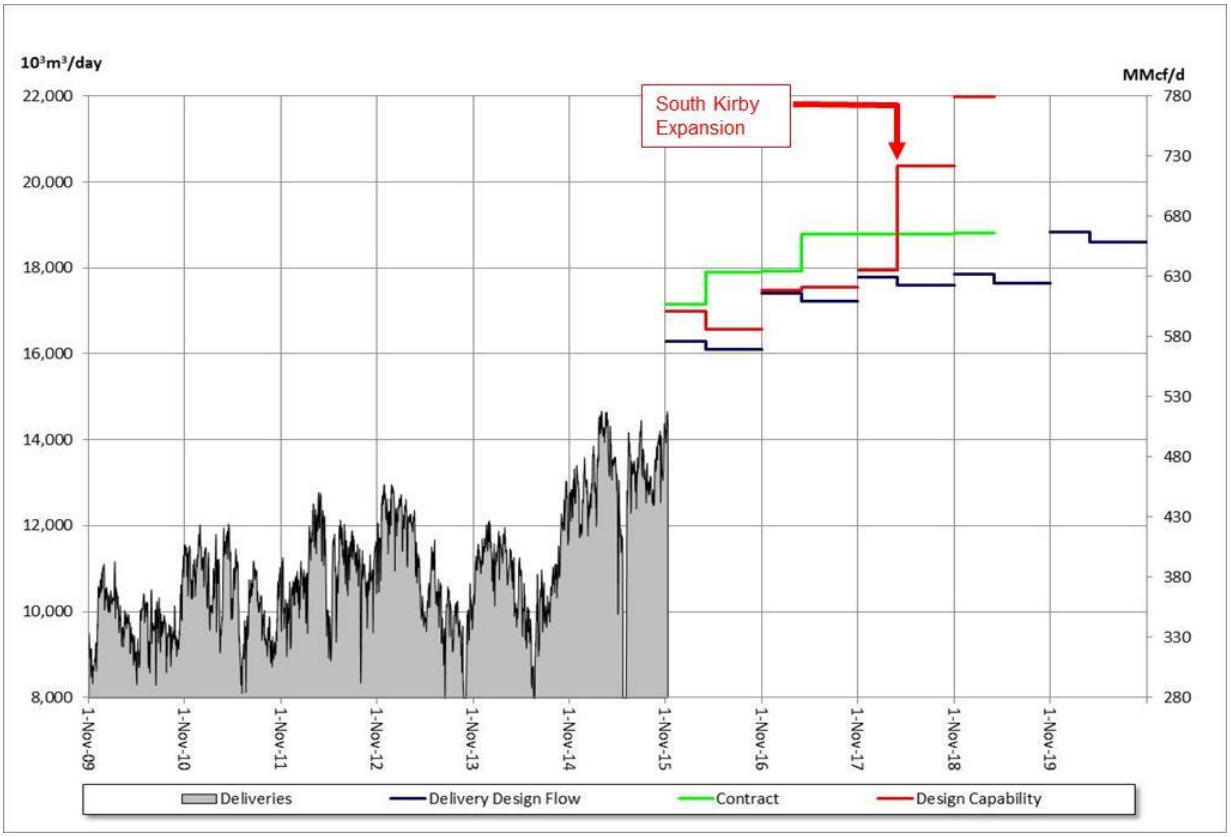


2.3.1 Design Flows – South Kirby Area

The design flows for the flow-within design condition in the South Kirby Area are the net effect of maximum deliveries less the minimum available local receipts in the area. Declining capability will be accommodated by one proposed facility.

Figure 2-7 shows historical flows, design flows, contract levels and design capability for the South Kirby Area. Delivery design flow rises throughout this forecast period, attributable primarily to increasing oilsands deliveries.

Figure 2-7: South Kirby Area Design Chart

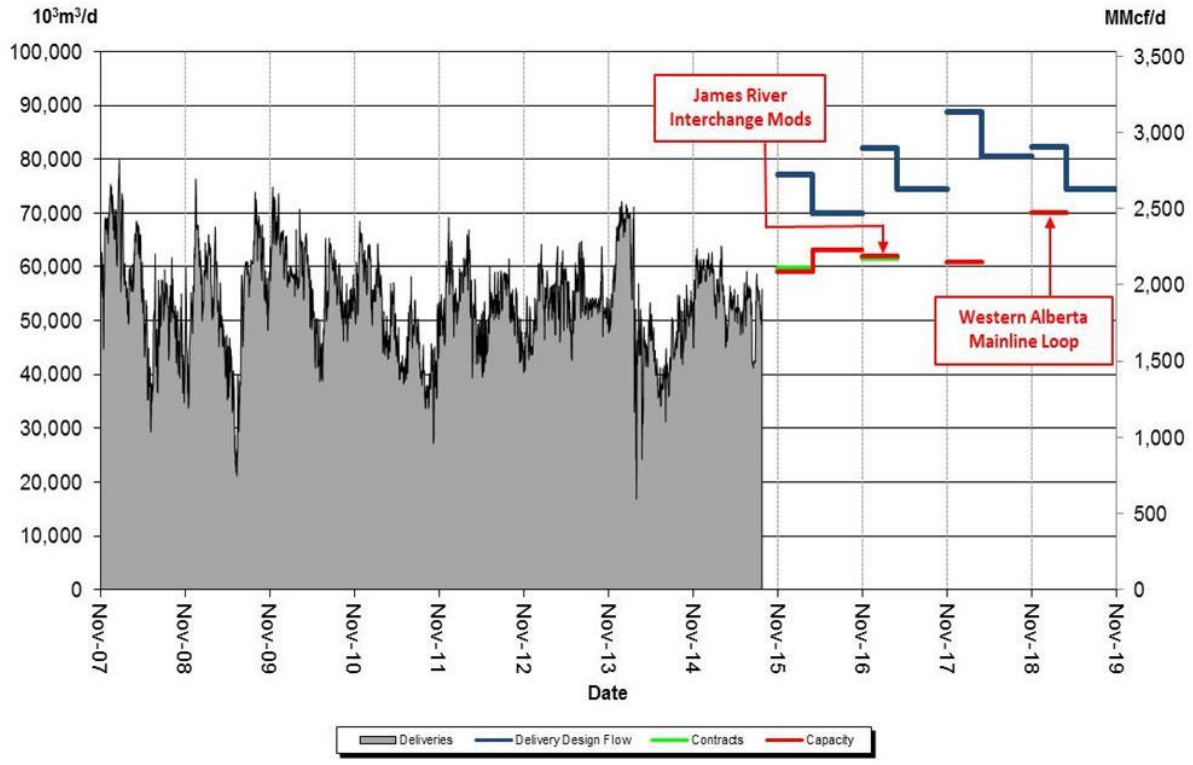


2.3.2 Design Flows – Alberta-B.C. Export

The design flows for the flow-within design condition at the Alberta-B.C. Export point (AB-BC) are the net effect of maximum deliveries less the minimum available local receipts in the area. Declining capability and increasing contracts will be accommodated by two proposed facilities.

Figure 2-8 shows historical flows, design flows, contract level and design capability for AB-BC. Notwithstanding the increase provided by the proposed facilities, capability decreases throughout this forecast period, attributable to increasing upstream deliveries and declining production in areas near this export point.

Figure 2-8: Alberta-B.C. Export Design Chart

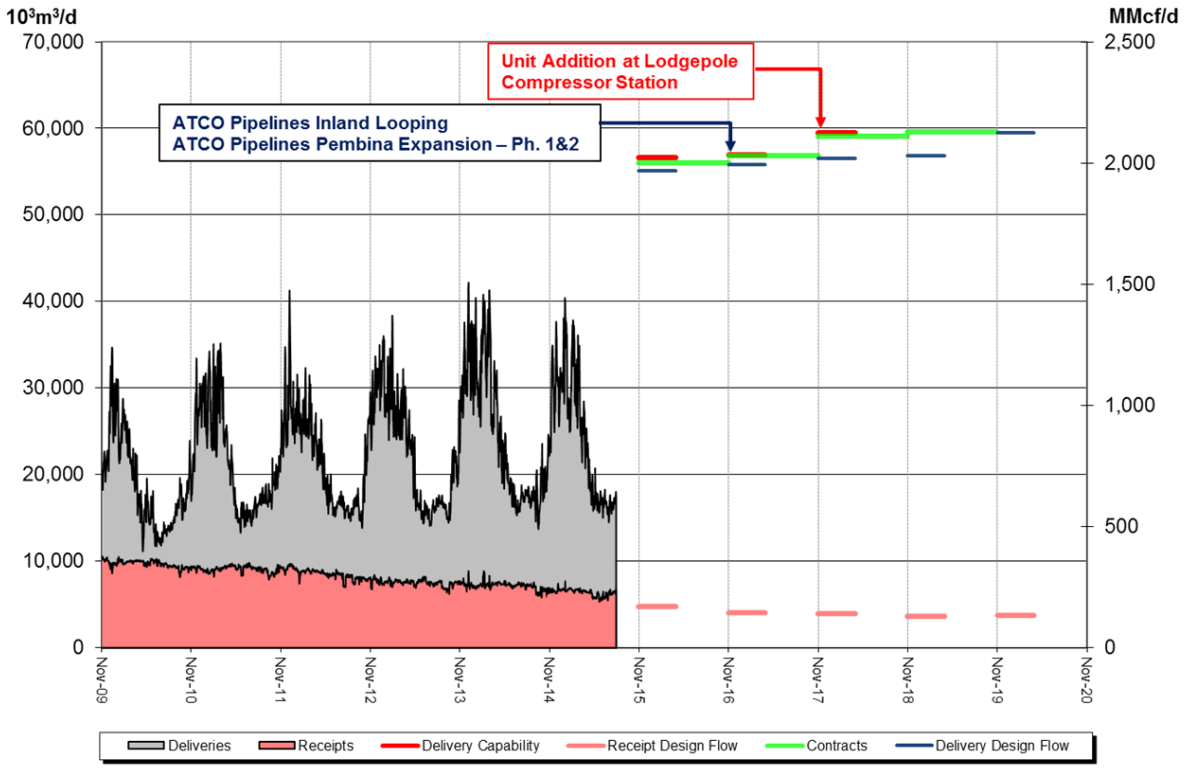


2.3.3 Design Flows – Greater Edmonton Area

The design flows for the flow-within design condition at in the Greater Edmonton Area are the net effect of maximum deliveries less the minimum available local receipts in the area. Continued delivery growth will be accommodated by one proposed facility.

Figure 2-9 shows historical flows, contract level and design capability for the Greater Edmonton Area. Contract level rises throughout this forecast period, attributable to increasing industrial and residential/commercial deliveries. Previously proposed facilities, all to be owned and constructed by ATCO Pipelines, are highlighted blue in Figure 2-9 to provide a correlation to the increasing design capability. The newly proposed facility, to be owned and constructed by NGTL, is highlighted red in Figure 2-9 to indicate its requirement.

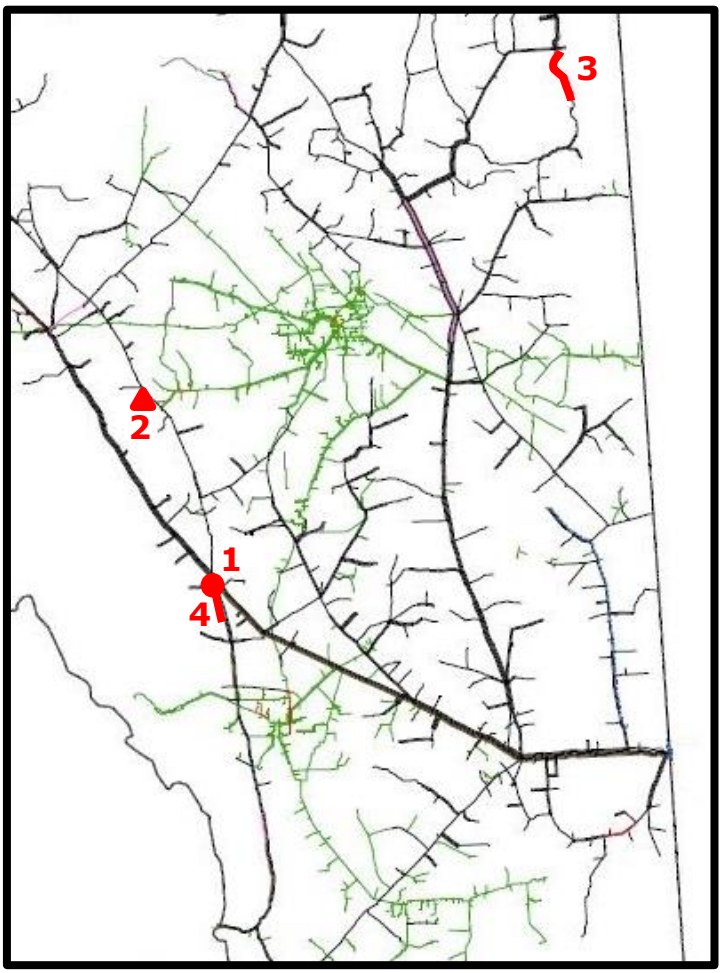
Figure 2-9: Greater Edmonton Area Design Chart



2.3.4 Proposed Facilities for Specific Area Demands

Figure 2-10 shows the location of the proposed facilities required to meet the design flow requirements for the three specified areas.

Figure 2-10: Proposed Facilities for Specific Area Demands



Applications for the proposed facilities are expected to be filed with the NEB in gas year 2015/2016 and the facilities are proposed to be in-service from 2016 through 2018. For details on each of the proposed facilities, see Table 2-2.

Table 2-2: Proposed Facilities for Specific Area Demands

Map Location	Proposed Facility	Description	Target In-Service Date	Forecast Cost ($Millions)
1	James River Interchange Modifications	Modifications	Aug 2016	6
2	Lodgepole Unit Addition	5 MW	Nov 2017	62
3	South Kirby Expansion	39 km NPS 24	Apr 2018	137
4	Western Alberta Mainline Loop	33 km NPS 42	Nov 2018	240
			Total	**205**

3.0 EXTENSION FACILITIES, LATERAL LOOPS AND METER STATIONS

3.1 INTRODUCTION

This section presents an overview of the extension facilities, lateral loops and receipt and delivery meter stations that are required to meet customer requests for firm service.

If mainline facilities are required, transportation service may be provided to customers on an interruptible basis until the required mainline facilities are in service. If a customer's request for service results in the addition of new or modified receipt meter stations, the minimum term and minimum contractual obligation are determined in accordance with the economic criteria described in the *Gas Transportation Tariff of NOVA Gas Transmission Ltd., Appendix E: Criteria for Determining Primary Term*.

For locations of the proposed extension facilities, lateral loops and meter stations, see Figure 3-1 and for facility details, see Table 3-1. These proposed facilities were presented at the TTFP meeting on December 7, 2015.

For a summary of the status of facilities that have been proposed, applied for, under construction or placed in-service since the 2014 Annual Plan, see *Appendix 2: Facility Status Update*.

Figure 3-1: Proposed Extensions, Lateral Loops and Meter Stations

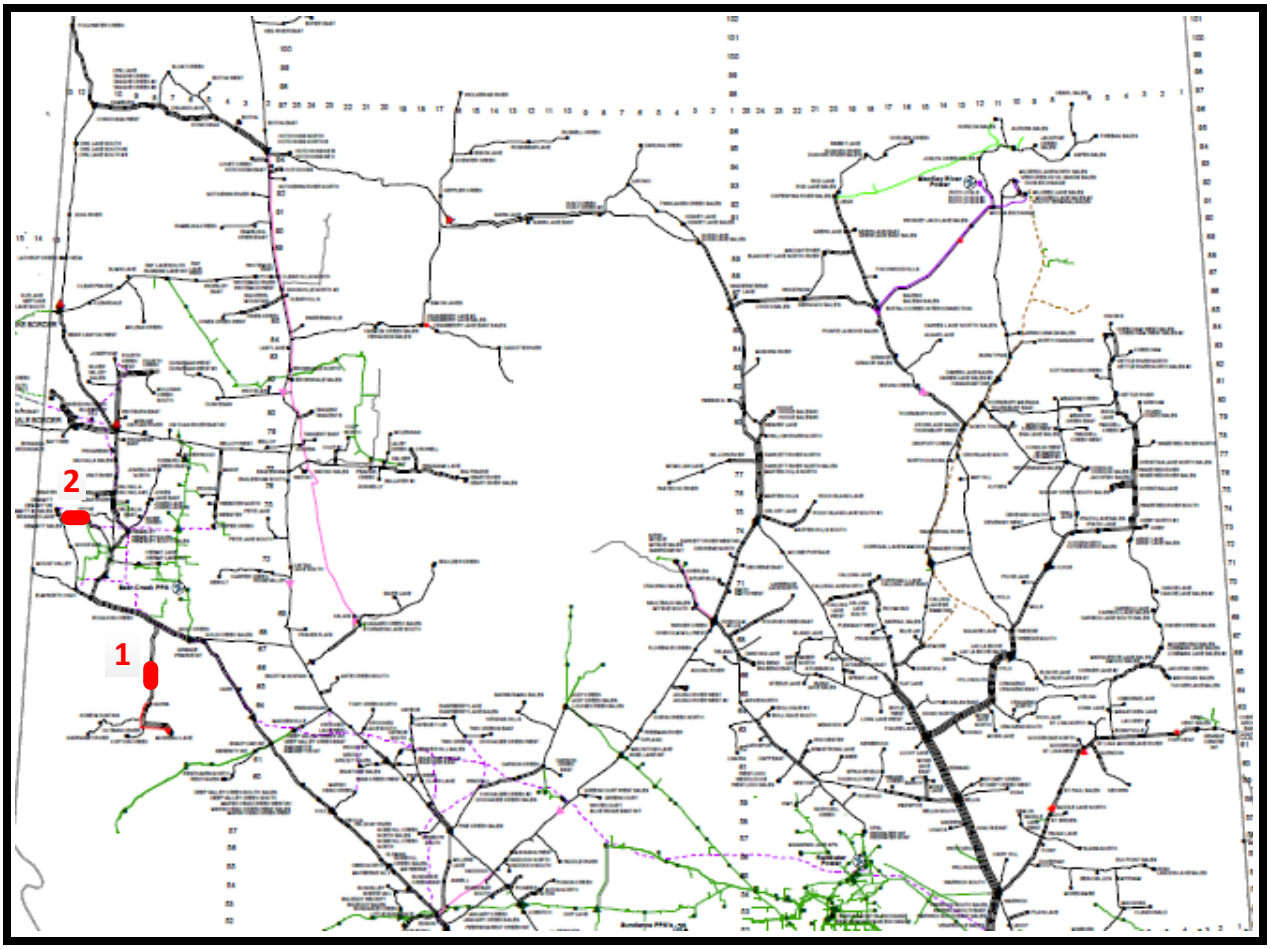


Table 3-1: Proposed Extensions, Lateral Loops and Meter Stations

Map Location	Proposed Facilities	Description	Target In-Service Date	Forecast Cost ($Millions)
1	Cutbank River Lateral Loop No. 2 (Red Rock Section)	18 km NPS 24	Apr 2018	65
2	Hythe Lateral Loop No. 2	13 km NPS 20	Nov 2017	41
			TOTAL	**106**

3.2 FACILITY DESCRIPTION

Cutbank River Lateral Loop No. 2 (Red Rock Section)

The 18 km NPS 24 loop of the NPS 20 Cutbank Lateral and NPS 24 Cutbank Lateral Loop (Red Rock Section) is required to accommodate incremental receipt contracts as a result of gas development in the Musreau Lake area.

The target in-service date for the facilities is April 1, 2018. The facility application is scheduled to be filed with the NEB in Q4 2016.

Hythe Lateral Loop No. 2

The 13 km NPS 20 loop of the NPS 6 Hythe Lateral and NPS 16 Hythe Lateral Loop is required to accommodate incremental receipt contracts as a result of gas development in the Demmitt area.

The target in-service date for the facilities is November 1, 2017. The facility application is scheduled to be filed with the NEB in Q3 2016.

Planned Meter Stations

Meter station projects are identified and planned to meet customer requests for service on an ongoing basis throughout the year. As new meter station projects are identified the TTFP will be informed and the new meter station projects will be included in the *2016 Facility Status Update*, which can be accessed at http://www.transcanada.com/customerexpress/871.html.

Appendix 1: Glossary of Terms

The following definitions are provided to help the reader understand the Annual Plan. The definitions are not intended to be precise or exhaustive and have been simplified for ease of reference. These definitions should not be relied on to interpret NGTL's Gas Transportation Tariff or any Service Agreement. Capitalized terms not defined here are defined in NGTL's Gas Transportation Tariff.

Allowance for Funds Used During Construction (AFUDC)

The capitalization of financing costs incurred during construction of new facilities before the facilities are included in rate base.

Annual Plan

A document outlining NGTL's planned facility additions and major modifications.

Average Annual Delivery

The average day delivery determined for the period of one Gas Year. All forecast years are assumed to have 365 days.

Average Day Delivery

The average day delivery over a given period, determined by summing the total volumes delivered divided by the number of days in that period. It is determined for either a Delivery Point or an aggregation of Delivery Points.

Average Field Price

Average estimated price of natural gas (post processing) before receipt into the NGTL System. The Average Field Price is equivalent to the Alberta Reference Price (ARP).

Average Receipt Forecast

The forecast of average flows expected to be received onto the NGTL System at each receipt point.

Coincidental

Occurring at the same time.

Delivery Meter Station

A facility that measures gas volumes leaving the NGTL System.

Delivery Point

The point where gas might be delivered to customer by company under a Schedule of Service, which shall include but not be limited to Group 1 Delivery Point, Group 2 Delivery Point, Group 3 Delivery Point, Extraction Delivery Point and Storage Delivery Point.

Delivery Design Area

The NGTL System is divided into five delivery design areas used to facilitate delivery service within or between Delivery Design Areas:

- Northwest Alberta and Northeast BC Delivery Area
- Northeast Delivery Area
- Southwest Delivery Area
- Southeast Delivery Area
- Edmonton and Area Delivery Area

Demand Coincidence Factor

A factor applied to adjust the system maximum and minimum day deliveries in a design area to a value more indicative of the expected actual peak day deliveries.

Design Area

The NGTL System is divided into three project areas – Peace River Project Area, North and East Project Area and Mainline Project Area. These project areas are subdivided into design and sub design areas. This subdivision allows the system to be modelled in a way that best reflects the pattern of flows in each area of the system.

Design Capability

The maximum volume of gas that can be transported in a pipeline system considering design assumptions. Usually presented as a percentage of design flow requirements.

Design Flows

Forecast of Peak Expected Flow required to be transported in a pipeline system considering design assumptions.

Design Forecast

Forecast of the most current projection of receipts and deliveries over a five-year design horizon.

Expansion Facilities

Facilities that will expand the existing NGTL System to/from the point of customer connection, including any pipeline loop of the existing system, metering and associated connection piping and system compression.

Extension Facilities

Facilities that connect new or incremental supply or markets to the NGTL System.

Firm Transportation

Service offered to customers to receive gas onto the NGTL System at Receipt Points or deliver gas off the NGTL System at Delivery Points with a high degree of reliability.

Gas Year

A period beginning at 800 hours (08:00) Mountain Standard Time on the first day of November in any year and ending at 800 (08:00) Mountain Standard Time on the first day of November of the next year.

Interruptible Transportation

Service offered to customers to receive gas onto the NGTL System at Receipt Points or deliver gas off the NGTL System at Delivery Points, provided capacity exists in the facilities, that is not required to provide firm transportation.

Lateral

A section of pipe that connects one or more Receipt or Delivery Points to the mainline.

Loop

The paralleling of an existing pipeline by another pipeline.

Mainline

A section of pipe, identified through application of the mainline system design assumptions, necessary to meet the aggregate requirements of all customers.

Maximum Day Delivery

The forecast maximum volume, included in the design, to be delivered to a Delivery Point.

Maximum Operating Pressure

The maximum operating pressure at which a pipeline is operated.

Minimum Day Delivery

The forecast minimum volume, included in the design, to be delivered to a Delivery Point.

NPS

Nominal pipe size, in inches.

Non-coincidental

Non-simultaneous occurrence.

Peak Expected Flow

The peak flow expected to occur at a point or points on the NGTL System. For a design area or subdesign area, this is the coincidental peak of the aggregate flow. For a single receipt point, it is equivalent to field deliverability.

Project Area

For design purposes, the NGTL System is divided into three project areas – Peace River Project Area, North and East Project Area and Mainline Project Area.

Dividing the system this way allows the system to be modelled in a way that best reflects the pattern of flows in each area of the system.

Receipt Meter Station

A facility that measures gas volumes entering the NGTL System.

Receipt Point

The point on the NGTL System at which gas may be received from customer by company under a Schedule of Service.

Storage Facility

Any commercial facility where gas is stored, that is connected to the NGTL System, and that is available to all customers.

Summer Season

The period starting April 1 and ending on October 31 of any calendar year.

System Average Receipts

The forecast of aggregate average receipts at all Receipt Points.

Transportation Design Process

The process that includes qualifying a customer's applications for service, designing additions to the system, sourcing all required facilities and installing facilities to meet firm transportation requests.

Winter Season

The period starting November 1 of any year and ending on March 31 of the following year.

Appendix 2: 2015 Facility Status Update

This section describes the current status of facilities that were applied for, are under construction or have been placed on-stream since the 2014 Annual Plan was issued on December 15, 2014. Periodic updates are being provided based on the level of activity occurring with respect to facilities. Facilities with (AP) after the project name refer to facilities in the ATCO Pipelines footprint.

Table A2-1: Current Status of Facilities

Applied-for Facilities	Description	Target In-Service Date	Status	TTFP Reference	Forecast Cost [1] ($Millions)	Update Month
2014 Meter Station and Associated Lateral Decommissioning	Beauvallon Botha Caribou Lake Sales Chump Lake Lateral Cottonwood Creek Diamond City Haddock South Keho Lake North Murray Lake North Myrnam Picture Butte Tieland	Q4 2014	Completed Sept. 9, 2015	May 29, 2014 TTFP Notification	3.2	October
2015 Meter Station and Associated Lateral Abandonment	Barich Bigstone East Bigstone East B Clyde North Craigend North Dapp East Devenish South Daysland Hamlin Jones Lake East Killam North Minnow Lake South Sales Niobe Creek Niton North Obed Creek Lateral Pleasant West Ribstone Steele Lake Valhalla East Woking Nosehill Creek Lateral	Q3 2016	Applied-for Oct 19, 2015	August 31, 2015 TTFP Notification	5.8	November

[1] Forecast Cost is the applied for cost or the forecast cost to complete for facilities in-service.

Applied-for Facilities	Description	Target In-Service Date	Status	TTFP Reference	Forecast Cost [1] ($Millions)	Update Month
Aitken Creek Compressor Station	15 MW Bi-directional	April 2019	Certificate Approval June 10, 2015	October 22, 2013 TTFP Meeting	72	June
Alces River B2 Compressor Station Modifications[2]	Bi-directional Flow	November 2015	In-Service Nov.17, 2015	October 22, 2013 TTFP Meeting October 30, 2014 TTFP Meeting	11.4	December (2015)
Alces River Compressor Station Unit Addition[3]	15 MW	April 2017	Applied for Mar. 31, 2015	October 30, 2014 TTFP Meeting February 10, 2015 TTFP Meeting	79	April
Alder Flats South No. 2	2-1610U Ultrasonic Meter	April 2015	In-Service May 21, 2015	August 13, 2014 TTFP Notification	5.1	September
Ansell South Receipt Meter Station	2-1064U Ultrasonic Meter	September 2015	In-Service Sept 25, 2015	February 4, 2015 TTFP Notification	3.3	October
Ante Creek Receipt Meter Station	882 Orifice Meter	November 2015	Application Withdrawn Oct. 1, 2015	March 6, 2015 TTFP Notification	3.0	October
Bear River No. 2 Receipt Meter Station	882 Orifice Meter	July 2015	In-Service July 16, 2015	September 12, 2014 TTFP Notification	2.6	July
Bilbo Receipt Meter Station	882 Orifice Meter	December 2014	In-Service Mar. 7, 2015	April 11, 2014 TTFP Notification	4.1	July
Brazeau Area Facilities Divestiture	2.8 km NPS 8 2.8 km NPS 8 2.9 km NPS 6 0.3km NPS 12 0.3 km NPS 8 Brazeau M/S Brazeau East M/S	July 2015	Completed June 12, 2015	December 16, 2014 TTFP Notification		October
Buffalo Creek Compressor Station Unit Addition	30 MW	November 2018	Proposed	December 7, 2015 TTFP Meeting	139	December (2015)

[2] Alces River B2 and Saddle Hills Compressor Station Modifications were applied for together in a single NEB Section 58 application on February 27, 2015.

[3] NGTL filed the *2017 NGTL System Expansion Project* Section 52 application on March 31, 2015 comprised of the following facilities: Alces River Compressor Station Unit Addition, Grande Prairie Mainline Loop No. 2 (McLeod River Section), Kettle River Lateral Loop (Christina River Section), Liege Lateral Loop No.2 (Pelican Lake Section), Northwest Mainline Loop (Boundary Lake Section), Northwest Mainline Loop No. 2 (Bear Canyon Section) and Otter Lake Compressor Station Unit Addition.

Applied-for Facilities	Description	Target In-Service Date	Status	TTFP Reference	Forecast Cost [1] ($Millions)	Update Month
Burnt River Receipt Meter Replacement	662 Orifice Meter	June 2016	Applied for Oct. 27, 2015	October 5, 2014 TTFP Notification	2.8	November
Calgary UPR – West Connector (AP)	22 km NPS 20/24	June 2016	Proposed	October 30, 2014 TTFP Meeting	74.5	December
Carmon Creek East Sales Meter Station	2-2012U Ultrasonic Meter	September 2016	Approved Sept. 22, 2014	May 30, 2014 TTFP Notification	4.3 (less 0.9 CIAC)	August
Clarkson Valley Compressor Station Decommissioning	1 – 15.2 MW unit	November 2014	Completed Nov. 10, 2014	October 22, 2013 TTFP Meeting September 12, 2014 TTFP Notification	2.8	January
Cutbank River Lateral Loop No. 2 (Kakwa Section) [4]	12 km NPS 24	April 2015	In-Service May 29, 2015	October 22, 2013 TTFP Meeting	24.0	June
Cutbank River Lateral Loop No. 2 (Pinto Creek Section) Musreau Lake North Receipt Meter Station	32 km NPS 24 2-1284U Ultrasonic Meter	April 2016	Under Construction	October 30, 2014 TTFP Meeting	92.0	November
Cutbank River Lateral Loop No.2 (Red Rock Section)	18 km NPS 24	Q2 2018	Proposed	December 7, 2015 TTFP Meeting	65	December (2015)
Cynthia Receipt Meter Station	880-2 Orifice meter	September 2015	In-Service Sept. 19, 2015	January 27, 2015 TTFP Notification	2.1 (less 0.5 CIAC)	September
Decommission Nine NGTL System Meter Stations and Associated Laterals	Caslan Crossfield West Fawcett River Flat Lake North Keho Lake Meyer "A" & Meyer "B" Virginia Hills East Webster North	Q1 2014	Completed Sep. 24, 2014	May 8, 2013 TTFP Notification	2.2	January

[4] Cutbank River Lateral Loop No. 2 (Kakwa Section) and the Musreau Lake Lateral Loop No. 3 were applied for together in a single NEB Section 58 application on May 7, 2014.

Applied-for Facilities	Description	Target In-Service Date	Status	TTFP Reference	Forecast Cost [1] ($Millions)	Update Month
East Calgary B Interconnect Modifications	85 m NPS 20	November 2014	In-Service Feb. 24, 2015	May 27, 2014 TTFP Notification	3.2	July
East Calgary Connector – UPR (AP) [5]	9 km NPS 30	2015	Under Construction	July 12, 2011 TTFP Meeting	65.6	September
Edmonton UPR – NE Connector (AP)	8 km NPS 20	2017	Proposed	October 30, 2014 TTFP Meeting	34.8	January
Elk River Southwest Receipt Meter Station	2-1284U Ultrasonic Meter	July 2015	In-Service Sept. 10, 2015	December 23, 2014 TTFP Notification	4.0 (100% CIAC)	September
Elk River Area Facilities Divestiture	1.0 km NPS 6 1.0 km NPS 6 Elk River South M/S Elk River South Sales M/S	July 2015	Completed Sept 10, 2015	December 23, 2014 TTFP Notification		September
Ferrier South A & B Receipt Meter Station Modifications	20 m NPS 6 Control Valve	December 2015	Proposed	May 7, 2015 TTFP Notification	1.5	May
Flat Lake Loop Decommissioning		Q3 2015	Proposed	October 30, 2014 TTFP Meeting	7	December
Gold Creek South Receipt Meter Station	882 Orifice Meter	April 2016	Approved Oct. 6, 2015	July 13, 2015 TTFP Notification	2.9	October
Goodfish Compressor Station	30 MW	November 2016	Approved Mar. 18, 2015	October 30, 2014 TTFP Meeting	135	April
Grande Prairie Mainline Loop No. 2 (McLeod River Section)	36 km NPS 48	April 2017	Applied for Mar. 31, 2015	October 30, 2014 TTFP Meeting February 10, 2015 TTFP Meeting	207	April
Grey Owl Creek Receipt Meter Station Expansion	660-2 Orifice Meter	March 2016	Applied for Sept. 1, 2015	July 15, 2015 TTFP Notification	2.4	September
Grey Owl Creek North Receipt Meter Station	882 Orifice Meter	September 2015	Approved Apr. 29, 2015	December 16, 2014 TTFP Notification	2.9	May

[5] ATCO Pipelines filed an application with the AUC for the Urban Pipeline Replacement (UPR) project on March 19, 2013. The AUC approved the UPR project in a decision dated January 17, 2014. The proposed segments of the UPR project that have been presented to the TTFP are identified in the table by the inclusion of "UPR" in the facility name.

Applied-for Facilities	Description	Target In-Service Date	Status	TTFP Reference	Forecast Cost [1]($Millions)	Update Month
Groundbirch Compressor Station	2-15 MW units – Bi-directional	April 2017	Certificate Approval June 10, 2015	October 22, 2013 TTFP Meeting	103	June
Hidden Lake North C/S Unit Addition	15 MW	TBD	Proposed	October 30, 2014 TTFP Meeting February 10, 2015 TTFP Meeting	78	February
Hythe Lateral Loop No. 2	13 km NPS 20	Q4 2017	Proposed	December 7, 2015 TTFP Meeting	41	December (2015)
Inland Looping (AP)	19 km NPS 20	November 2016	Proposed	October 22, 2013 TTFP Meeting October 30, 2014 TTFP Meeting	45	December (2015)
James River Interchange Modifications	Bypass of Existing Control Valves	August 2016	Proposed	December 7, 2015 TTFP Meeting	6	December (2015)
Japan Canada No. 2 Sales Meter Station	2-860T Turbine Meter 480 m NPS 6 Pipe 54 m NPS 8 Pipe	December 2015	Approved Jan. 9, 2015	September 5, 2014 TTFP Notification	1.6	January
Kettle River Lateral Loop (Christina River Section)	20 km NPS 24	April 2017	Applied for Mar. 31, 2015	October 30, 2014 TTFP Meeting February 10, 2015 TTFP Meeting	77	April
Leismer Compressor Station Isolation	1 – 1 MW unit	Q1 2016	Proposed	October 30, 2014 TTFP Meeting	3	December
Leismer East Compressor Station	15 MW	April 2016	Under Construction	August 19, 2014 TTFP Meeting	79.0	September
Liege Lateral Loop No.2 (Pelican Lake Section)	56 km NPS 30	April 2017	Applied for Mar. 31, 2015	October 30, 2014 TTFP Meeting February 10, 2015 TTFP Meeting	215	April
Liege Lateral Loop No.2 (Thornbury Section)[6]	36.6 km NPS 30	April 2016	Under Construction	August 19, 2014 TTFP Meeting	139.0	October
Little Sundance Receipt Meter Station Expansion	660-2 Orifice Meter	July 2015	In-Service Oct 30, 2015	January 6, 2015 TTFP Notification	1.7	November

[6] The Liege Lateral Loop No.2 (Thornbury Section) and Leismer East Compressor Station were applied for together in a single NEB Section 58 application on September 19, 2014.

Applied-for Facilities	Description	Target In-Service Date	Status	TTFP Reference	Forecast Cost [1]($Millions)	Update Month
Livingstone Creek Receipt Meter Station	2-1064U Ultrasonic Meter	August 2015	In-service Aug. 7, 2015	October 23, 2014 TTFP Notification	3.5	August
Livingstone Creek No. 2 Receipt Meter Station	2-1064U Ultrasonic Meter	September 2015	Approved Feb. 26, 2015	October 23, 2014 TTFP Notification	3.5	March
Lodgepole Compressor Station Unit Addition	5 MW	November 2016	Proposed	December 7, 2015 TTFP Meeting	62	December (2015)
MacKay Sales Meter Station	2-860T Turbine Meter	December 2014	In-service Feb. 13, 2015	June 10, 2013 TTFP Notification	2.8	July
Marten Hills Extension Decommissioning	40 km NPS 20	Q3 2015	Proposed	October 22, 2013 TTFP Meeting October 30, 2014 TTFP Meeting	3.0	December
McDermott Extension Calumet River Sales & Calumet River No. 2 Sales Meter Stations	8 km NPS 20 2-1280U LVS-2	April 2016	Under Construction	October 30, 2014 TTFP Meeting	43.7	October
Medicine Hat Area Capacity Expansion Foothills Control Valve at Empress	EASML NPS 48 Loop #4 Modifications Tie-in / Control Valve / 2-1610 Ultrasonic Meter	October 2015	In-Service Oct. 28, 2015	October 22, 2013 TTFP Meeting	15.5	November
Medicine Hat Compressor Station	3.5 MW	Q1 2017	Applied for Oct. 30, 2015	September 15, 2015 TTFP Meeting	66.9	November
Meikle River Compressor Station Series Modifications	Modifications to Enable Series Operation	November 2018	Proposed	December 7, 2015 TTFP Meeting	16	December (2015)
Meikle River D Compressor Station	33 MW	November 2016	Approved Mar. 18, 2015	October 30, 2014 TTFP Meeting	136	April
Mitsue Lateral Loop Decommissioning	13 km NPS 10 26 km NPS 8	Q3 2015	Proposed	October 22, 2013 TTFP Meeting October 30, 2014 TTFP Meeting	3.1	December
Minnow Lake West Receipt Meter Station	2-1064U Ultrasonic Meter	September 2015	In-Service Dec 10, 2015	March 10, 2015 TTFP Notification	3.3	December (2015)

Applied-for Facilities	Description	Target In-Service Date	Status	TTFP Reference	Forecast Cost [1] ($Millions)	Update Month
Monarch Interconnect Facility Modifications	Replace control valves and turbine meters with spool pieces; replace 117 m NPS 12 piping	November 2015	In-Service Oct. 27, 2015	March 25, 2014 TTFP Notification February 2, 2015 TTFP Notification	1.0	November
Musreau Lake Lateral Loop No. 3	16 km NPS 24	April 2015	In-Service May 29, 2015	October 22, 2013 TTFP Meeting	31.0	June
North Branch Replacement (AP)	3 km NPS 16	November 2014	In-Service Mar. 1, 2015	October 22, 2013 TTFP Meeting	7.0	May
North Central Corridor Loop (North Star Section 1)	32 km NPS 48	November 2018	Proposed	December 7, 2015 TTFP Meeting	200	December (2015)
North Montney Mainline (Aitken Creek Section) [7]	180.9 km NPS 42	April 2016	Certificate Approval June 10, 2015	October 22, 2013 TTFP Meeting	762	June
North Montney Mainline (Kahta Section)	119 km NPS 42	April 2017	Certificate Approval June 10, 2015	October 22, 2013 TTFP Meeting	530	June

[7] The *North Montney Project* was filed as a Section 52 application on November 8, 2013 comprised of the following facilities: North Montney Mainline (Aitken Creek Section), North Montney Mainline (Kahta Section), Aitken Creek Compressor Station, Saturn Compressor Station, Groundbirch Compressor Station, 13 receipt meter stations, a bi-directional storage meter station (Aitken Creek Interconnect) and a delivery meter station (Mackie Creek Interconnection).

Applied-for Facilities	Description	Target In-Service Date	Status	TTFP Reference	Forecast Cost [1]($Millions)	Update Month
North Montney Mainline Meter Stations Receipt Meter Stations: Kahta Creek Kahta Creek North Buckinghorse River Mason Creek Beatton River Lily Halfway River Blair Creek Blair Creek East Aitken Creek West Aitken Creek East Gundy Kobes Altares Storage Meter Station: Aitken Creek Interconnect Delivery Meter Station: Mackie Creek Interconnection	2-1064U Ultrasonic Meters 2-3020U Ultrasonic Meter 2-3020U Ultrasonic Meter	April 2017 July 2019 April 2017 July 2019 April 2017 April 2017 April 2017 April 2017 April 2017 July 2019 Nov. 2016 April 2016 April 2017 April 2016 April 2016 January 2019	Certificate Approval June 10, 2015	October 22, 2013 TTFP Meeting	66	June
Northeast Calgary Connector – UPR (AP)	17 km NPS 24	2015	Under Construction	2011 Annual Plan	77.8	August
Northwest Mainline Loop No. 2 (Bear Canyon Section)	27 km NPS 36	April 2017	Applied for Mar. 31, 2015	October 30, 2014 TTFP Meeting February 10, 2015 TTFP Meeting	110	April
Northwest Mainline Loop (Boundary Lake Section)	91 km NPS 36	April 2017	Applied for Mar. 31, 2015	October 30, 2014 TTFP Meeting February 10, 2015 TTFP Meeting	384	April
Northwest Mainline Loop (Peace River Crossing)	4 km NPS 36	November 2018	Proposed	December 7, 2015 TTFP Meeting	40	December (2015)
Otter Lake Compressor Station	28 MW	December 2015	Under Construction	October 22, 2013 TTFP Meeting	100	September

Applied-for Facilities	Description	Target In-Service Date	Status	TTFP Reference	Forecast Cost [1]($Millions)	Update Month
Otter Lake Compressor Station Unit Addition	30 MW	April 2017	Applied for Mar. 31, 2015	October 30, 2014 TTFP Meeting February 10, 2015 TTFP Meeting	115	April
Peace River Mainline Decommissioning / Abandonment (Meikle River to Valleyview Section)	266 km NPS 20 2.3 km NPS 4	Q1 2016	Proposed	October 22, 2013 TTFP Meeting October 30, 2014 TTFP Meeting	13.7	August
Peigan Trail Pipeline – UPR (AP)	3 km NPS 16	2016	Proposed	July 10, 2012 TTFP Meeting	15.0	December (2015)
Pembina Expansion – Phase 1 (AP)	8.5 km NPS 24	Q4 2016	Proposed	October 30, 2014 TTFP Meeting	26.4	December (2015)
Pembina Expansion – Phase 2 (AP)	10.8 km NPS 24	Q4 2016	Proposed	October 30, 2014 TTFP Meeting	33.6	December (2015)
Saddle Hills Compressor Station Modifications	Bi-directional Flow	November 2015	In-Service Nov. 4, 2015	October 22, 2013 TTFP Meeting October 30, 2014 TTFP Meeting	10	November
Saturn Compressor Station	15 MW Bi-directional	April 2017	Certificate Approval June 10, 2015	October 22, 2013 TTFP Meeting	70	June
Saturn Compressor Station – Unit 2	15 MW Bi-directional	April 2019	Certificate Approval June 10, 2015	October 22, 2013 TTFP Meeting	63	June
Scotford Area Expansion (AP)	6.9 km NPS 16 2 Meter Stations 1.0 km NPS 10 0.7 km NPS 8	Q3 2015	Under Construction	August 19, 2014 TTFP Meeting	18.6 (less 2.3 CIAC)	July

Applied-for Facilities	Description	Target In-Service Date	Status	TTFP Reference	Forecast Cost [1] ($Millions)	Update Month
Shady Oak North Receipt Meter Station	2-1284U Ultrasonic Meter	March 2016	Approved Oct. 19, 2015	July 6, 2015 TTFP Notification	5.3 (less 2.4 CIAC)	November
Shepard Energy Centre Extension (AP) [8]	15.8 km NPS 20, associated Delivery Station (2-1612T Turbine Meter), 2.4 km NPS 24, and associated system modifications	July 2014 Nov 2014	In-Service May 21, 2014 Associated modifications In-Service April 16, 2015	November 20, 2012 TTFP Meeting	71.8	May
Simonette Lateral Loop Simonette East Receipt Meter Station	22 km NPS 24	April 2016	Approved July 8, 2015	October 30, 2014 TTFP Meeting	84.6	July
Snipe Hills Compressor Station	3.5 MW	November 2015	In-Service Oct. 28, 2015	October 22, 2013 TTFP Meeting May 16, 2014 TTFP Notification	50.4	November
South Kirby Expansion Project	39 km NPS 24	November 2018	Proposed	October 30, 2014 TTFP Meeting February 10, 2015 TTFP Meeting December 7, 2015 TTFP Meeting	137	December (2015)
Southeast Calgary Connector – UPR (AP)	13 km NPS 24	Q2 2015	Under Construction	July 12, 2011 TTFP Meeting	63.0	September
Southwest Edmonton Connector – UPR (AP)	21 km NPS 20	2015	Applied for June 2, 2015	July 10, 2012 TTFP Meeting	76.0	October
Strachan North Receipt Meter Station	660-2 Orifice Meter	December 2015	In-Service Dec 1, 2015	May 14, 2015 TTFP Notification	2.3 (less 0.4 CIAC)	December (2015)

[8] The Shepard Energy Centre Project includes the Shepard Extension (15.8 km NPS 20), Shepard Sales Meter Station (2-1612T), East Calgary B Extension (2.4 km NPS 24) and other associated system modifications. ATCO Pipelines submitted separate AUC facility applications for the Project, one application that included the Shepard Extension and Shepard Sales Meter Station, and a separate AUC facility application for East Calgary B Extension.

Applied-for Facilities	Description	Target In-Service Date	Status	TTFP Reference	Forecast Cost [1]($Millions)	Update Month
Suffield Lateral Loop	27 km NPS 20	November 2016	Cancelled	October 30, 2014 TTFP Meeting September 15, 2015 TTFP Meeting	50	September
Thunder Creek Compressor Station Decommissioning	3.5 MW Compressor Station	March 2015	Completed Mar. 27, 2015	December 6, 2013 TTFP Notification June 23, 2014 TTFP Notification	8.3	August
Towerbirch Expansion Groundbirch Mainline Loop Tower Lake Section Tower Lake Receipt Meter Station Dawson Creek North No. 2 Receipt Meter Station Dawson Creek North Receipt Meter Station	 55 km NPS 36 32 km NPS 30 2-1284U Ultrasonic Meter 2-1284U Ultrasonic Meter 2-1284U Ultrasonic Meter	 November 2017 November 2017 November 2017 April 2018 September 2018	Applied for September 2, 2015	August 18, 2015 TTFP Meeting	470	September
Valhalla North Receipt Meter Station	882 Orifice Meter	April 2016	Approved Oct. 23, 2015	July 15, 2015 TTFP Notification	3.3	November
Vermillion Compressor Station (AP)	2 – 1 MW units	November 2014	In-Service Dec. 19, 2014	October 22, 2013 TTFP Meeting	14.0	January
Wapiti Central Sales Meter Station	NPS 2 Low Volume Sales	December 2015	In-Service Oct. 30, 2015	August 6, 2015 TTFP Notification	1.3	November
Western Alberta Mainline Loop	33 km NPS 42	November 2018	Proposed	December 7, 2015 TTFP Meeting	240	December (2015)
Western Alberta Mainline Loop (Willow Creek Section) Decommissioning			Cancelled	October 30, 2014 TTFP Meeting	N/A	December (2015)
Wildhay River South Receipt Meter Station	2-1284U Ultrasonic Meter	May 2015	In-Service July 25, 2015	September 22, 2014 TTFP Notification	4.2	August

Applied-for Facilities	Description	Target In-Service Date	Status	TTFP Reference	Forecast Cost [1]($Millions)	Update Month
Wolf Lake Compressor Station Demolition – Unit #1	1 – 15 MW unit	Q1 2016	Proposed	October 30, 2014 TTFP Meeting	4	August
Wolf Lake Receipt Meter Station	880-2 Orifice Meter	August 2015	In-Service July 14, 2015	November 19, 2014 TTFP Notification	1.7	July
Wolverine River Lateral Loop (Carmon Creek Section)	61 km NPS 20	April 2017	Certificate Approval June 1, 2015	October 22, 2013 TTFP Meeting February 11, 2014 TTFP Meeting August 18, 2015 TTFP Meeting	144.0	August
Woodenhouse Coolers		February 2016	Under Construction	October 30, 2014 TTFP Meeting	30.1	September
Woodenhouse C/S Unit Addition	30 MW	November 2018	Proposed	October 30, 2014 TTFP Meeting February 10, 2015 TTFP Meeting December 7, 2015 TTFP Meeting	136	December (2015)
Yellowhead Receipt Meter Station	2-1284U Ultrasonic Meter	July 2015	In-Service Nov. 11, 2015	December 16, 2014 TTFP Notification	4.2 (100% CIAC)	November

Appendix 3: System Map

The System Map, including the 2015 Annual Plan facilities, is expected to be available in March 2016 and can be accessed at **http://www.transcanada.com/customerexpress/5525.html**.