



# NGTL System and Foothills Pipelines Ltd.

## Customer Operations Meeting

October 1, 2020



# Welcome and Thank You for Joining Us

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## 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 we will answer them at the best possible opportunity

# 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.

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.

- No  
impact to FT

Refers to outage periods where FT impact is not expected
- Potential  
impact to FT

Refers to outage periods where there is potential of FT impact
- Partial  
impact to FT

Refers to outage periods where FT impact is expected

# Important Notes

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- Outage information in this presentation (slides 13 to 20) is NOT applicable beyond the October 1, NGTL/Foothills Customer Operations (WebEx only) meeting
- For current outage information, please refer to the most recent Daily Operating Plan (DOP) on TC Customer Express
- This meeting will only cover operational topics related to the NGTL and Foothills systems. For information on Commercial and Regulatory topics, please contact your marketing representative

# Our Focus During COVID-19

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- Protect our teams, partners and communities
- Ensure no interruption to our customers
- Secure supply of critical equipment and services with our partners

**Notice something is off?**

Please reach out: [Marketing Reps](#) or 403.920.PIPE



# Safety Moment – Passwords

## TIME IT TAKES A HACKER TO BRUTE FORCE YOUR PASSWORD

| Number of Characters | Numbers Only | Lowercase Letters | Upper and Lowercase Letters | Numbers, Upper and Lowercase Letters | Numbers, Upper and Lowercase Letters, Symbols |
|----------------------|--------------|-------------------|-----------------------------|--------------------------------------|---|
| 4                    | Instantly    | Instantly         | Instantly                   | Instantly                            | Instantly                                     |
| 5                    | Instantly    | Instantly         | Instantly                   | Instantly                            | Instantly                                     |
| 6                    | Instantly    | Instantly         | Instantly                   | 1 sec                                | 5 secs  |
| 7                    | Instantly    | Instantly         | 25 secs                     | 1 min                                | 6 mins  |
| 8                    | Instantly    | 5 secs            | 22 mins                     | 1 hour                               | 8 hours                                       |
| 9                    | Instantly    | 2 mins            | 19 hours                    | 3 days                               | 3 weeks                                       |
| 10                   | Instantly    | 58 mins           | 1 month                     | 7 months                             | 5 years                                       |
| 11                   | 2 secs       | 1 day             | 5 years                     | 41 years                             | 400 years                                     |
| 12                   | 25 secs      | 3 weeks           | 300 years                   | 2k years                             | 34k years                                     |
| 13                   | 4 mins       | 1 year            | 16k years                   | 100k years                           | 2m years                                      |
| 14                   | 41 mins      | 51 years          | 800k years                  | 9m years                             | 200m years                                    |
| 15                   | 6 hours      | 1k years          | 43m years                   | 600m years                           | 15 bn years                                   |
| 16                   | 2 days       | 34k years         | 2bn years                   | 37bn years                           | 1tn years                                     |
| 17                   | 4 weeks      | 800k years        | 100bn years                 | 2tn years                            | 93tn years                                    |
| 18                   | 9 months     | 23m years         | 6tn years                   | 100 tn years                         | 7qd years                                     |



-Data sourced from [HowSecureIsMyPassword.net](https://howsecureismypassword.net)

# Safety Moment: Tips to Build a “Smart Password”

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## Use phrases

Create a phrase with a combination of upper and lower case letters, numbers, and symbols...

*ILoveSwimming123!*

## Use password generators

Password manager tools can generate them for your convenience

## Wrong security answers

Use false answers...

*Where were you born?*

*Minnesota*

Update your passwords frequently

Don't use your favorite vacation spot

Don't use anniversaries dates

Don't repeat passwords

Don't use your children names

# Agenda

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1. Dithiazine maintenance update
2. Review outages in Daily Operating Plan (DOP)
3. Advisory Bulletins: transition to standard process
4. Enhancements to *my.TC*

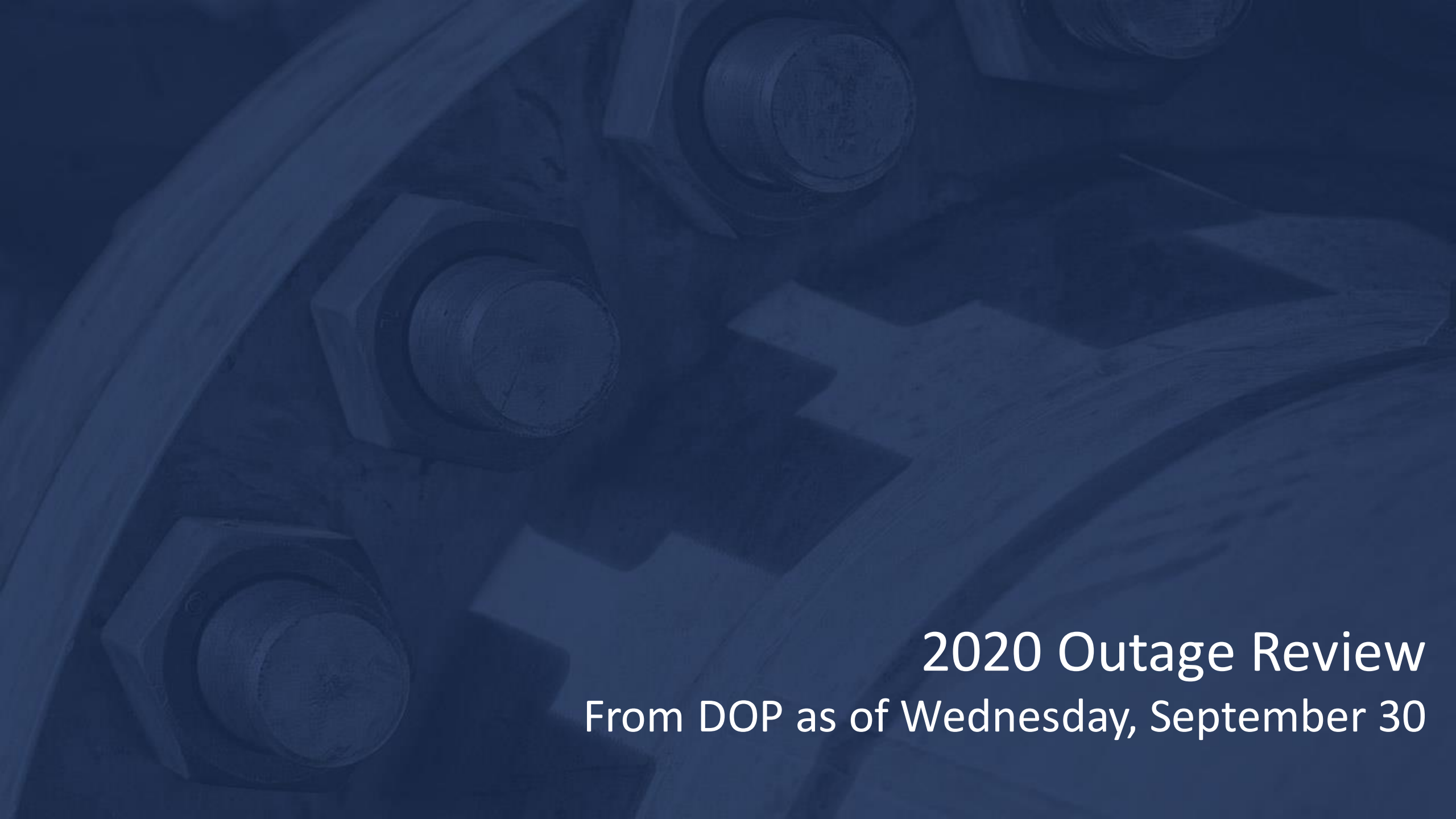


# Dithiazine maintenance update

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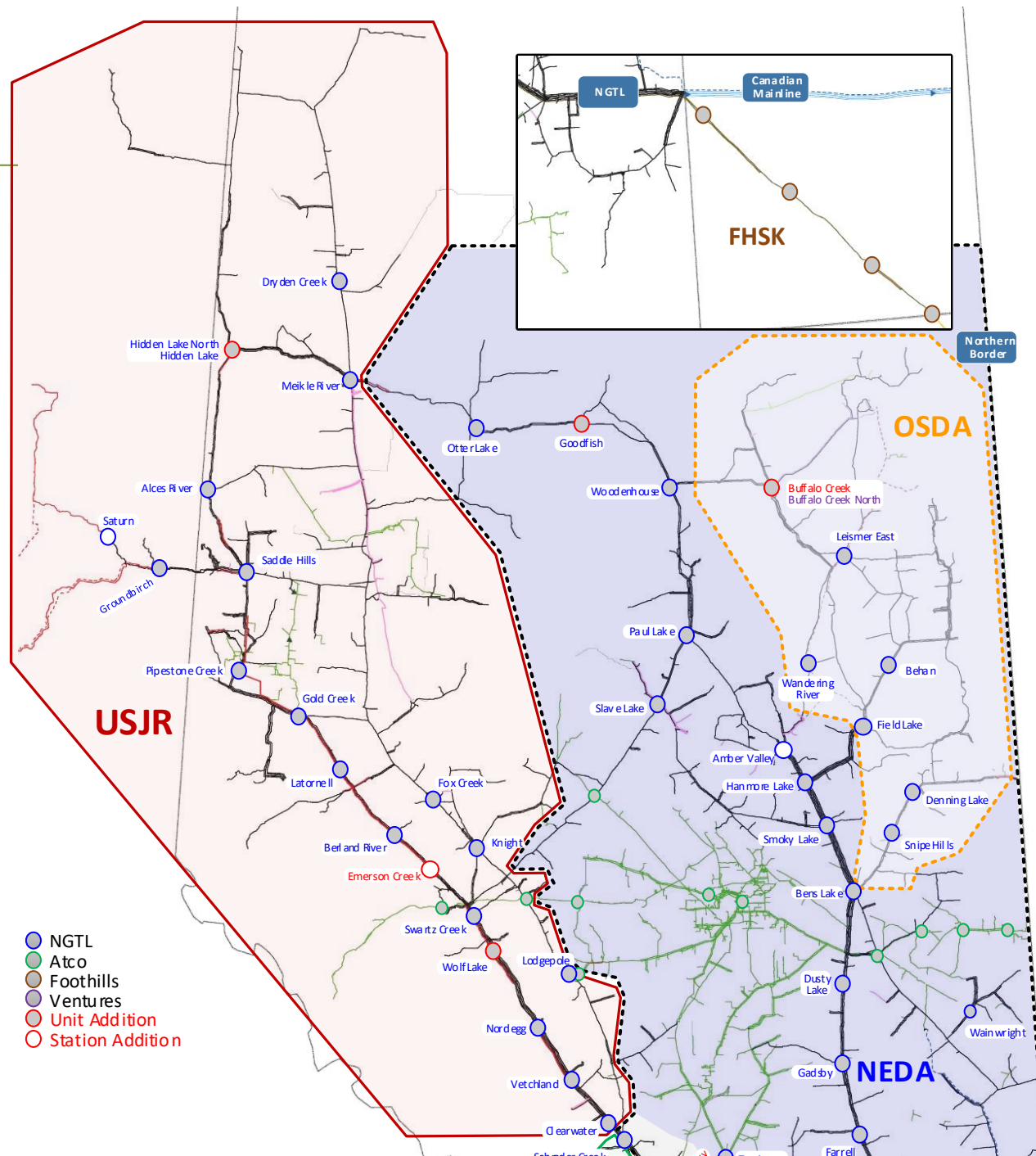
- TC Energy continues to explore and implement best method(s) to monitor and remediate its own systems
- Incremental Mechanical pigging will be included in the 2021 pipe integrity program
- 2021 maintenance program will be communicated at the November Customer Ops meeting

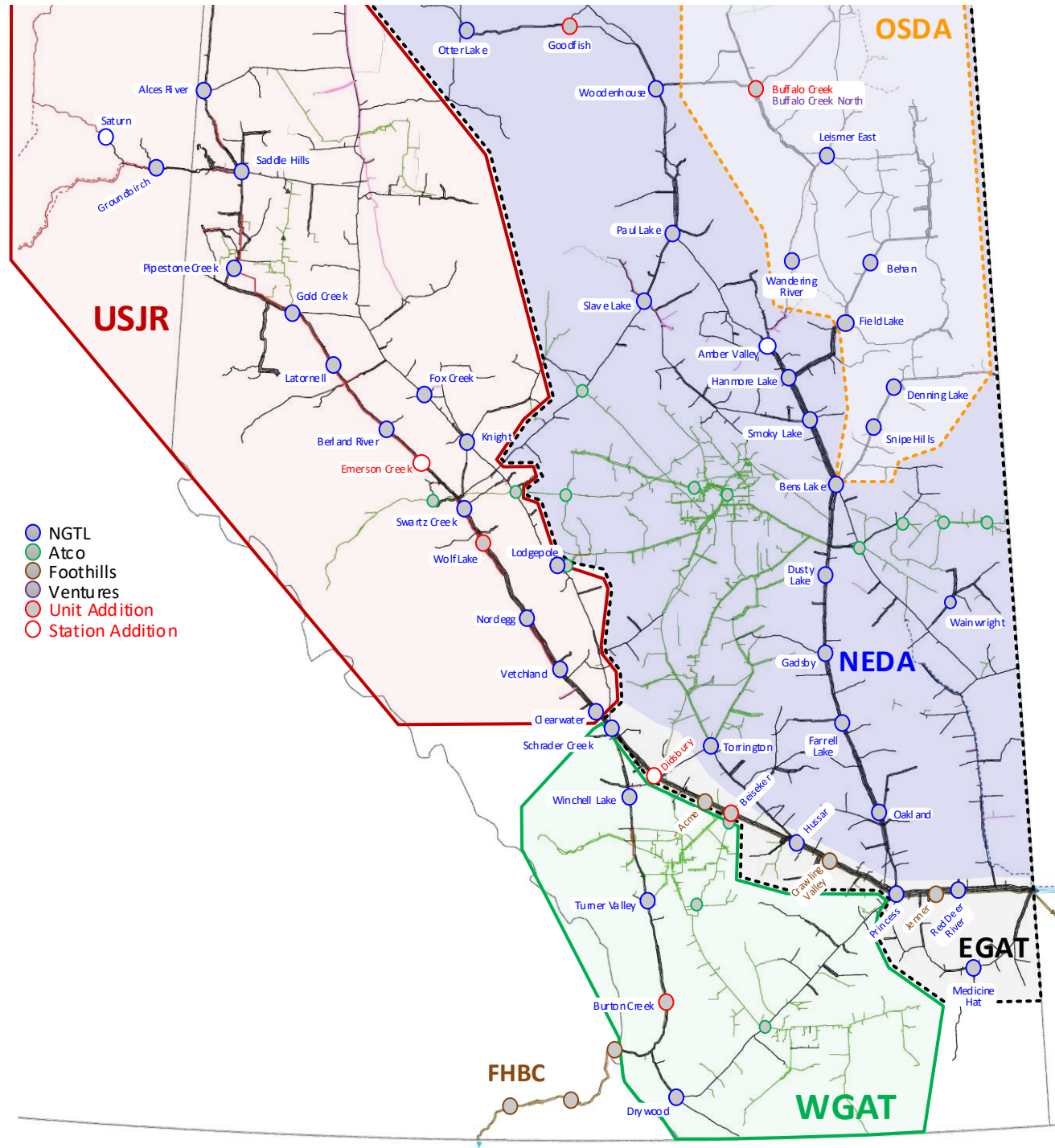
Click [HERE](#) to access the bulletin containing additional information



# 2020 Outage Review

From DOP as of Wednesday, September 30





Publication: Compared to:

Sep 30, 2020 ▼

Sep 09, 2020 ▼

## Upstream James River

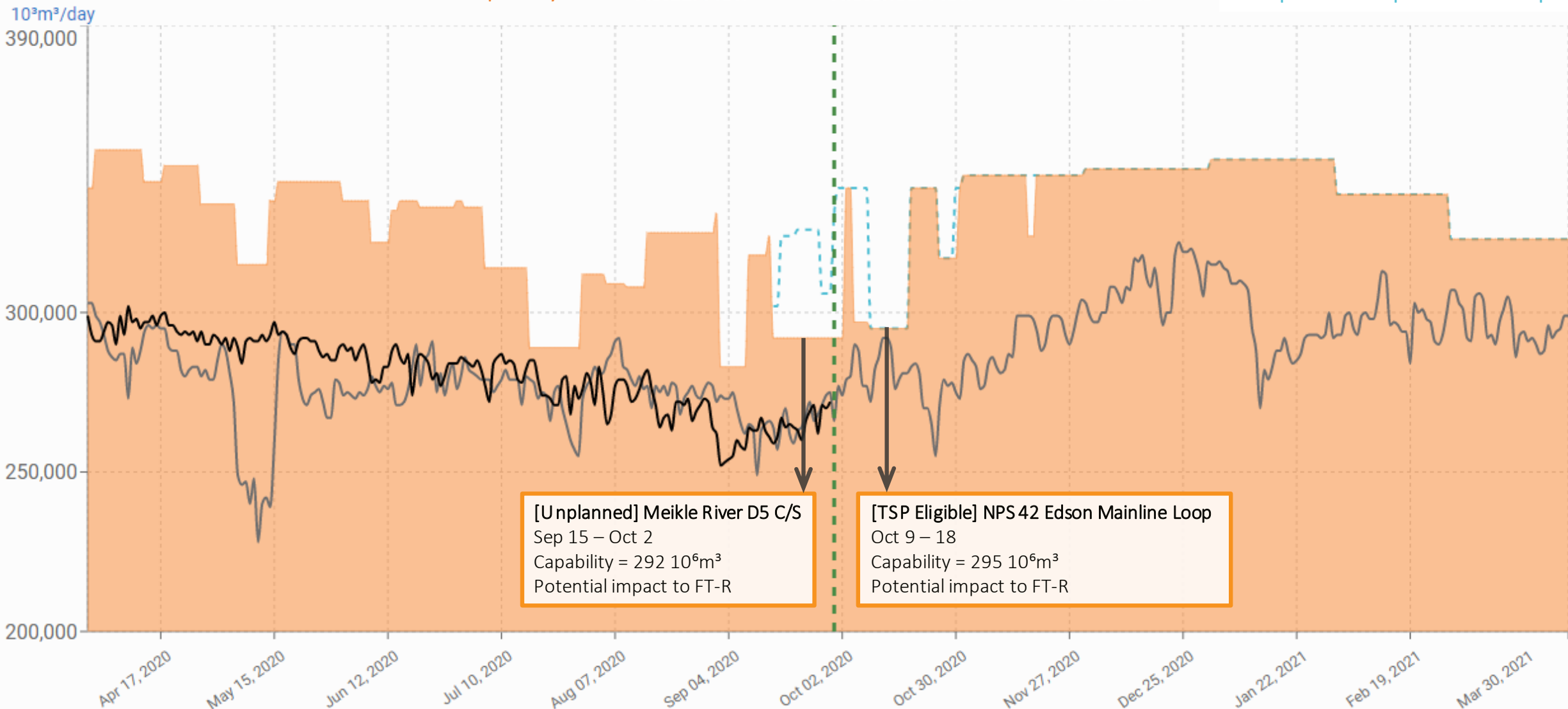
Capability

Actual Flow

Historical Flow

Contracts

Compared to Sept 9 Posted Capability



This slide is NOT applicable beyond the Oct 1, NGTL/Foothills Customer Operations meeting on WebEx.  
Please refer to the DOP on TC Customer Express for current outage information



# Upstream James River Receipt Area (USJR)

No  
impact to FT

Potential  
impact to FT

Partial  
impact to FT

| Outage ID | Start        | End          | USJR Outage Capability (10 <sup>6</sup> m <sup>3</sup> /d) | USJR Impact (10 <sup>6</sup> m <sup>3</sup> /d) | Area Outage Capability (10 <sup>6</sup> m <sup>3</sup> /d) | Typical Outage Area Flows (10 <sup>6</sup> m <sup>3</sup> /d) | Location/ Area  | Outage Description   |
|-----------|--------------|--------------|--|---|--|---|---|--|
| 17146597  | SEP 15, 2020 | OCT 2, 2020  | 292  | 39  | 170  | 150-180   | Segments 2, 3, 4, and partial 7 (Upstream of Latornell) | Meikle River D5 - Compressor Station Maintenance                 |
| 15778219  | OCT 5, 2020  | OCT 8, 2020  | 297  | 42  | 170  | 150-180   | Segments 2, 3, 4, and partial 7 (Upstream of Latornell) | Paul Lake - Compressor Station Maintenance                       |
| 17038417  | OCT 9, 2020  | OCT 18, 2020 | 295  | 44  | N/A  | 270-305   | Potential impact to FT-R USJR                           | [TSP Eligible] NPS 42 Edson Mainline Loop - Pipeline Maintenance |
| 15714476  | OCT 26, 2020 | OCT 30, 2020 | 317  | 22  | N/A  | 270-305   | Potential impact to FT-R USJR                           | [TSP Eligible] Vetchland - Compressor Station Maintenance        |
| 17139249  | NOV 17, 2020 | NOV 18, 2020 | 324  | 19  | N/A  | 270-305   | Potential impact to FT-R USJR                           | Wolf Lake A2 - Compressor Station Maintenance                    |

Publication: Compared to:

Sep 30, 2020 ▼

Sep 09, 2020 ▼

## Oil Sands Delivery Area

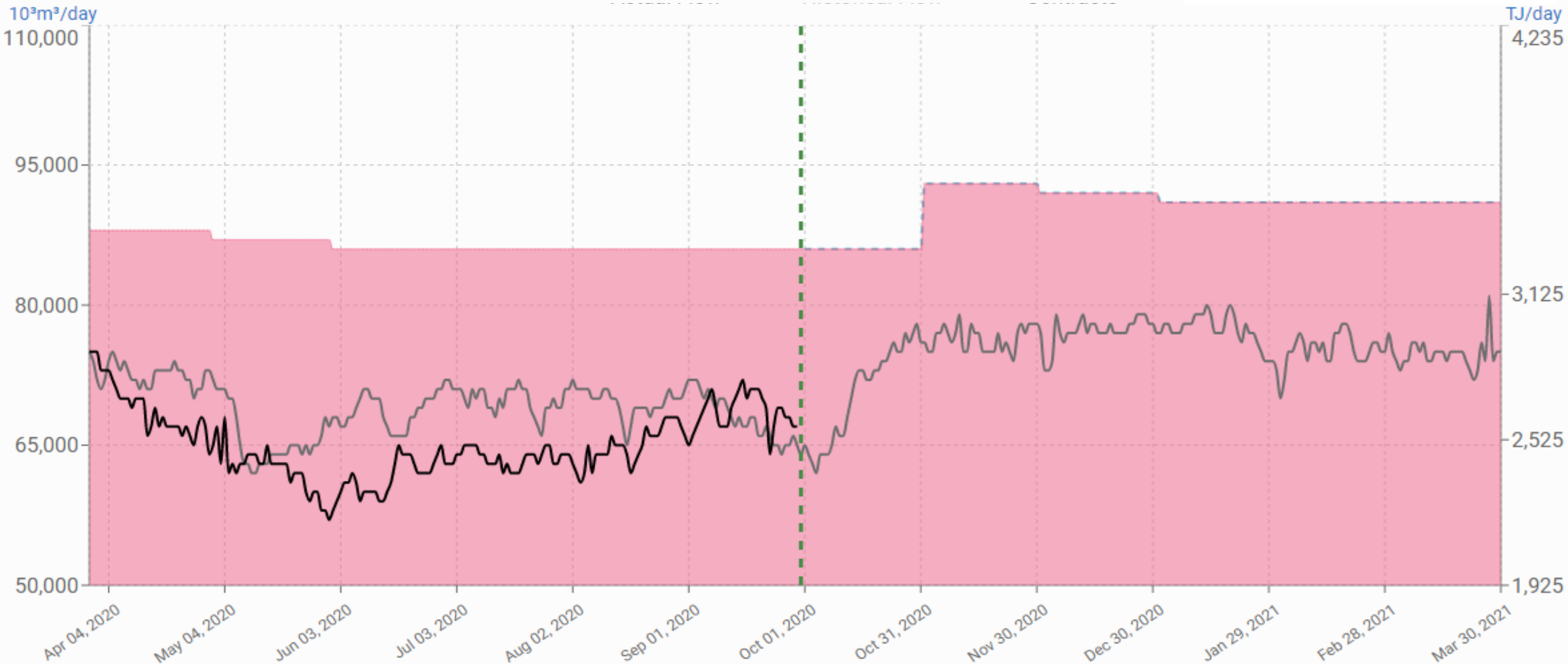
■ Capability

— Actual Flow

— Historical Flow

- - - Contracts

- - - Compared to Sept 9 Posted Capability



This slide is NOT applicable beyond the Oct 1, NGTL/Foothills Customer Operations meeting on WebEx.  
Please refer to the DOP on TC Customer Express for current outage information

# Northeast Delivery Area (NEDA) Oilsands Delivery Area (OSDA)

No  
impact to FT

Potential  
impact to FT

Partial  
impact to FT

| Outage ID | Start        | End         | Capability/<br>Allowable<br>(10 <sup>6</sup> m <sup>3</sup> /day) | Service Allowable Location/Area   | Outage Description                               |
|-----------|--------------|-------------|---|---|--|
| 17146597  | SEP 15, 2020 | OCT 2, 2020 | 105   | No impact to FT-D anticipated<br>NEDA<br>Segments 6, 10, 11, 12, 13, 14, 15, 16, 17, 23, 24, partial 28 | Meikle River D5 - Compressor Station Maintenance |
| 15778219  | OCT 5, 2020  | OCT 8, 2020 | 110   | No impact to FT-D anticipated<br>NEDA<br>Segments 6, 10, 11, 12, 13, 14, 15, 16, 17, 23, 24, partial 28 | Paul Lake - Compressor Station Maintenance       |

Publication:

Compared to:

Sep 30, 2020

Sep 09, 2020

## East Gate

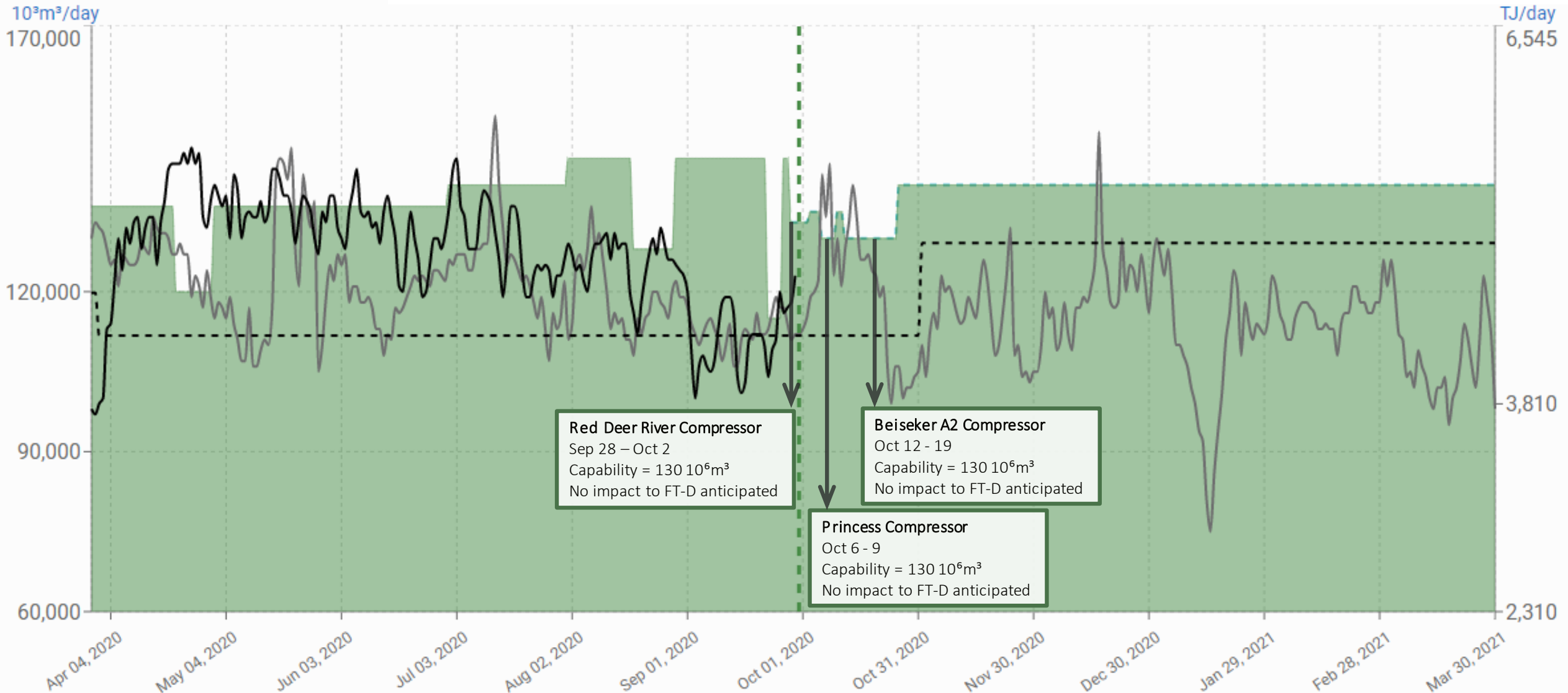
■ Capability

— Actual Flow

— Historical Flow

- - - Contracts

- - - Compared to Sept 9 Posted Capability



# East Gate Delivery Area (EGAT) Foothills Zone 9 (FHSK)

No  
impact to FT

Potential  
impact to FT

Partial  
impact to FT

| Outage ID | Start        | End          | Capability / Allowable (10 <sup>6</sup> m <sup>3</sup> /day) | Impact (10 <sup>6</sup> m <sup>3</sup> /d) | Service Allowable Location/Area  | Outage Description   |
|-----------|--------------|--------------|--|--|--|--|
| 15714465  | SEP 28, 2020 | OCT 2, 2020  | 133  | 12   | No impact to FT-D anticipated: Empress/McNeill Borders Segments 15, 16, 17, 18, 19, 20, 23, partial 21, and partial 28 | Red Deer River - Compressor Station Maintenance                    |
| 15862705  | SEP 28, 2020 | OCT 25, 2020 | 135  | 5  | No impact to FT-D anticipated: Empress/McNeill Borders Segments 15, 16, 17, 18, 19, 20, 23, partial 21, and partial 28 | NPS 42 Central Alberta System Mainline Loop - Pipeline Maintenance |
| 15714463  | OCT 6, 2020  | OCT 9, 2020  | 130  | 10   | No impact to FT-D anticipated: Empress/McNeill Borders Segments 15, 16, 17, 18, 19, 20, 23, partial 21, and partial 28 | Princess - Compressor Station Maintenance                          |
| 16899071  | OCT 12, 2020 | OCT 19, 2020 | 130  | 10   | No impact to FT-D anticipated: Empress/McNeill Borders Segments 15, 16, 17, 18, 19, 20, 23, partial 21, and partial 28 | Beiseker A2 - Compressor Station Maintenance                       |
| 16898499  | OCT 20, 2020 | OCT 25, 2020 | 130  | 10   | No impact to FT-D anticipated: Empress/McNeill Borders Segments 15, 16, 17, 18, 19, 20, 23, partial 21, and partial 28 | Beiseker A1 - Compressor Station Maintenance                       |
| 15786231  | OCT 15, 2020 | OCT 20, 2020 | 25   |  | Potential impact to FT: McNeill Border Foothills SK  | NPS 42 Foothills Zone 9 (Shaunavon to Monchy) Pipeline Maintenance |



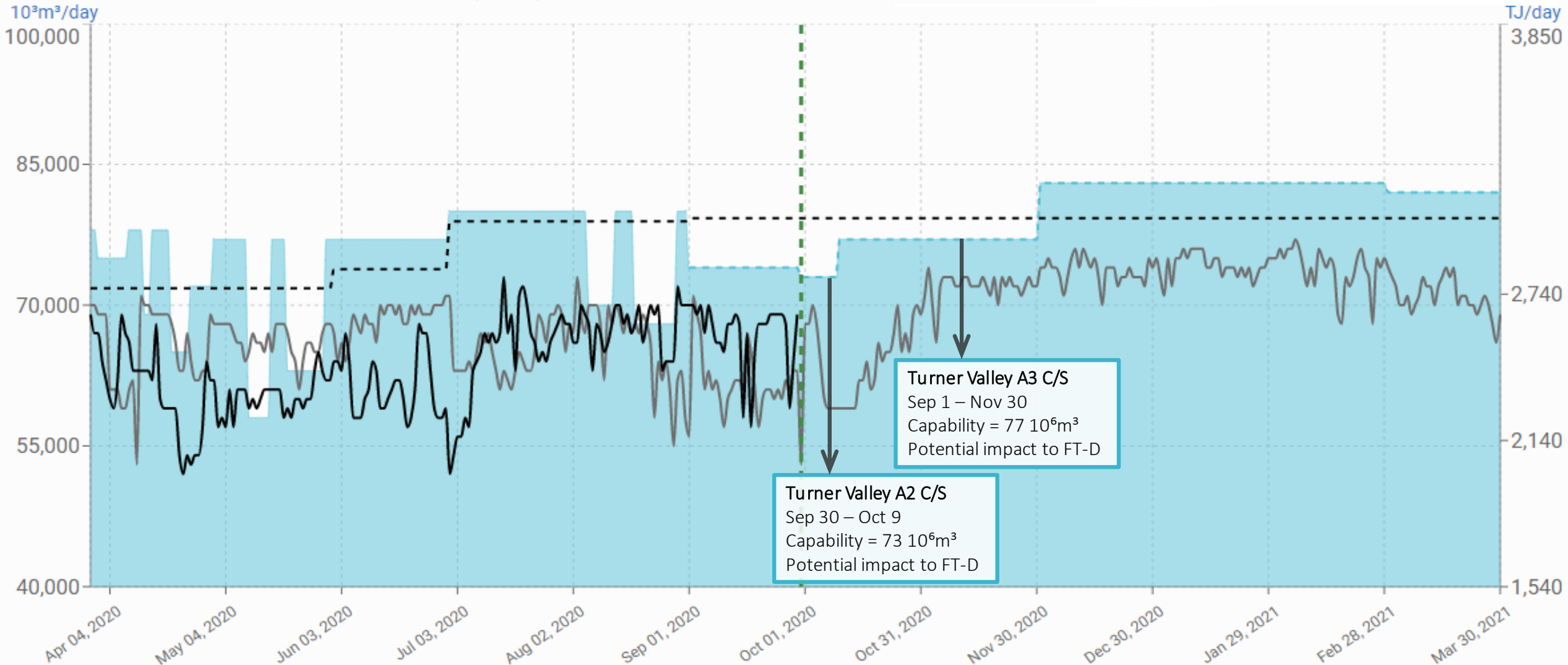
Publication: Compared to:

Sep 30, 2020 ▾

Sep 09, 2020 ▾

## Alberta-B.C. Border

■ Capability — Actual Flow — Historical Flow - - Contracts - - Compared to Aug 10 Posted Capability



# West Gate Delivery Area (WGAT) Foothills Zone 8 (FHBC)

No  
impact to FT

Potential  
impact to FT

Partial  
impact to FT

| Outage ID | Start        | End          | Capability/<br>Allowable<br>(10 <sup>6</sup> m <sup>3</sup> /day) | Impact<br>(10 <sup>6</sup> m <sup>3</sup> /d) | Service Allowable<br>Location/Area  | Outage Description                                |
|-----------|--------------|--------------|---|---|---|---|
| 13638042  | SEP 1, 2020  | NOV 30, 2020 | 77  | 5   | Potential impact to FT-D: Alberta/BC Border<br>Segments 22 and partial 21 | Turner Valley A3 - Compressor Station Maintenance |
| 15714474  | SEP 30, 2020 | OCT 9, 2020  | 73  | 9   | Potential impact to FT-D: Alberta/BC Border<br>Segments 22 and partial 21 | Turner Valley A2 - Compressor Station Maintenance |



Advisory bulletins: transition to standard process

# Advisory Bulletin: Problem Statement

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Unplanned outages are currently not communicated until sufficient confidence of service impact is reached. This results in scenarios where service changes are applied late in the day, resulting in significant customer impacts and price volatility

## Why the delay?

Most often due to time required by field resources to troubleshoot and determine scope/nature of the issue

# Advisory Bulletin: Solution In-Place

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Provide market facing 'advisory' information for unplanned events that have the potential to impact Firm Service

## Why:

COAT and 1:1 customer feedback – customers need information re: potential service impacts early in the day with defined update expectations

- *Early notification allows better decision making, and reduces customer impact and price volatility*

## What events trigger an Advisory Bulletin:

Unplanned outages that threaten FT, and will not meet required confidence level to communicate service authorization change by 8:30am

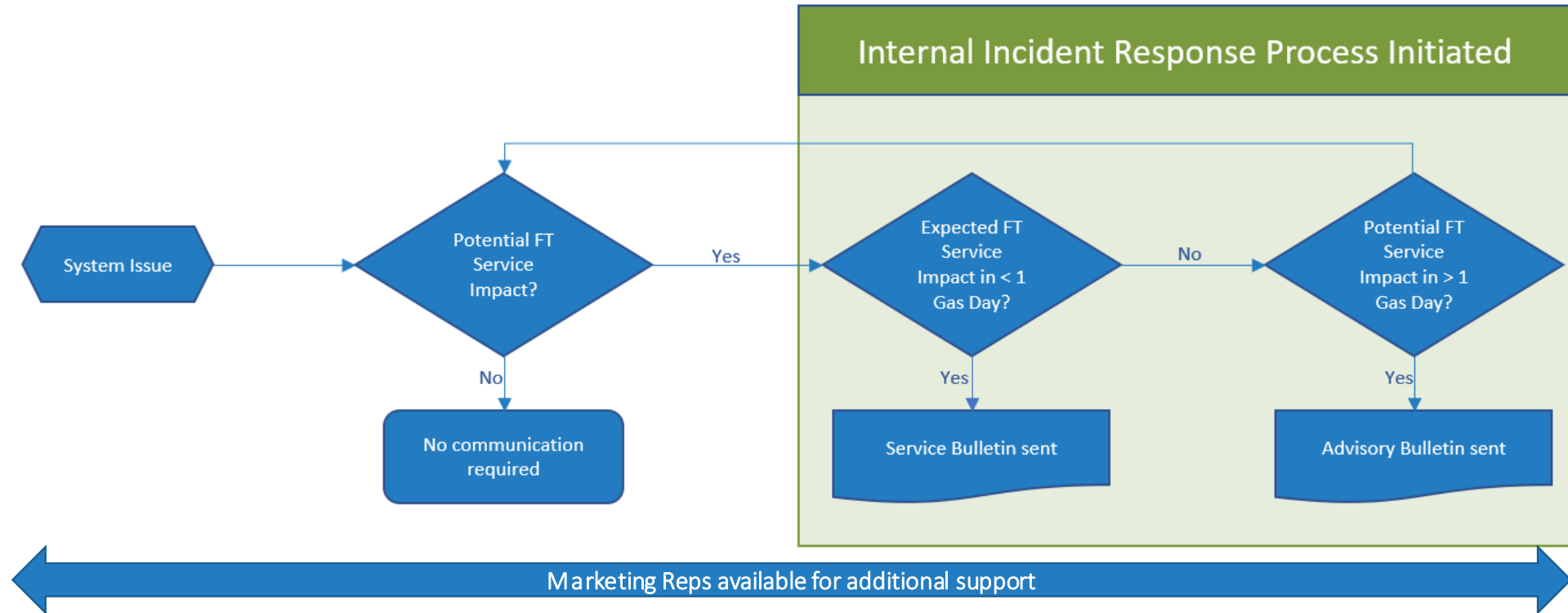
## Outcome:

Templated Bulletin outlining

- the nature of the unplanned event
- potential service impact (FT-D, FT-R, location)
- update interval



# Service Change Communication Processes



## Service Change Communication and Execution Timing (NAESB Windows)

| Cycle          | Communication Deadline* | Nomination Deadline | Effective Time |
|----------------|-------------------------|---------------------|----------------|
| Timely/Evening | 1600                    | 1700                | 0800 (+1 day)  |
| ID1            | 800                     | 900                 | 1300           |
| ID2            | 1230                    | 1330                | 1700           |
| ID3            | 1700                    | 1800                | 2100           |

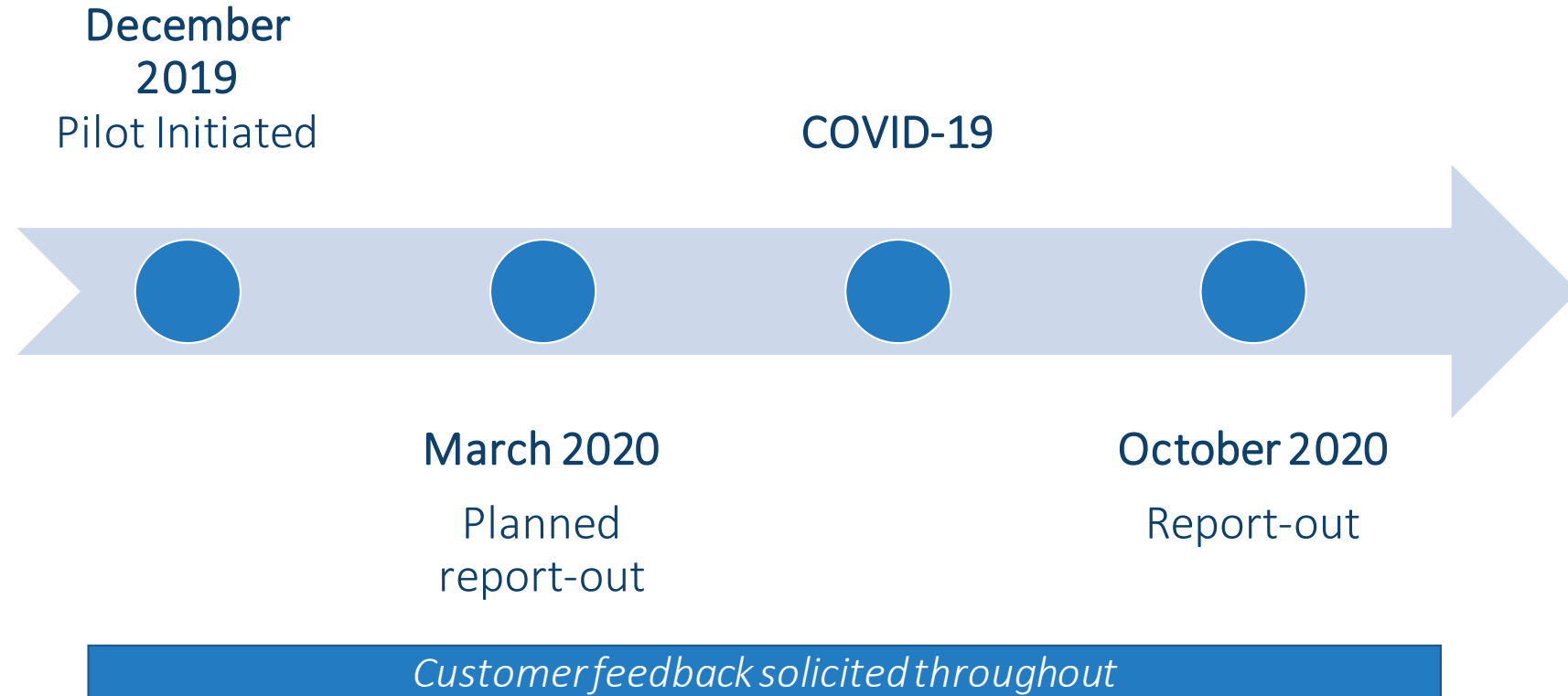
\* Any service change must be communicated via bulletin by the cycle's "Communication Deadline"

### Considerations

- NGTL must ensure communication of any market moving information is completed symmetrically to all customers (completed via Bulletin)
- The Advisory Bulletin can be sent off-cycle as a means of ensuring symmetric information of FT service risk to all customers

# Pilot Timeline

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## Critical Stats

Since December 2019, 5 events were communicated, resulting in 22 bulletins (average of 4 bulletins/event)

# What's Next

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Effective immediately, the Advisory Bulletin will transition from pilot to standard process

- The Advisory Bulletin has broad customer support and has proven valuable in improving communication and transparency of unplanned operational events

# Enhancements to *my.TC*

1

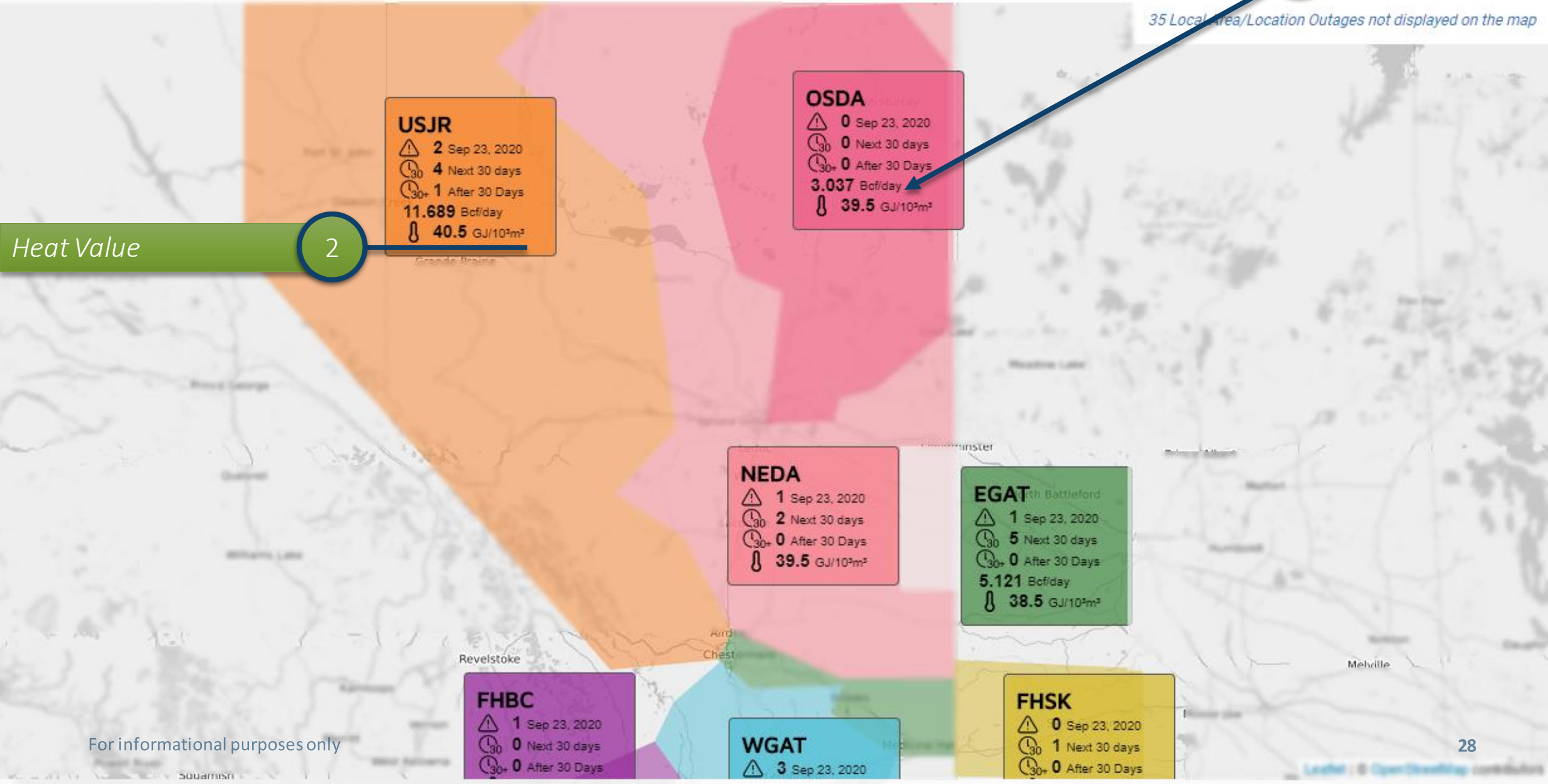
*Unit Conversion*

2

*Area Heat Values*

3

*Data Download*





# OUTAGES



NGTL Outages



Bulletins



Contact & FAQ



Subscriptions

Publication: Compared to:

Sep 23, 2020

Sep 22, 2020

USJR AB/BC EGAT OSDA Compared to  
Actual Flow Historical Flow Contracts

\*ASSUMPTIONS

Bcf/day

1

Volume

Energy

1

GJ/day

13

11

9

7

15,636,470

12,310,856

10,310,856

8,310,856

Oct 28, 2020

USJR: 11.195 (1 Outage)  
Historical Flow: 9.78 Bcf/day  
Heat Value: 40.5 GJ/10<sup>3</sup>m<sup>3</sup>

All actual and historical flows have been rounded to the nearest thousand.  
Historical flow date is Oct 28, 2019.

2

Area Heat Value

For informational purposes only

# Continuity of enhancements

< Upstream James River 2 Sep 23, 2020 5 Upcom

Publication: Compared to:

Sep 23, 2020 ▼

Sep 22, 2020 ▼

Receipt

**Upstream James River**  
Base Operational Capability

40.5 GJ/10<sup>3</sup>m<sup>3</sup>  
11.689 Bcf/day

2 Sep 23, 2020

4 Next 30 days

1 After 30 Days

Delivery

**West Gate**  
Base Operational Capability

38.5 GJ/10<sup>3</sup>m<sup>3</sup>  
2.86 Bcf/day

3 Sep 23, 2020

1 Next 30 days

0 After 30 Days

For informational purposes only

Area Heat Value

2

Base Operational Capability  
11.689 Bcf/day  
From Sep 01, 2020 to Sep 30, 2020

Heat Value  
40.5 GJ/10<sup>3</sup>m<sup>3</sup>

17146597

Impact 1.377 Bcf/day Outage Capability 10.312 Bcf/day Local Area Impact 0.777 Bcf/day Local Area Out

Maintenance Potential impact to FT-R  
Segments 2, 3, 4, and partial 7 (Upstream of Latornell)

2

Volume Conversion

15781939

Impact 0.177 Bcf/day Outage Capability 11.513 Bcf/day Local Area Impact 0.177 Bcf/day Local Area Out 5.368 Bcf/day

System Mainline Potential impact to FT-R  
Segments 2, 3, 4, and partial 7 (Upstream of Pipestone Creek)

15871033

Impact 0.883 Bcf/day Outage Capability 10.806 Bcf/day Local Area Impact N/A Local Area Out N/A Bcf/day

tation Potential impact to FT-R  
USJR

**Publication:**  
 Sep 23, 2020

**Compared to:**  
 Sep 22, 2020

**Base Operational Capability**  
 11,689 bcf/day  
 From Sep 01, 2020 to Sep 30, 2020

**Heat Value**  
 40.5 GJ/10<sup>6</sup>m<sup>3</sup>

**Displayed Values:**  
 bcf/day

All system capabilities reported are based on many assumptions related to factors which affect operational capability. These factors and the system capabilities will be reviewed on a daily basis which may result in revision of operational capability and authorized quantities. TC Energy shall not be liable for damages sustained as a result of any use or reliance on information contained.

Empress/McNeil Border delivery capability is determined assuming zero storage receipt and deliveries. All delivery locations within a defined area of impact are hydraulically equivalent. This includes Group 1 (export), Group 2 (intra), and storage locations.

Coordinating NGTL System and Foothills maintenance with Customer maintenance can help minimize Customer impact of planned maintenance. Whenever possible, TC Energy will align its maintenance with Customer maintenance activities. In order to maximize coordination opportunities, please complete and return the [Plant Turnaround Request Form](#). This form can be used to submit information on either receipt or delivery scheduled facility maintenance.

For service related matters, please contact your Marketing Representative.

For further information, please contact The Pipe Line at 403-820-7472 or toll-free 1-877-820-7472.

### Other Links

- Gas Day Summary Report
- Current System Report
- NGTL System - Segment Codes & Project Areas Map
- NGTL Systems - Operational Areas Map
- Plant Turnaround Request Form
- Plant Turnaround Data
- Administrator Login
- Base Capability Table
- Privacy Policy

Data Download

3

# What's Next

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## TC Energy

1. Chart Data Download (TBD)
2. COAT Team Project Debrief (TBD)
3. Next COAT Topic (TBD)

## Our customers

Your feedback: [Marketing Reps](#) | [Talk To Us](#)

# Contact information

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## Matt Ramsay

Supervisor, Operations Planning - West

[matthew\\_ramsay@tcenergy.com](mailto:matthew_ramsay@tcenergy.com)

403-920-6814

## Kevin D'Souza

Chair, NGTL/Foothills Customer Operations meetings

403-920-7915

[kevin\\_dsouza@tcenergy.com](mailto:kevin_dsouza@tcenergy.com)

## Nadim Kassam

Modernization, Customer Experience

403-920-5011

[nadim\\_kassam@tcenergy.com](mailto:nadim_kassam@tcenergy.com)