TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

EXECUTIVE SUMMARY

The 2020 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 2020/21 Gas Year. The 2020 Annual Plan describes NGTL's long-term outlook for receipts, deliveries, peak expected flows, proposed facilities, and design flow requirements supporting these proposed facilities. This 2020 Annual Plan is based on NGTL's June 2020 Design Forecast of receipts and deliveries.

Since the release of the 2019 Annual Plan, NGTL has identified a number of facility projects. NGTL's Tolls, Tariff, Facilities 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 and the *Guidelines for New Facilities* document. NGTL files facility applications with the Canada Energy Regulator (CER) 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 facility identified in this Annual Plan was presented to the TTFP Committee on December 7, 2020. New facilities proposed after issuance of this Annual Plan will be shown in the *2021 Facility Status Update (NGTL 2021 Update)*, which can be accessed at http://www.tccustomerexpress.com/871.html.

Table E-1 lists the one project identified in the 2020 Annual Plan.

Table E-1: Proposed Facility Addition

Project Area	Proposed Facilities	Annual Plan Reference	Description	Target In-Service Date	Regulator	Capital Cost ($ Millions)
Aggregate System Facilities						
Peace River	Hidden Lake & Hidden Lake North Compressor Station Coolers	Section 2	Coolers	Apr-23	CER	45
					Total	**45**

The Hidden Lake & Hidden Lake North Compressor Station Coolers are required to transport supply to existing and growing markets in northeast Alberta (North of Bens Lake Area) which are predominantly deliveries related to oilsands production.

This 2020 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 2021)
- Appendix 4: Unit Transportation Costs

Electronic versions of the Annual Plan, the *Facilities Design Methodology* document, and the *Guidelines for New Facilities* document can be accessed at http://www.tccustomerexpress.com/871.html.

Customers and other interested parties are encouraged to communicate their suggestions, comments and questions to NGTL regarding the 2020 Annual Plan to:

- Colin Cooper, Supervisor, Mainline Planning West (403) 920-5304
- Darryn Rouillard, Manager, Mainline Planning (403) 920-6341
- Murray Ferraton, Manager, Customer Solutions (403) 920-5323
- Joe Zhou, Director, Capacity Management (403) 920-7227
- Karen Hill, Manager, Receipt and Delivery Forecasting (403) 920-5622
- Neall Banner, Director, Strategy and Fundamentals (403) 920-7907

1.0 DESIGN FORECAST

1.1 INTRODUCTION

This Annual Plan is based on the June 2020 Design Forecast of receipts and deliveries for the NGTL System. An overview of the June 2020 Design Forecast was presented at the December 7, 2020 TTFP meeting.

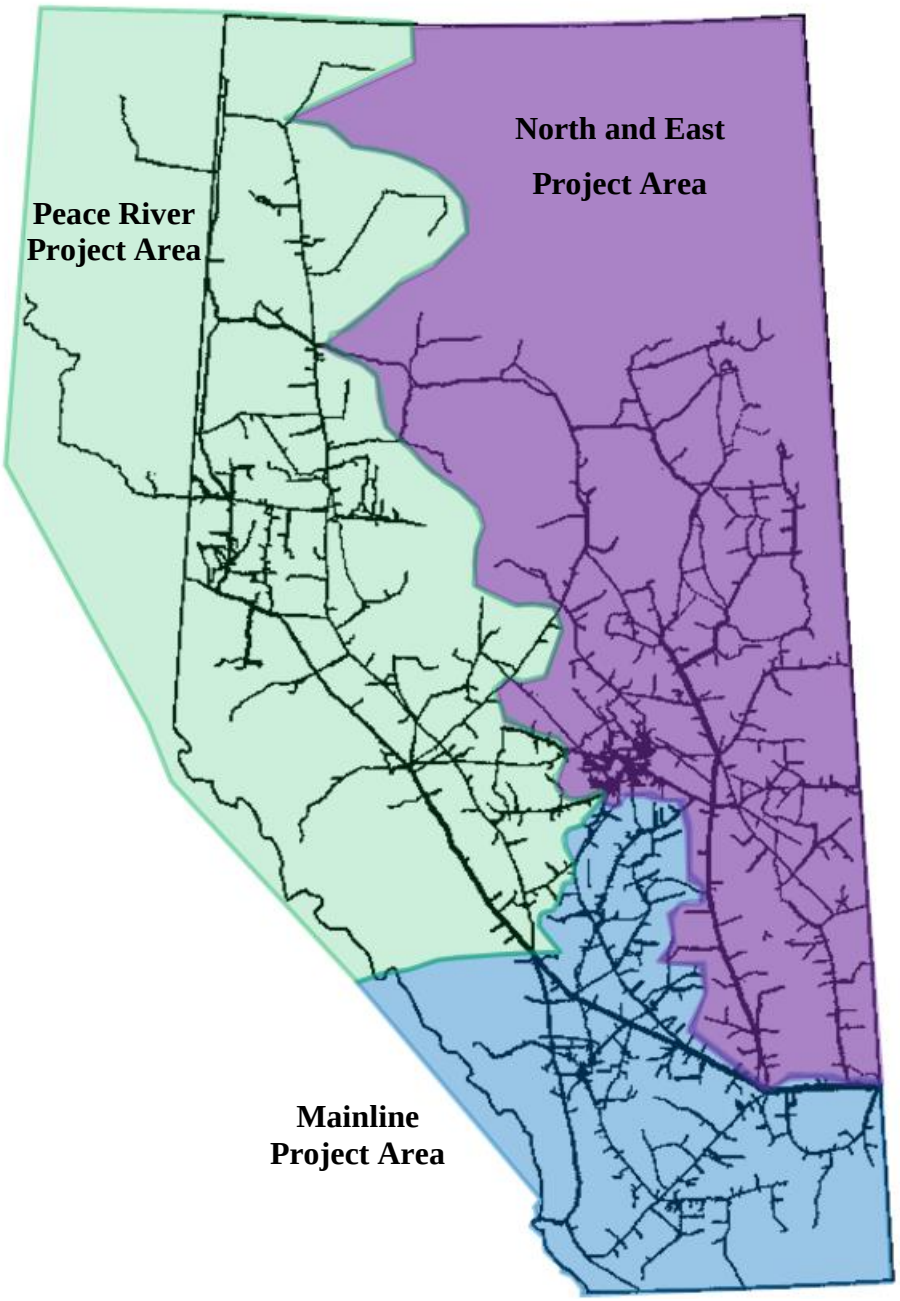
This section describes:

- economic assumptions used in developing the 2020 Design Forecast
- receipt and delivery forecasts for the NGTL System
- supply contribution, including winter withdrawal from storage facilities, used in the design process

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

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

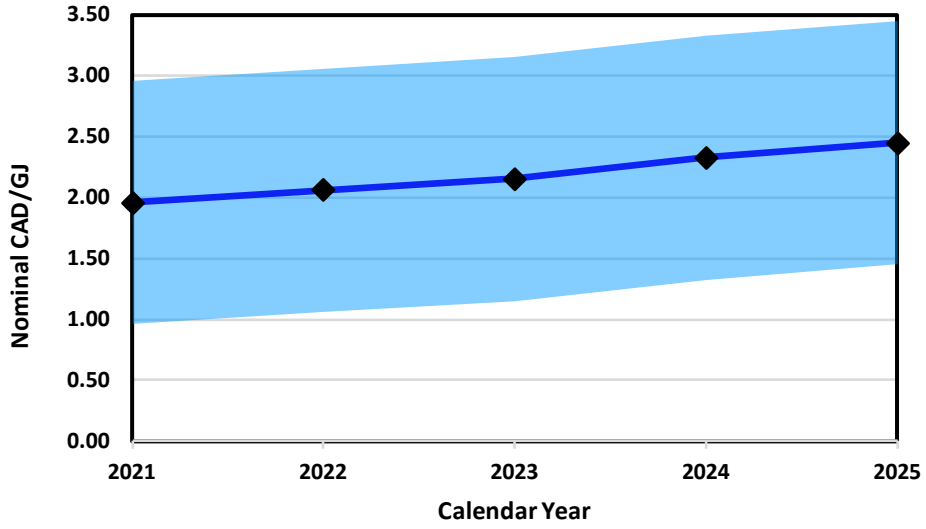
The following assumptions, developed in early 2020, reflect broader trends in the North American economy and energy markets, and underlie the forecast of receipts and deliveries:

- Over the next several years, North American natural gas demand will increase, led by oilsands developments, electrical generation, industrial sectors, as well as LNG (Liquified Natural Gas) exports.
- In the US, industrial growth is broadly based, while the oil sands and electrical generation lead the growth in Western Canada.
- Several policy drivers at the provincial and federal level, are supporting continued progress in coal-to-gas conversion of electricity generation.
- LNG export projects are being developed in both the U.S. and Canada. Those in the US started exporting in 2016 and will continue to grow. Canada LNG exports are expected to begin in 2024 with LNG Canada.
- Associated gas supplies from oil plays and liquids rich gas plays are exerting downward influence on North American natural gas prices, and NIT continues to price below Henry Hub as traditional markets for Western Canadian supplies are challenged by short-term availability of oil pipeline egress capacity and gas from competing basins.
- New natural gas supply must continually be developed to maintain and/or grow the supply in the basin due to the natural declines of existing supply.
- NIT/AECO prices are expected to grow to the range of $1.50 - $3.50 Cdn/GJ by 2025.
- The average annual outlooks of receipts, deliveries, and NGTL System throughput volumes reported in this section are understood to be within a range of outcomes due to factors such as changing market conditions and the pace of WCSB supply development.

1.2.2 Average Natural Gas Price Forecast

TC Energy considers commodity pricing to determine the economic viability of future natural gas production. The 2020 natural gas price forecast range developed by TC Energy is shown in Figure 1-2.

Figure 1-2: Average Nominal NIT Price



1.3 GAS DELIVERY FORECAST

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.

Deliveries to intra markets on the NGTL System are forecast to rise, primarily due to demand in the oil sands sector and gas-fired electrical generation. The 2024-2025 range of the Forecast is heavily influenced by the anticipated 3 new oil pipelines coming online and the pace of fill of those lines. Because of this, there could be a range of outcomes in the North and East Project areas as seen in Figure 1-3 and Figure 1-4. The impact on design stemming from this range is discussed in Section 2.3.

Figure 1-3: System Intra Deliveries by Project Area

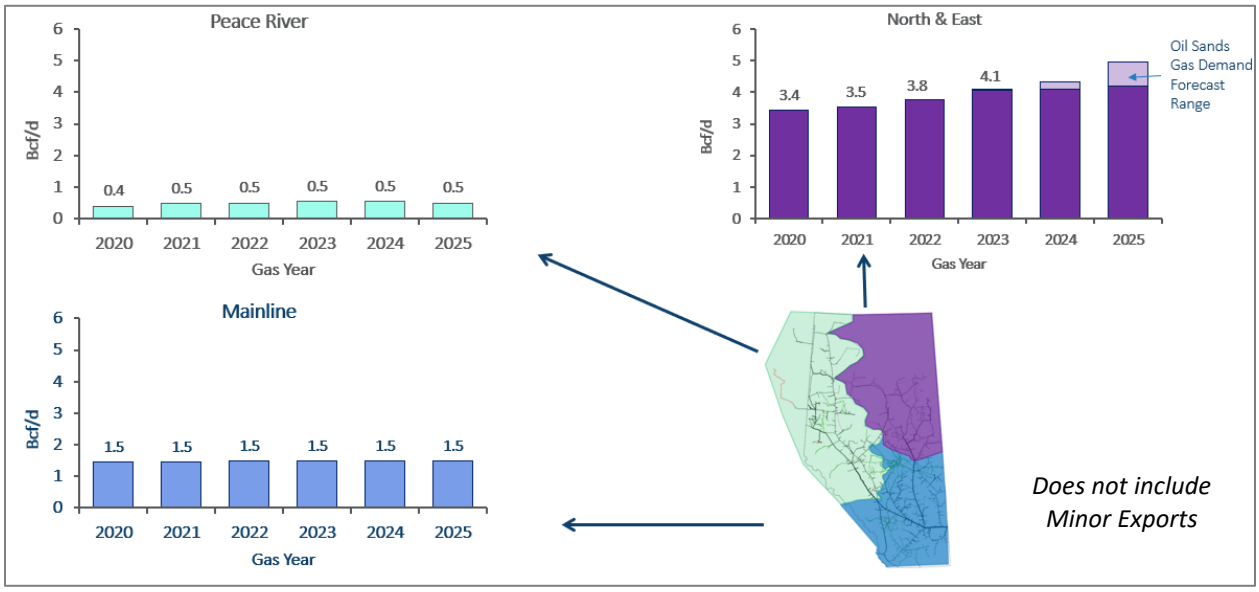
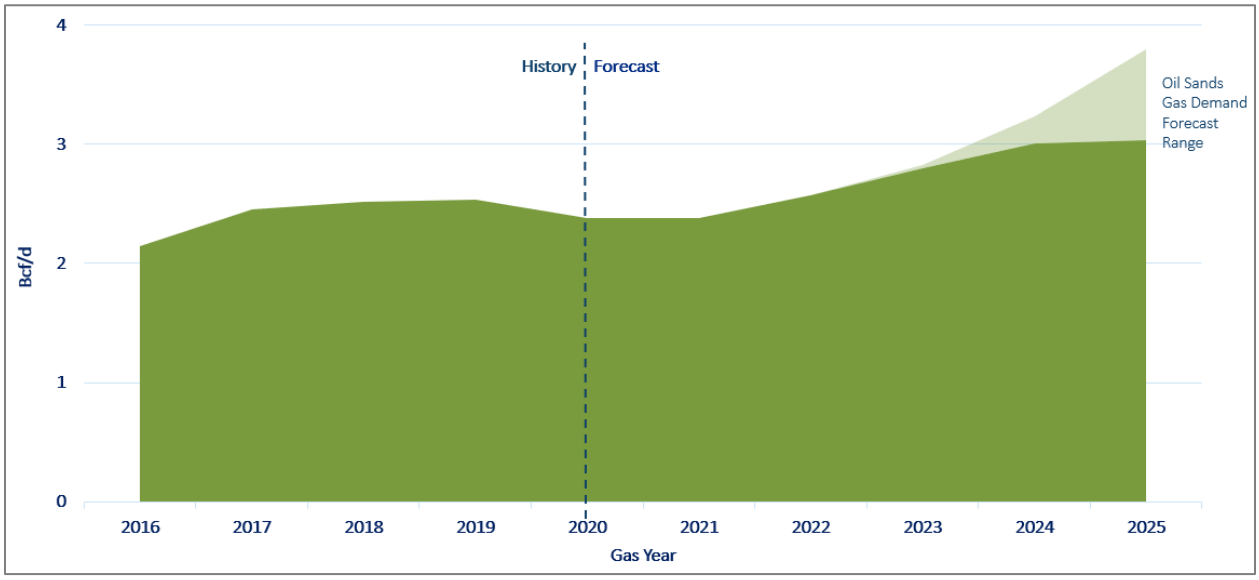


Figure 1-4: Oilsands Forecast Range



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 of deliveries for the NGTL System. The Average Annual Delivery Forecast, for Gas Years 2021 through 2025 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 2020 Design Forecast ($10^6m^3/d$)				
	Gas Year 2021	**2022**	**2023**	**2024**	**2025**
Export	188.0	197.5	202.5	225.4	268.8
Intra System	165.9	174.2	183.9	184.1 – 189.7	186.9 – 209.5
Total System	353.9	371.7	386.5	409.5 – 415.1	455.7 – 478.3
Delivery Type	**June 2020 Design Forecast (Bcf/d)**				
	Gas Year 2021	**2022**	**2023**	**2024**	**2025**
Export	6.6	7.0	7.1	8.0	9.5
Intra System	5.9	6.1	6.5	6.5 – 6.7	6.6 – 7.4
Total System	12.5	13.1	13.6	14.5 – 14.7	16.1 – 16.9

Fuel and Minor Exports are included

Note**:** Totals for Receipt & Delivery may not align due to rounding.

Volumes expressed as an average daily flow for each gas year, at 101.325 kPa and 15°C.

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

Project Area	June 2020 Design Forecast ($10^6m^3/d$)				
	Gas Year 2021	**2022**	**2023**	**2024**	**2025**
Peace River	13.5	14.1	15.1	15.2	13.9
North and East	104.4	111.3	119.7	124.6 – 130.3	127.4 – 147.2
Mainline	43.7	44.3	44.5	44.4	44.4
Total	161.7	169.7	179.3	184.2 – 189.9	185.7 – 205.5
Project Area	**June 2020 Design Forecast (Bcf/d)**				
	Gas Year 2021	**2022**	**2023**	**2024**	**2025**
Peace River	0.5	0.5	0.5	0.5	0.5
North and East	3.7	3.9	4.2	4.4 – 4.6	4.5 – 5.2
Mainline	1.5	1.6	1.6	1.6	1.6
Total	5.7	6.0	6.3	6.5 – 6.7	6.6 – 7.3

Fuel and Minor Exports are included.

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 2020 Design Forecast winter and summer Maximum Day Delivery by Project Area for Intra System Deliveries is provided in Table 1-3 for winter and Table 1-4 for summer.

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

Project Area	June 2020 Design Forecast ($10^6m^3/d$)				
	Gas Year 2021	**2022**	**2023**	**2024**	**2025**
Peace River	24.7	33.9	36.6	43.9	57.2
North and East	173.9	189.2	200.4	203.9 – 209.5	218.0 – 240.7
Mainline	120.5	118.8	113.4	111.0	111.1
Total	319.1	341.9	350.4	358.8 – 364.4	386.3 – 409.0
Project Area	**June 2020 Design Forecast (Bcf/d)**				
	Gas Year 2021	**2022**	**2023**	**2024**	**2025**
Peace River	0.9	1.2	1.3	1.5	2.0
North and East	6.1	6.7	7.1	7.2 – 7.4	7.7 – 8.5
Mainline	4.3	4.2	4.0	3.9	3.9
Total	11.3	12.1	12.4	12.6 – 12.8	13.6 – 14.4
Excludes LNG					

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

Project Area	June 2020 Design Forecast ($10^6m^3/d$)				
	Gas Year 2021	**2022**	**2023**	**2024**	**2025**
Peace River	27.8	33.6	33.6	31.7	24.4
North and East	155.5	167.3	177.9	181.2 – 186.9	206.7 – 229.4
Mainline	122.2	122.3	122.6	122.8	123.2
Total	305.5	323.2	334.1	335.7 – 341.4	354.3 – 377.0
Project Area	**June 2020 Design Forecast (Bcf/d)**				
	Gas Year 2021	**2022**	**2023**	**2024**	**2025**
Peace River	1.0	1.2	1.2	1.1	0.9
North and East	5.5	5.9	6.3	6.4 - 6.6	7.3 – 8.1
Mainline	4.3	4.3	4.3	4.3	4.3
Total	10.8	11.4	11.8	11.8 – 12.0	12.5 – 13.3
Excludes LNG					

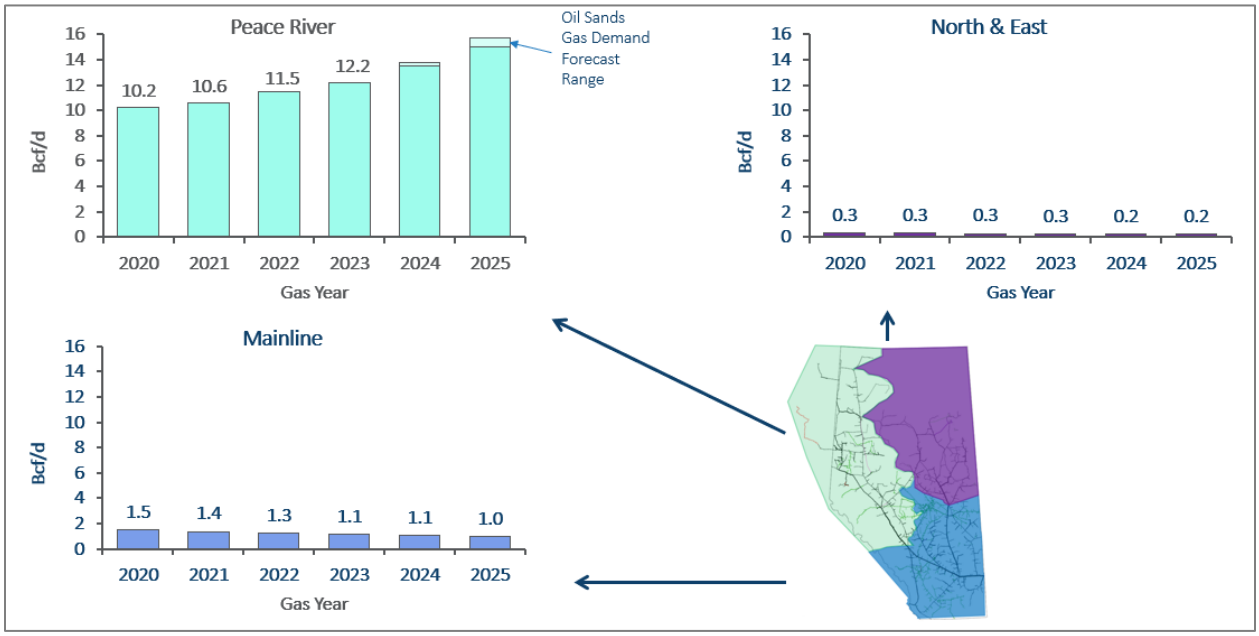
1.4 RECEIPT FORECAST

NGTL develops a Receipt Forecast on an average annual basis using information collected from several sources, including upstream information from customers, historical flows, industry publications and government agencies.

- NGTL uses well based forecasting methods and models to generate forecasts of future production. Factors such as gas price, liquids content in the gas, economics, total number of drilling locations available, well production profiles, pace of development, material and equipment availability, potential capital requirements, and access constraints are considered when developing a forecast of supply.
- For conventional production, there has been little to no activity in the last few years. NGTL anticipates that conventional supply will continue to decline. This production decline will be noticed mostly in the north east and east parts of the basin, which are areas outside of the Peace River Project Area.
- The decline rate of legacy gas and the more recent supply from shale and tight sandstone reservoirs varies across the basin and from year to year. Typically, the basin declines about 20% (18% to 22%) per year if left unsupported, without new wells.

Exploration activity focused on shale and tight sandstone reservoirs has resulted in increasing Montney and Deep Basin gas volumes entering the NGTL System, primarily through the Peace River Project Area. The incremental shale gas and tight sandstone gas supply is expected to more than offset existing basin production declines and will gradually increase system supply to nearly 16.5 Bcf/d in 2025. However, it should be noted that there is also associated uncertainty with Receipts as illustrated in Figure 1-5. For the purposes of this section of Annual Plan, a mid-point forecast is presented in the subsequent tables.

Figure 1-5: System Receipts by Project Area



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 aggregate receipts forecast for the NGTL System for the 2021 through 2025 gas years. A summary of System Average Receipts by Project Area is expressed as an average daily flow and shown in Table 1-5.

Table 1-5: System Average Receipts

Project Area	June 2020 Design Forecast ($10^6m^3/d$)				
	Gas Year 2021	**2022**	**2023**	**2024**	**2025**
Peace River	300.9	324.8	345.6	373.8 – 379.4	419.1 – 441.7
North and East	8.7	7.9	7.3	6.8	6.4
Mainline	38.9	35.5	32.6	30.1	28.0
Total	348.5	368.2	385.4	410.7 – 416.3	453.5 – 476.1
Project Area	**June 2020 Design Forecast (Bcf/d)**				
	Gas Year 2021	**2022**	**2023**	**2024**	**2025**
Peace River	10.6	11.5	12.2	13.2 – 13.4	14.8 – 15.6
North and East	0.3	0.3	0.3	0.2	0.2
Mainline	1.4	1.3	1.1	1.1	1.0
Total	12.3	13.0	13.6	14.5 – 14.7	16.0 - 16.8

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 1-6, while System receipts by Project Area are shown in Figure 1-7.

Figure 1-6: System Deliveries by Destination

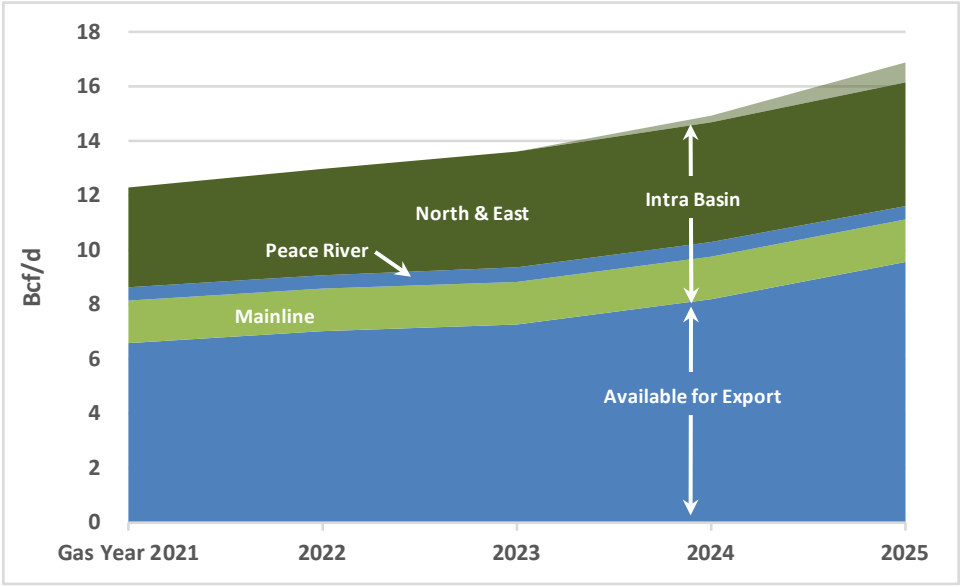
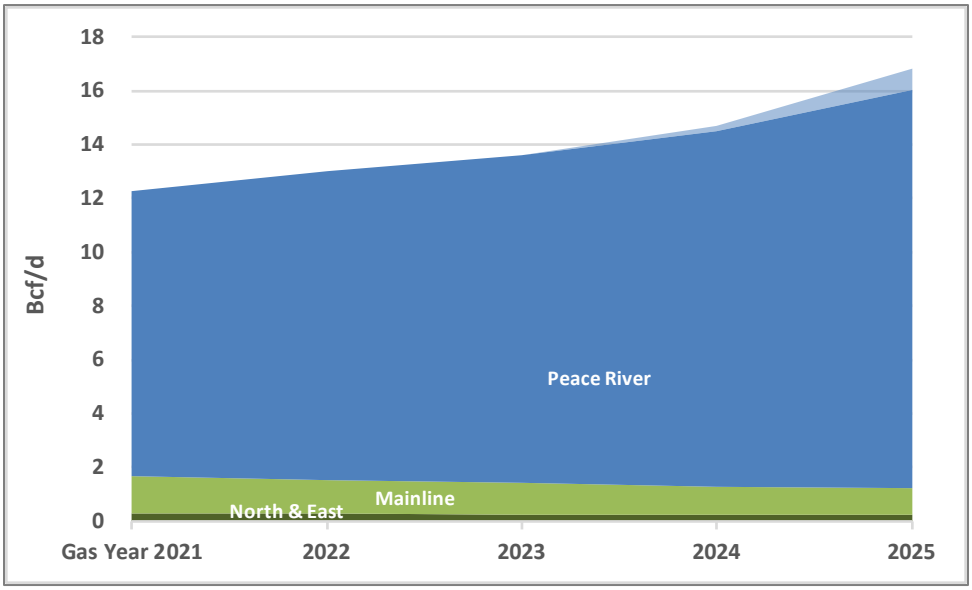


Figure 1-7: System Receipts by Project Area



The average annual outlooks of receipts, deliveries, and NGTL System throughput volumes reported in this section are understood to be within a range of outcomes due to factors such as changing market conditions and the pace of WCSB supply development.

1.6 STORAGE FACILITIES

1.6.1 Commercial Storage

There are eight commercial storage facilities connected to the NGTL System (AECO 'C', Big Eddy, Carbon, Chancellor, Crossfield East #2, January Creek, 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	
	$10^6m^3/d$	Bcf/d
AECO C	45.2	1.6
Big Eddy	41.0	1.4
Carbon	12.2	0.4
Chancellor	35.8	1.3
Crossfield East 2	16.4	0.6
January Creek	19.3	0.7
Severn Creek	11.6	0.4
Warwick Southeast	9.6	0.3
Total	**191.1**	**6.7**

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 the North of Bens Lake Area of the NGTL System. Similar to commercial storage facilities, the total deliverability from the peak shaving storage facility is significant, and the actual maximum day receipt from this storage also 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 supply contribution from the peak shaving storage facility 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. The maximum withdrawal rate and the maximum working inventory of the storage facility are used as the upper limits for the supply contribution provided.

2.0 DESIGN FLOWS AND MAINLINE FACILITIES

2.1 INTRODUCTION

This section contains the proposed natural gas transportation mainline facilities that may be applied for on the NGTL System in the 2020/21 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 2020 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.tccustomerexpress.com/871.html.

This section includes a comparison of historical flows to the design flows. Additionally, the expected 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 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.

This Annual Plan is proposing one new facility to serve North of Bens Lake Area demands. Unique to this Annual Plan, is a section presenting the uncertainties surrounding other potential future facilities, additional to the proposed facility. There is a high level of uncertainty with system flow requirements in the 2024-2025 portion of the design horizon. To provide a view of this uncertainty, a range of potential design flows for key areas are presented. Further clarity on these uncertain flow requirements and their implications will be obtained in 2021 through customer engagement and the continued analysis of market dynamics. Depending on the results of these activities, additional facilities may or may not be proposed throughout 2021.

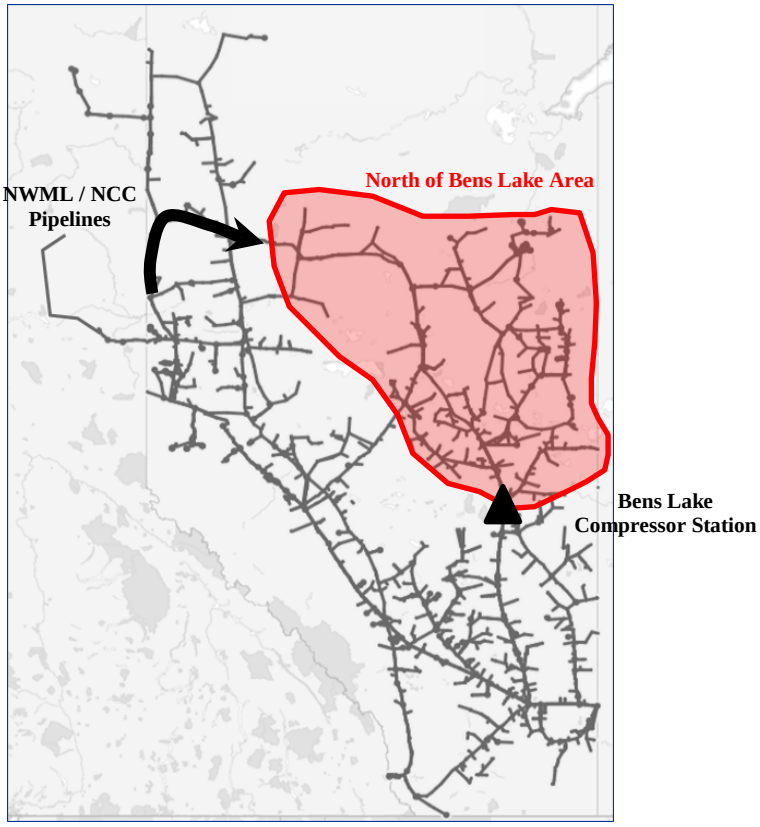
An overview of the design flows and proposed facility resulting from the June 2020 design forecast was presented to the TTFP on December 7, 2020.

For a summary of the status of mainline facilities that have been proposed, applied for, under construction or placed in-service since the December 2019 Annual Plan, see *Appendix 2: Facility Status Update*.

2.2 FACILITY FOR NORTH OF BENS LAKE AREA DELIVERIES

A proposed facility is required to meet delivery requirements in the North of Bens Lake Area. Deliveries in this area, shown in Figure 2-1, are predominantly for oilsands production, but also consists of some other industrial, residential/commercial, and intra-provincial deliveries. The supply required to meet North of Bens Lake Area demands, is primarily transported through the Northwest Mainline (NWML) and North Central Corridor (NCC) pipelines.

Figure 2-1: North of Bens Lake Area

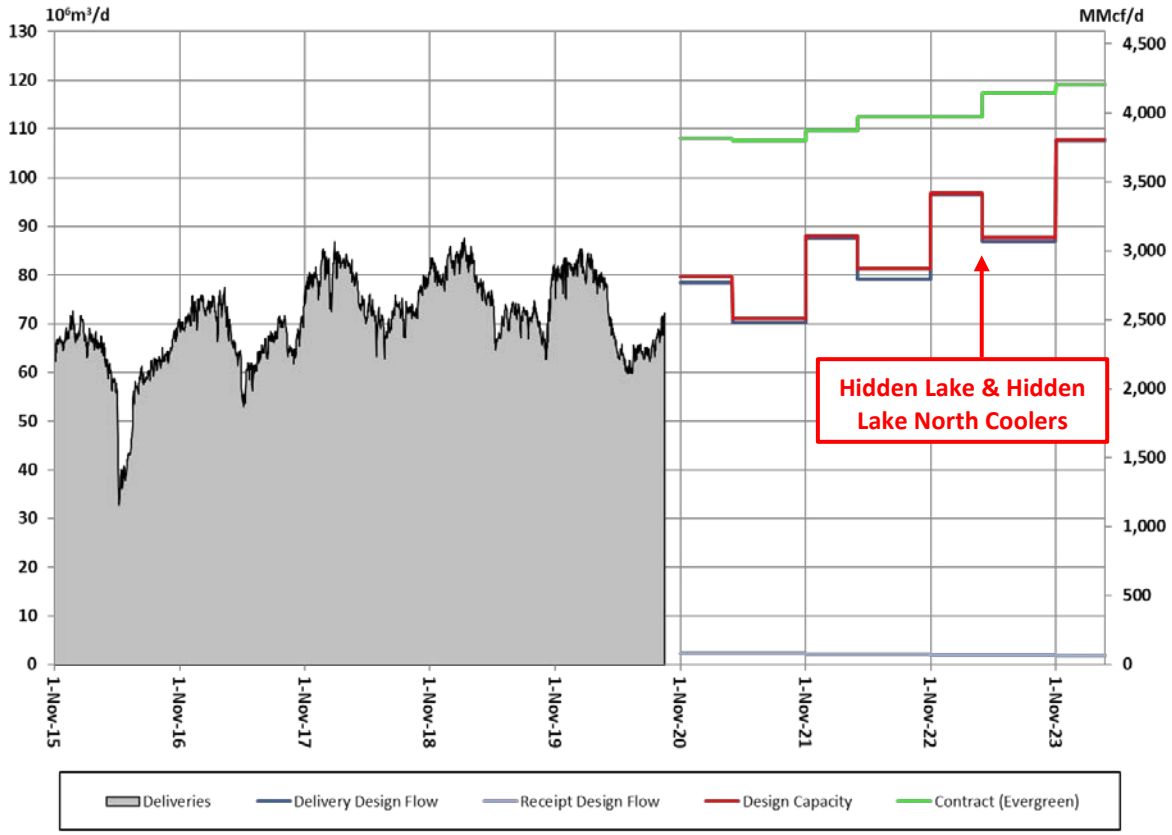


2.2.1 Design Capability – North of Bens Lake Area

The prevailing design condition for the North of Bens Lake Area is the Total System Flow-Within Condition: When total system deliveries, including those in the North of Bens Lake Area, are at their maximum. The design capability for North of Bens Lake Area represents the capability to meet deliveries in that area when all other system deliveries are also at their maximum and utilizing major portions of system capability.

Figure 2-2 shows historical flows, design flows, contract levels and design capability in the North of Bens Lake Area. Delivery design flow rises throughout this forecast period, attributable to increasing oilsands, other industrial, residential/commercial, and intra-provincial deliveries. The proposed facility is highlighted red in Figure 2-2 to provide a correlation to the increase in design capability and indicate its requirement.

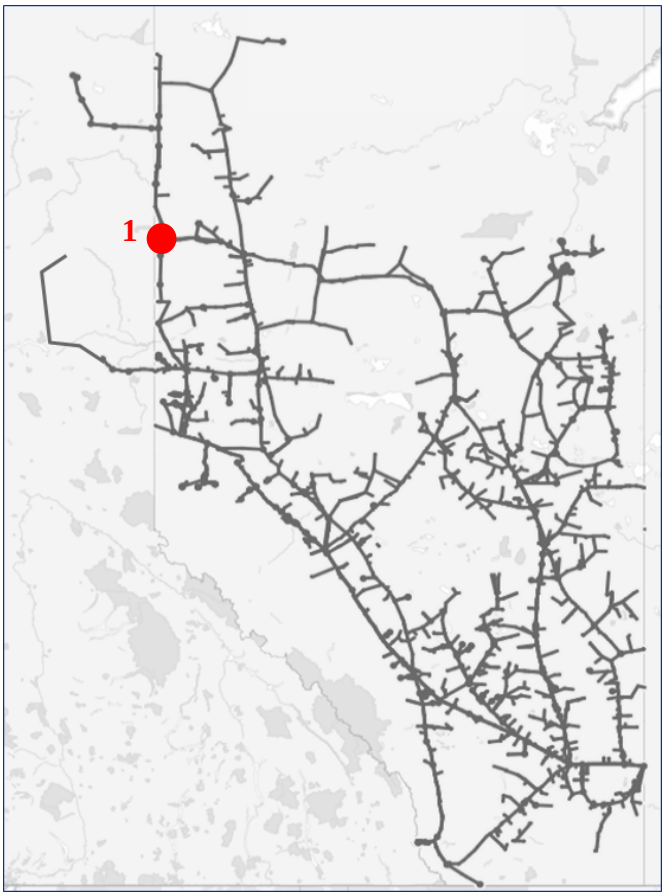
Figure 2-2: North of Bens Area Lake Design Chart



2.2.2 Proposed Facilities for North of Bens Lake Area

Figure 2-3 shows the location of the proposed facility required for North of Bens Lake Area demand. The proposed cooler additions will allow the compressor units at Hidden Lake and Hidden Lake North to utilize additional power, enabling more gas to be transported through the NWML and NCC pipelines, increasing the North of Bens Lake Area delivery capability.

Figure 2-3: Proposed Facility for North of Bens Lake Area Demand



The application for the proposed facility is expected to be filed with the CER in gas year 2020/2021 and the facility is proposed to be in-service by April 2023. For details on the proposed facility, see Table 2-1.

Table 2-1: Proposed Facility for North of Bens Lake Area Demand

Map Location	Proposed Facility	Description	Target In-Service Date	Forecast Cost ($Millions)
1	Hidden Lake & Hidden Lake North Compressor Station Coolers	Coolers	Apr 2023	45

2.3 SYSTEM REQUIREMENT RANGES

System flow requirements in the 2024-2025 portion of the design horizon have a high degree of uncertainty due to the influence of major market factors that are still too early in their development to predict with enough confidence to present in this Annual Plan. These major factors include:

- The pace and magnitude of long-term oilsands development
- The pace and magnitude of the long-term electric generation and other intra-system industrial growth
- The pace and degree of supply development in capacity-constrained portions of the system
- Government legislation and its impact on energy development including on those factors listed above

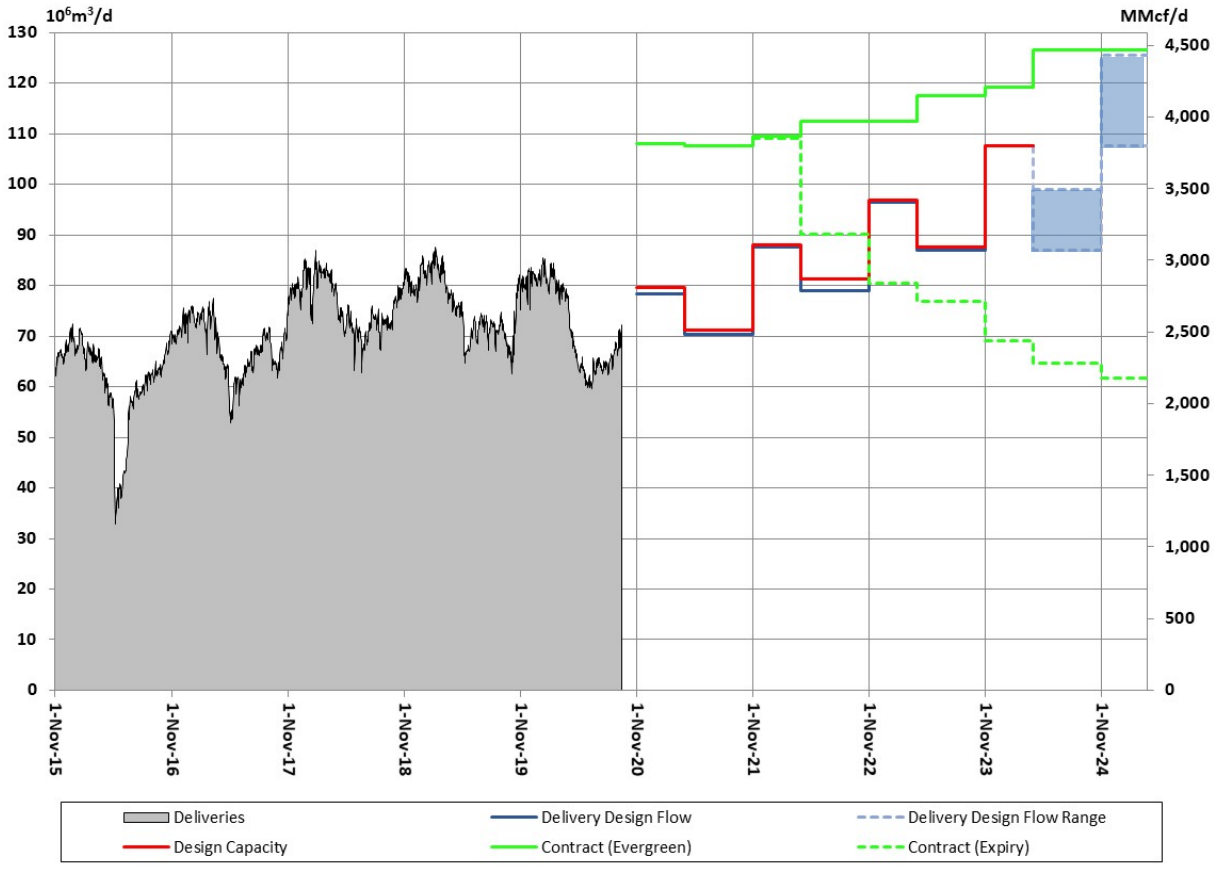
To provide a view of this uncertainty, a range of potential design flows for two key areas are presented: North of Bens Lake Area and Peace River Project Area. The 2024-2025 design flows for these areas are too uncertain to associate with proposed facilities and associated costs. For reference, designing for the upper limits of these ranges could result in up to $3 billion of additional proposed facilities.

2.3.1 Design Flows – North of Bens Lake Area

As described in Section 2.2, North of Bens Lake Area deliveries are forecasted to increase through to the 2024 gas year, thereby requiring the proposed facility. The uncertainty beyond 2024, in the 2024-2025 timeframe, is presented in Figure 2-4 below.

Figure 2-4 shows historical flows, design flows, contract levels and design capability in the North of Bens Lake Area, including design flow ranges starting in the 2024 gas year. The delivery design flow range in 2024-2025 is primarily dependant on the level of oilsands development. As can be seen in Figure 2-4, the evergreen contract profile provides commercial underpinning for all currently proposed facilities as well as any additional facilities that would be proposed to meet the upper limits of the design flow range. The current expiry contract profile is included in Figure 2-4 to highlight that commercial underpinning has the potential to change and could be at levels that underpin the minimal additional facilities required to meet the lower limits of the design flow range.

Figure 2-4: North of Bens Lake Area Design Chart (to 2025)

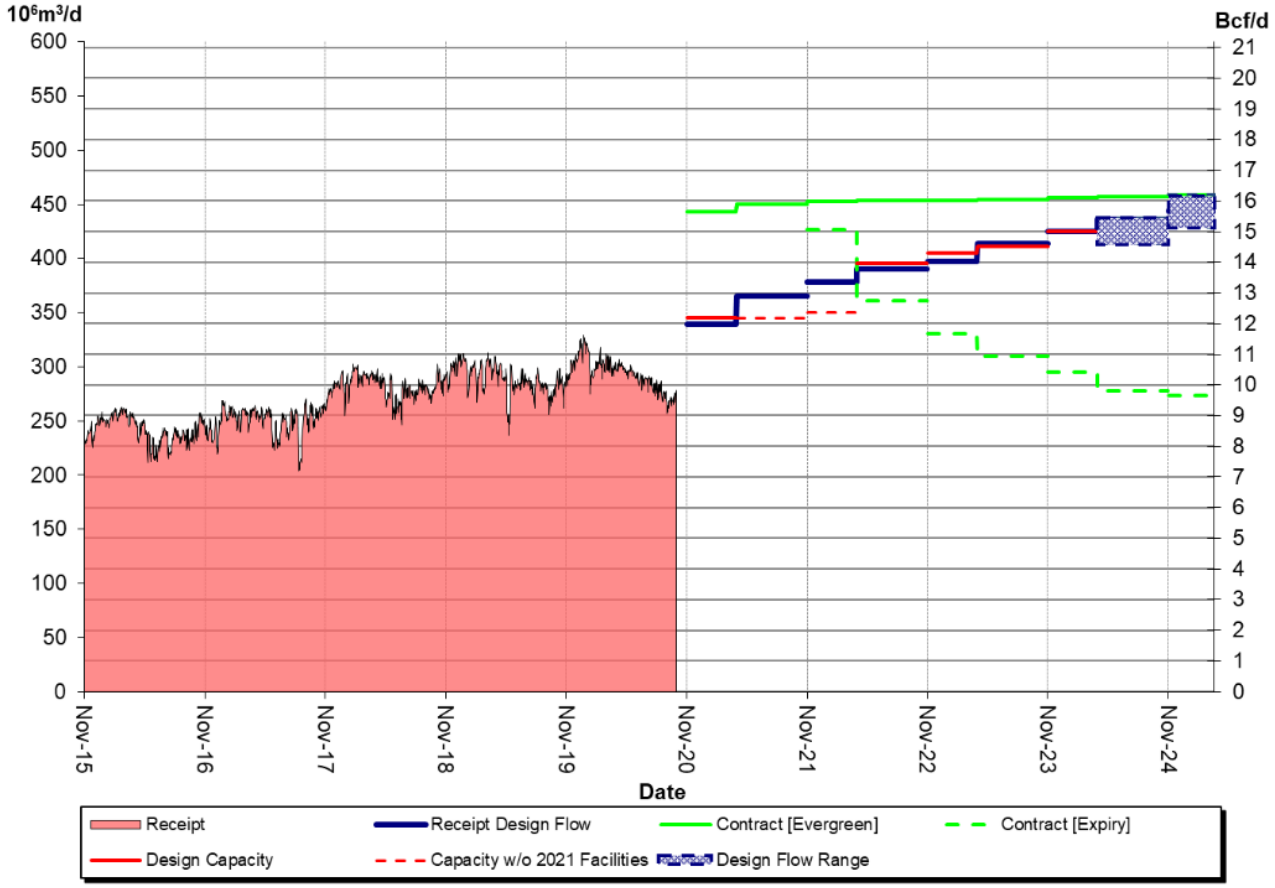


2.3.2 Design Flows – Peace River Project Area

As shown in Table 1-5, the Peace River Project Area is the only part of the system where receipt is growing and provides a clear majority of the system supply. Currently proposed facilities will enable this continued supply growth and shift into this area through to the 2024 gas year. The uncertainty beyond 2024, in the 2024-2025 timeframe, is presented in Figure 2-5 below.

Figure 2-5 shows historical flows, design flows, contract levels and design capability in the Peace River Project Area, including design flow ranges starting in the 2024 gas year. The receipt design flow range in 2024-2025 is dependant on the level of system demand, including the oilsands-dependent ranges described in Section 2.3.1, as well as all other intra-system and export loads. Additionally, the range is also dependent on the degree of supply development in the area. As can be seen in Figure 2-5, the evergreen contract profile provides commercial underpinning for all currently proposed facilities as well as any additional facilities that would be proposed to meet the upper limits of the design flow range. The current expiry contract profile is included in Figure 2-5 to highlight that commercial underpinning has the potential to change and could be at levels that underpin the minimal additional facilities required to meet the lower limits of the design flow range. The capacity without the 2021 NGTL Expansion Project currently under construction is shown in the 2021-2022 timeframe to provide a reference on the impact of the expected in-service delays.

Figure 2-5: Peace River Project Area Design Chart



3.0 EXTENSION FACILITIES, LATERAL LOOPS AND METER STATIONS

No additional extension facilities, lateral loops or receipt and delivery meter stations have been identified for this Annual Plan.

For a summary of the status of facilities that have been proposed, applied for, under construction or placed in-service since the 2019 Annual Plan, see *Appendix 2: Facility Status Update*.

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 *2021 Facility Status Update (NGTL 2021 Update)*, which can be accessed at http://www.tccustomerexpress.com/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 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.

Flow-Through Design Condition

For the purposes of facility design, a condition for a specified area when deliveries are at their minimum and receipts are at their maximum in that area.

Flow-Within Design Condition

For the purposes of facility design, a condition for a specified area when deliveries are at their maximum and receipts are at their minimum in that area.

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.

Liquified Natural Gas (LNG)

Natural gas that has been cooled down to liquid form for ease of transport.

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 sub design 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: 2020 Facility Status Update

The Facility Status Update is available as an Adobe Acrobat PDF or MS Excel version with sort and search functionality. It is maintained as a separate document(s) which can be accessed at http://www.tccustomerexpress.com/871.html

Appendix 3: System Map

The System Map, including the 2020 Annual Plan facilities, is expected to be available in March 2021 and can be accessed at http://www.tccustomerexpress.com/ngtl-2020-annual-plan.html.

Appendix 4: Unit Transportation Cost Data

This expanded Appendix 4 is being provided pursuant to Order TG-001-2020 through which the Canada Energy Regulator (CER) directed NGTL to extend its narrative accompanying unit cost of transportation data that the National Energy Board (NEB) initially directed NGTL to provide as part of its Annual Plan in NEB Order TG-004-2018.

Specifically, the CER directed NGTL to extend the narrative to include the following:

a) A commentary on whether NGTL considers the trend in unit transportation costs to be a reasonable proxy for the general trend in transportation tolls for the same period. If not, NGTL must explain the reasons for the divergence. The Commission encourages NGTL, where appropriate to use scenarios to illustrate the influence of market forces on pipeline transportation costs; and
b) NGTL's views on the future competitiveness of its tolls and its perspective on emerging market factors that might affect the long-term viability of NGTL and the competitiveness of the WCSB.

This Appendix 4 provides unit transportation cost data for three historical years and the five forecast years covered in the 2020 Annual Plan. For years 2024 and 2025, NGTL provides an upper and lower range for revenue requirement, throughput levels, and the resulting unit cost, recognizing the increased uncertainty over system requirements towards the end of the projection period.

Unit Transportation Cost Data
(2018 to 2025)

	2018	2019	2020	2021	2022	2023	2024		2025	
							Low	High	Low	High
A: Revenue Requirement ($ millions)	2,094 [1]	2,152 [1]	2,445 [2]	2,777 [3]	3,095 [4]	3,395 [4]	3,597 [5]	3,617 [5]	3,767 [5]	3,885 [5]
B: Throughput [6] (10^9m^3)	129	128	118 [2]	125 [3]	135 [7]	140 [7]	143 [7]	145 [7]	145 [7]	153 [7]
C: A/B Unit Cost ($ million/10^9m^3)	16.2	16.8	20.8	22.3	22.9	24.2	25.2	25.0	26.0	25.4

Sources:
1. NGTL Quarterly Surveillance Reports for the period ending December 31.
2. NGTL 2020 Final Rates Application.
3. NGTL 2021 Interim Rates Application.
4. Based on an illustrative escalation of NGTL's 2021 Revenue Requirement and forecast capital additions using simplified assumptions for cost escalations and in-service dates.
5. Based on an illustrative escalation of NGTL's 2021 Revenue Requirement and a range of capital additions using simplified assumptions for cost escalations and in-service dates.
6. Based on the sum of all NGTL deliveries excluding storage injections.
7. Based on NGTL's Design Forecast prepared in June 2020.

NGTL views the forecast unit transportation costs to be a reasonable proxy for the general trend in system average transportation tolls for the 5-year projection period. There may, however, be some divergence over time due to uncertainty associated with a multitude of factors, market outcomes and capacity scenarios that can influence future transportation costs and/or tolls, including the following:

- WCSB supply/demand changes and the related change in system capacity requirements;
- Location of supply relative to system demand, which influences extent of facilities required;
- Capacity expansion cost (e.g., depending on system requirements at the time, expansion costs could be higher or lower for an equivalent volume of firm contracts);
- Firm contracting levels (e.g., can influence system capacity requirements, and billing determinants for tolls);
- Supply/Demand characteristics (e.g., base vs. peak loads, which influence pipeline transportation costs);
- Government policy (e.g., can impact costs, firm contract levels or both, and relatedly, pipeline transportation costs);
- Environmental/Social considerations (e.g., concerns over wildlife impacts or landowner considerations and associated cost impacts);
- Technology improvements (e.g., efficiency gains leading to cost reductions);
- Services development (e.g., new services that attract and retain volumes to the system providing a net benefit to the system);
- Repurposing facilities (e.g., change in utilization in response to changes in requirements).

The WCSB is one of the largest supply basins in North America and provides access to vast relatively low-cost reserves, with an estimated resource of 1,120 Tcf,[1] which represents 21% of the total North American gas resource. Production of this resource is particularly economic due to the liquids uplift that producers realize, especially for wells drilled in the Montney formation. Connecting to this supply allows NGTL and its customers to maintain access to diverse intra-basin and downstream markets in order to compete with other basins and to compete for market share within the basin.

NGTL regularly assesses the competitiveness of its tolls and the WCSB's competitive access to downstream markets, inclusive of transportation costs. In addition to pipeline transportation toll levels, competitive access to downstream markets is influenced by many other factors including NGTL's multiple service offerings, flexibility of supply and demand options, and the reliability of supply, among others. NGTL notes that customers have subscribed for the full export capacity currently available on the NGTL System as well as for expansion projects to serve both intra-system and downstream demand. This demand for transportation on the NGTL System demonstrates the near-term and longer-term competitiveness of the NGTL System and the WCSB.

The upward trend in unit transportation cost shown above reflects that new facilities need to be added over time in order to maintain the connectivity between the WCSB and downstream

[1] Canada's Energy Future 2019, Reference Case [CER, September 2019]

markets, which is essential to maintaining the long-term viability of the NGTL System and the competitiveness of the WCSB. This includes facilities required to connect the supply which continues a westward migration resulting in increased distance between supply and markets. In addition, as new facilities typically cost more than older, more depreciated facilities on a per unit basis, periods of larger-scale facility additions frequently coincide with periods of an increased trend in unit transportation cost. As part of its active management of costs, NGTL assesses the long-term needs of proposed facilities, which ensures facilities being added are required over the long term to continue meeting the need of NGTL System customers in the most efficient manner.

Future tolls are also dependent on contracting decisions of customers, which may deviate from the forecast throughput data used in the unit cost data provided above. For example, actual contract levels in future years will depend on individual customer renewal decisions over the period, which may in turn be impacted by a range of factors. Overall, however, NGTL expects continued robust demand for natural gas and transportation services on the NGTL System. Natural gas is an essential commodity in the integrated North American economy, used as a fuel for heating and generation of electricity, as well as a feedstock for industrial processes. In addition, North American gas is increasingly exported to global markets via LNG with a large-scale project currently being developed in western Canada. Emerging factors that could impact long-term demand include climate policies – such as carbon pricing, clean fuel standards, and incentives for renewable energy. These factors may create both opportunities and challenges for gas demand, but their impact is expected to be gradual. Natural gas remains an efficient energy source with the lowest carbon intensity among fossil fuels and is expected to play a key role in implementing environmental policies in the various markets served by the NGTL System. Challenges, however, may result from policies that disproportionately impact domestic gas supply compared to competing gas supply. NGTL will continue to incorporate new information into its assessment of long-term supply and demand outlook, and proactively manage the NGTL System in order to support its long-term viability and the competitiveness of both the NGTL System and the WCSB.