



# NGTL System and Foothills Pipe Lines Ltd.

## Customer Operations Meeting

November 15, 2018



# Forward Looking Information

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This presentation includes certain forward looking information. Statements that are forward-looking are based on certain assumptions and on what we know and expect today and generally include words like anticipate, expect, believe, may, will, should, estimate or other similar words.

The information provided is for informational purposes only and is not to be relied upon for any other purpose whatsoever. The information is based upon certain assumptions that may or may not be accurate, and therefore is subject to various risks and uncertainties. TransCanada shall not be liable for damages sustained as a result of any use or reliance on such information.

The outages listed in this presentation are not an exhaustive list. Outage date, duration, and impact may be subject to change. Refer to the Daily Operating Plan (DOP) for all planned outages with potential service impact.

**Potential impact to FT** Refers to outage periods where there is increased potential of FT impact

**Partial impact to FT** Refers to outage periods where FT impact is expected

# Welcome and thank you for joining us!

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## Safety:

- In case of alarm or emergency, please proceed immediately to the ground-level exit
- Nearest stairs to ground-level exit are outside this room and directly to the left
- Muster point is located on the plus-15 level of 5<sup>th</sup> Avenue Place (425 1<sup>st</sup> Street SW)

## Participating via WebEx:

- Please sign-in through WebEx application including your full name and company
- To reduce background noise and improve audio quality, all WebEx participants will be placed on mute
- Please submit your questions via the chat function and the moderator will ask your question

# Safety Moment: Ladder Safety

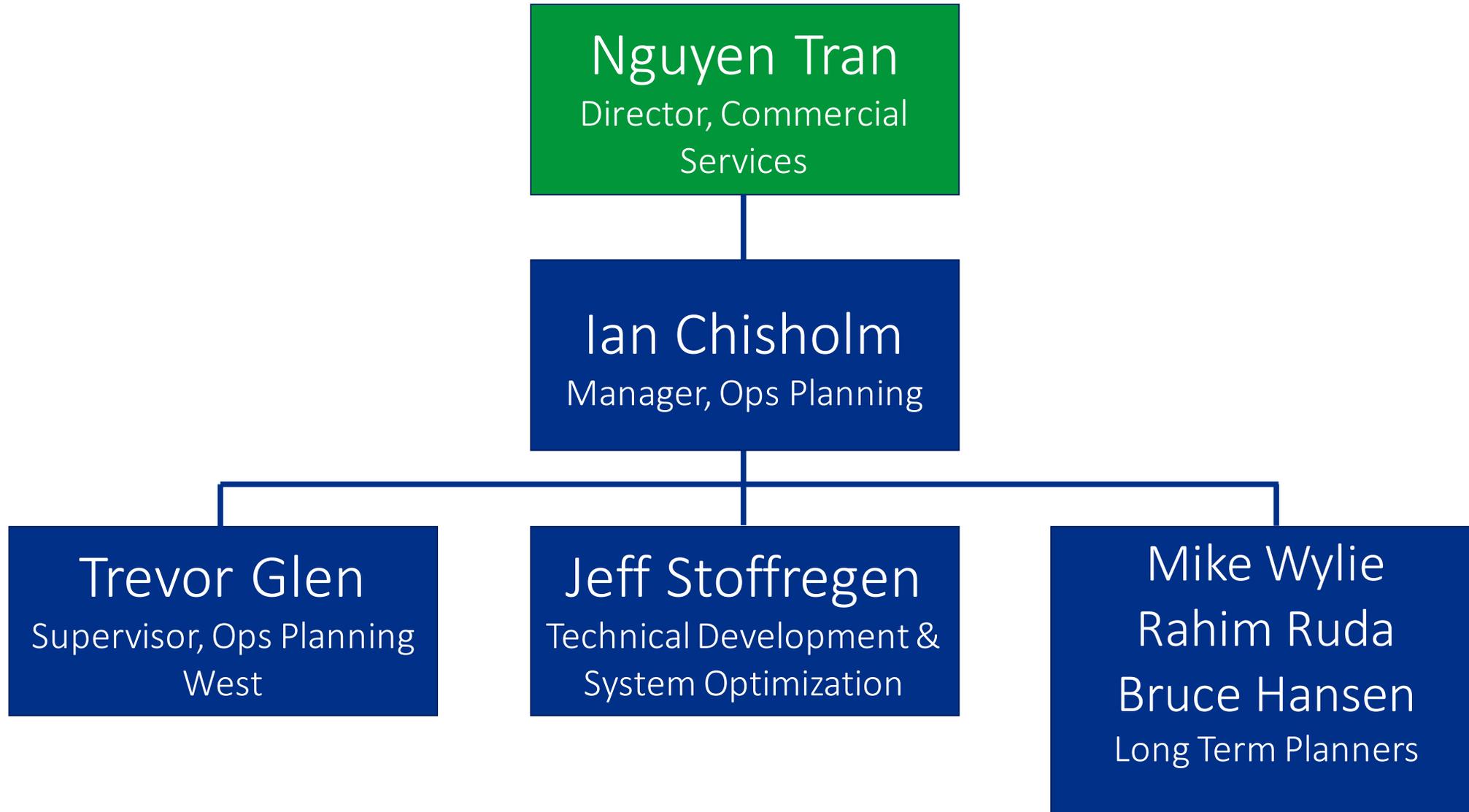
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- Before you go scaling a ladder, review some basic ladder safety tips such as:
  - Inspect all ladders for damage before use
  - Be sure the ladder is stable before ascending
  - Consider using a spotter/footer
  - Use a 4 to 1 ratio when using extension ladders
  - Keep your body near the center line of the ladder
  - Maintain three points of contact with the ladder
- Read any warning and/or instruction labels that are affixed to your ladder



# NGTL Commercial Services - Personnel Changes

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# Agenda

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1. Operational Base Capability Update
2. 2019 Operational Outlook Update
3. Overview of Pipe Integrity Program
4. Over-Production / Over-Consumption Procedure Refresher

# Agenda

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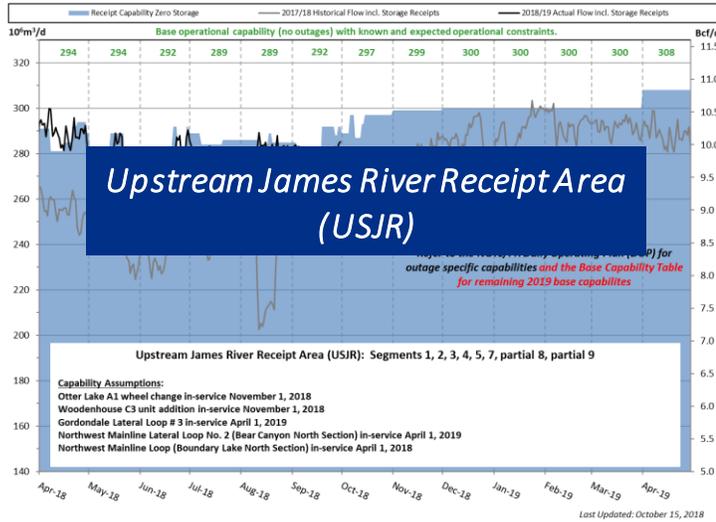
1. Operational Base Capability Update
  - Background
  - Review Current Daily Operating Plan (DOP) Capabilities
  - Changes to Operational Base Capability Reporting
  - Operational Base Capabilities by Area
  - Short Term Empress/McNeill Outlook
2. 2019 Operational Outlook Update
3. Overview of Pipe Integrity Program
4. Over-Production / Over-Consumption Procedure Refresher

# Background

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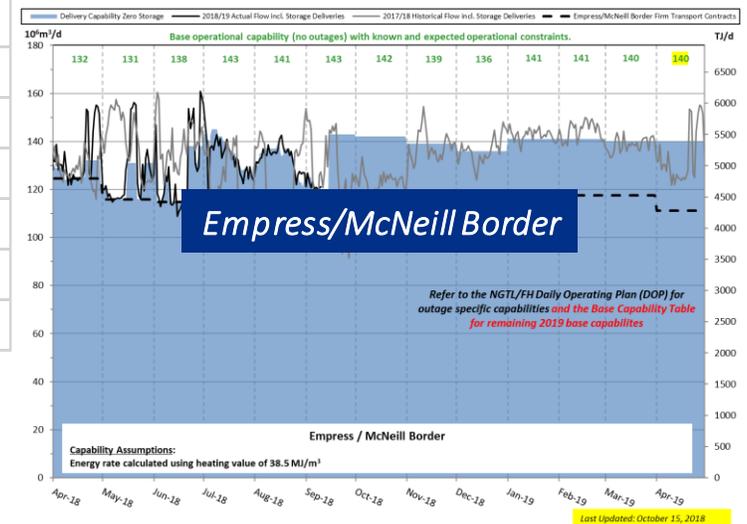
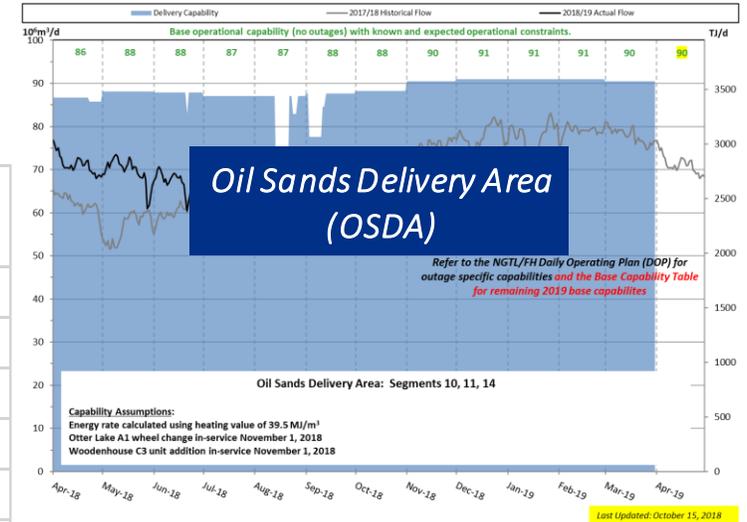
- **Operational Base Capability:**
  - Stated monthly capability for a given area for a given set of assumptions around flow distribution, ambient temperatures, facilities
- **Outage Capability:**
  - Capability for a given area during an outage event
- **Allowable:**
  - Amount of flow authorized considering all system conditions and outages

# Existing Operational Base Capability Outlook



Base Capability Table ( $10^6\text{m}^3/\text{day}$ )

mmm-yy	USJR	ABC	Empress /McNeill	OSDA
Mar-18	293	69	129	85
Apr-18	294	73	132	86
May-18	294	73	131	88
Jun-18	292	73	138	88
Jul-18	289	73	143	87
Aug-18	289	73	141	87
Sep-18	292	75	143	88
Oct-18	295	75	142	88
Nov-18	300	77	139	90
Dec-18	302	77	136	91
Jan-19	302	77	141	91
Feb-19	302	77	141	91
Mar-19	301	75	140	90

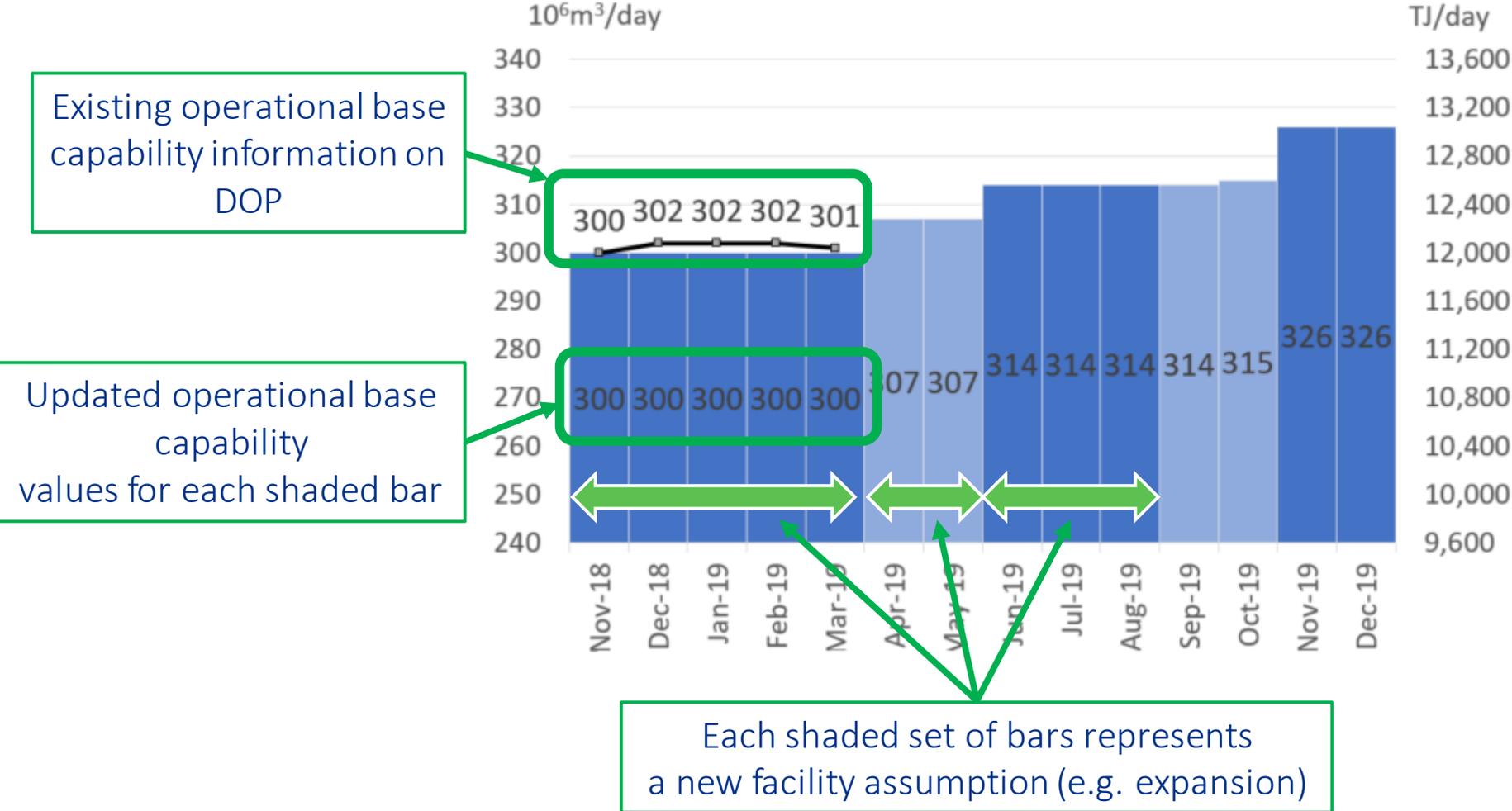


# Updates to Operational Base Capabilities

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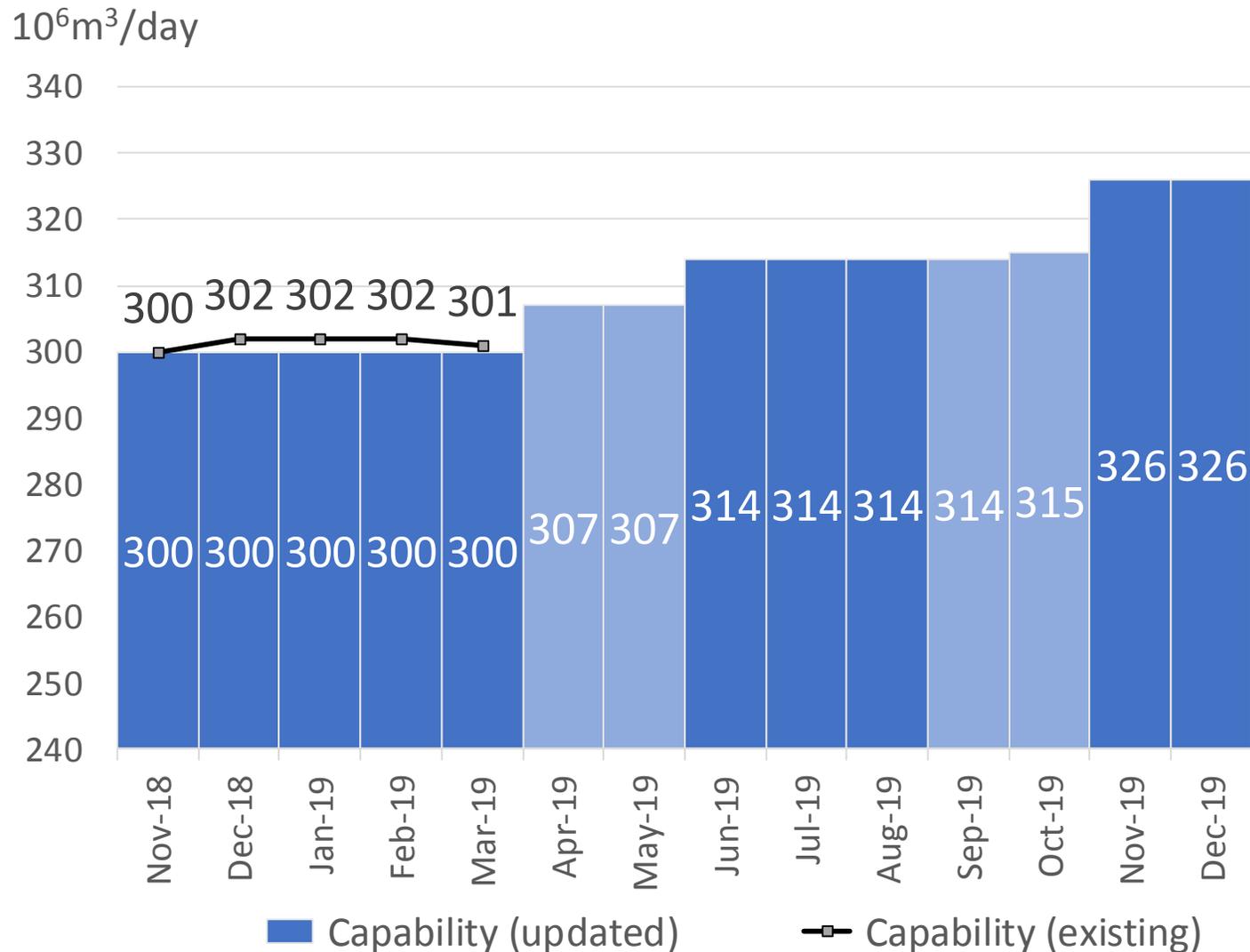
- NGTL aims to provide the most accurate operational information to market
- All operational base capabilities have been updated with the most current assumptions, and the outlook has been extended to support roll-out of outages through December 2019
- Updates to EGAT operational base capability will better reflect system-wide alignment between posted capability and allowable
- DOP will be updated by November 16, 2018 to reflect updated operational base capabilities

# Chart Breakdown



FIGURES AND NUMBERS ARE FOR ILLUSTRATION PURPOSES ONLY

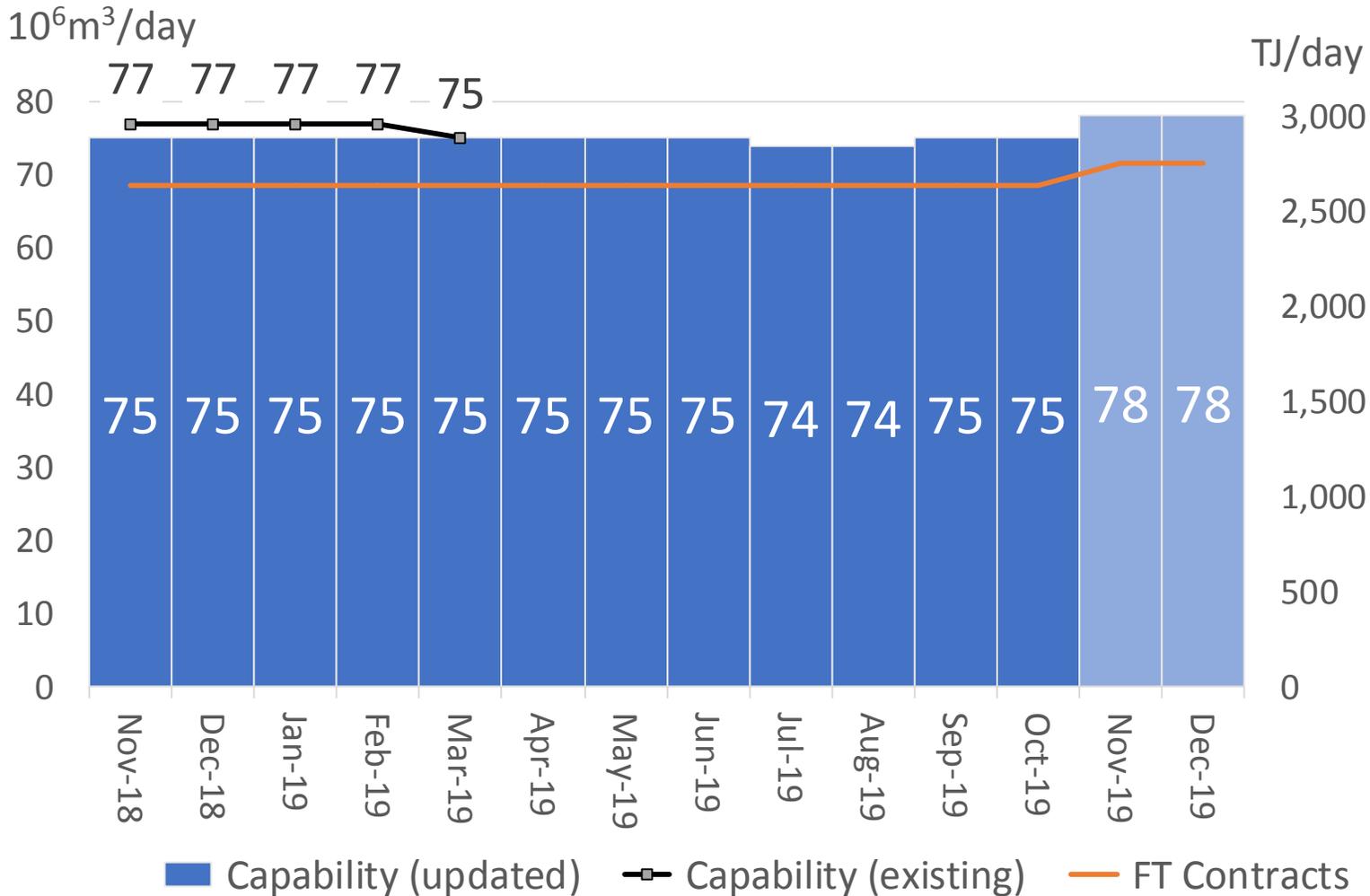
# Upstream James River (USJR) Receipt Area



- TJ/day
- Facility Expansion Assumptions:
- **Nov 2018 Expansion:**
    - Otter Lake unit 1 wheel change, and Woodenhouse unit addition
  - **Apr 2019 Expansion:**
    - Northwest Mainline Loop (Boundary)
  - **Jun 2019 Expansion:**
    - Saddle West Expansion
  - **Sep 2019 Expansion:**
    - North Montney Mainline (Aitken Creek)
  - **Nov 2019 Expansion:**
    - Grande Prairie Mainline NPS 48 Loop
    - Groundbirch Compressor Station
    - North Path Delivery Project

*Marginal change in USJR operational base capability*

# Alberta/B.C Border (ABC)



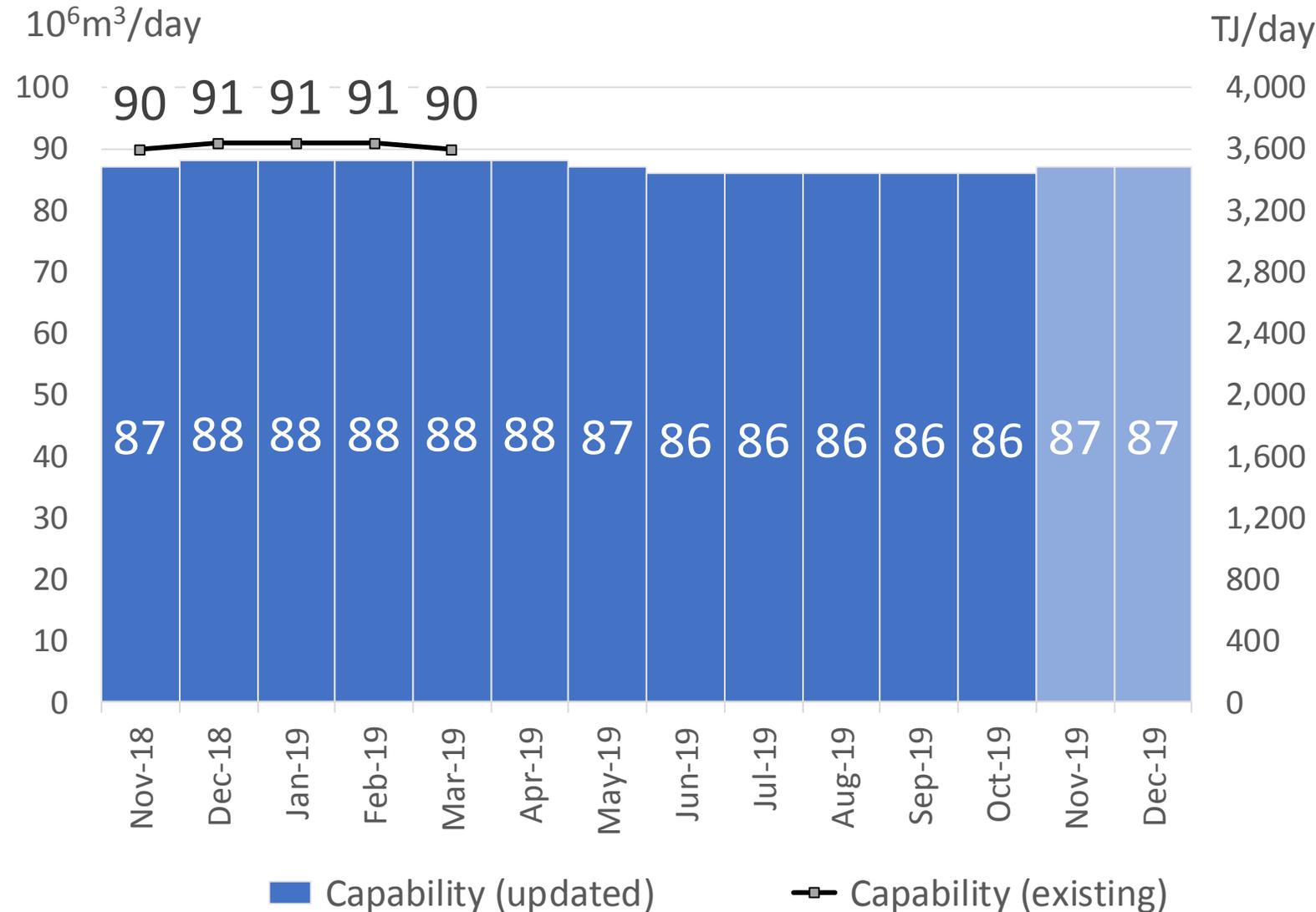
## Facility Expansion Assumptions:

- Nov 2019 Expansion:
  - Winchell Lake unit addition

*Current forecast results in slightly lower winter operational base capabilities*

- Alberta/B.C. Border serves as a proxy to represent service allowable in the West Gate Delivery Area (WGAT)

# Oil Sands Delivery Area (OSDA)

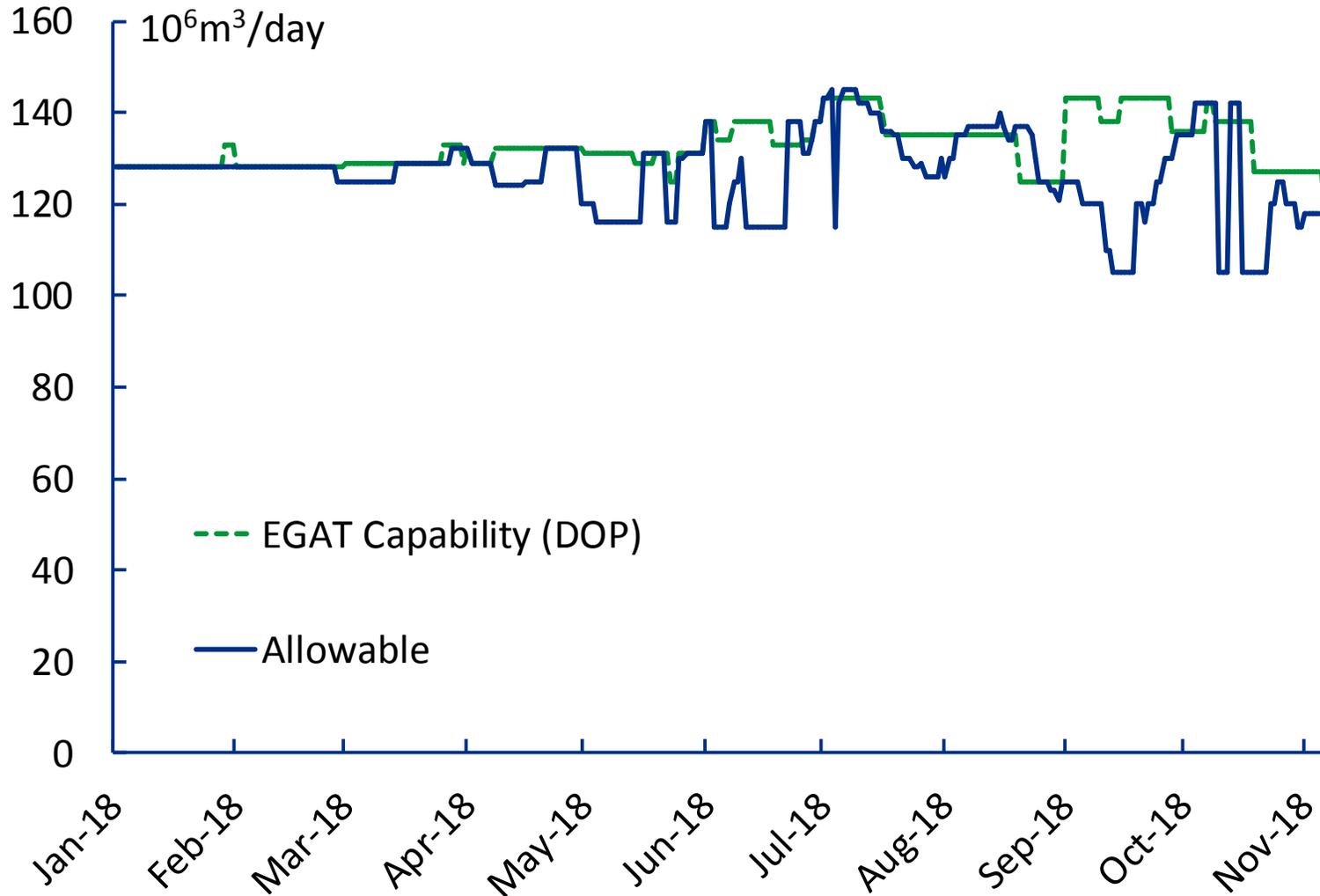


## Facility Expansion Assumptions:

- Nov 2018 Expansion:
  - Otter Lake unit 1 wheel change, and Woodenhouse unit addition
- Nov 2019 Expansion:
  - Denning Lake wheel change

*Current forecast results in slightly lower operational base capabilities*

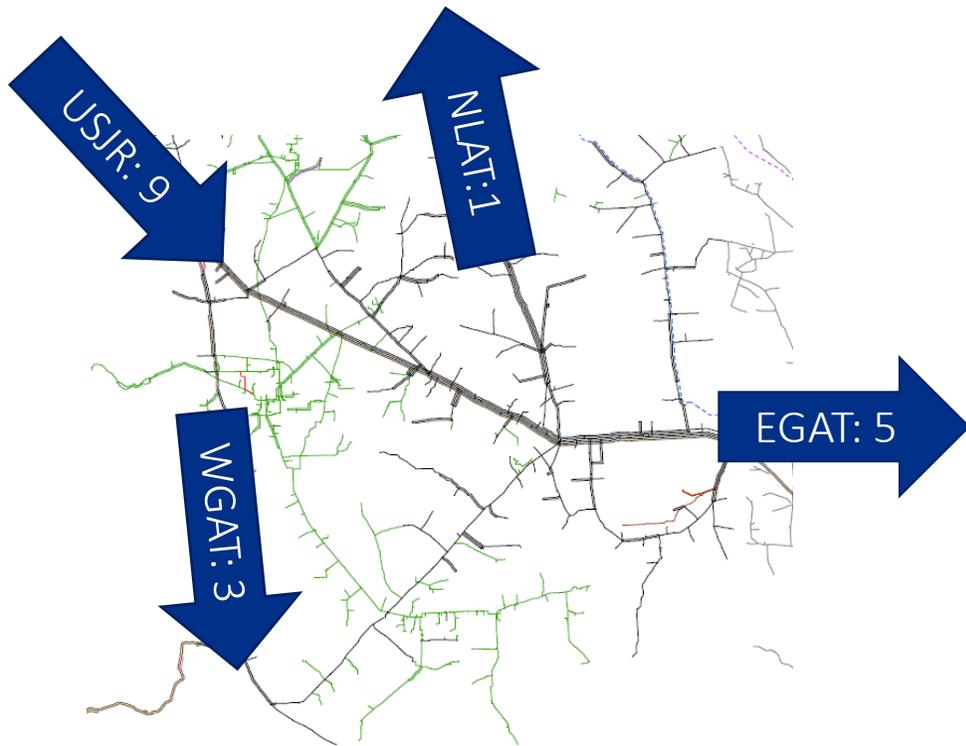
# East Gate (EGAT) Capability versus Allowable



- Posted Capability may not match daily Allowable
- Daily allowable is a function of all system conditions on the day
- Updated operational base capabilities will create closer alignment between Capability and Allowable

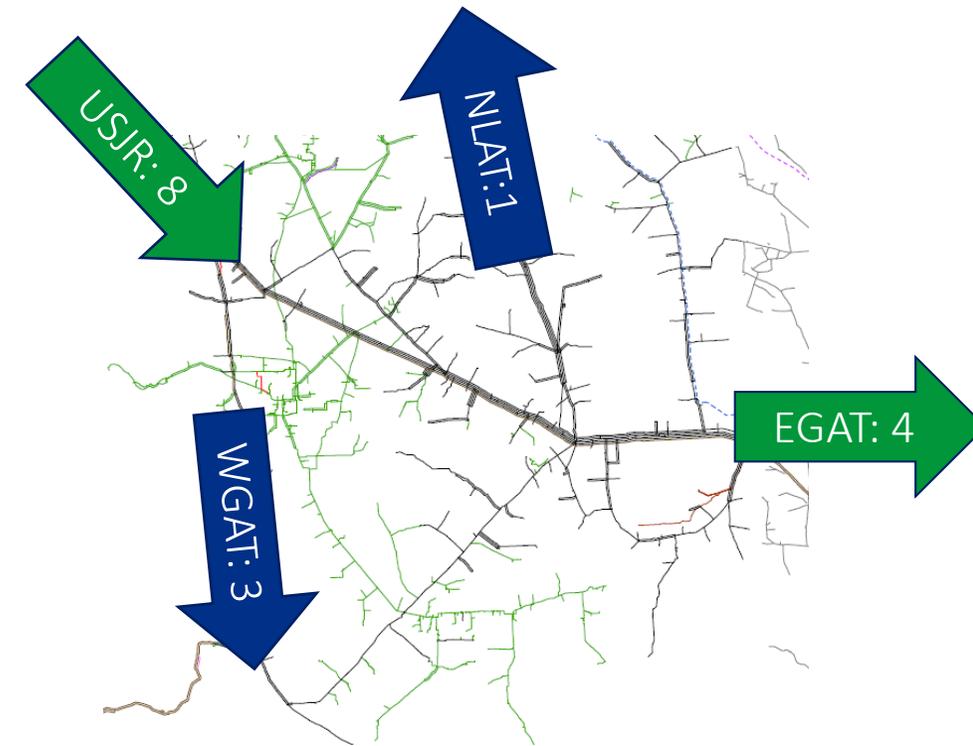
# EGAT Operational Base Capability Outlook - Comparison

## Existing



- Existing EGAT operational base capability does not account for USJR operational base capability
- Updated EGAT operational base capability takes into account flows of 8 units from USJR
- Results in EGAT base capability of 4 units
- More closely aligns with Allowable

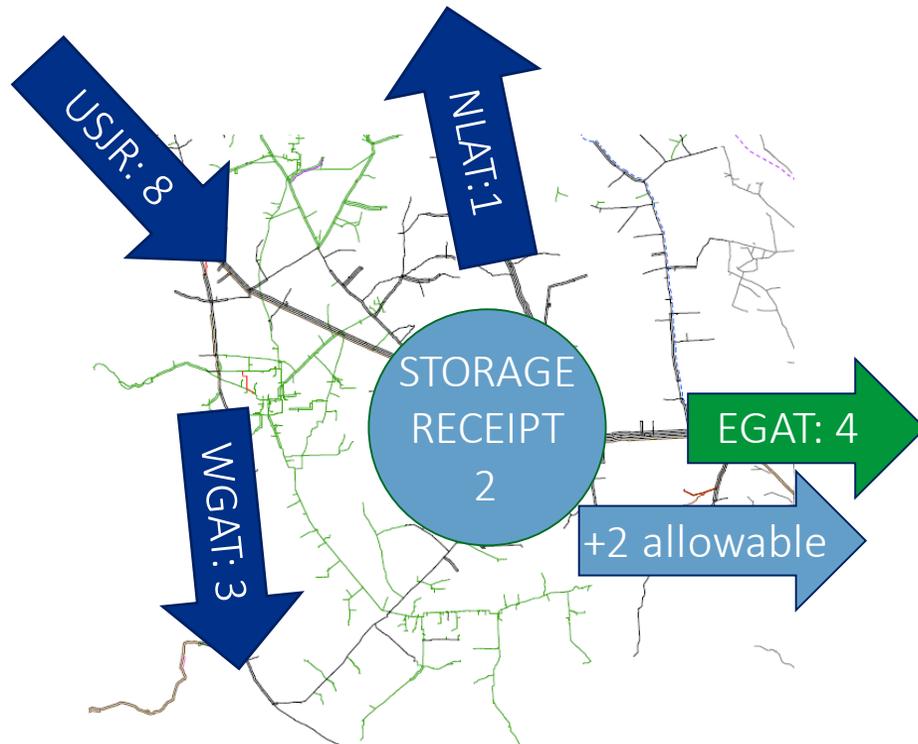
## Updated



NLAT = North Lateral

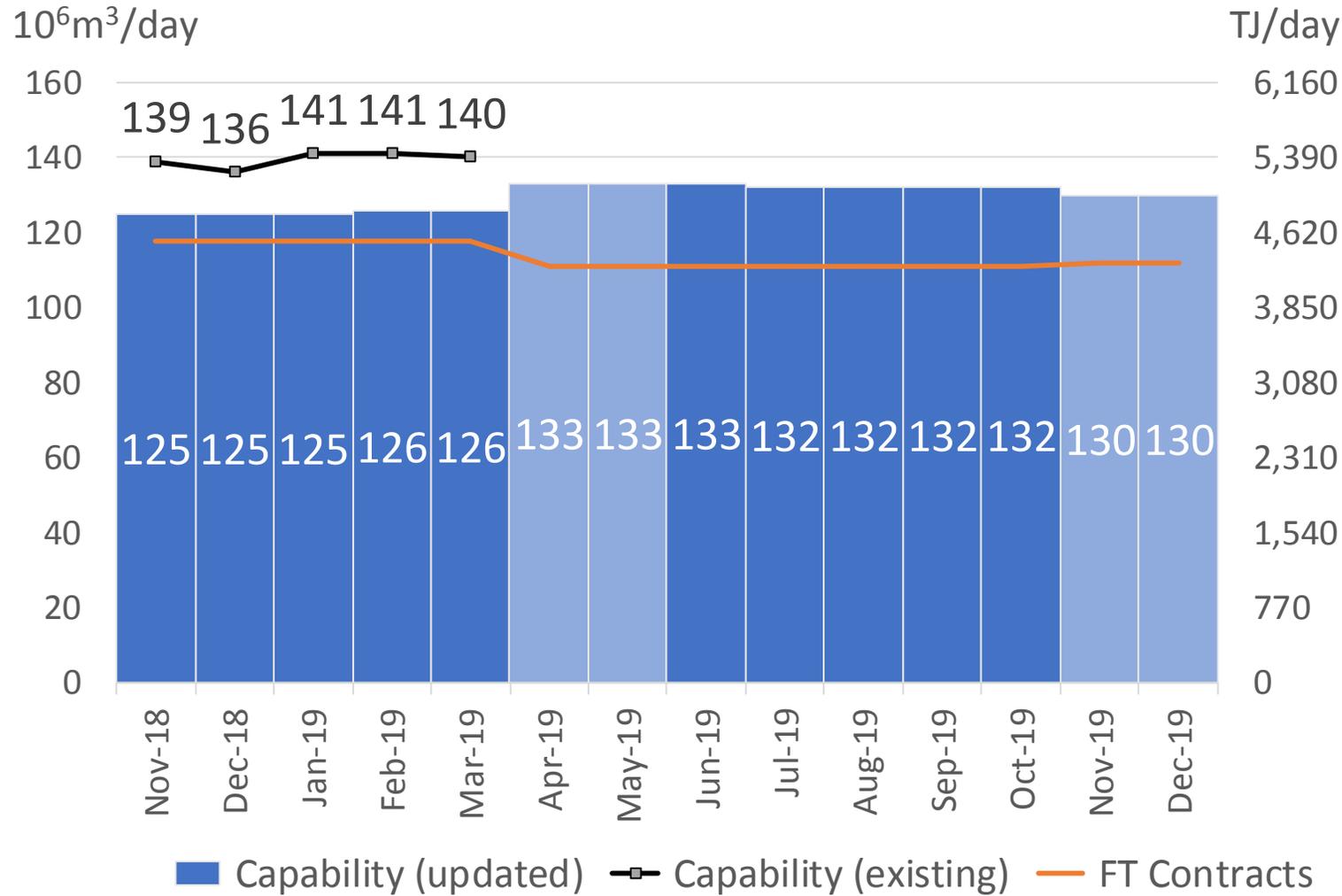
FIGURES AND NUMBERS ARE FOR ILLUSTRATION PURPOSES ONLY

# Actual Flows vs. Updated Operational Base Capabilities



- Storage is not included in operational base capabilities
- Storage Deliveries are included in actual flow reported
- Storage Receipts *may* result in service authorization and actual flows in excess of stated capability

# Empress/McNeill (EGAT)



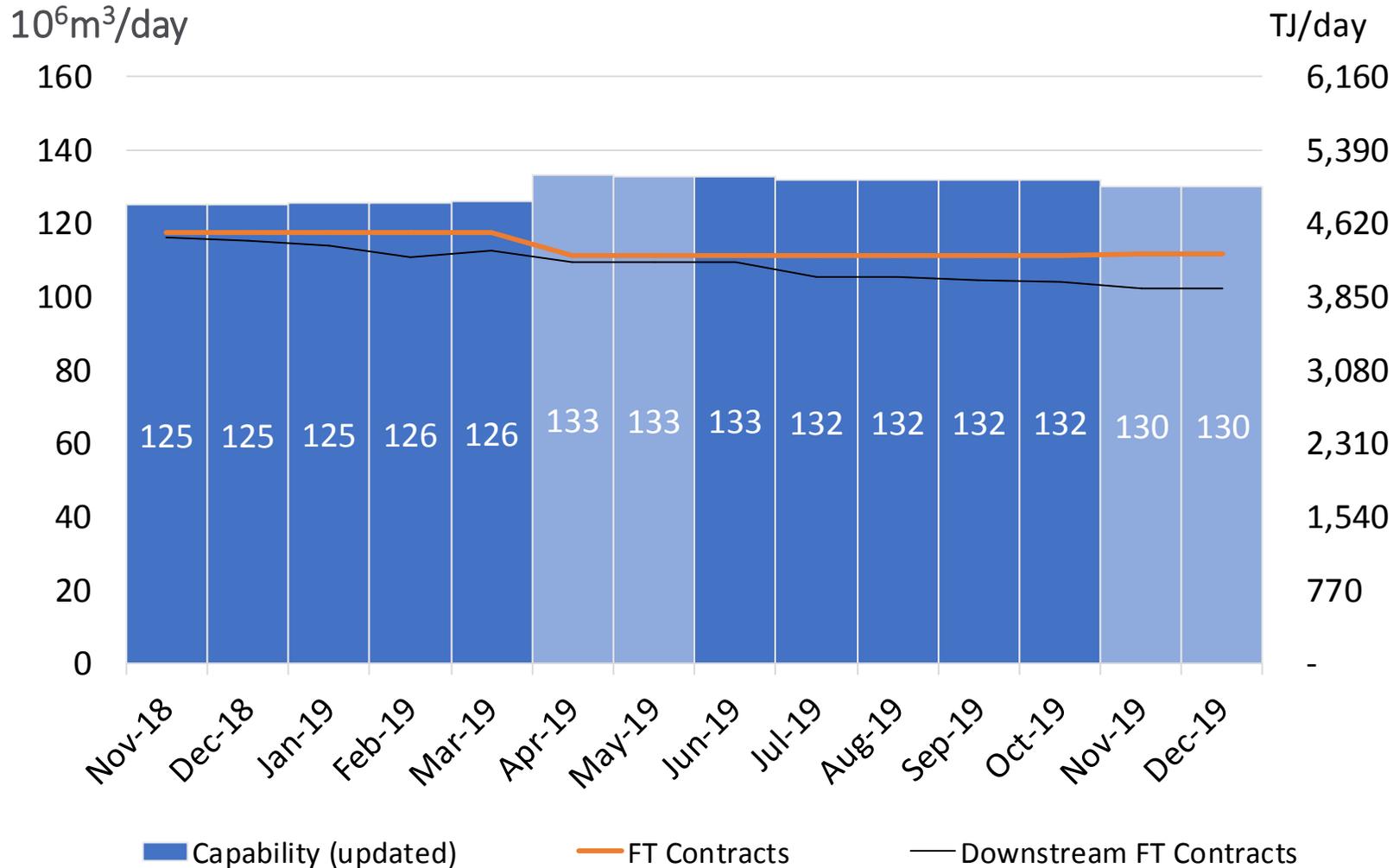
- Empress/McNeill serves as a proxy to represent service allowable in the East Gate Delivery Area (EGAT)

## Facility Expansion Assumptions:

- Nov 2018 Expansion:
  - Otter Lake unit 1 wheel change, and Woodenhouse unit addition
- Apr 2019 Expansion:
  - Northwest Mainline Loop (Boundary)
- Jun 2019 Expansion:
  - Saddle West Expansion
- Nov 2019 Expansion:
  - Grande Prairie Mainline NPS 48 Loop

*Current forecast and aligned system assumption results in lower operational base capabilities*

# Empress/McNeill - Short Term Outlook



- Updated operational base capabilities do not affect the way service is sold
- Downstream firm deliveries will not be impacted
- Downstream FT includes FT contracts on Mainline and Saskatchewan deliveries and an assumed 933 TJ/d at Monchy

# EGAT Area Outages

- Some outages within the EGAT area will be removed from DOP as they result in capabilities that are above the updated operational base capabilities for the area:
  - E.g. Beiseker Compressor Station Maintenance:
    - Outage Capability: 135
    - Updated Nov 2018 Operational Base Capability: 125

Outage ID	Start	End	Capability / Allowable (10 <sup>3</sup> m <sup>3</sup> /day)	Service Allowable Location/Area	Outage Description
14259261	Nov 19, 2018	Nov 20, 2018	135,000	IT-D anticipated Empress/McNeill Borders Segments 15,16,17,18,19,20,23, partial 21, and partial 28	Beiseker – Compressor Station Maintenance

# Summary

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- Updated operational base capabilities will better reflect total system conditions that affect allowable flow
- No physical change to actual flows or access to markets
- Results in more accurate data and reporting
- DOP will be updated by November 16, 2018 to reflect updated operational base capabilities

**Questions?**



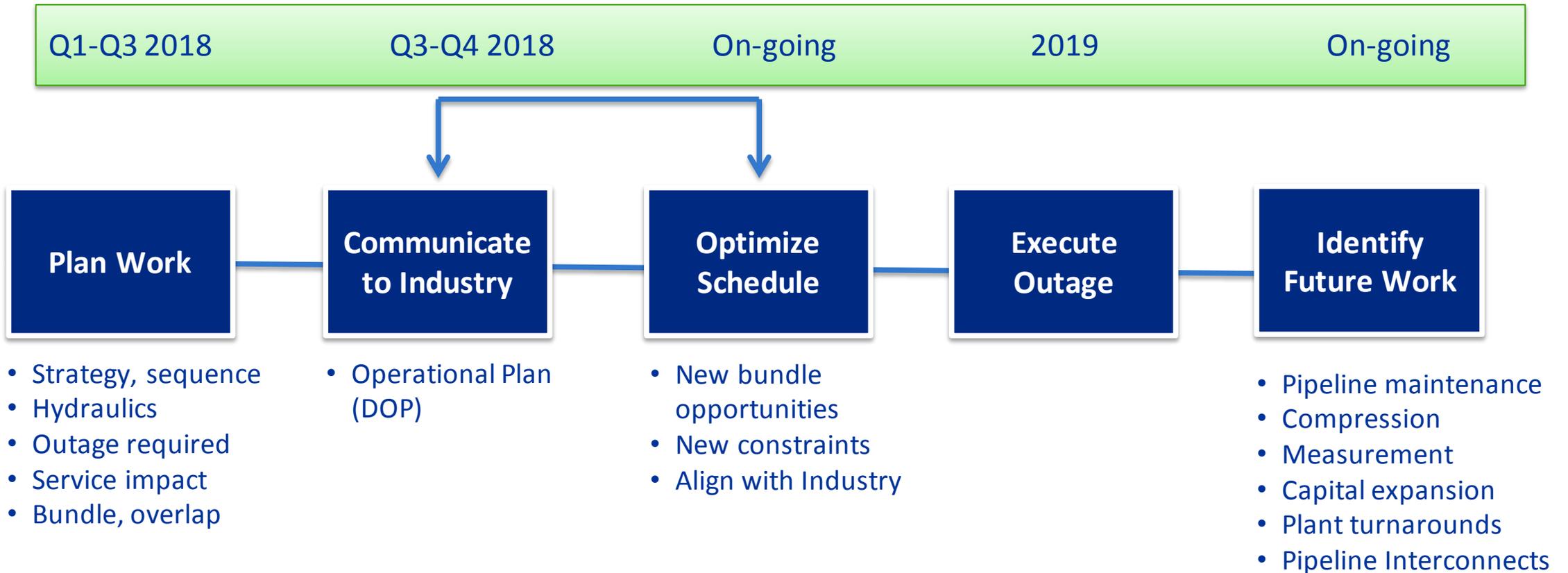
# Agenda

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1. Operational Base Capability Update
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# Outage Planning Process

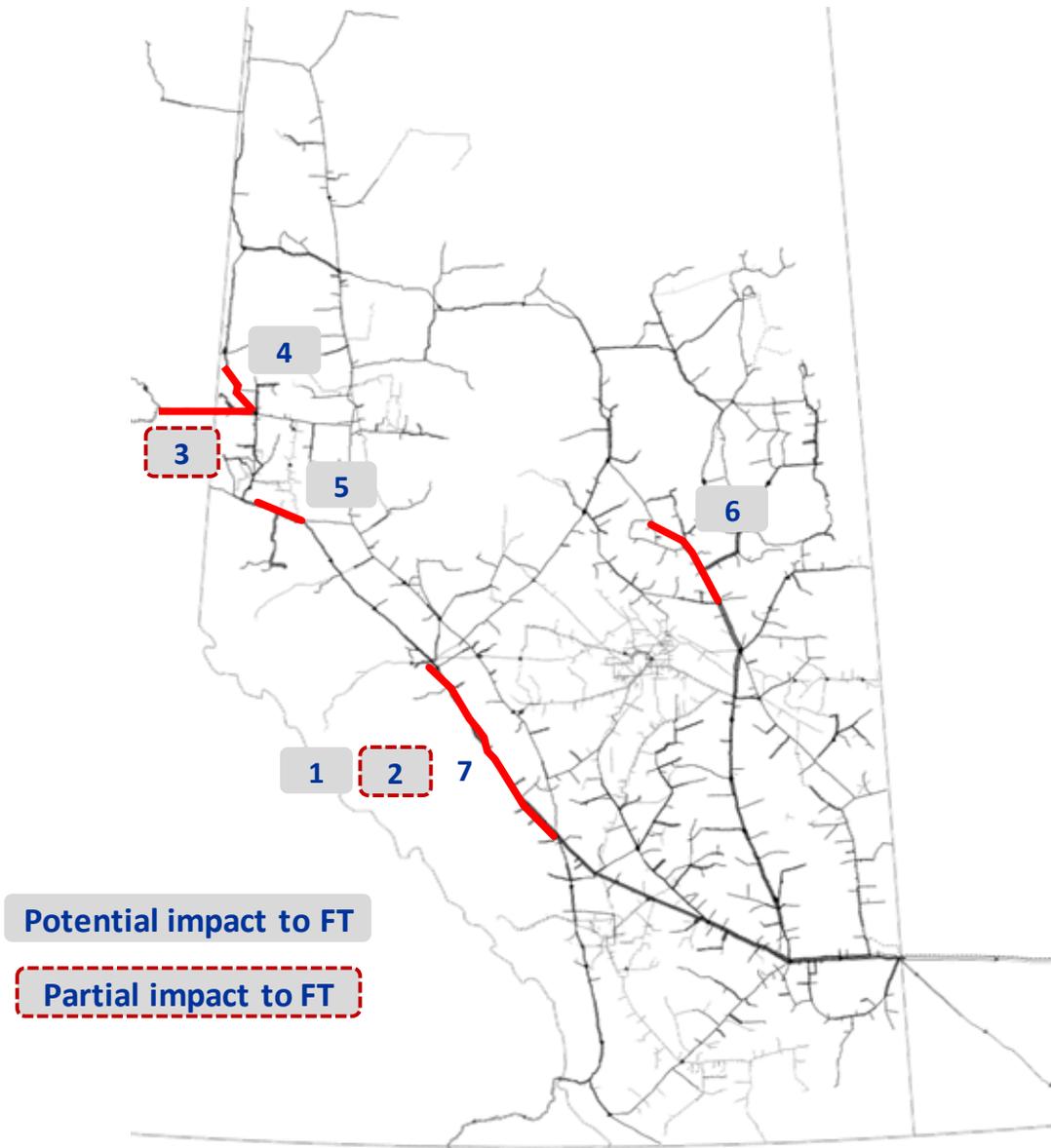
## 2019 Program Timeline:



*Currently in communication and optimization phase with focus on integrating all work, bundling activities, and optimizing overall program*

# 2019 Pipe Maintenance – Outage Highlights

Location: Upstream James River Receipt Area

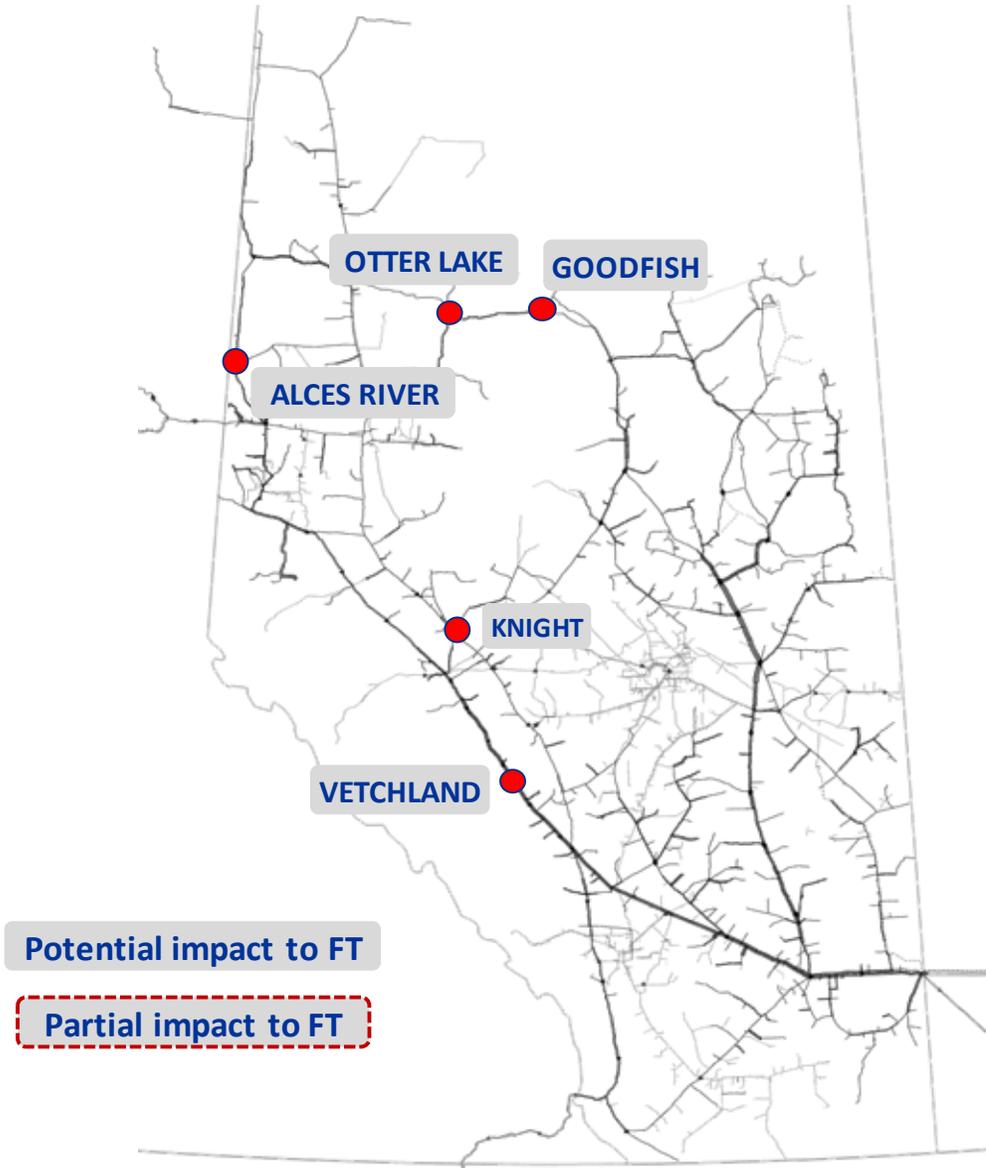


Facility Outage	Planned Outage Timing	Capability Loss TJ/day
1. NPS 42 Edson Mainline Loop 2	Apr 23 - May 2, 2019	500
2. NPS 48 Edson Mainline Loop 3 <i>(USJR area of impact)</i>	May 6-11, 2019	2100
3. NPS 36 Groundbirch Mainline & NPS 36 Gordondale Lateral Loop 3 <i>(USJR impact ends; Local area of impact begins)</i>	May 11-16, 2019	2100
4. NPS 36 NW Mainline Loop 2 (New)	Jun 4-8, 2019	250
5. NPS 30 Grande Prairie Mainline Loop	July 3-12, 2019	250
6. NPS 30/42 Paul Lake & Flat Lake Lateral Loop 3 & 4	Aug 13-19, 2019	450
7. NPS 42 Edson Mainline Loop 1	Deferred to 2020	

**Outage date, duration, and impact may be subject to change. Refer to DOP for all planned outages with potential service impact**

# 2019 Compression Maintenance – Outage Highlights

Location: Upstream James River Receipt Area

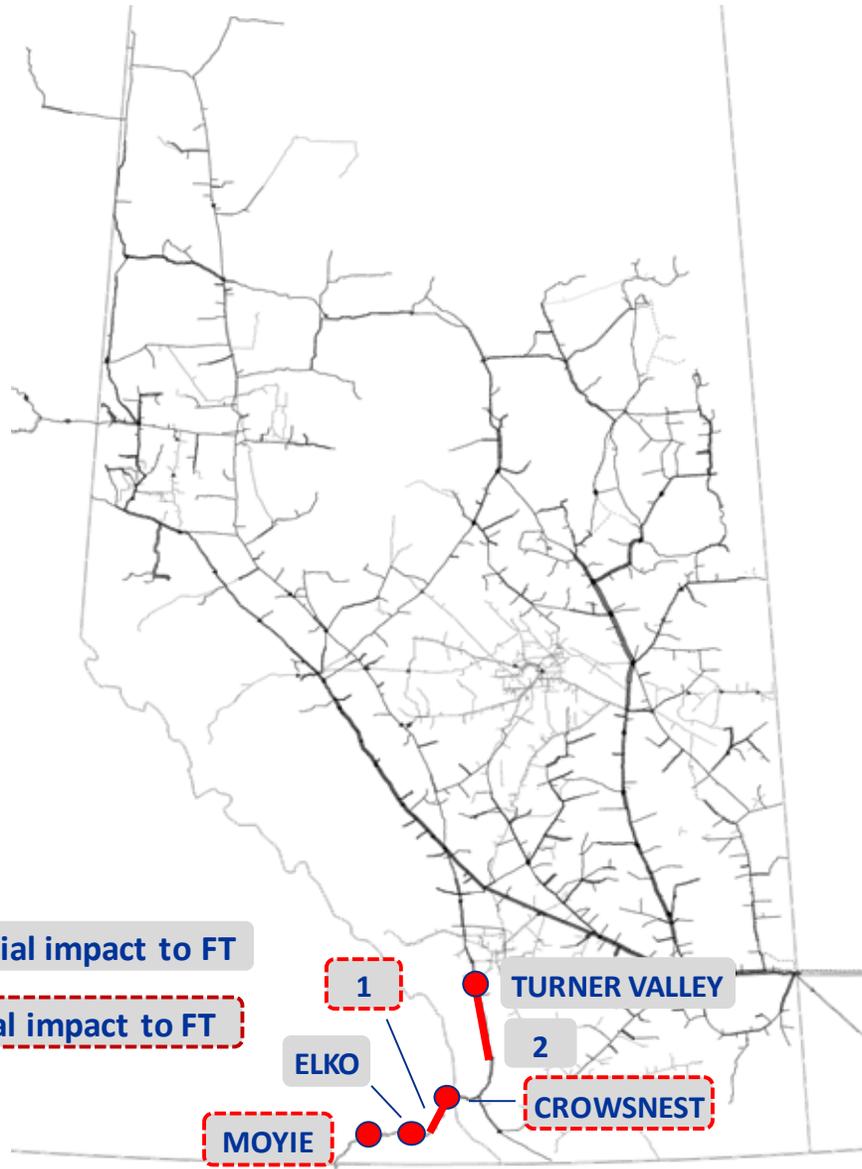


Facility Outage	Planned Outage Timing	Capability Loss TJ/day
Alces River Unit 3 (New)	Mar 5-6, 2019	500
Goodfish C/S	Jun 24-27, 2019	750
Alces River Unit 3 (New)	Jul 15-21, 2019	500
Knight C/S (New)	Jul 23-31, 2019	200
Vetchland C/S	Aug 20-31, 2019 (Revised)	300
Otter Lake Unit 2 (New)	Sep 3-6, 2019	650
Otter Lake Unit 1 (New)	Sep 9-15, 2019	650

***Outage date, duration, and impact may be subject to change. Refer to DOP for all planned outages with potential service impact***

# 2019 Compression and Pipe Maintenance – Outage Highlights

Location: Western Gate Delivery Area

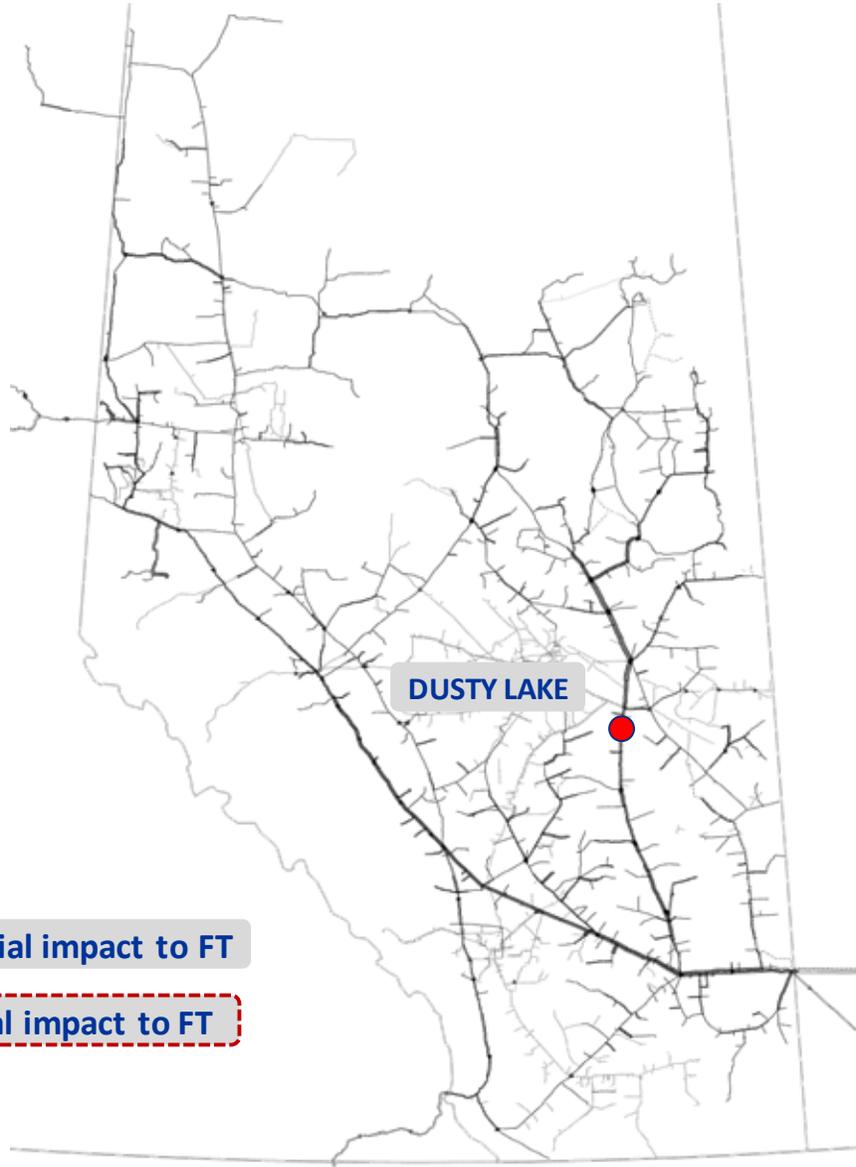


Facility Outage	Planned Outage Timing	Capability Loss TJ/day
1. NPS 36 BC Mainline	May 6 – 16, 2019	600
Turner Valley Unit 2	May 23 – Jun 3, 2019	200
2. NPS 36 WAS Mainline	Jun 18-30, 2019	275
Elko C/S	Jul 9-12, 2019	300
Moyie C/S	Jul 15-18, 2019	600
Crowsnest A C/S	Jul 22-25, 2019	600

***Outage date, duration, and impact may be subject to change. Refer to DOP for all planned outages with potential service impact***

# 2019 Compression Maintenance – Outage Highlights

Location: North East Delivery Area



Potential impact to FT

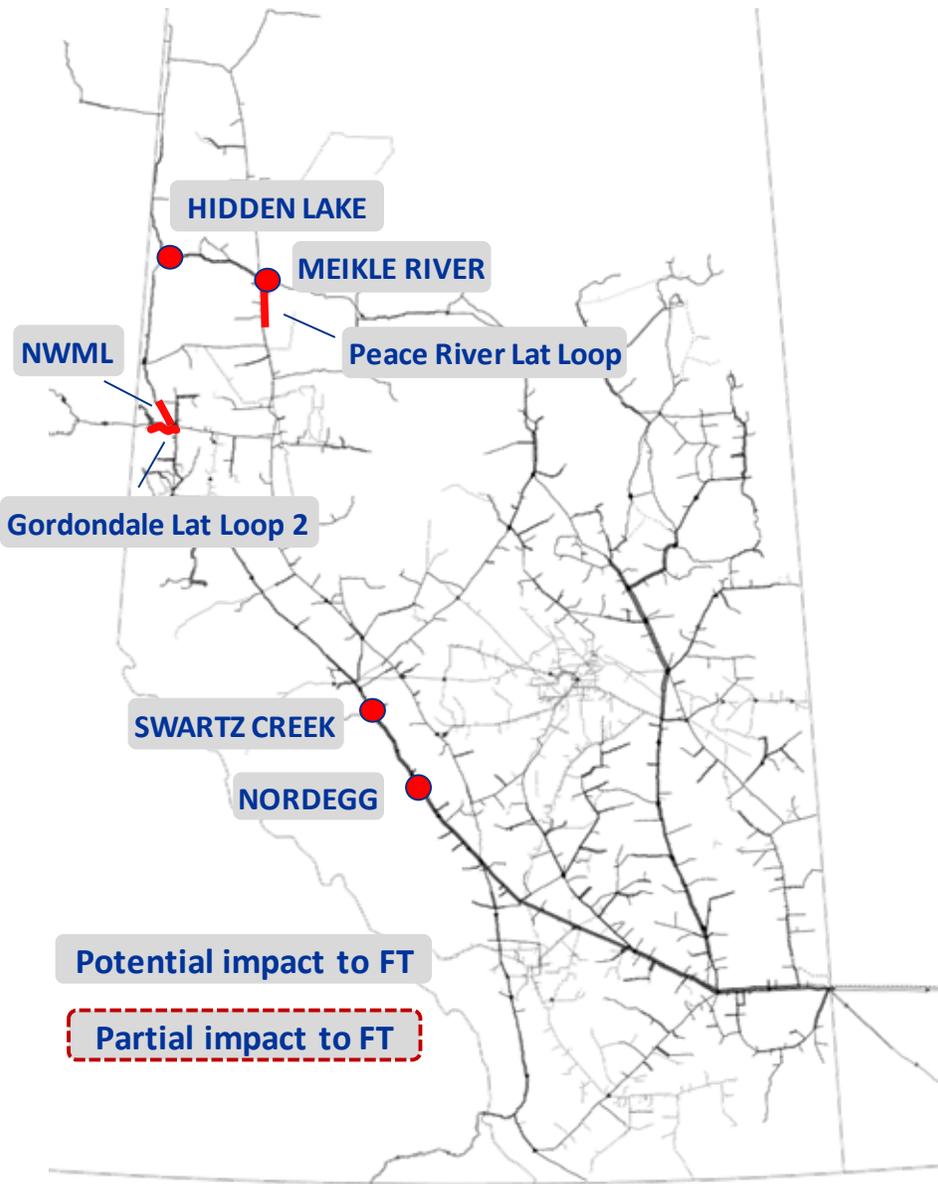
Partial impact to FT

Facility Outage	Planned Outage Timing	Capability Loss TJ/day
Dusty Lake C/S	Apr 15-17, 2019 (Revised)	800

*Outage date, duration, and impact may be subject to change. Refer to DOP for all planned outages with potential service impact*

# 2019 Capital Expansion – Outage Highlights

Location: Upstream James River Receipt Area

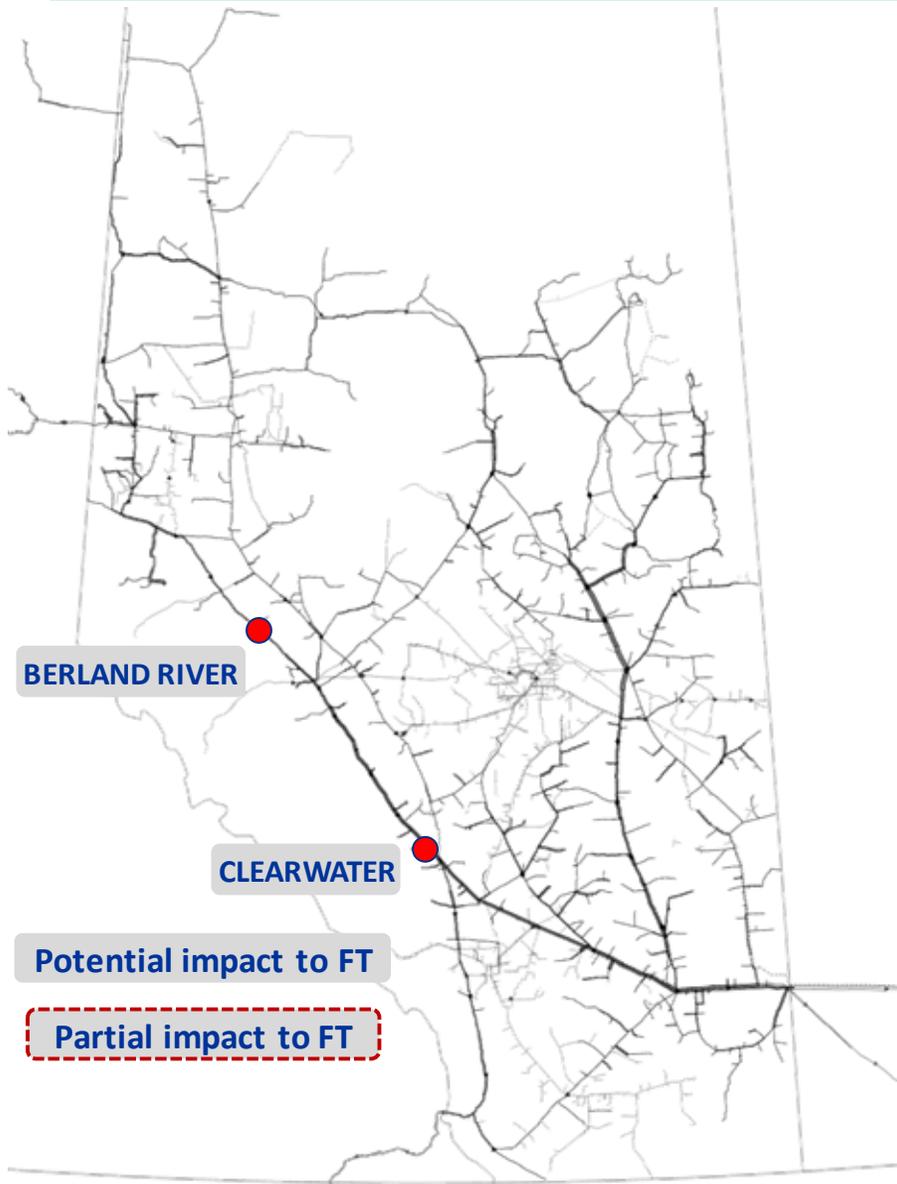


Expansion Facility Description	Outage Requirement	Planned Outage Timing	Capability Loss TJ/day
Saddle West Expansion	NPS 36 NWML	Jan 15-23, 2019	200
	Nordegg C/S NPS 42 Gordondale Lat Loop 2	Jan 29 - Feb 11, 2019	600
	Swartz Creek C/S	Feb 20-28, 2019	400
Northwest Mainline Loop Boundary Lake North (New)	Hidden Lake C/S Hidden Lake North C/S	Jan 18-26, 2019	400
North Path Delivery Project	Meikle River B2 C/S & NPS 30 Peace River Lat Loop (New)	Jun 3-15, 2019	250
	Meikle River C3 C/S	Jun 17-Jul 6, 2019	200
	Meikle River B & C4 C/S	Jul 8-27, 2019	250
	Meikle River D C/S	Jul 29-Aug 17, 2019	400
	Meikle River C3 & C4 C/S	Aug 19-31, 2019	350

**Outage date, duration, and impact may be subject to change. Refer to DOP for all planned outages with potential service impact**

# 2019 Capital Expansion – Outage Highlights (continued)

Location: Upstream James River Receipt Area

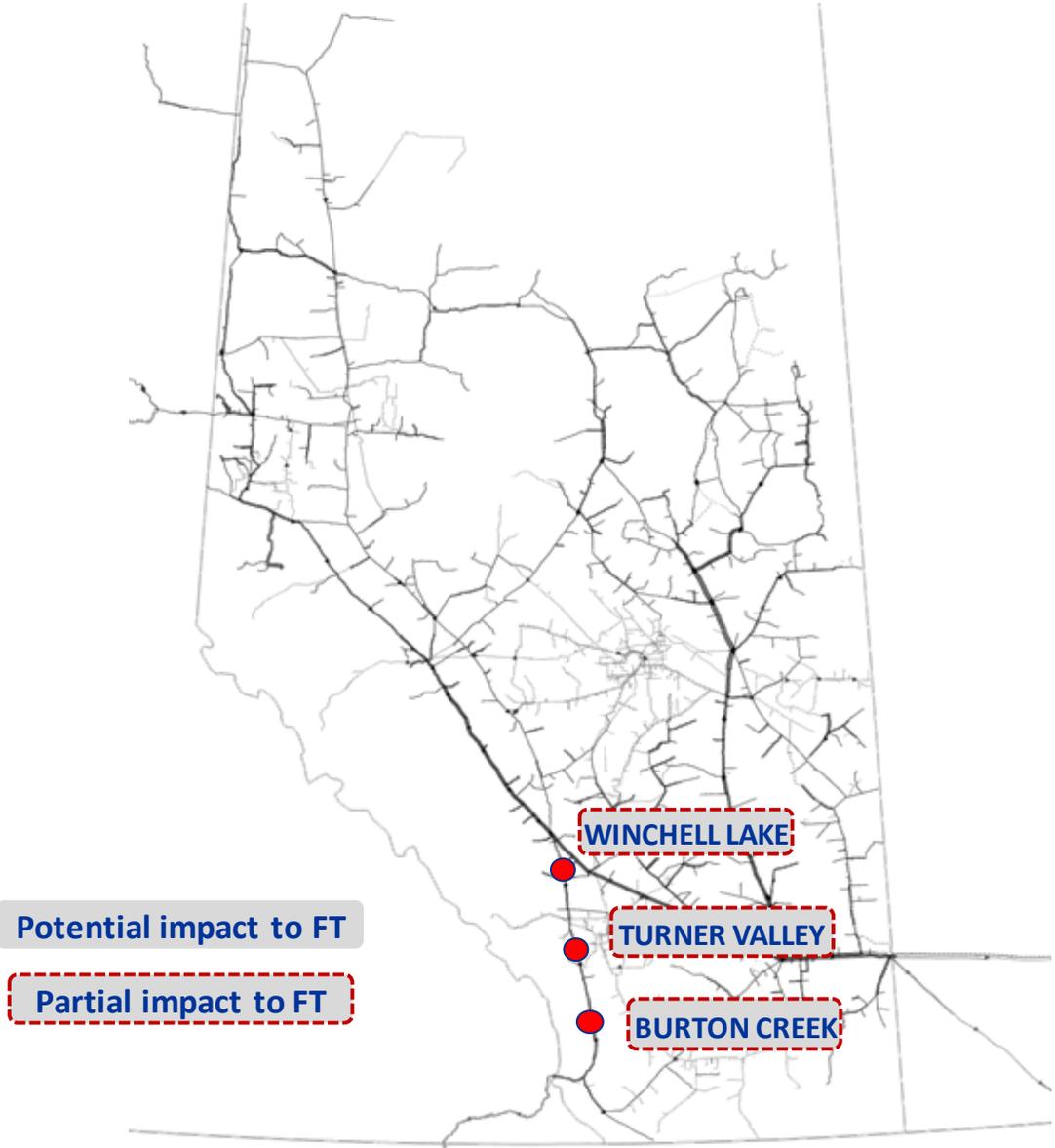


Expansion Facility Description	Outage Requirement	Planned Outage Timing	Capability Loss TJ/day
McLeod River North (New)	Berland River C/S	Sep 16-25, 2019	400
Clearwater West Expansion (New)	Clearwater C/S	Oct 7-17, 2019	300

***Outage date, duration, and impact may be subject to change. Refer to DOP for all planned outages with potential service impact***

# 2019 Capital Expansion – Outage Highlights

Location: Western Gate Delivery Area



Expansion Facility Description	Outage Requirement	Planned Outage Timing	Capability Loss TJ/day
Winchell Lake Unit Addition	Winchell Lake C/S	Jul 8-21, 2019	400
West Path Delivery Project (New)	Turner Valley C/S	Oct 28 - Nov 6, 2019	600
	Burton Creek C/S	Nov 18-27, 2019	400

*Outage date, duration, and impact may be subject to change. Refer to DOP for all planned outages with potential service impact*

**Questions?**



# Agenda

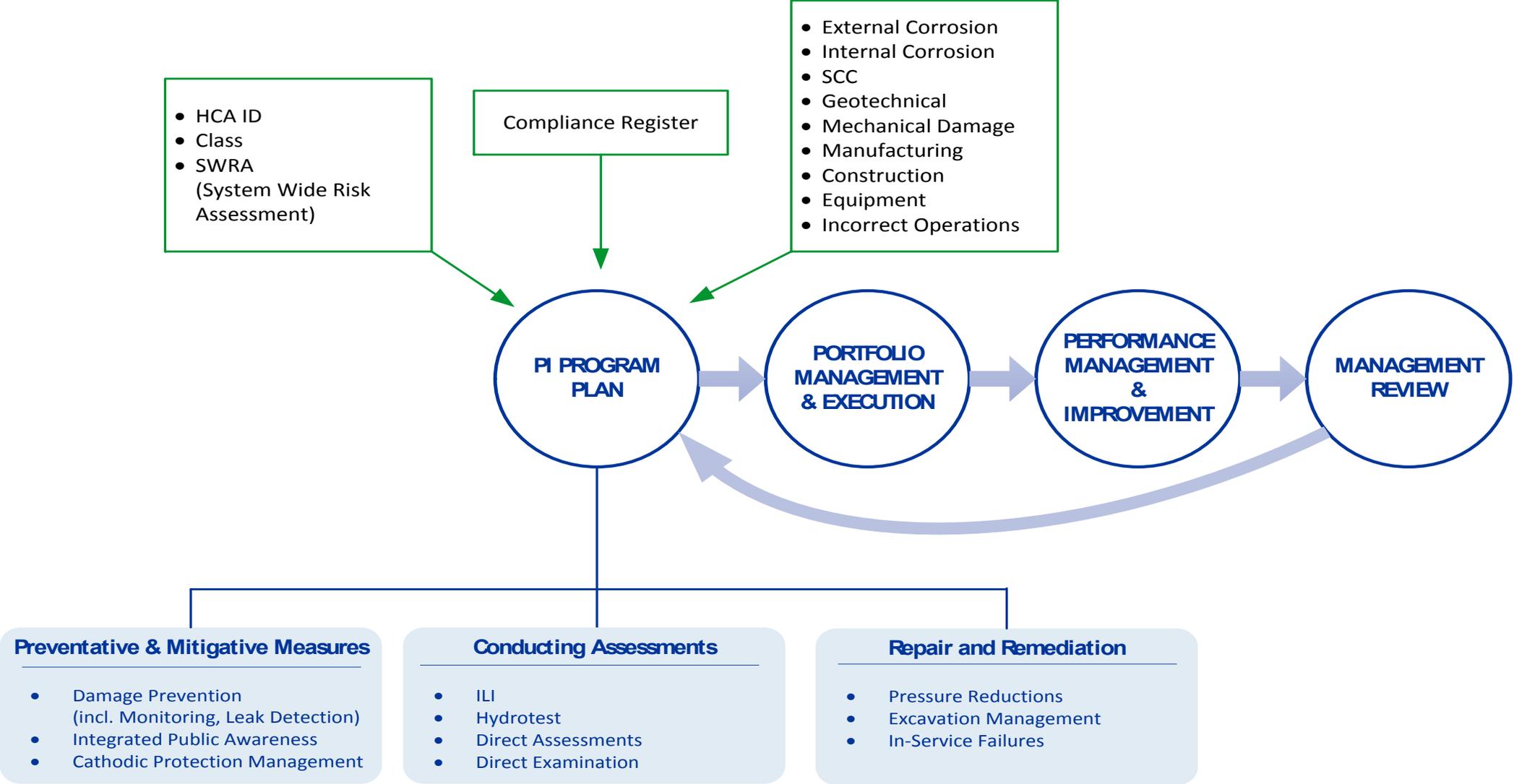
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# Pipe Integrity (PI)



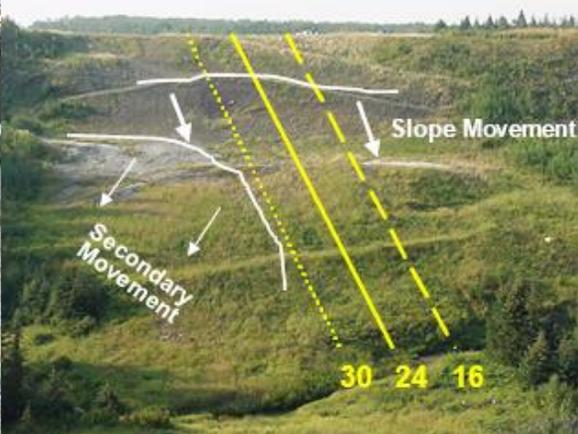
# Pipe Integrity Management Program



# Pipe Integrity Management Program



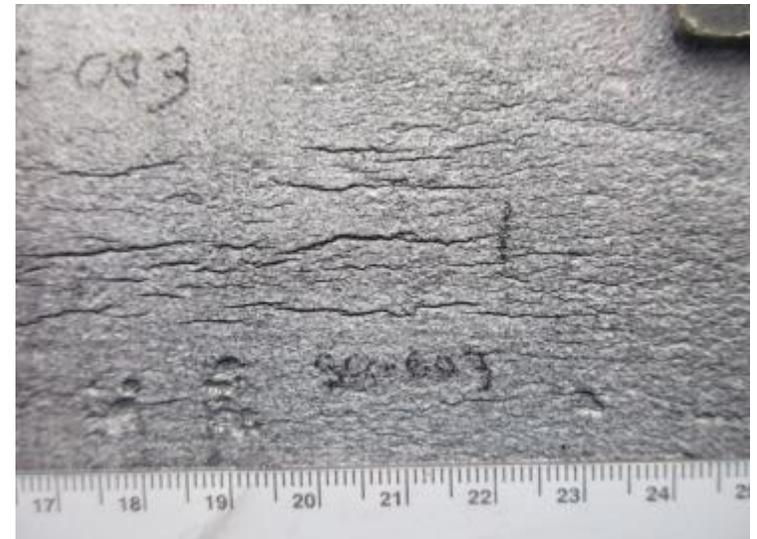
*Ensures safety for over 40,000 km of pipeline in Canada*



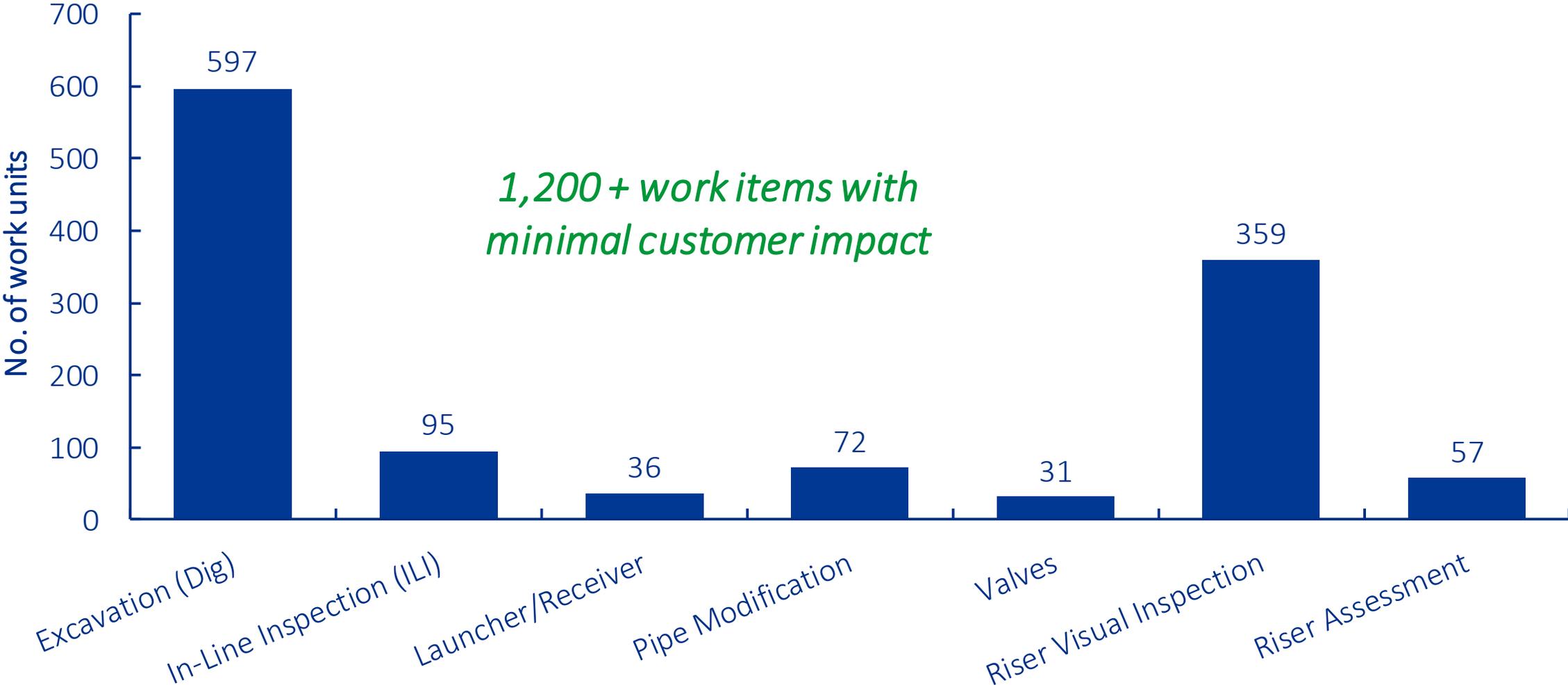
# Experienced Team with Large Portfolio

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- Over 40,000 km of pipe in Canada
  - 25,000 km in NGTL
- 1.5 Billion m<sup>2</sup> of steel
- Over 5 million features assessed annually
- Most effective mitigation is by inline inspection (ILI)



# 2018 NGTL Pipe Integrity Program



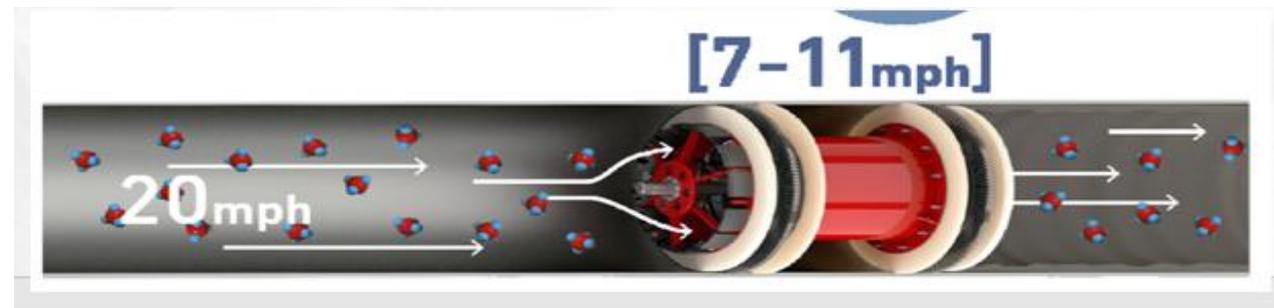
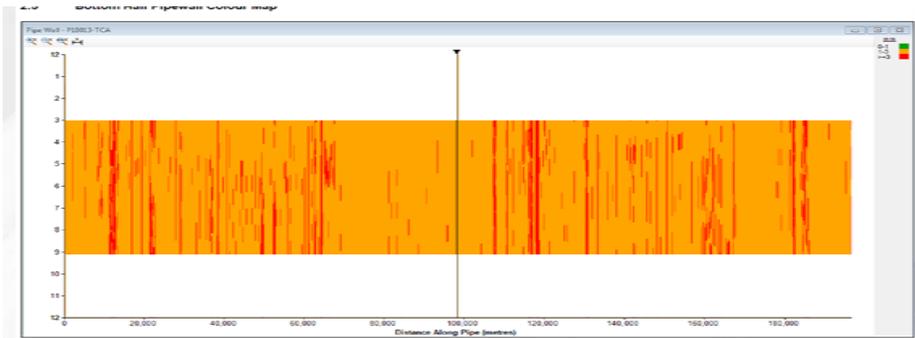
# Challenges: Debris

	Debris (litres)	# Cleaning Runs
NGTL	14,888	282
Foothills	780	18

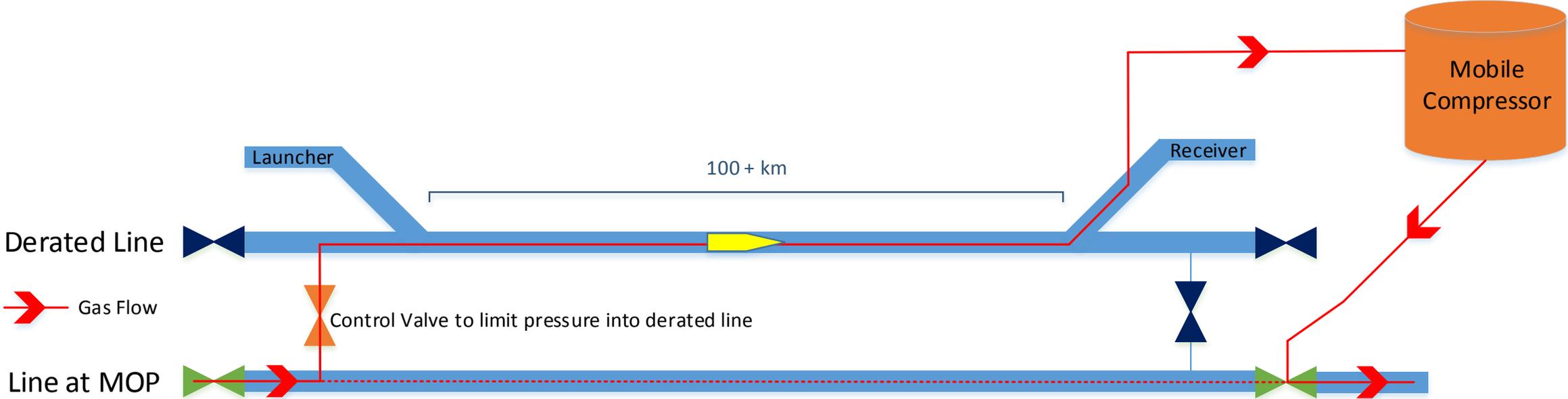


# Evolution of PI Maintenance Approach

- Development of dual diameter tools
- Engineering speed control cleaning tools
- Establish debris mapping methodology
- Wholistic asset planning approach to Pipe Integrity Maintenance
- Changing execution approaches – low pressure I/I



# Evolution of PI Maintenance Approach: Low Pressure ILL



# Foothills Zone 8 (BC) – PI Asset Plan Improvements

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- Increase ILI cycle from 4 years to 2 years
- Reduce probability of immediate features
- Reduce likelihood of operational impact

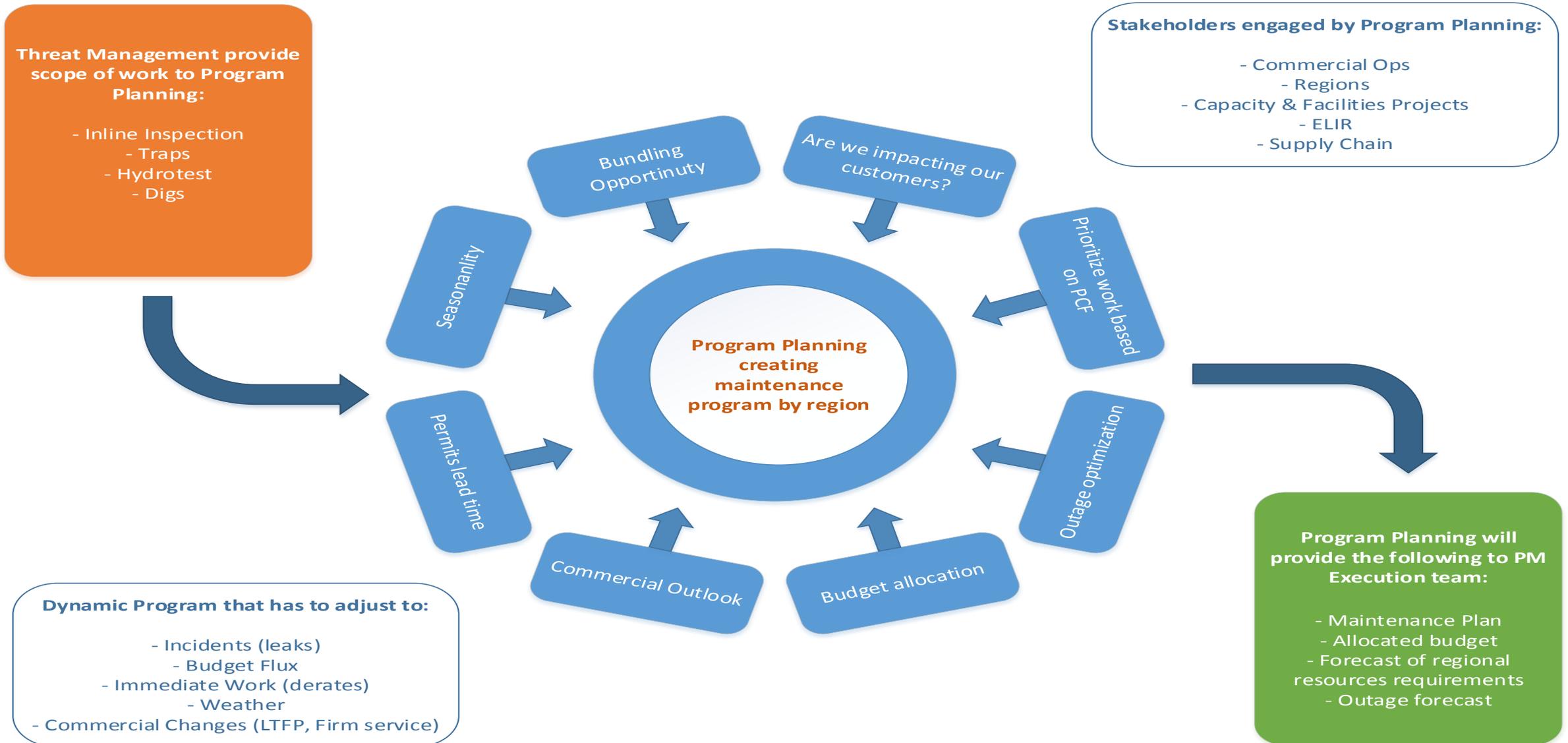


# Restoration

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# Maintaining Safety while Reducing Operational Impact



**Questions?**



# Agenda

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# Over-Consumption & Over-Production - Definition

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- **Over-Consumption:**
  - When aggregate consumption at a Group 2 delivery point is in excess of its aggregate scheduled energy
- **Over-Production:**
  - If during a receipt restriction aggregate measured receipt production is calculated to be in excess of the aggregate authorized nomination quantity
- **Procedure can be found on Customer Express at the following link:**
  - [http://www.tccustomerexpress.com/docs/ab\\_nominations\\_procedures/over-consumption-procedure-final.pdf](http://www.tccustomerexpress.com/docs/ab_nominations_procedures/over-consumption-procedure-final.pdf)

# Procedure Overview

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- If over-production/consumption occurs at a receipt/delivery point and NGTL determines it may negatively impact operations and/or Customers, NGTL has discretion to implement the following procedures to ensure that fair and equitable service is provided:
  - NGTL will notify the Common Stream Operator (CSO) or Connecting Pipe Operator (CPO) and require a reduction of a specified amount within specified time period
  - If non-compliance continues, NGTL may escalate the notification to Senior Officers and c.c. customers with service at the meter
  - If non-compliance continues after escalation, NGTL will notify the CSO/CPO and customers at the meter that NGTL may take steps necessary to reduce over-production/consumption in a safe manner

**Questions?**



# NGTL and Foothills Contact Information

Inquiries	Availability	Team	Functions	Contact Information
General assistance	7am-10 pm MT, 7 day/week	TransCanada Call Centre	Customer service for nominations, allocations, and measurement	403-920-PIPE (7473) or toll-free at 1-877-920-PIPE (7473); and <a href="mailto:nominations@transcanada.com">nominations@transcanada.com</a>
Contracts and Billing	Business hours	Contracts	Support for contracts	<b>NGTL:</b> <a href="mailto:ngtl_contracting@transcanada.com">ngtl_contracting@transcanada.com</a>
		Billing	Support for billing	<b>FH:</b> <a href="mailto:ab_ft_openseason@transcanada.com">ab_ft_openseason@transcanada.com</a> <a href="mailto:ngtl_billing@transcanada.com">ngtl_billing@transcanada.com</a>
Operations planning and outage coordination	Business hours	Operations Planning	New facility integration, operating plan strategies, outage planning and coordination, linepack management, connected pipeline agreements, event/emergency management	<a href="http://www.transcanada.com/customerexpress/2880.html">http://www.transcanada.com/customerexpress/2880.html</a>

# NGTL and Foothills Contact Information

Inquiries	Availability	Team	Functions	Contact Information
Sales and service	Business hours	Customer Account Managers	Service inquiries and new service requests	<b>NGTL:</b> <a href="http://www.tccustomerexpress.com/875.html">http://www.tccustomerexpress.com/875.html</a> <b>FH:</b> Ashley Stowkowy: 920-5828 Andrea Watters: 920-7956
Multi-stakeholder interests	Business hours	Commercial Collaboration	Multi-stakeholder initiatives, customer meetings, and the Tolls, Tariff, Facilities and Procedures (TTFP) committee	<a href="http://www.tccustomerexpress.com/872.html">http://www.tccustomerexpress.com/872.html</a>
All other contacts		TransCanada Natural Gas Pipelines		<a href="http://www.tccustomerexpress.com/852.html">http://www.tccustomerexpress.com/852.html</a>