

# Slide revision – November 15, 2019

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Slide 21 has been revised to reflect the following corrections:

- Facility outage #3 (Gold Creek)
  - Area of impact revised to segments 1,2,3,4,5 partial 7 (upstream Berland River) – (segment 5 has been added to the Area of impact)
  - Outage impact has been revised to “Potential Impact to FT” (previously Partial Impact to FT)

Slide 23 has been revised to reflect the following corrections:

- Facility outage #4
  - NPS 48 BC Mainline Loop has been deferred from 2020. Accordingly, Facility outage #4 is now considered removed (represented by the strikethrough of the outage in the table)
- Facility outage #5
  - As a result of the deferral of NPS 48 BC Mainline Loop from 2020, the outage is now represented as new Facility outage #5 - Burton Creek outage with Elko bundled. The timing for this outage is yet to be determined (TBD).
- Facility outage #7
  - Base capability number has been revised to 220  $10^6\text{m}^3/\text{d}$  (previously incorrectly stated as 195  $10^6\text{m}^3/\text{d}$ )

# Slide revision – November 7, 2019

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Slide 21 has been revised to reflect the following corrections:

- Facility outage #5 (NPS 42 Edson Mainline Loop) base capability has been revised to 333 10<sup>6</sup>m<sup>3</sup>/d (previously incorrectly stated as 336 10<sup>6</sup>m<sup>3</sup>/d)
- Facility outage #9 (Vetchland) base capability has been revised to 340 10<sup>6</sup>m<sup>3</sup>/d (previously incorrectly stated as 344 10<sup>6</sup>m<sup>3</sup>/d )



**NGTL System and Foothills Pipe Lines Ltd.**

**Customer Operations Meeting**

November 6, 2019



# 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. TC Energy shall not be liable for damages sustained as a result of any use or reliance on such information.

**Potential  
impact to FT**

Refers to outage periods where there is high potential of FT impact

**Partial  
impact to FT**

Refers to outage periods where FT impact is expected

**Potential  
impact to IT**

Refers to outage periods where there is high potential of IT impact (EGAT only)

# 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 right
- Muster points are located on the plus-15 level of: 5<sup>th</sup> Ave Place, TC Energy Tower, Suncor Energy Centre, and Telus First Tower

## 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

# Carbon monoxide safety

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Carbon monoxide can cause health problems before you even notice that it's present. Breathing in the gas reduces your body's ability to carry oxygen in your blood.

Here are some simple precautions to help prevent carbon monoxide poisoning:

- Install carbon monoxide detectors in your home
- Open the garage door before starting your vehicle
- Have all fuel-burning appliances inspected each year
  - Furnaces, fireplaces, gas stoves, water heaters



# Agenda

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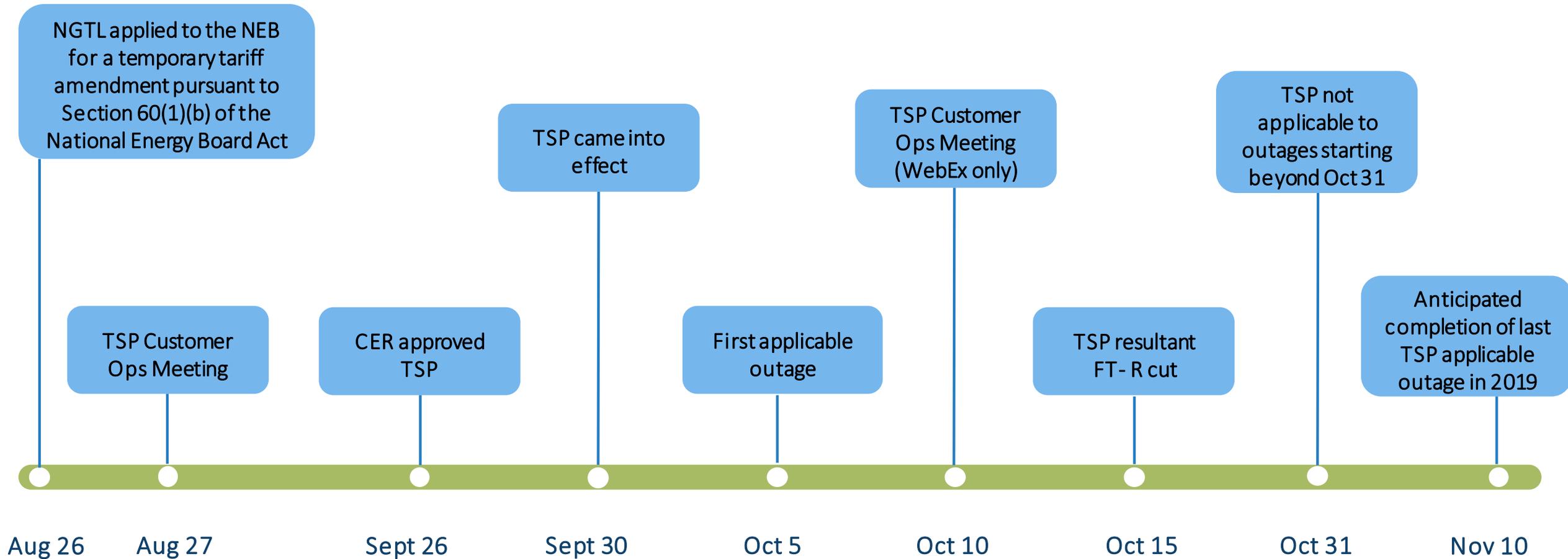
- 1 2019 Temporary Service Protocol review
- 2 2020 Operational Outlook
- 3 Over-consumption procedure
- 4 Customer Operations Action Team update

# Agenda

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- 1 2019 Temporary Service Protocol review
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# Temporary Service Protocol (TSP) – 2019 timeline



# Temporary Service Protocol – Outages impacted in 2019

	October																															November									
	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	1	2	3	4	5	6	7	8	9	10				
Edson ML 30" ILI	100% FT/100% IT-D																																								
Meikle C											80% FT-R/ 100% IT-D	83% FT-R/ 100% IT-D																													
Hidden Lake South										80% FT-R/ 100% IT-D	83% FT-R/ 100% IT-D					76% FT-R/100% IT-D																									
CAS ML 30" ILI																	76% FT-R/100% IT-D																								
NW Mainline Loop ILI																											82% FT-R/ 100% IT-D														
Clearwater																																								77% FT-R/100% IT-D	

# TSP 2019 – Thoughts and lessons learned

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## Clear communication is paramount

- System scrutiny highlights daily variability of the NGTL system
- TSP applicable outage does not mean a certain FT-R cut
- Largest outage constraint drives restriction methodology
- Impacts of concurrent downstream maintenance (planned/unplanned)

## Schedule maintenance to avoid TSP start/end dates (April 1/October 31)

- Outages only scheduled across start/end dates only if absolutely necessary (ISD impact, safety/integrity drivers)

# Temporary Service Protocol - resources

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Please visit Customer Express for additional TSP related information

- Customer Operations meeting (WebEx only), TSP, October 10 2019:  
<http://www.tccustomerexpress.com/docs/2019-10-10%20Customer%20Ops%20WebEx%20Meeting.pdf>

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# Commonly referenced flow paths

NWML

NCC

GPML

EDSML

CAS

WAS

NLAT

EAS

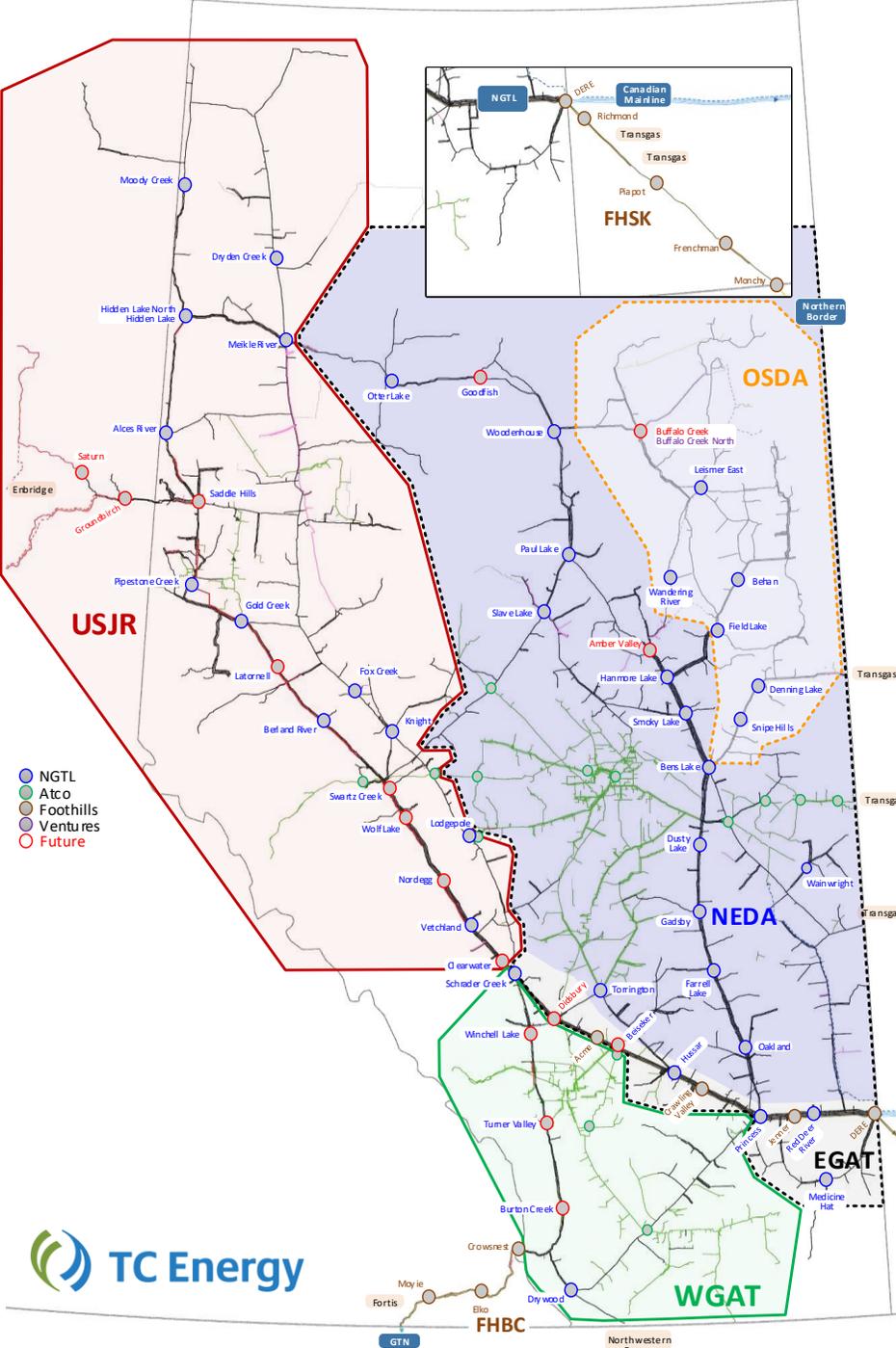
SLAT

- Northwest Mainline (NWML)
- Grande Prairie Mainline (GPML)
- Edson Mainline (EDSML)
- Western Alberta System Mainline (WAS)
- Central Alberta System Mainline (CAS)
- Eastern Alberta System Mainline (EAS)
- South Lateral (SLAT)
- North Lateral (NLAT)
- North Central Corridor (NCC)

Click [HERE](#) to access this information on Customer Express



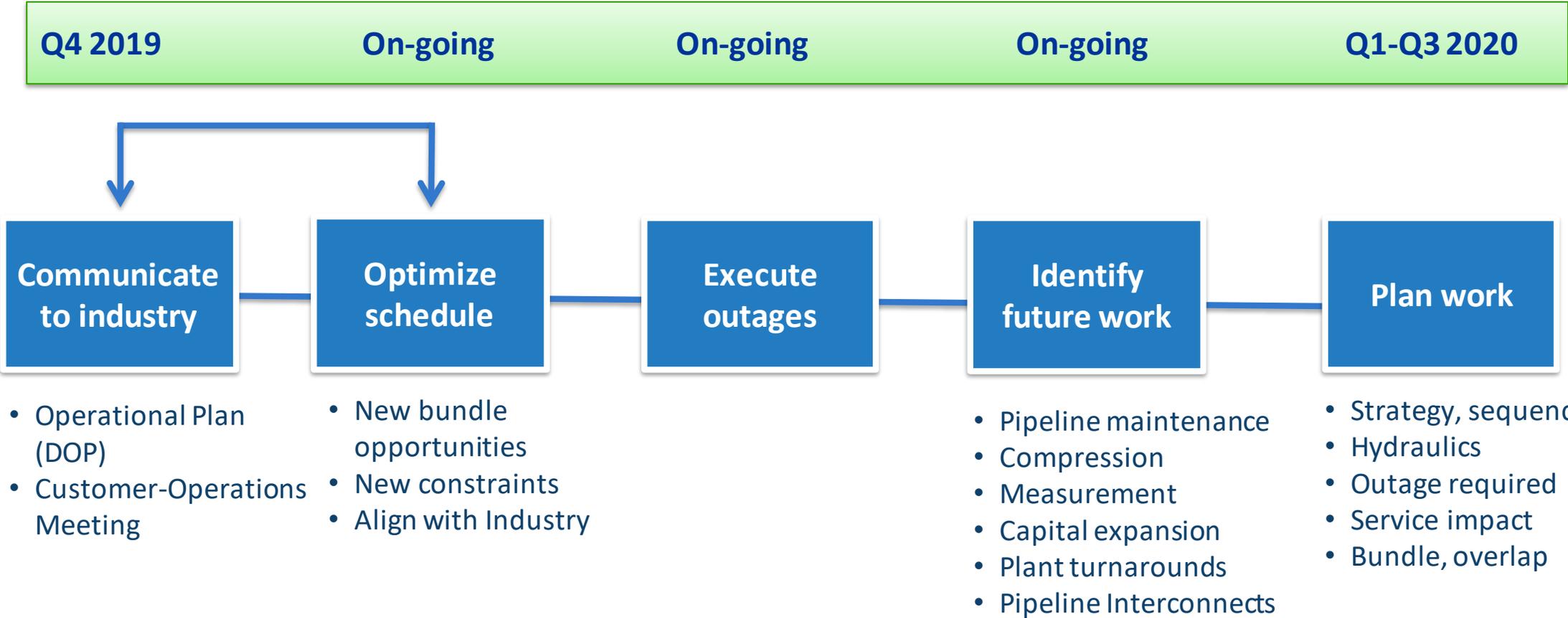
# Commonly referenced service areas



- Upstream James River Receipt Area (USJR) - majority of system receipts
- Western Gate Delivery Area (WGAT) - includes export
- Eastern Gate Delivery Area (EGAT) - includes export & storage injection
- Foothills B.C. (FHBC)
- Foothills Sask. (FHSK)

Click [HERE](#) to access this information on Customer Express

# 2020 program timeline



# Basis for 2020 operational outlook

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- ‘Outage Highlights’ today only includes known outages with high potential for FT or significant EGAT IT impact

*Majority but not all of the significant 2020 outages*

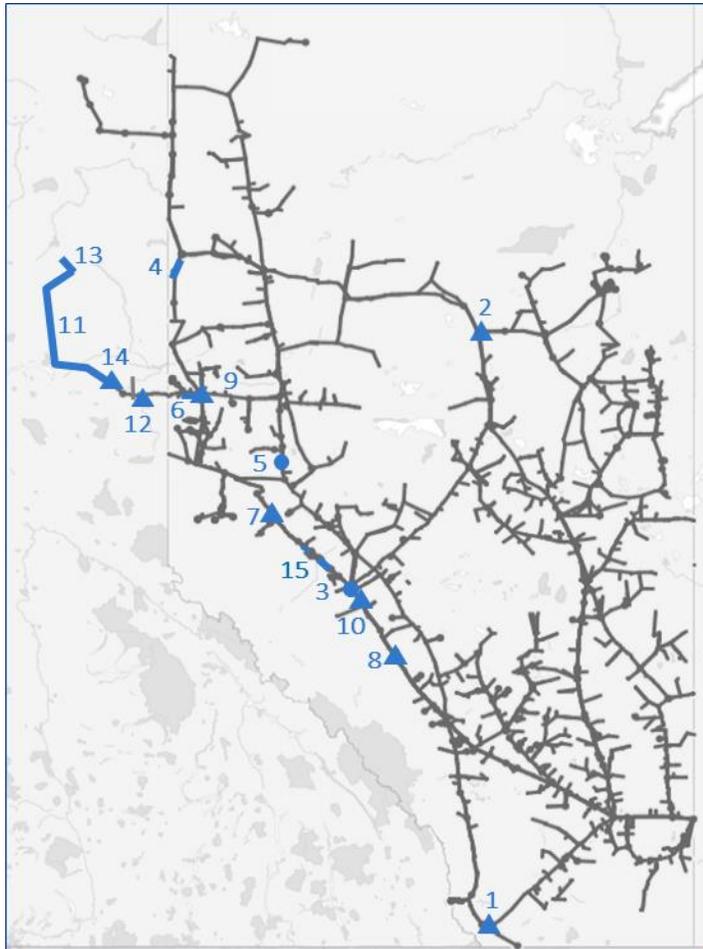
- Outage window, duration, area of impact, and capability information may be revised as new information becomes available

*Expansion facility timing, interconnect collaboration, schedule refinement, supply/demand distribution, etc.*

- Further detail associated with these and all other outages will be communicated and updated through the Daily Operating Plan (DOP) as more information is available

*Dates, other major outages, complete outage schedule*

# Mainline expansion facilities



**LEGEND:**

- Proposed Facility
- ▲ Proposed Compressor
- Proposed Pipe

<u>MAP I.D.</u>	<u>FACILITY</u>	<u>DESCRIPTION</u>
1	Drywood Compressor Station Coolers	In service
2	Woodenhouse CS Unit Addition	30MW In service
3	Edson Control Valve Addition	In service
4	NWML Loop Boundary Lake North	23km NPS 36 In service

### Saddle West Expansion

5	Clarkson Valley Control Valve	In service
6	Gordondale Lateral Loop No.3	25km NPS 36 In service
7	Latornell CS Unit Addition	30MW In service
8	Nordegg CS Unit Addition	30MW In service
9	Saddle Hills CS Unit Addition and CV Mods	30MW In service
10	Swartz Creek CS Unit Addition	30MW In service

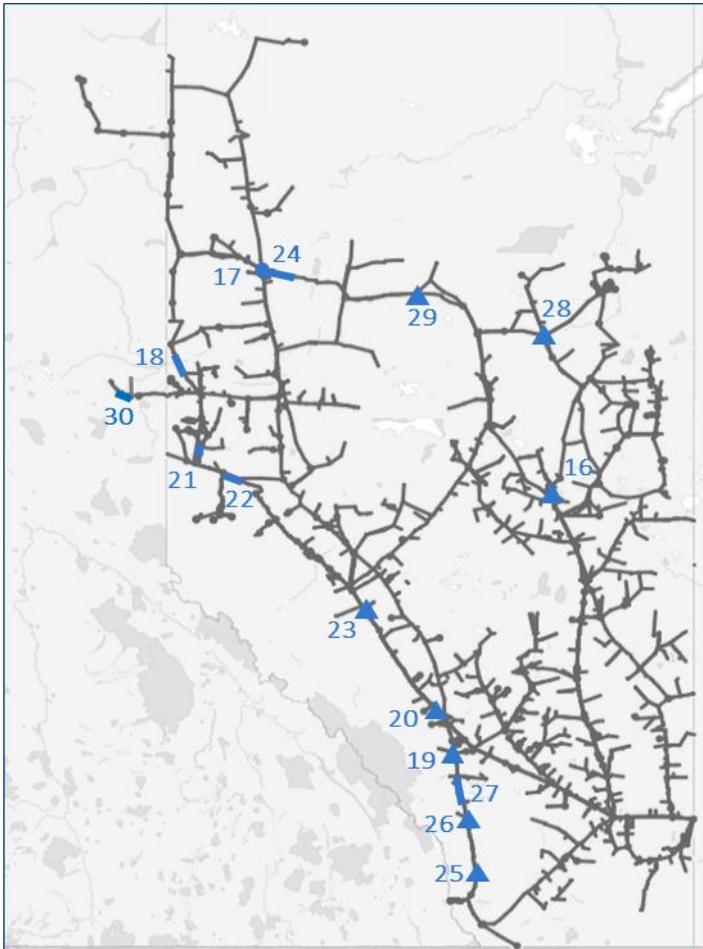
### North Montney Project

11	NMML Aitken Creek Section	182km NPS 42
12	Groundbirch CS	2x15MW In service
13	NMML Kahta Section	24 km NPS 42
14	Saturn CS	15 MW

15	GPML Loop No.2 McLeod River North Section	35km NPS 48
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2020 outage plan benefits from these future expansion facilities

# Mainline expansion facilities



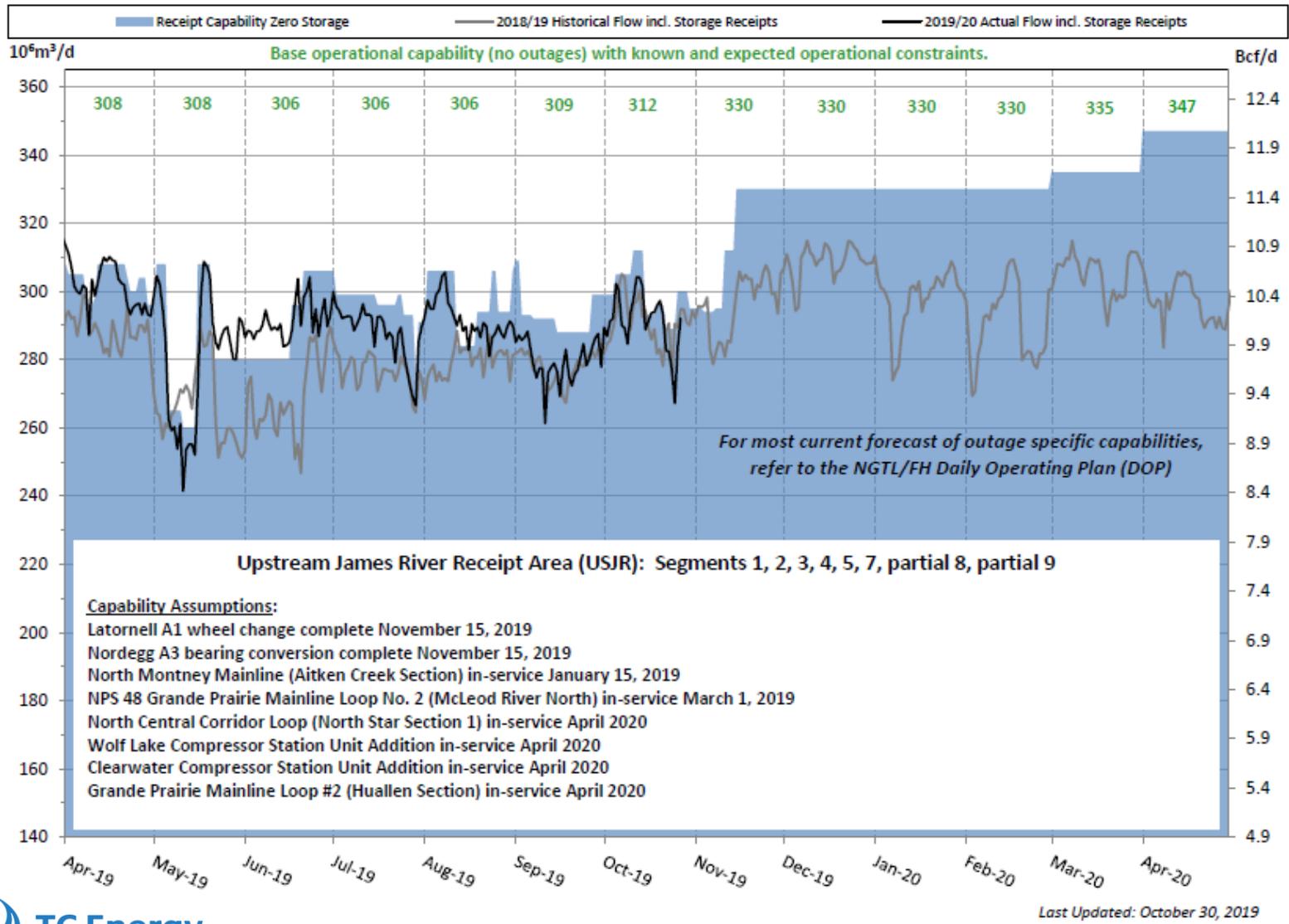
**LEGEND:**

- Proposed Facility
- ▲ Proposed Compressor
- ▬ Proposed Pipe

<u>MAP I.D.</u>	<u>FACILITY</u>	<u>DESCRIPTION</u>
<b>North Path Delivery Project</b>		
16	Amber Valley CS Unit Addition	15MW
17	MeikleRiver CS Series Modification	
18	NWML Loop No.2 Bear Canyon North Section	28km NPS 36 In service
19	Winchell Lake CS Unit Addition	30MW In service
<b>Clearwater West Expansion</b>		
20	Clearwater CS Unit Addition	30MW
21	GPML Loop No.2 (Huallen)	13km NPS 48
22	GPML Loop No.3 Elsworth Section 1	24km NPS 48
23	Wolf Lake CS Unit Addition	30MW
24	NCC Loop - North Star Section 1	32km NPS 48
<b>West Path Delivery Project</b>		
25	Burton Creek CS Unit Addition	30MW
26	Turner Valley CS Unit Addition	30MW
27	WASML Loop - Rocky View Section	22km NPS 42
28	Buffalo Creek CS Unit Addition	30MW
29	Goodfish CS #2 Unit Addition	30MW
30	Groundbirch Mainline Loop - Sunrise	24km NPS 42

2020 outage plan benefits from these future expansion facilities

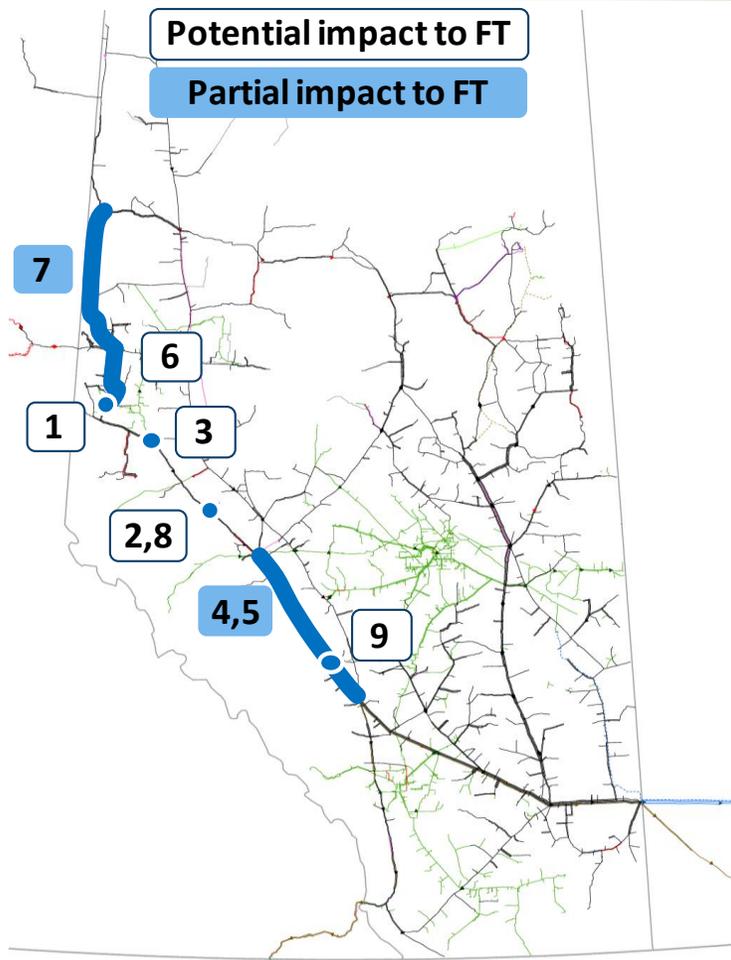
# Operational capability outlook – Upstream James River Receipt Area (USJR)



mm-yy	USJR 10 <sup>6</sup> m <sup>3</sup> /d
Apr-19	308
May-19	308
Jun-19	306
Jul-19	306
Aug-19	306
Sep-19	309
Oct-19	312
Nov-19	330
Dec-19	330
Jan-20	330
Feb-20	330
Mar-20	335
Apr-20	347
May-20	341
Jun-20	335
Jul-20	333
Aug-20	332
Sep-20	336
Oct-20	340

Base capability outlook extended beyond that which is currently in DOP Base Capability table.

# Outage highlights – Upstream James River Receipt Area (USJR)



Facility Outage		Planned Outage Timing	TSP applicable	Base 10 <sup>6</sup> m <sup>3</sup> /d	Outage Capability 10 <sup>6</sup> m <sup>3</sup> /d TJ/d	
1.	Pipestone Creek <i>Compressor Station Modifications</i>	Nov 25 to Dec 9, 2019	No	196 <sup>a</sup>	182	7,300
2.	Berland River <i>Compressor Station Modifications</i>	Dec 10 to Dec 15, 2019	No	330 <sup>b</sup>	301	12,100
3.	Gold Creek <i>Compressor Station Modifications</i>	Feb (13 days), 2020	No	236 <sup>c</sup>	209	8,400
4.	NPS 42 Edson Mainline Loop 2 <i>Pipeline Maintenance</i>	Apr (10 days), 2020	Yes	347	325	13,000
5.	NPS 42 Edson Mainline Loop <i>Pipeline Maintenance</i>	Jul (15 days), 2020	Yes	333	300	12,000
6.	NPS 30 Grande Prairie Mainline Loop <i>Pipeline Maintenance</i>	Aug (10 days), 2020	Yes	204 <sup>a</sup>	190	7,600
7.	NPS 36 Northwest Mainline <i>Pipeline Maintenance</i>	Sep (11 days), 2020	Yes	220 <sup>c</sup>	175	7,000
8.	Berland River <i>Compressor Station Maintenance</i>	Sep (3 days), 2020	Yes	298 <sup>d</sup>	277	11,100
9.	Vetchland <i>Compressor Station Maintenance</i>	Oct (2 days), 2020	Yes	340	318	12,800

*Expected area of impact and capability stated is for the base USJR: segments 1,2,3,4,5,7,p8,p9 (exceptions below)*

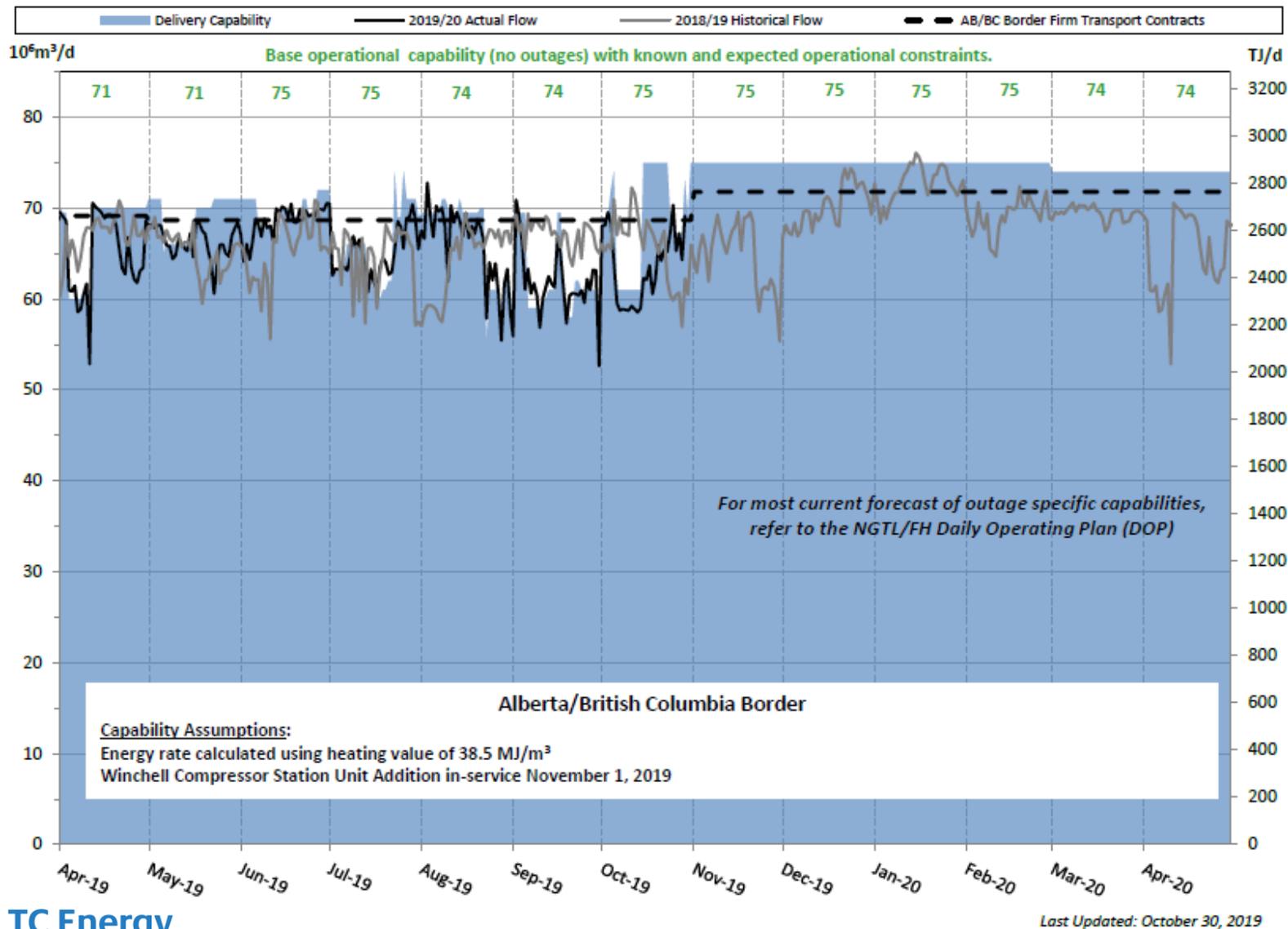
*a. Segments 1,2,3,4, partial 7 (upstream Latornell)*

*b. Segments 1,2,3,4,5,7, partial 8 (upstream Wolf Lake), partial 9 (upstream Lodgepole)*

*c. Segments 1,2,3,4,5 partial 7 (upstream Berland River)*

*d. Segments 1,2,3,4,5,7, partial 8 (upstream Swartz Creek), partial 9 (upstream Lodgepole)*

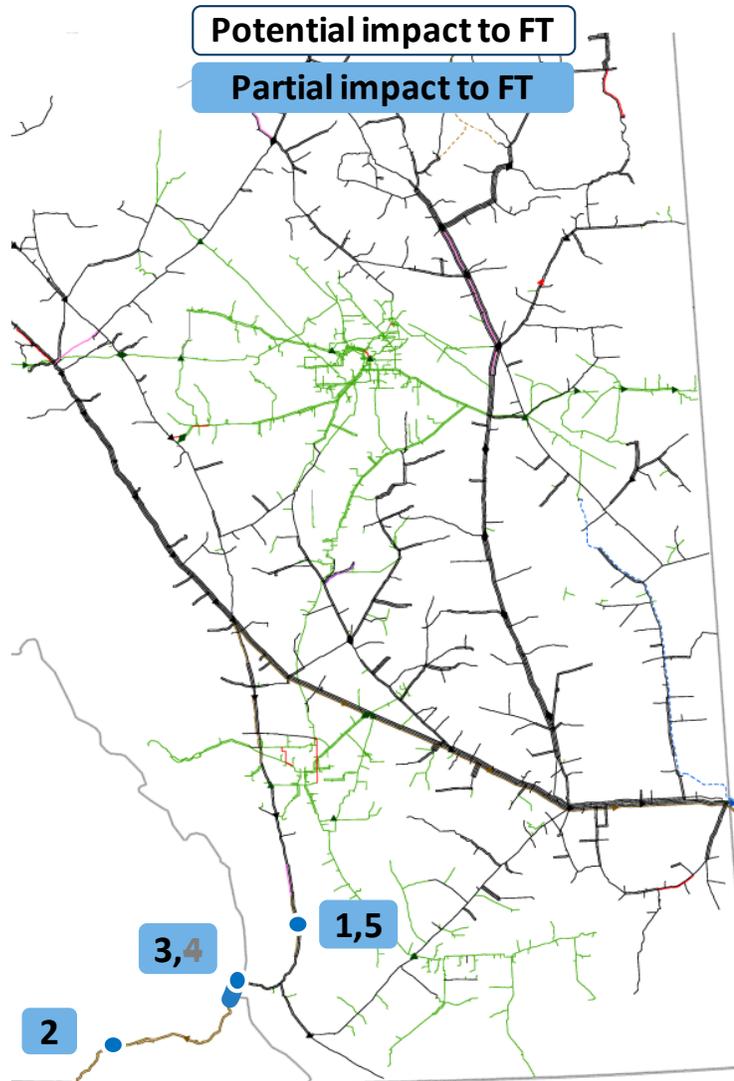
# Operational capability outlook – Alberta British Columbia Border (ABC)



mm-yy	ABC 10 <sup>6</sup> m <sup>3</sup> /d
Apr-19	71
May-19	75
Jun-19	75
Jul-19	74
Aug-19	74
Sep-19	75
Oct-19	75
Nov-19	75
Dec-19	75
Jan-20	75
Feb-20	75
Mar-20	74
Apr-20	74
May-20	74
Jun-20	80
Jul-20	80
Aug-20	80
Sep-20	80
Oct-20	80

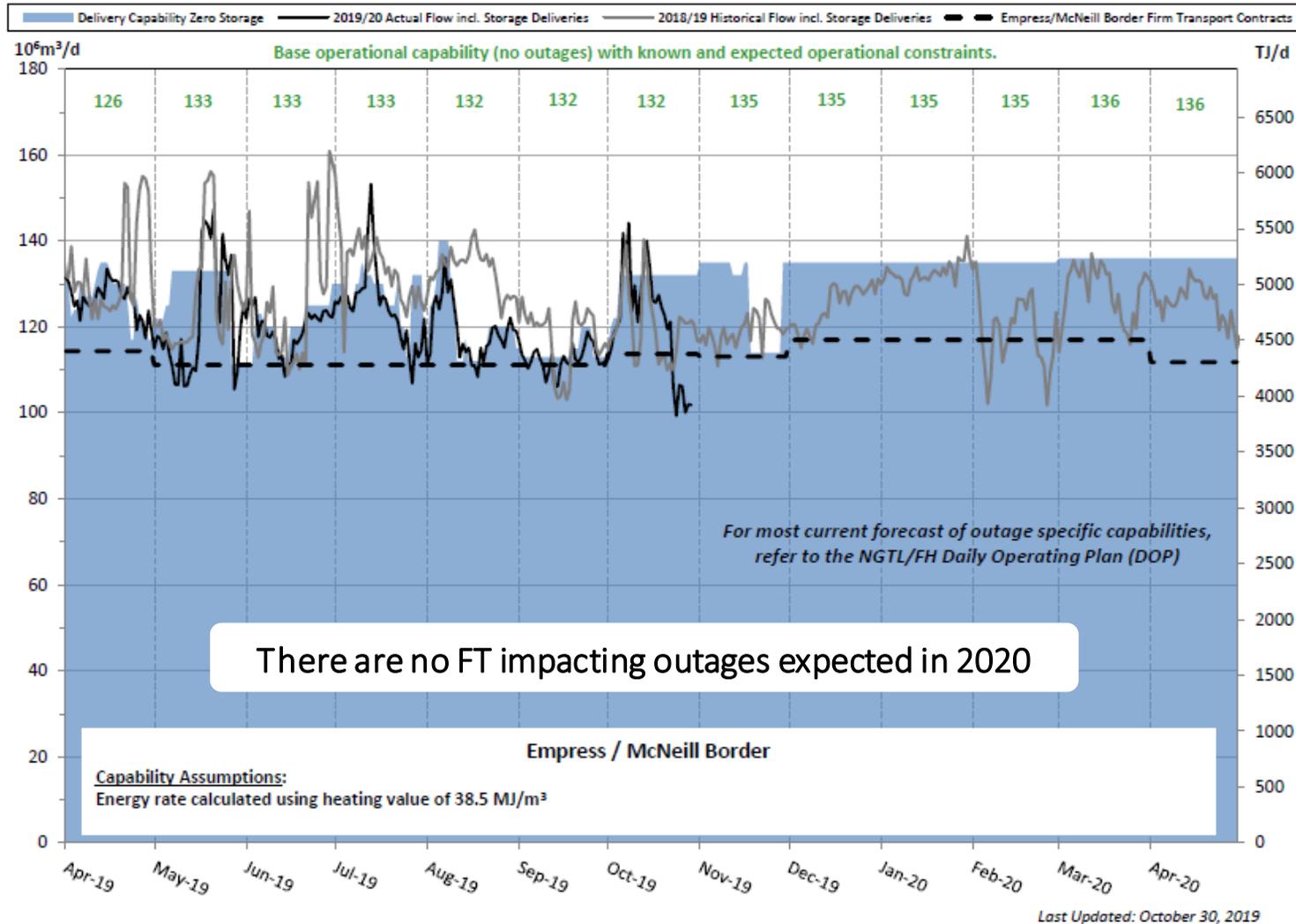
Base capability outlook extended beyond that which is currently in DOP Base Capability table.

# Outage highlights – Alberta British Columbia Border (ABC)



Facility Outage	Planned Outage Timing	System	Outage Capability		
			Base 10 <sup>6</sup> m <sup>3</sup> /d	10 <sup>6</sup> m <sup>3</sup> /d	TJ/d
1. Burton Creek <i>Compressor Station Modifications</i>	Feb (6 days), 2020	NGTL	75	63	2,425
2. Moyie (Turner Valley) <i>Compressor Maintenance</i>	Apr (5 days), 2020	FHBC	74	57	2,200
3. Crowsnest A <i>Compressor Station Maintenance</i>	Jun (3 days), 2020	FHBC	80	61	2,350
4. NPS 48 BC Mainline Loop (Burton Creek, Elko) <i>Pipeline Modifications</i>	Aug (11 days), 2020	FHBC	80	59	2,275
5. Burton Creek (Elko) <i>Compressor Station Modifications</i>	TBD (3 days)	NGTL	TBD	TBD	TBD

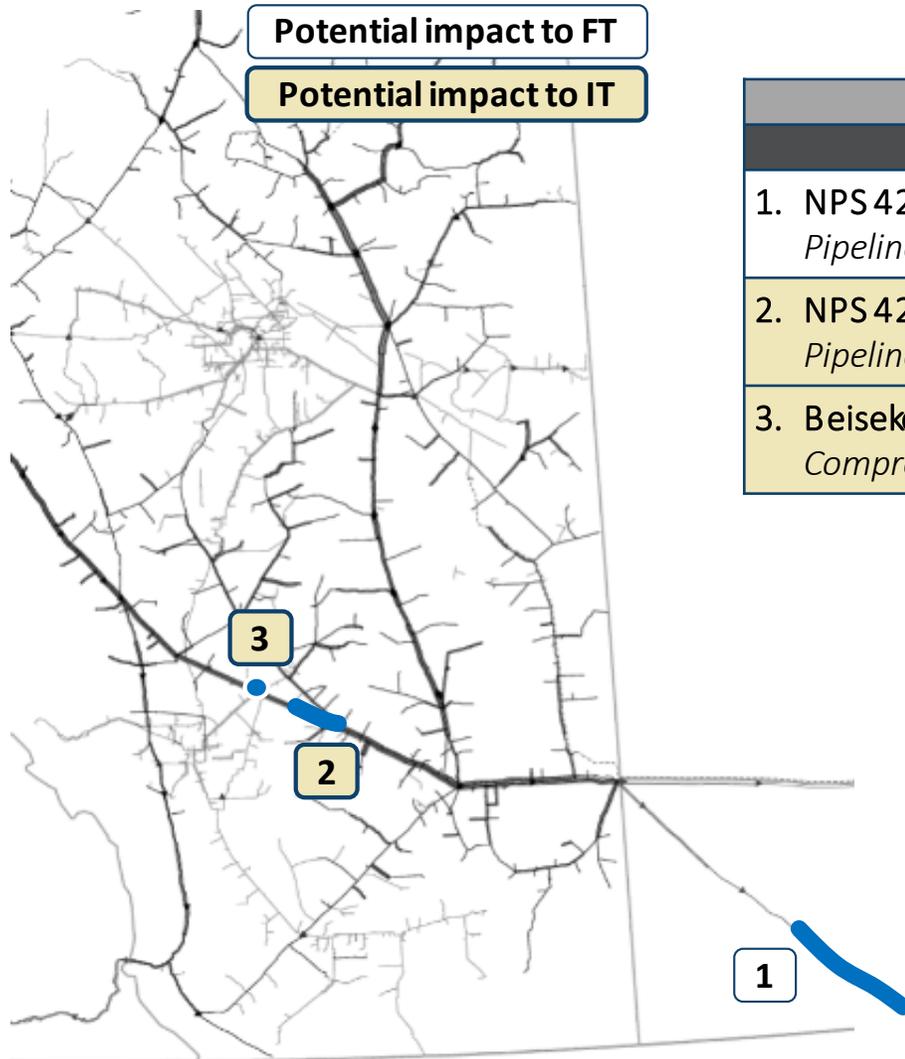
# Operational capability outlook – Empress/McNeill Border (EGAT)



mm-yy	EGAT 10 <sup>6</sup> m <sup>3</sup> /d
Apr-19	133
May-19	133
Jun-19	133
Jul-19	132
Aug-19	132
Sep-19	132
Oct-19	132
Nov-19	135
Dec-19	135
Jan-20	135
Feb-20	135
Mar-20	136
Apr-20	136
May-20	136
Jun-20	136
Jul-20	140
Aug-20	145
Sep-20	145
Oct-20	140

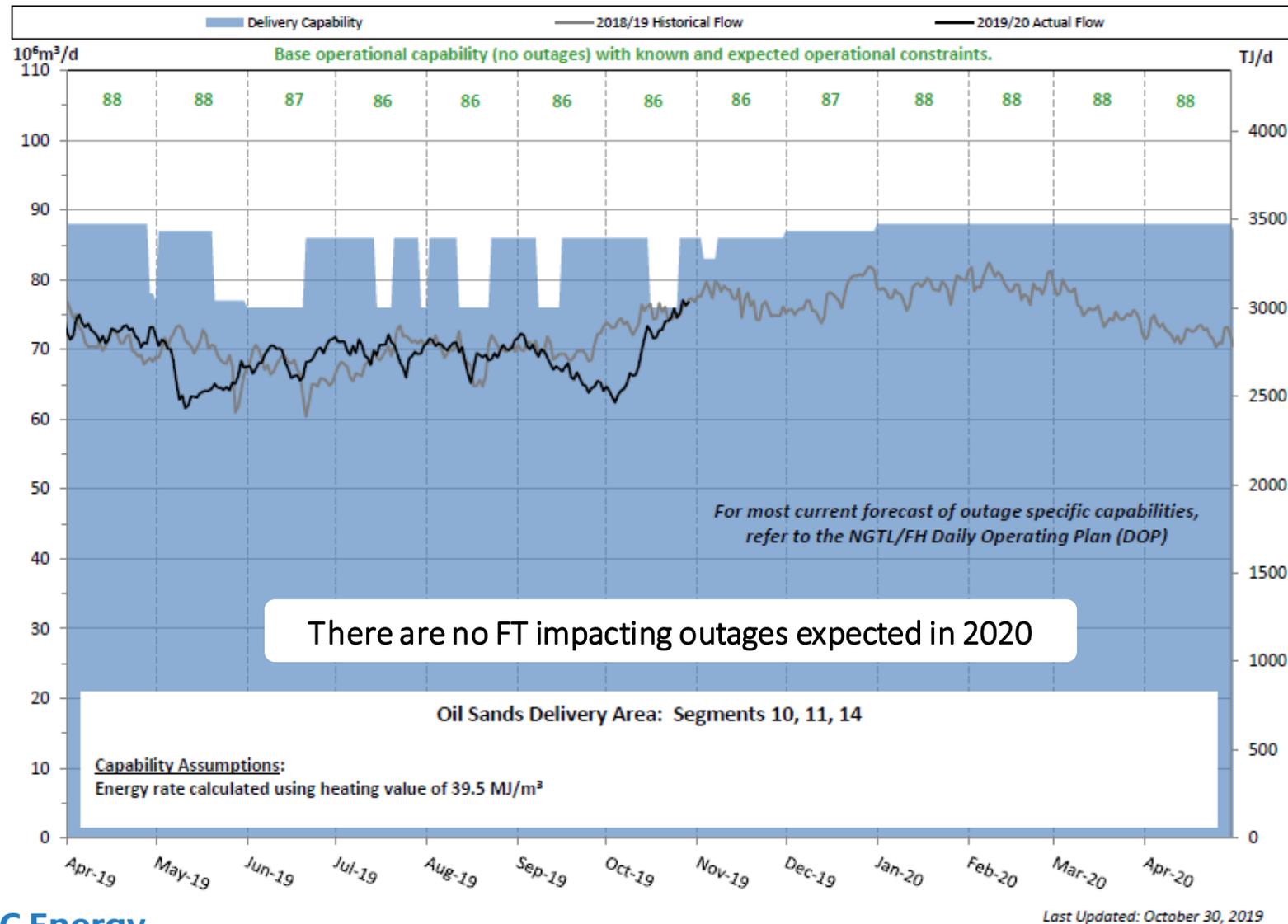
Base capability outlook extended beyond that which is currently in DOP Base Capability table.

# Outage highlights – Empress/McNeill (EGAT) & Monchy Borders



Facility Outage	Planned Outage Timing	Outage Capability		
		Base 10 <sup>6</sup> m <sup>3</sup> /d	10 <sup>6</sup> m <sup>3</sup> /d	TJ/d
1. NPS 42 Foothills Mainline – Monchy border <i>Pipeline Maintenance</i>	May (5 days), 2020	55	25	975
2. NPS 42 CAS Mainline Loop <i>Pipeline Hydrotest</i>	Aug (30 days), 2020	145	140	5,400
3. Beiseker <i>Compressor Modifications</i>	Oct (10 days), 2020	140	130	5,000

# Base capability outlook – Oil Sands Delivery Area (OSDA)



mm-yy	OSDA 10 <sup>6</sup> m <sup>3</sup> /d
Apr-19	88
May-19	87
Jun-19	86
Jul-19	86
Aug-19	86
Sep-19	86
Oct-19	86
Nov-19	87
Dec-19	87
Jan-20	88
Feb-20	88
Mar-20	88
Apr-20	88
May-20	87
Jun-20	86
Jul-20	86
Aug-20	86
Sep-20	86
Oct-20	86

Preliminary base capability outlook extended beyond that which is currently in DOP Base Capability table.

# Next steps

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## Communicate the schedule and details for:

1. All 'major' outages in 2020 – *mid Nov 2019*
  - Drives the timing for many of the remaining outages
2. All Q1 2020 outages – *end of Nov 2019*
  - Outage timing based on expansion, external resource availability, and running hours
3. Remaining summer 2020 outages – *mid Dec 2019*
  - Outage timing based on minimizing risk of throughput interruption

Refer to the Daily Operating Plan (DOP) for the most current outage information

# Agenda

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- 1 2019 Temporary Service Protocol review
- 2 2020 Operational Outlook
- 3 Over-consumption procedure
- 4 Customer Operations Action Team update

# Definition

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During a NGTL restriction:

**Over-consumption:** When aggregate consumption at a Group 2 delivery point is in excess of its aggregate scheduled energy

Click [HERE](#) to access this procedure information on Customer Express

# Over-consumption - background

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Inequities can be caused by taking another customer's allowable quantity:

- Over-consumption can result in low pressures causing customers downstream to be unable to take gas off the system

## NGTL goals

- Ensure customers treated fairly and equitably:
  - Ensure effective mechanisms in place to ensure all customers/operators comply with existing procedures during a restriction
  - Eliminate over-consumption during service restrictions (i.e. below 100% IT-D)
- Ensure effective operation of the system during restrictions:
  - Meet service obligations

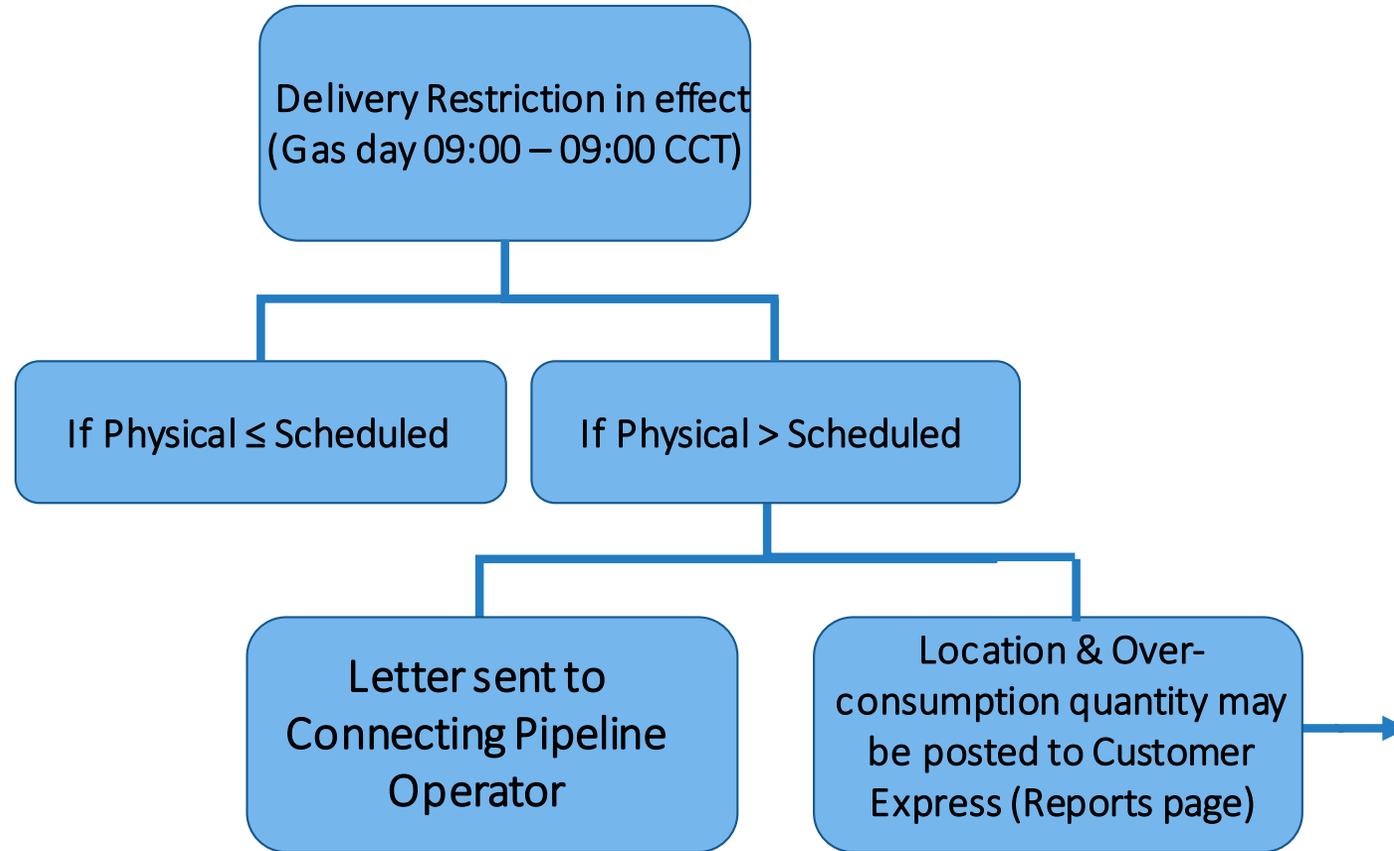
# Escalation process

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If over-consumption occurs at a Group 2 delivery point and may negatively impact operations and/or customers, NGTL will implement the following procedures to ensure that fair and equitable service is provided:

- NGTL will notify the Connecting Pipe Operator (CPO) and require a reduction of a specified amount within specified time period
- NGTL may post on its website where and when over-consumption occurs
- If non-compliance continues, NGTL may escalate the request to senior officers of the CPO and customers with service at the meter
- If non-compliance continues after escalation, NGTL will notify the CPO and customers at the meter, that NGTL may take steps necessary to eliminate overconsumption

# Escalation process



## Reports

- ▶ [Alberta Borders Heat Values](#)
- ▶ [NGTL Fuel Usage and Measurement Variance](#)
- ▶ [NGTL Station Percent Utilization](#)
- ▶ [CO2 Management Service](#)
- ▶ [Credit and Financial Procedures \(PDF\)](#)
- ▶ [Monthly PA CSO Contacts - March 16, 2019 \(XLS\)](#)
- ▶ [Location Daily Contacts - March 16, 2019 \(XLS\)](#)
- ▶ [Plant Turnaround Information Request Form \(DOC\)](#)
- ▶ [Gas Balance Schedules and Recovery](#)
- ▶ [System Utilization](#)

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# Customer Operations Action Team – Scope

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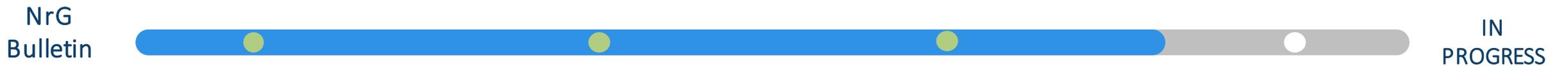
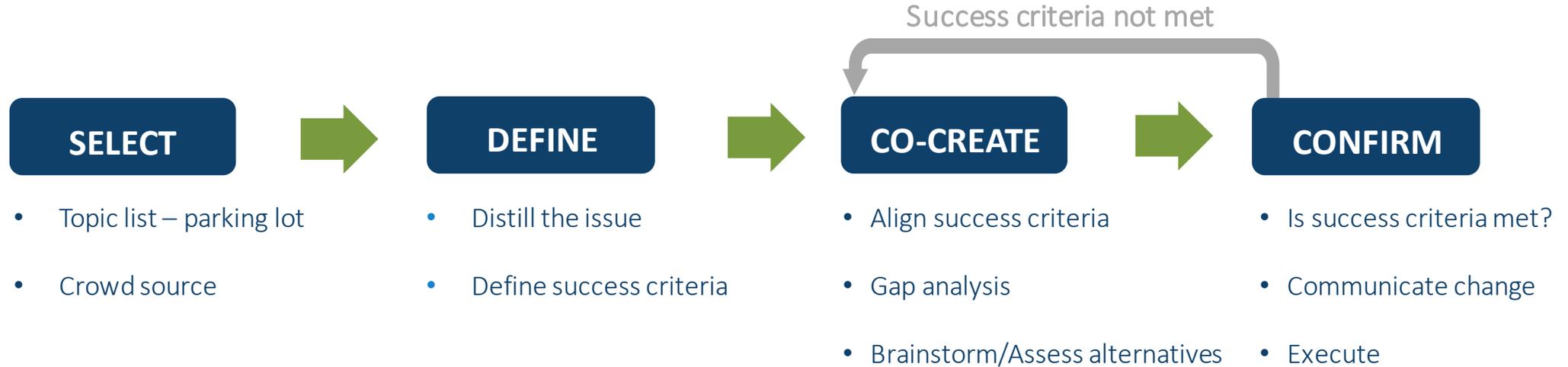
## WHAT IT IS

- Operational communication focus
- Open, respectful, collaborative
- Build two-way understanding
- “Ops-to-Ops” – front line focused
- Drive immediate, impactful change

- Tariffs
- Commercial, policy or regulatory issues

## WHAT IT ISN'T

# Action Team approach & status



# Operational communication enhancements

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1. Consistent weekday DOP publishing window | 3:15 – 3:30 p.m.
2. Daily current system status dashboard
3. DOP compare report
4. Weekend capability forecast
5. Improved DOP capability graphs

# The Hopper

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## “The Hopper”

- *Daily Operating Plan (DOP)*
- *NrG Highway Bulletin*
- *TC Customer Express*
- *Contracting processes & tools*

*What else can we add to “The Hopper”?*

# Customer experience and feedback

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Help us understand how we are doing and what topics you would find valuable by answering a few questions on *Slido*

Join at: [Slido.com](https://slido.com) – NGTL/FH Customer Ops Meeting  
Password: NGTL

# Join Action Team

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Email: [action\\_team@tcenergy.com](mailto:action_team@tcenergy.com)

# NGTL and Foothills contact information

Inquiries	Availability	Team	Functions	Contact information
General assistance	7am-10 pm MT, 7 day/week	TC Energy 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@tcenergy.com">nominations@tcenergy.com</a>
Contracts and Billing	Business hours	Contracts  Billing	Support for contracts  Support for billing	<b>NGTL:</b> <a href="mailto:ngtl_contracting@tcenergy.com">ngtl_contracting@tcenergy.com</a>  <b>FH:</b> <a href="mailto:ab_ft_openseason@tcenergy.com">ab_ft_openseason@tcenergy.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.tccustomerexpress.com/contacts.html">www.tccustomerexpress.com/contacts.html</a>

# NGTL and Foothills contact information

Inquiries	Availability	Team	Functions	Contact information
Sales and service	Business hours	Marketing Representatives	Service inquiries and new service requests	<b>NGTL &amp; Foothills:</b> <a href="http://www.tccustomerexpress.com/contacts.html">www.tccustomerexpress.com/contacts.html</a>
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		TC Energy Natural Gas Pipelines		<a href="http://www.tccustomerexpress.com/852.html">http://www.tccustomerexpress.com/852.html</a>