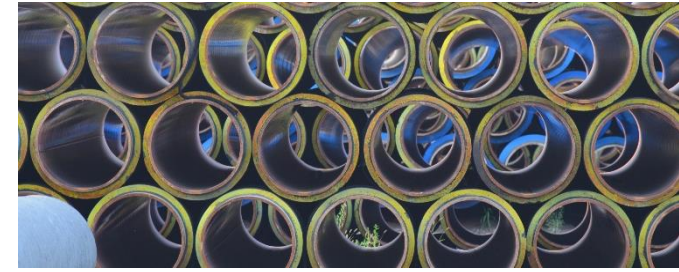




Delivering Energy to Improve Lives

TGP Pre-Winter Operations Meeting

November 2020



- TGP Gas Control Organizational Structure
- TGP System Overview
- 2020 Summer Review
- 2019/2020 Winter Lookback
- Operations/Remaining Outages
- Scheduling/DART Update
- Commercial Update

*Gina Mabry
Director, Trans and Storage Svc, East Region*

*Brian Merchant
Director, Gas Control Engineering*

*Ganesh Venkateshan
Manager, TGP Gas Control*

*Tom Burgett
Director, Operations-Northern Division*

*Mitch Myer
Manager, Operations- Agawam STA 261*

*Cathy Soape Hutton
Manager, Trans and Storage Svc, East Region*

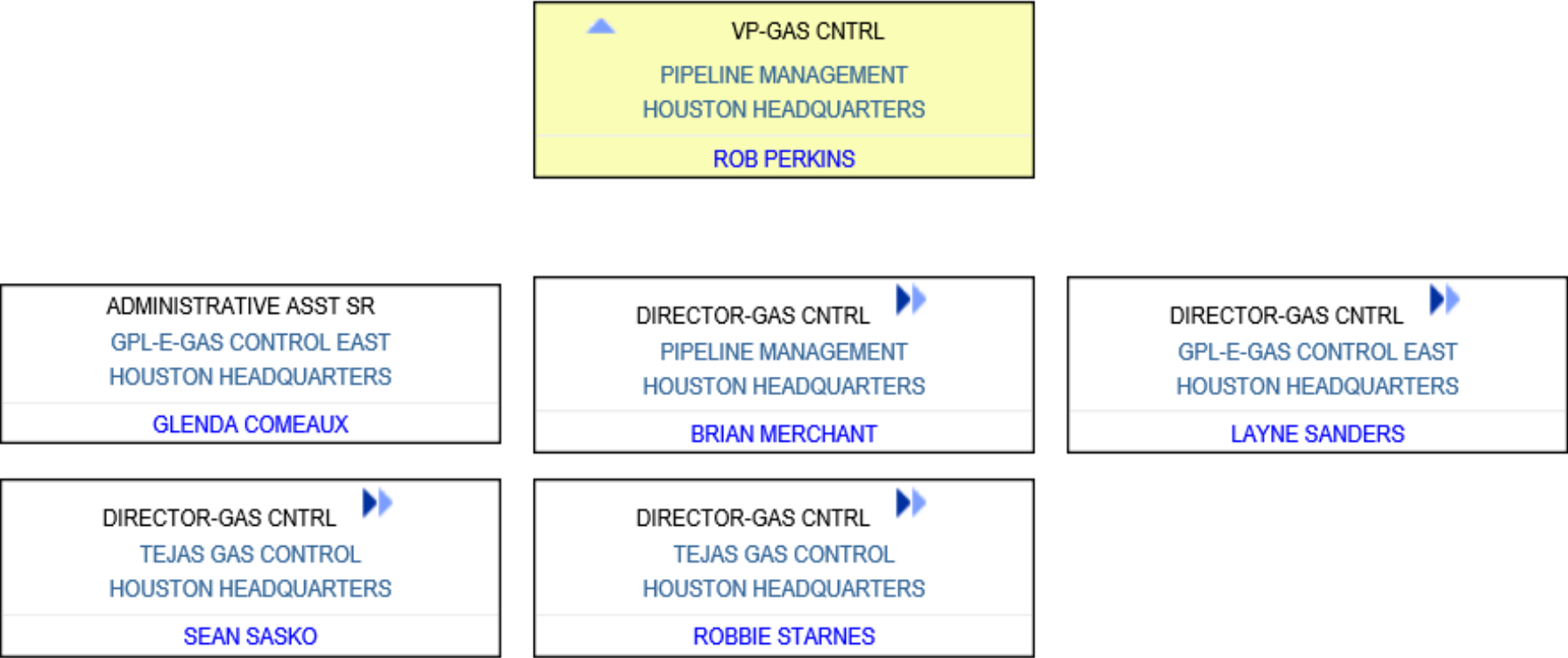
*Adam Harris
Manager, Trans and Storage Svc, East Region*

*Coralie Carter Sculley
Director, TGP Marketing*

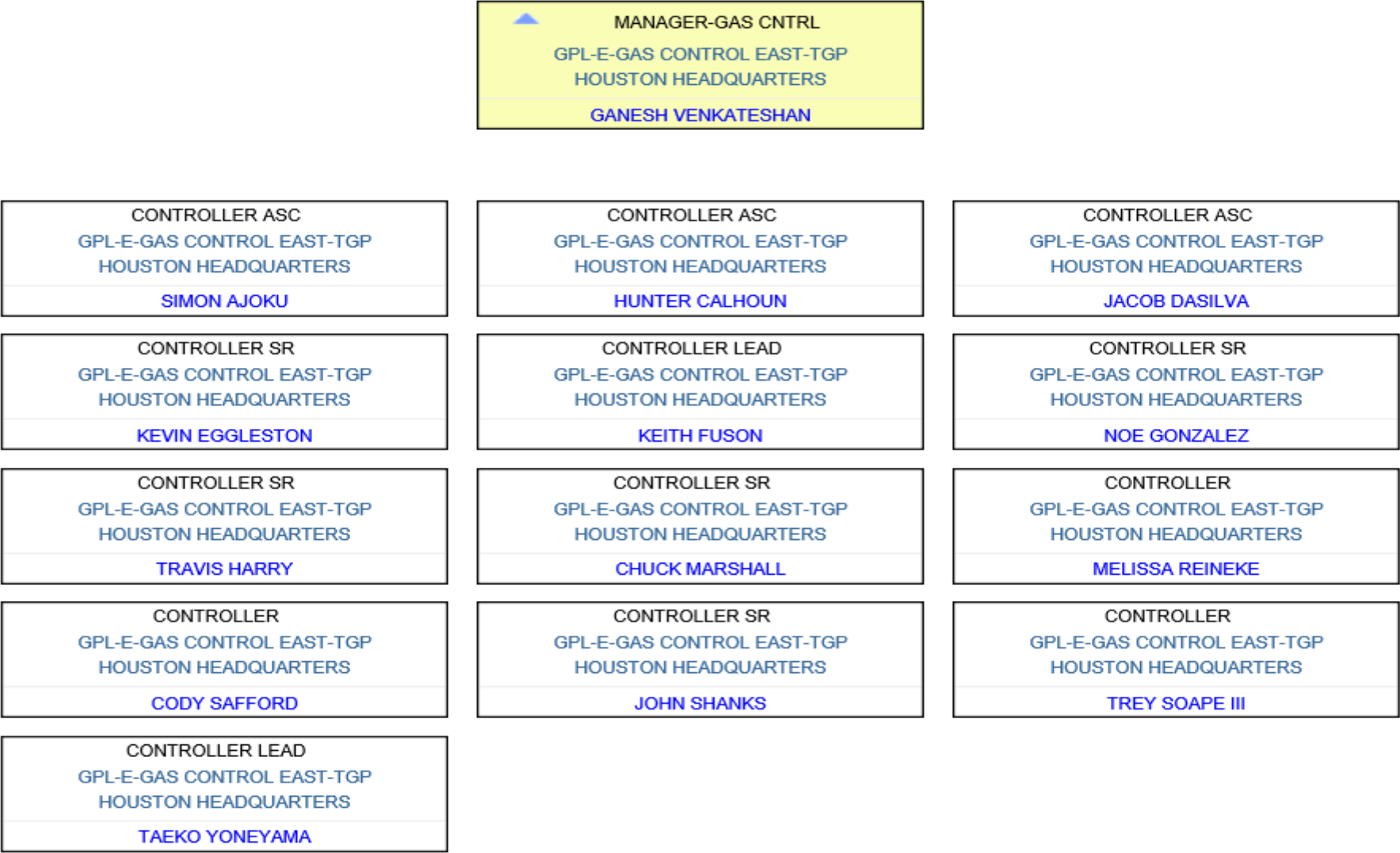
- Background
 - March 16 travel restrictions and office closures
 - KM Pandemic Plan Reviewed and subsequently updated to fit the 2020 COVID Pandemic
- Challenges in Division 10
 - Small teams operate key assets (more conservative approach to prevent disablement of small teams)
- Strategy
 - Implement KM plan and add requirements consistent with NE state guidance
 - Separation, distancing masks, hygiene, staggered breaks, etc.
 - Requested SELF REPORTING of any symptoms or household illness
 - Work with employee for on the job isolation, work at home, or pay for quarantine
 - Communicate, communicate, communicate (from a distance!)
- Results
 - Excellent cooperation with self reporting – Many issues reported and managed to date
 - No teams have needed replacement due to COVID

GAS CONTROL ORGANIZATIONAL STRUCTURE

Gas Control Organizational Structure



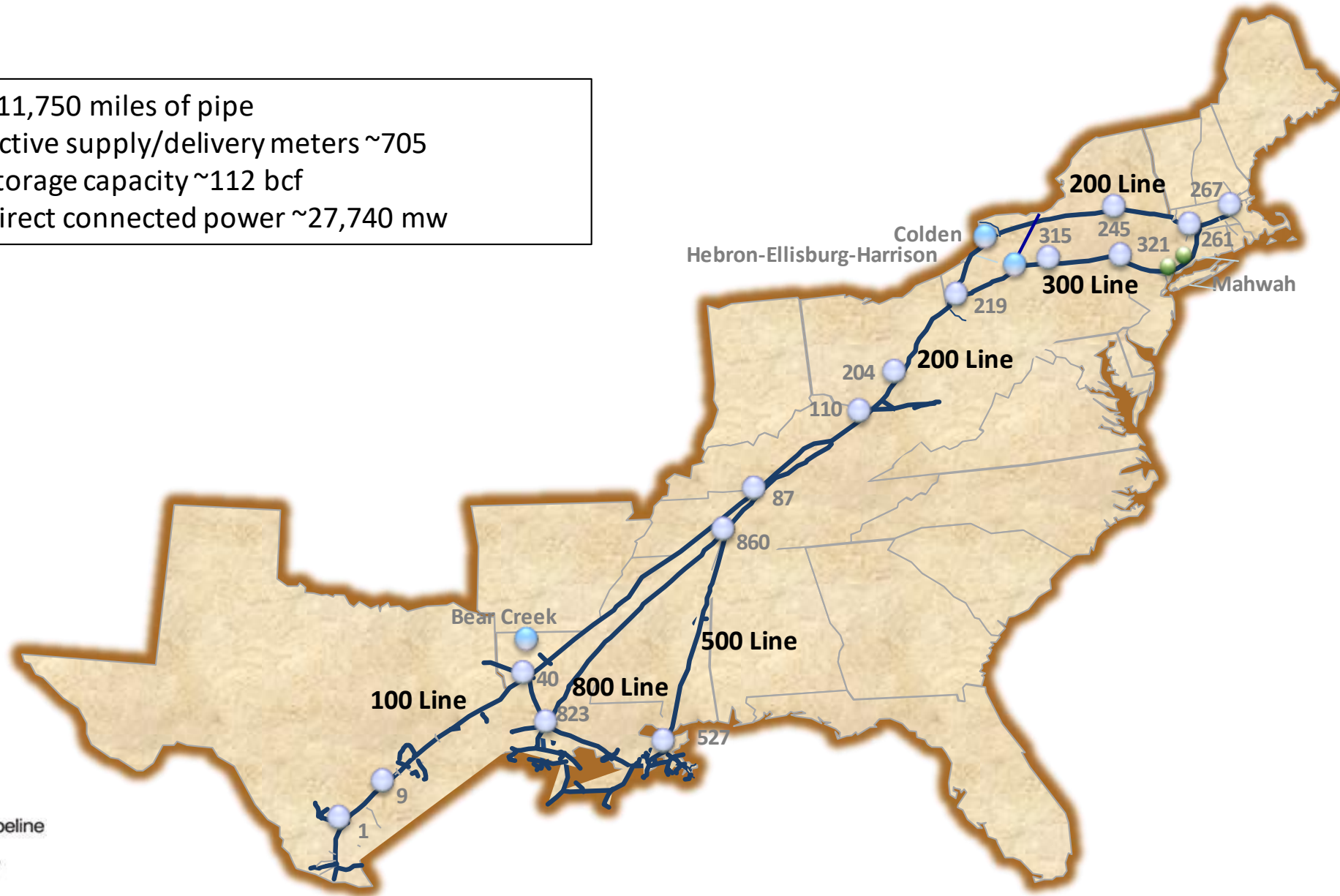
Gas Control Organizational Structure



SYSTEM OPERATIONS OVERVIEW

TGP System Map

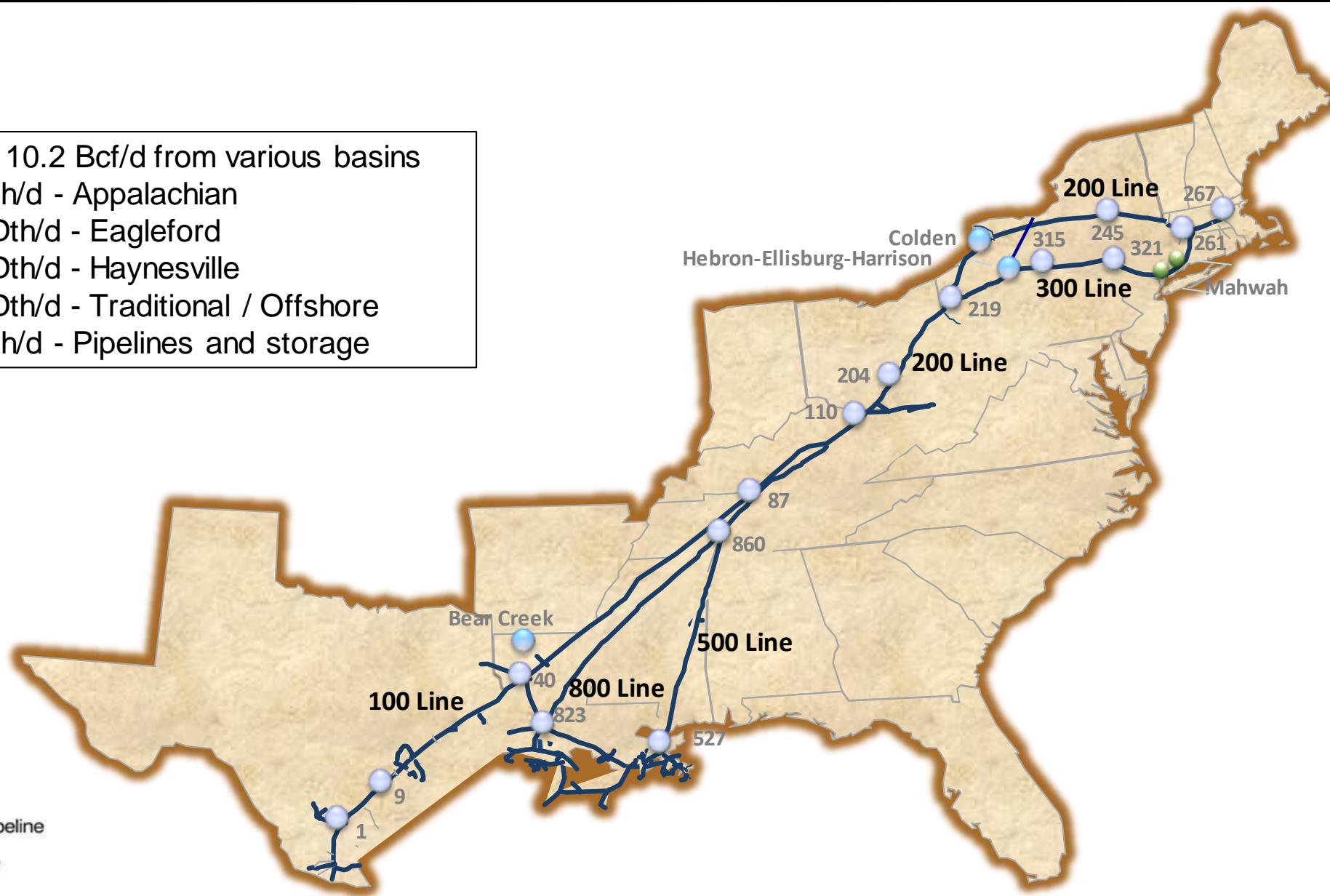
- ~11,750 miles of pipe
- Active supply/delivery meters ~705
- Storage capacity ~112 bcf
- Direct connected power ~27,740 mw



YTD TGP Gas Receipts

Approximately 10.2 Bcf/d from various basins

- 4.5 MDth/d - Appalachian
- 0.85 MDth/d - Eagleford
- 0.45 MDth/d - Haynesville
- 0.40 MDth/d - Traditional / Offshore
- 4.0 MDth/d - Pipelines and storage



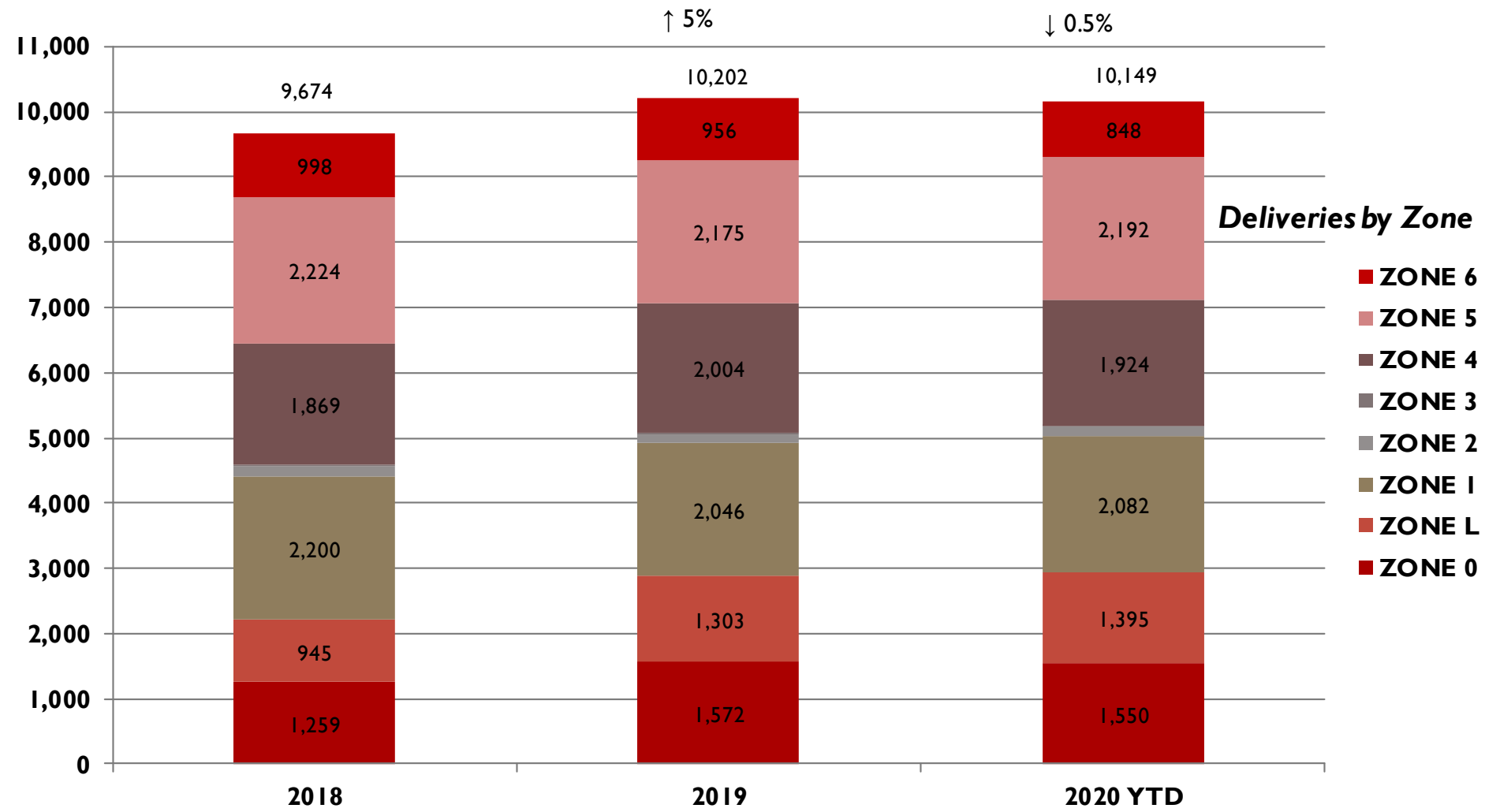
- **SUPPLY**

- Substantial associated gas growth in the Permian, proximity to largest growth markets along Gulf Coast
- Marcellus/Utica production remains strong

- **DEMAND**

- Steady LNG increase
- Mexico: heavy reliance on KM assets for import
- Power: continued gasification of electric grid realized on TGP

TGP System Wide Throughput



*Through September

243-1 Pipe Replacement Project



Recent Meter Station Construction



Rye Meter Station



Rivervale Meter Station Building

Compressor Station 261 / Loop Line



Compressor Station 261 – Agawam, MA
Auxiliary Building Installation



Loop Line 260A-100

SUMMER 2020 LOOK BACK

- Overview
 - System-wide throughput flat compared to previous summer
 - Impact of COVID-19
 - Challenging Maintenance Season
- Demand
 - Strong demand across system
 - Decreases in LDC (-7%), Interconnect (-7%) and Mexico (-11%) demand
 - Increases in Power (13%) and LNG (68%) demand

Summer System Wide Flows



	<u>2018</u>	<u>2019</u>	<u>2020*</u>	<u>Change</u>
LDC	1,057	1,139	1,056	-7%
Power	1,607	1,412	1,591	+13%
Pipeline Interconnects	5,733	5,303	4,950	-7%
Mexico	860	931	832	-11%
LNG	-	597	1,001	+68%
Industrial	51	45	45	0%
TOTAL	9,307	9,426	9,475	+1%

Volumes are MDth/d

*Through September

Summer Northeast Market Flows



	<u>2018</u>	<u>2019</u>	<u>2020*</u>	<u>Change</u>
LDC	675	725	698	-4%
Power	397	336	382	+14%
Pipeline Interconnects	1,456	1,338	1,366	+2%
TOTAL	2,528	2,399	2,446	+2%

Volumes are MDth/d

*Through September

WINTER 2019 – 2020 LOOK BACK

- Overview
 - Mild Winter Demand
 - System-wide throughput increased 7.3% compared to previous winter
 - Storage Inventories were higher than the prior year's levels at the end of winter due to lower demands
 - System Wide Peak Day was ~12.11 Bcf/d on January 20, 2020
 - Exports to Mexico decreased 3% compared to previous winter
- Supply
 - Supply in Zone 4 consistent as previous Winter
 - Supply changes were demand related at Dracut/Distrigas
- Operational Challenges

Winter 2019-2020 System Wide Flows



	<u>2017-2018</u>	<u>2018-2019</u>	<u>2019-2020</u>	<u>Change</u>
LDC	1,880	2,120	2,030	-4%
Power	1,324	1,105	1,286	+16%
Interconnects	5,469	5,840	5,494	-6%
Mexico	857	918	890	-3%
LNG	-	108	1,145	+960%
Industrial	63	56	47	-15%
TOTAL	9,593	10,146	10,892	+7.3%

Volumes are MDth/d

Winter 2019-2020 Northeast Market Flows

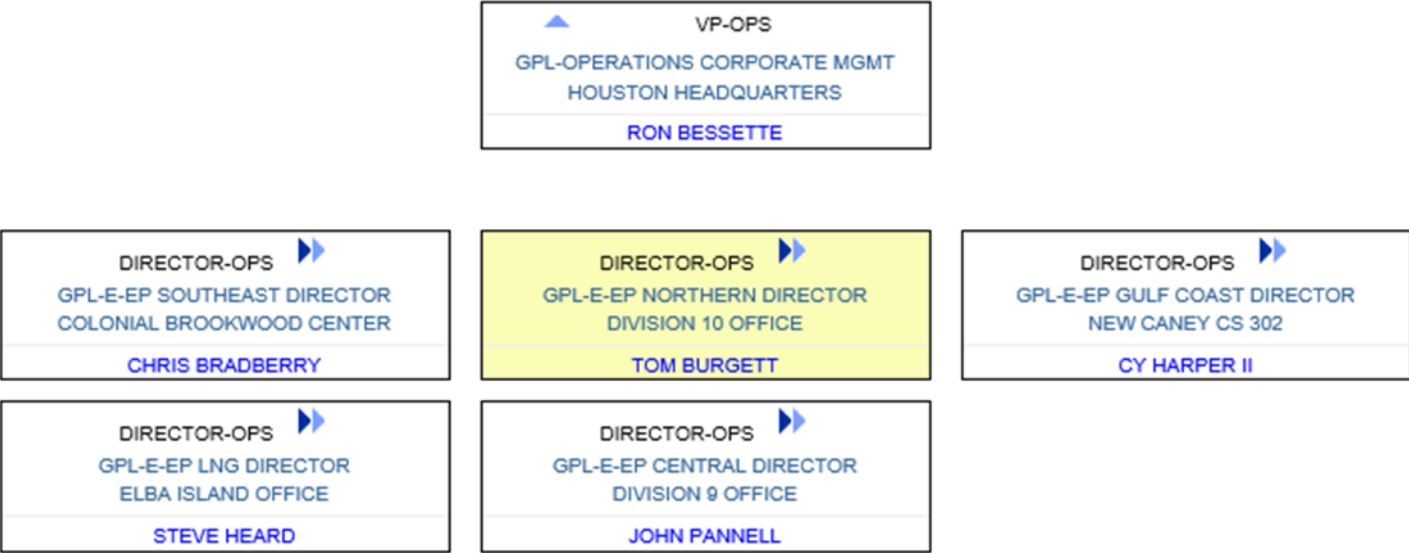


	<u>2017-2018</u>	<u>2018-2019</u>	<u>2019-2020</u>	<u>Change</u>
LDC	1,376	1,582	1,516	-4%
Power	246	247	298	+21%
Pipeline Interconnects	1,561	1,526	1,520	-1%
TOTAL	3,183	3,354	3,334	-1%

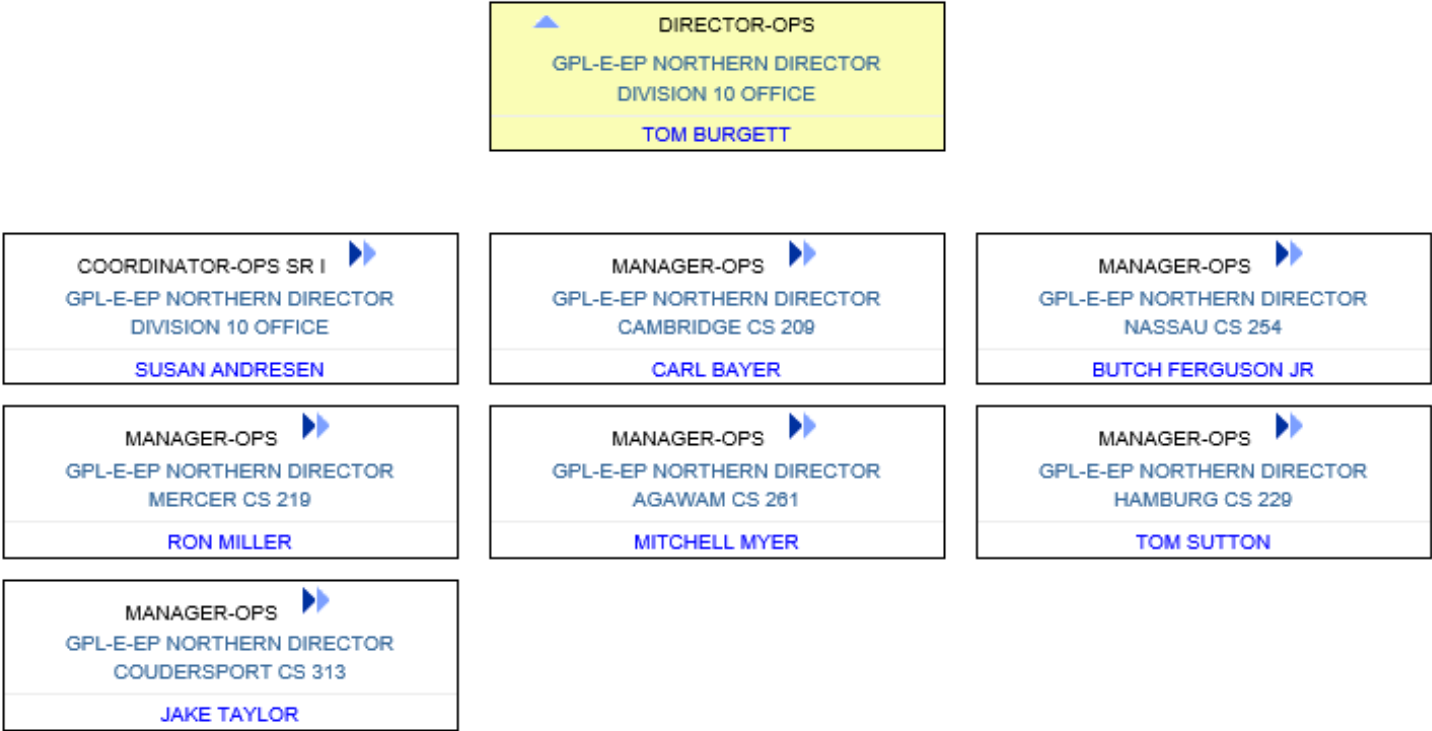
Volumes are MDth/d

OPERATIONS UPDATE

Operations Organizational Structure



Operations Organizational Structure



Scheduled Maintenance

- Goal to complete routine maintenance by early November.
 - Compressor station maintenance:
 - Station/Unit protective devices – Annual Calibrations
 - Compressor maintenance
 - Borescope inspections and water wash
 - Calibration/Testing of monitoring equipment
 - Test run units (as applicable)
 - Pipeline and meter station maintenance:
 - Annual Valve Maintenance
 - Auto-close checks
 - Device calibration/meter tests (Ongoing)
- Winter Weather Preparation
 - Check/Test run emergency equipment (i.e. generators, heaters, snow handling equipment, etc.)
 - Contingency planning
 - Place personnel on site at key compressor stations during significant winter events.

2020 Projects offer significant upside

- Robust improvements to Emergency Systems, improves reliability
- Replacing two aging turbines with a state of the art machine
 - Net emissions reduction
 - Net noise reduction
- Upgraded emergency generator and compressed air skid
 - Upgraded MCC
 - New Auxiliary Building
- More efficient flow through Station 261 – Agawam
 - 30” Suction header
 - 60” main line gas filter vessel

2020 Maintenance Projects

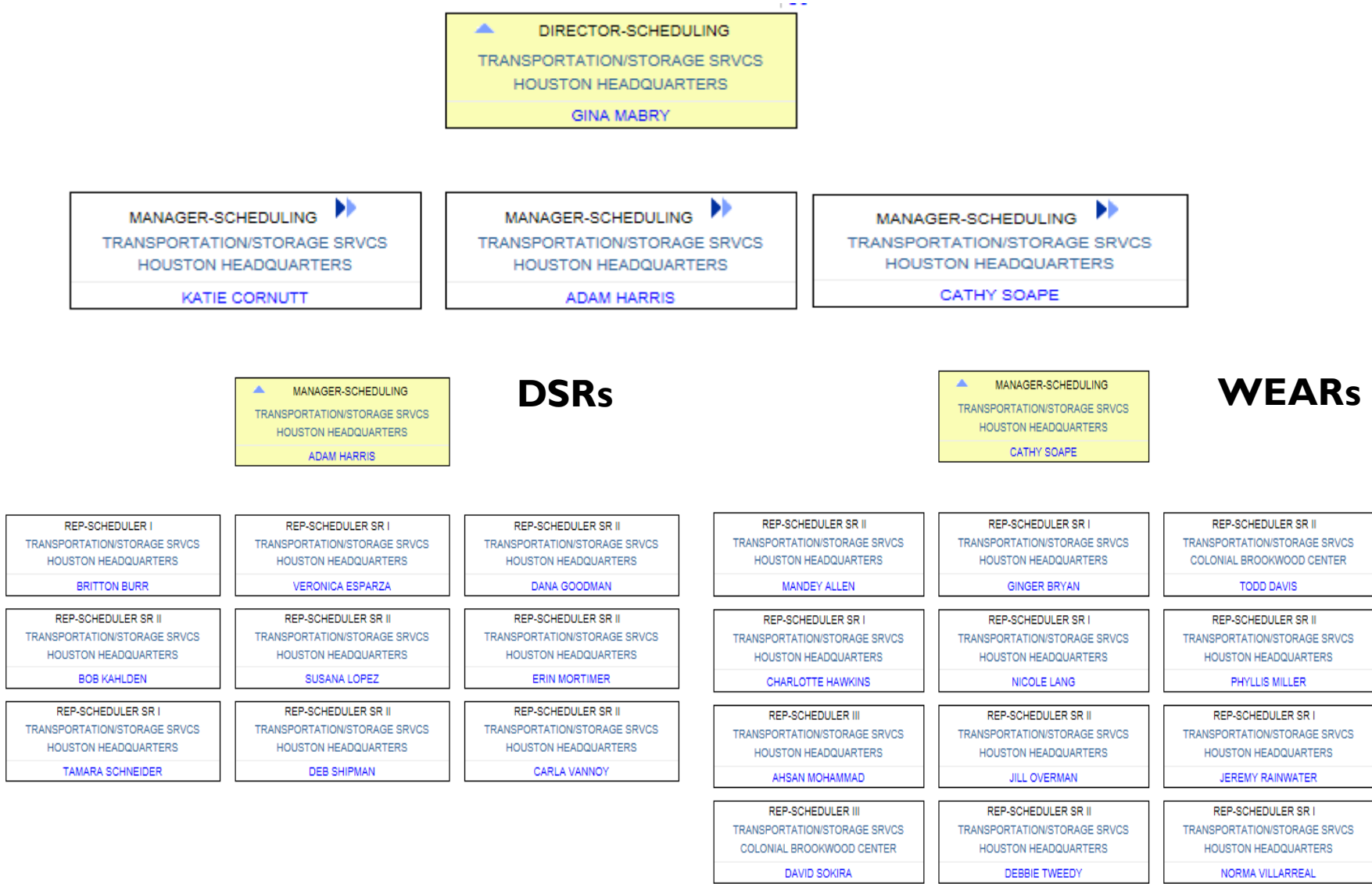
- MLV actuator replacement program
 - Installed new line break actuators @ 10 MLV locations
- Gas filter replacements
 - Replaced elements in 4 main line filter vessels
- Turbine Exchanges
 - Station 261 – Unit 5A
- Electrical Upgrades
 - Installed new equipment to modernize electronics and improve control
- ROW mowing and side trimming program
 - \$1.1MM spent in 2020

- Pipeline Integrity - ILI
 - Segments inspected: 3
 - Tools launched and received: 6
 - Resultant digs for 2021: None
 - 10 Digs scheduled for 2021 (2019 ILI)
 - 46 Digs scheduled planned for 2022
 - Outstanding inspections reports: All have been received - No reports will initiate digs this winter!
- Pipeline Integrity - Remediation
 - Completed 44 anomaly digs and 3 DA projects
 - SCCDA & ECDA
 - We continue to look for innovative ways to reduce customer impact
 - Dent fatigue life analysis
 - Foreign crossing review, etc.
 - Continued development of engineering analysis

SCHEDULING/DART UPDATE

Transportation Storage Services

Organizational Structure



Winter Restrictions

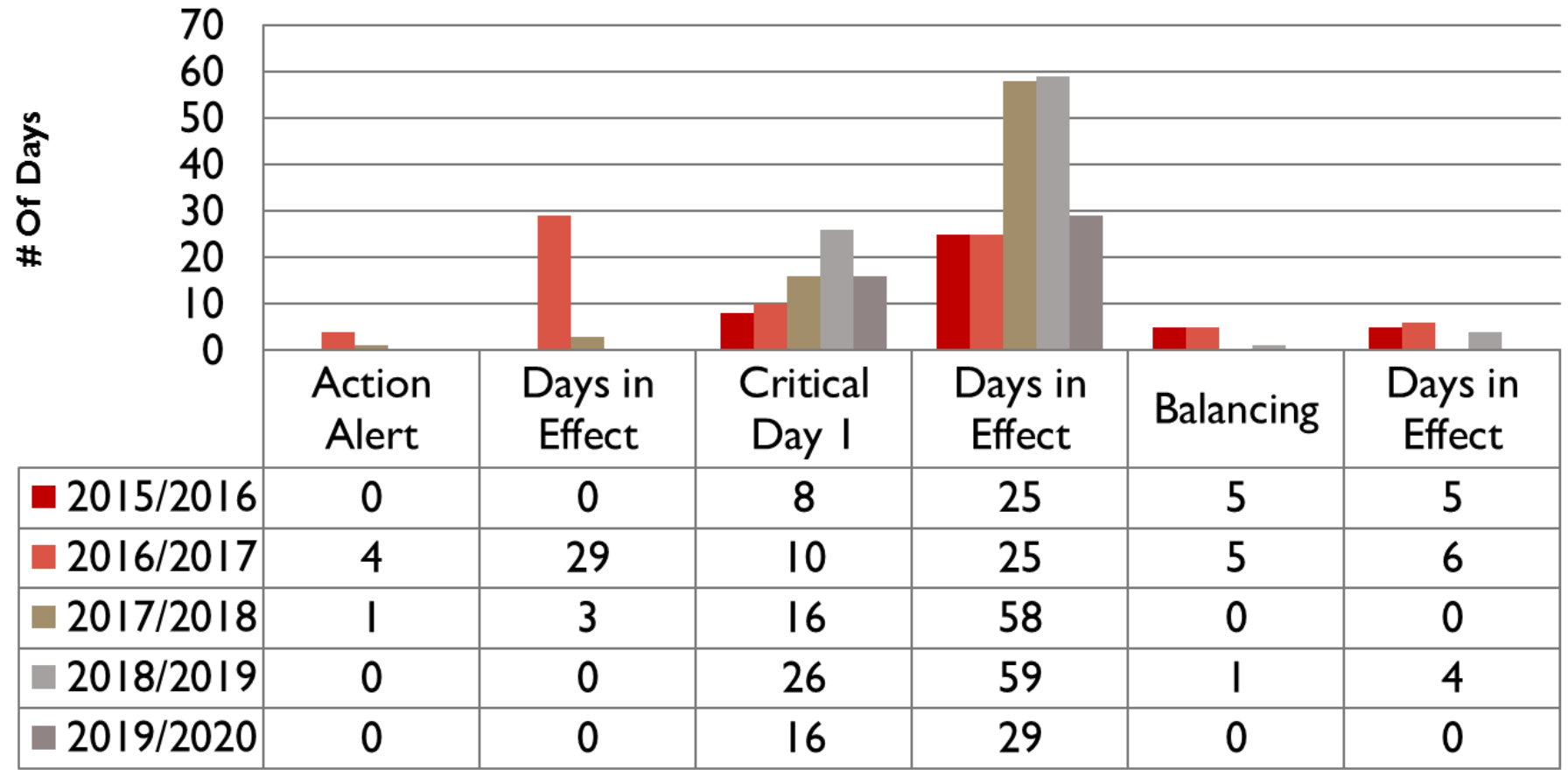
Restriction Point Highly Utilized TGP Paths	Percentage Days Restricted (November - March)	Percentage Days Restricted (November - March)	Percentage Days Restricted (November - March)	Percentage Days Restricted (November - March)	Percentage Days Restricted (November - March)
	2015/2016	2016/2017	2017/2018	2018/2019	2019/2020
Sta. 200/204	64%	69%	68%	0%	1%
Sta. 245	100%	99%	100%	100%	100%
Sta. 261	68%	28%	81%	85%	64%
Sta. 267	31%	56%	68%	2%	0%
MLV 268	0%	0%	38%	9%	3%
MLV 273	0%	17%	76%	99%	70%
Sta. 315 BH	76%	97%	89%	61%	37%
Sta. 321	86%	93%	92%	81%	100%
MLV 355 BH	9%	5%	15%	34%	16%
Sta. 1 BH	84%	0%	21%	83%	17%
Sta. 9 BH	0%	44%	90%	31%	55%
Mahwah	93%	88%	60%	98%	100%
Rivervale	66%	81%	99%	88%	6%

Summer Restrictions

Restriction Point Highly Utilized TGP Paths	Percentage Days Restricted (April – October)	Percentage Days Restricted (April – October)	Percentage Days Restricted (April - October)	Percentage Days Restricted (April - October)	Percentage Days Restricted (April - Sept)
	2016	2017	2018	2019	2020
Sta. 200/204	74%	93%	67%	12%	36%
Sta. 245	100%	98%	98%	83%	93%
Sta. 261	12%	20%	49%	1%	15%
Sta. 267	1%	5%	10%	0%	0%
MLV 268	0%	0%	12%	0%	0%
MLV 273	0%	0%	17%	16%	75%
Sta. 315 BH	99%	99%	99%	70%	99%
Sta. 321	46%	76%	99%	63%	75%
MLV 355 BH	63%	29%	79%	23%	15%
Sta. 1 BH	65%	8%	80%	13%	20%
Sta. 9 BH	37%	50%	58%	22%	11%
Mahwah	86%	58%	50%	98%	87%
Rivervale	78%	57%	58%	68%	0%

Winter Season OFOs

Zones 4,5&6

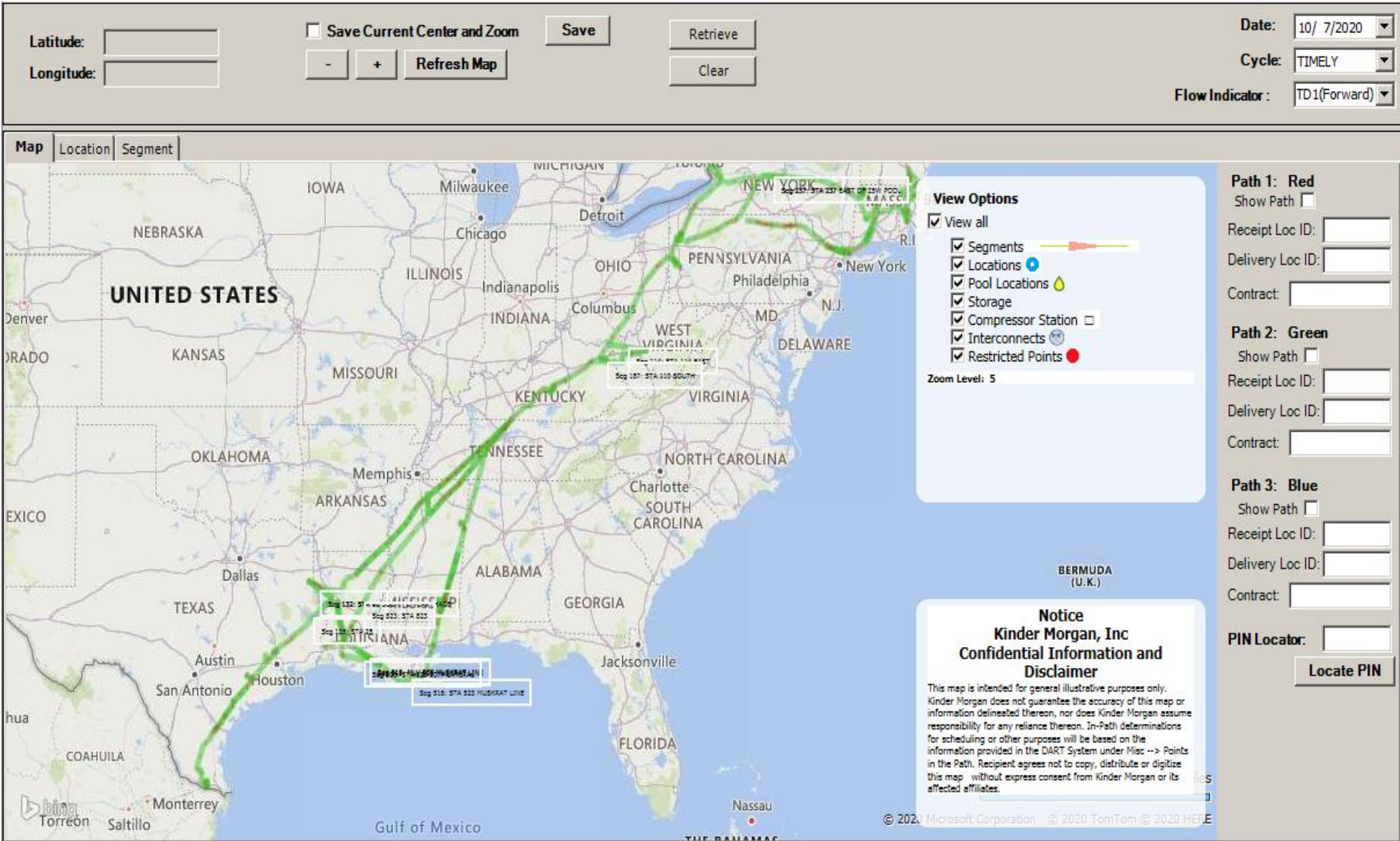


- Evaluate Displacement
- No delivery nominations allowed to Dracut
- No receipt nominations allowed at Mendon until ID1 (compared to EPSQ volumes)
- Invalid nominations not allowed
- Limitations of Storage Services/Linepack Services
- Can restrict meter bounces if causing directional changes to occur at locations
- EPSQ invoked on meters as needed
- New restriction locations as needed
- Imbalance Warnings
- OFOs

- DART Capacity Release Upload Feature
- New Restriction locations may be implemented
 - NOTE: New locations are stated in Restriction Notice
- Monitor EBB for System and Maintenance Updates
- Contract pathing should be determined – know exception pathing
- Be conscious of suppliers' priorities
- To avoid overlapping nominations, review MDQ Utilization screen before or after submitting batch
- After nomination submission, review priorities in Capacity Split Screen
- Supply points associated with pools can be found on the TGP home page in Location Information

Graphical Pipe

Work In Progress (prototype)



Map Features:

Pick and choose data elements to display

Zoom In/out function

Find location

Display up to 3 paths simultaneously

View operational capacity and restriction information with hover tool

Real time data available by date/cycle

Graphical Pipe

Work In Progress (prototype)



Zoom Feature

Latitude: 35.5635

Longitude: -78.4106

☐ Save Current Center and Zoom

-

+

Refresh Map

Date: 10/ 9/2020

Cycle: TIMELY

Flow Indicator : TD1(Forward)

Map Location Segment

View Options

☒ View all

☒ Segments

☒ Locations

☒ Pool Locati

☒ Storage

☒ Compresso

☒ Interconne

☒ Restricted

Zoom Level: 7.5

View Options

☒ View all

☒ Segments

☒ Locations

☒ Pool Locations

☒ Storage

☒ Compressor Station

☒ Interconnects

☒ Restricted Points

LOC 420245: COL GAS/TGP MILFORD PA
BIG PIKE

Oct 09, 2020 TIME TD1
Delivery

Operating Capacity: 0

Total Scheduled Quantity: 0

Operationally Available Capacity: 0

Service Priority Cut: 0

Operating Capacity: 0

Total Scheduled Quantity: 0

Operationally Available Capacity: 0

Service Priority Cut: 0

Receipt:

Kindergard Confidential

PIN Locator: 420245

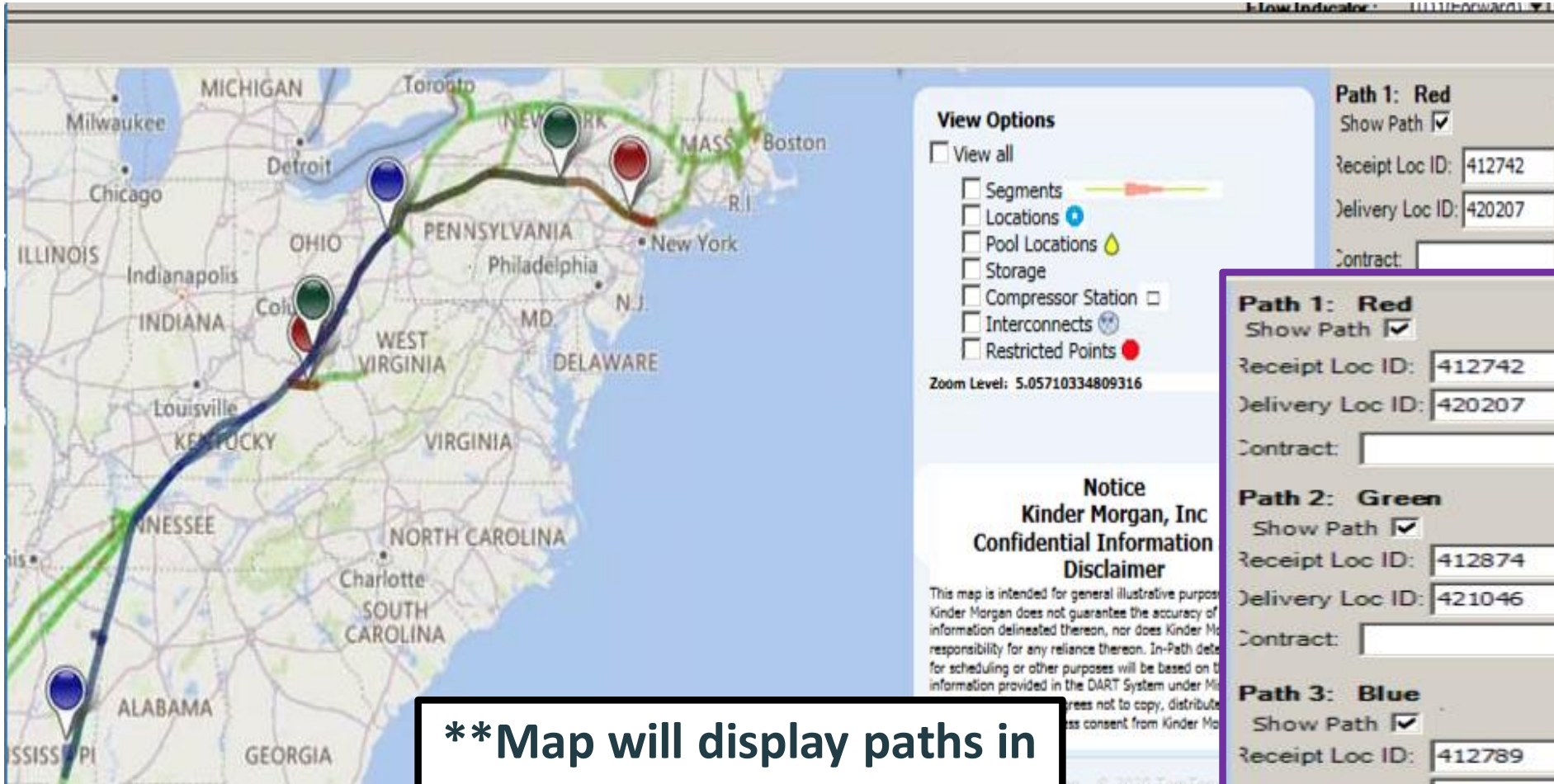
Locate PIN

Date and Cycle
real time data

Pick and choose
map elements to display

Locate Point
Hover for Capacity info

Work In Progress (prototype)



****Map will display paths in red, green, or blue as selected**

Multiple Path View

Enter receipt and delivery points to view multiple paths in different colors

Hourly Cycle enhancement for Operators

- Meter operators can now designate which hourly cycle(s) they will accept nomination changes
 - applicable to the 11pm – 8am CST hourly cycles
- Previously, this was an all or nothing designation
- Operators can make this selection on the Maintain Confirmation by Exception screen in DART

The screenshot displays the NetVolumes STQA (SQLSTQA) application interface. A 'Change item' dialog box is open, showing the 'Auto Confirm Indicator' section. The 'Hourly/Late Cycle' section is active, with a list of time slots from 11 PM to 08 AM. The 08 AM slot is selected with a checkmark. The dialog box also includes buttons for 'Close', 'Clear', 'Save', 'Print Preview', and 'Print'. In the background, a table titled 'Auto Confirm Indicator' is visible, showing various indicators and their status.

Timely	Evening	ITRD1	ITRD2	ITRD3	Hourly/Late Cycle	Auto Match
Y	Y	Y	Y	Y	Y	

New automated storage notifications

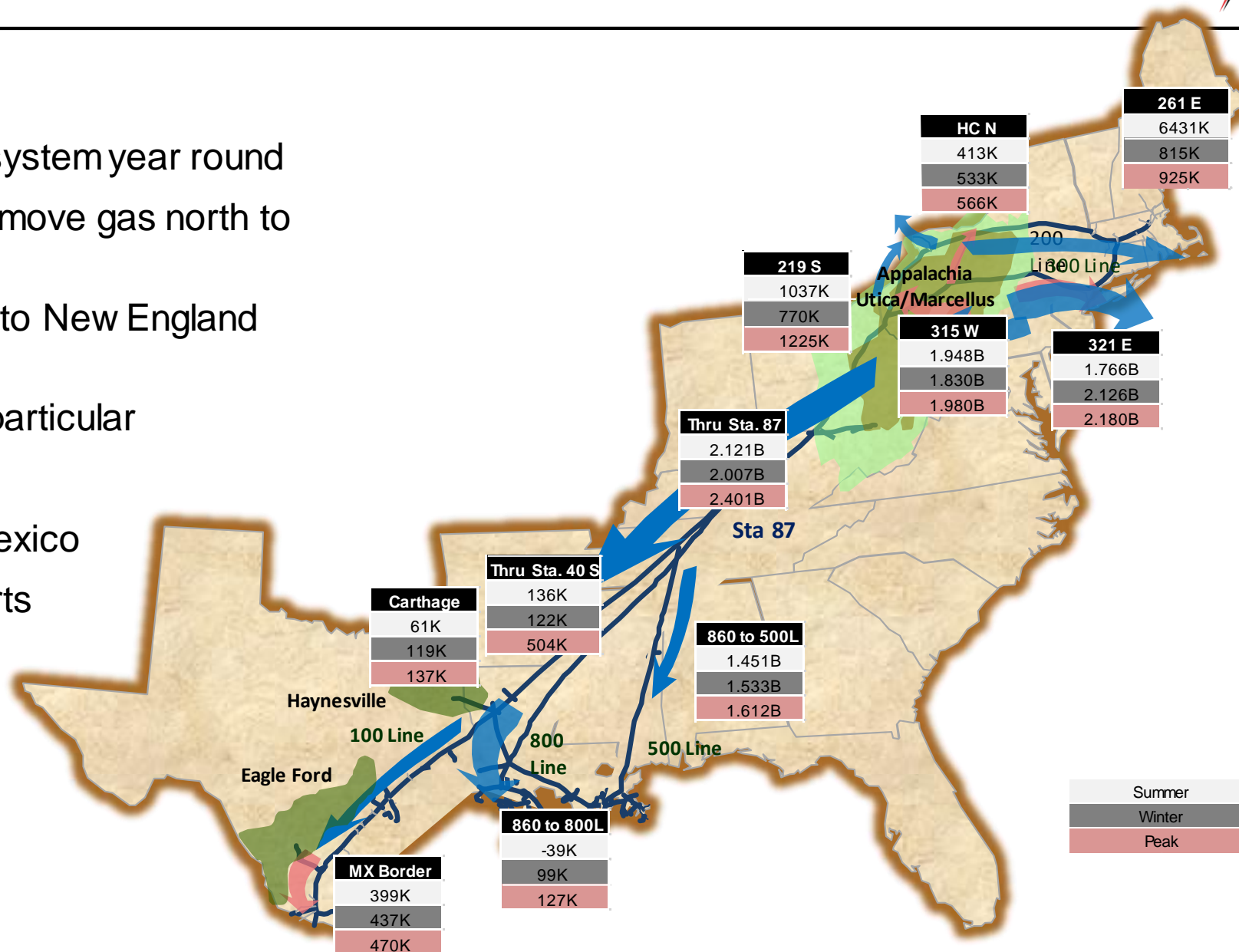


- Firm storage customers can sign-up for automated storage notifications
- Types of email notifications
 - Storage balance exceeds MSQ
 - Notification email will be sent on any day of occurrence during the month
 - Notification email will also be sent beginning last 5 days of the month if contract is set to terminate or is fully recalled (ex. Capacity release contracts). This notification will serve as a good reminder to complete storage transfers effective the first of the next month.
 - Storage balance is less than 0
 - Storage balance is less than 10% of MSQ (tariff requirement)
- Sign up for these notices in DART
 - Preferences -> Business Preferences -> Imbal Trd/Stor Trans
- Customers will receive an email at 8:00am CST

COMMERCIAL UPDATE







System Flows

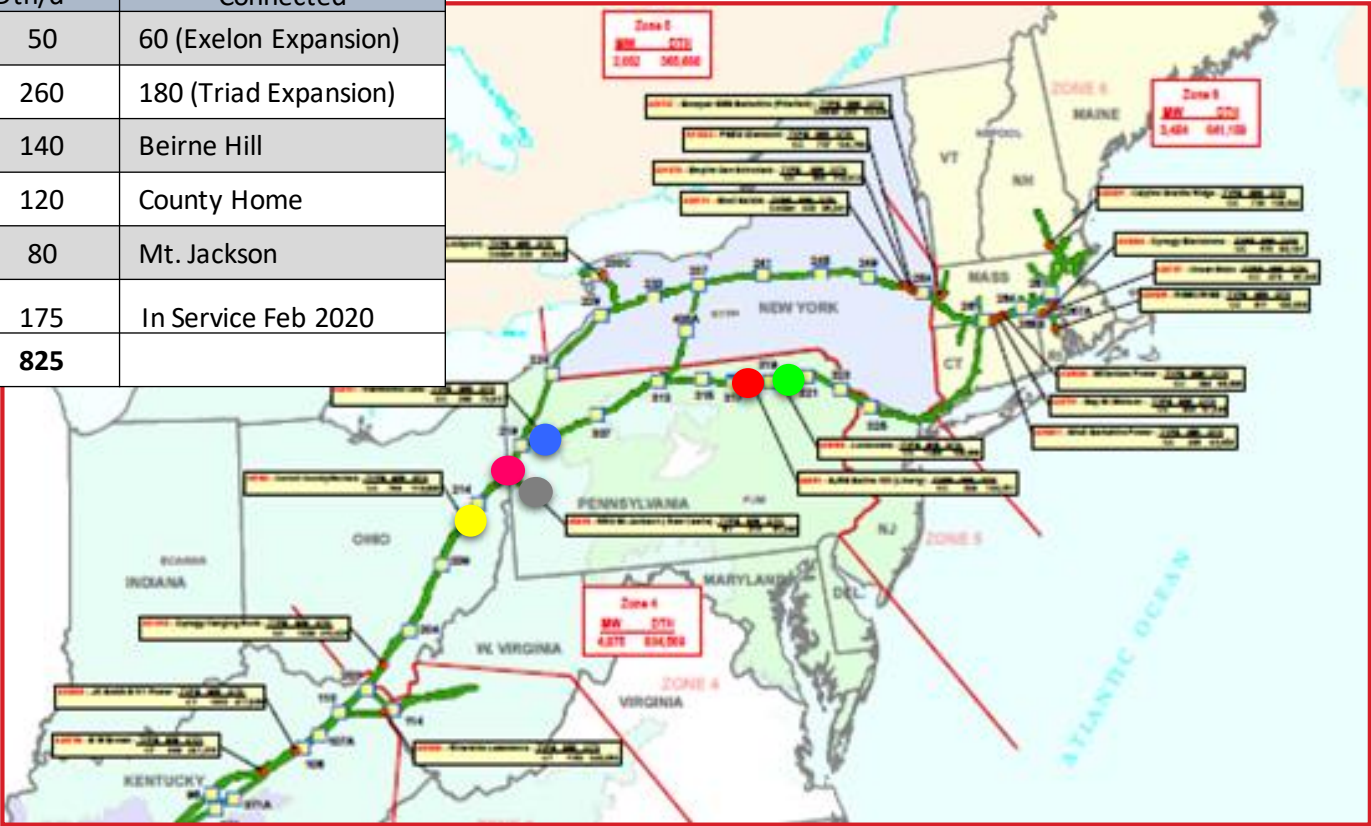
- High utilization across system year round
- Increasing demands to move gas north to south
- Traditional bottleneck into New England remains
- Power growth- PJM in particular
- Growing LNG Export
- Continued interest in Mexico
- Steady Canadian Exports



Appalachia: *in-basin* Activity attracts Power markets



Recent Plants Connected	Gas Load MDth/d	Connected
 Exelon-Handsoma Lake	50	60 (Exelon Expansion)
 Invenergy-Lackawanna	260	180 (Triad Expansion)
 Panda-Liberty	140	Beirne Hill
 Advanced-Carroll Co.	120	County Home
 NRG-Lawrence Co.	80	Mt. Jackson
 Hickory Run	175	In Service Feb 2020
TOAL LOAD	825	



Tennessee Gas Pipeline
Company, L.L.C.
a Kinder Morgan company

- ☐ Slowdown in new project applications
- ☐ Uncertainty around remaining projects in queue
- ☐ Greenfield pipeline additions unlikely
 - ☐ Narrow basis
 - ☐ Attractive in-basin pricing

Project Name	Capacity (MMcf/d)	In-Service
Constitution	650	??
Northern Access	500	Delayed 2024
PennEast	1,000	??
Atlantic Bridge	133	Imminent In-service
Transco NE Supply	400	Paused indefinitely
Mountain Valley	2,000	Delayed 2022-2023
Atlantic Coast Pipeline	1,500	Cancelled

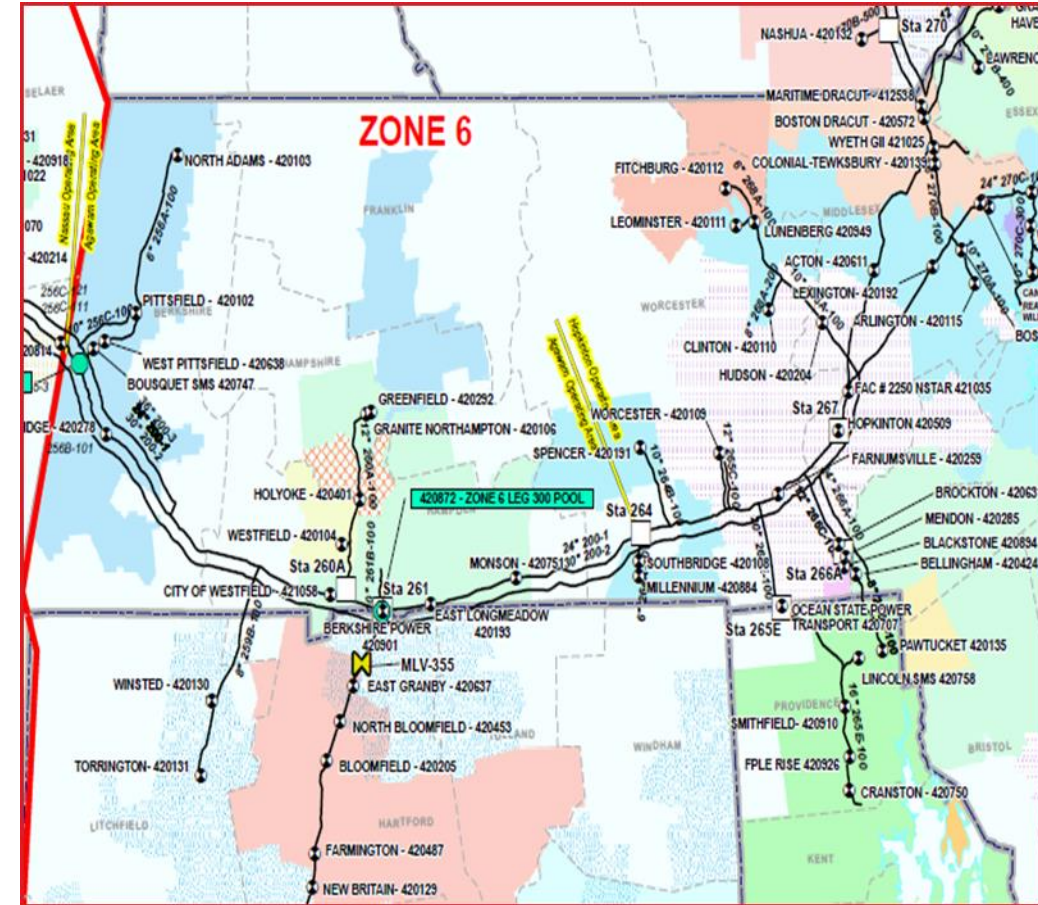


Line 261 Upgrade

Construction Phase



- Commercial Driver:
 - Residential/commercial gas demand growth
- Capacity: 96,400 Dth/d
- Customer:
 - Columbia Gas of Mass (now Eversource)
- Project Scope:
 - HP Replacement at Station 261
 - 2 miles of looping Springfield Lateral
- Phased In-service:
 - November 2020 – Looping
 - November 2021 – HP Replacement

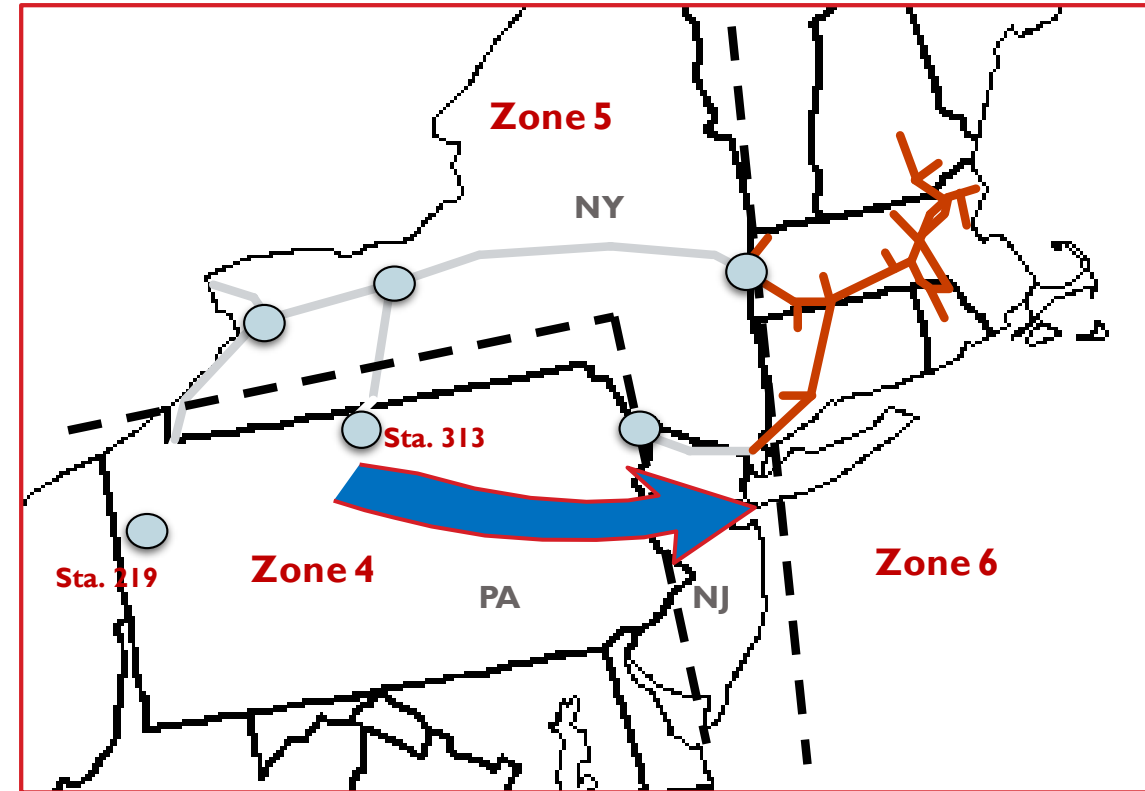


East 300 Upgrade

Regulatory/Permitting Phase



- Commercial Driver:
 - Residential/commercial gas demand growth
- Capacity: 115,000 Dth/d
- Customer:
 - Consolidated Edison Company of New York
- In-service: November 2022
- Project Scope:
- Compression only in NJ and PA
- Project Status:
 - FERC 7C Application – filed June 30, 2020 (CP20-493)



Tennessee Gas Pipeline
Company, L.L.C.
a Kinder Morgan company

Park & Loan – Term (PAL-D)

ROPD & ROLD

Attributes:

- Lowest form Interruptible Services
- Invoiced on Total Scheduled volume

Offerings:

Term
Balancing

Park & Loan – Term (PAL-T)

ROPT & ROLT

Attributes:

- Highest form Interruptible Services
- Invoiced on Total Quantity (TQ)

Offerings:

Term
Balancing
Operational

Term

- Based on Market Price
- Cash, Balmo and Forwards
- Timing, Location and quantity based on operational flexibility

Balancing

- Acts like synthetic storage
- Price varies based on turns, locations and term
- Yearly and Monthly terms

Operational

- Contracted on a customer needs basis as operational flexibility allows



Recognized Industry Leader

ESG Multi-faceted Approach

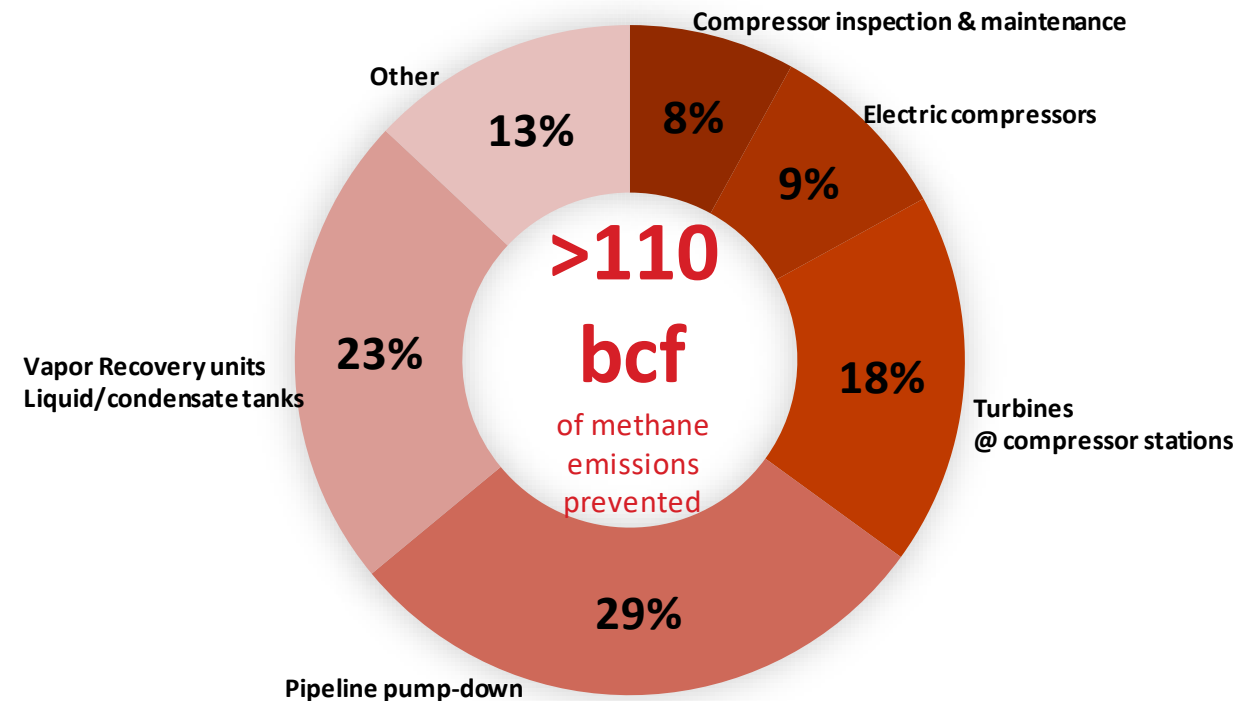


- Leadership
 - 2019 Emissions Intensity 0.02% TGP; 0.03% KM
 - ONE Future – Founding Member
 - INGAA GHG Task Force
 - Carbon Neutral Pipeline – Ruby
 - EPA Natural Gas STAR & Methane Challenge Programs
- Transparency
 - ESG Report
 - Utilize 3rd Party metrics
- Collaboration
 - Environmental Agencies – studies & new technology
 - Evaluate Opportunity – expansions & new facilities
 - Producers, Shippers & Peers
- Emission Reduction Methods
 - Pipeline pump-down
 - Compressor inspection & maintenance
 - Electric Compressor
 - Vapor Recovery Units
 - Turbines @ compressor stations

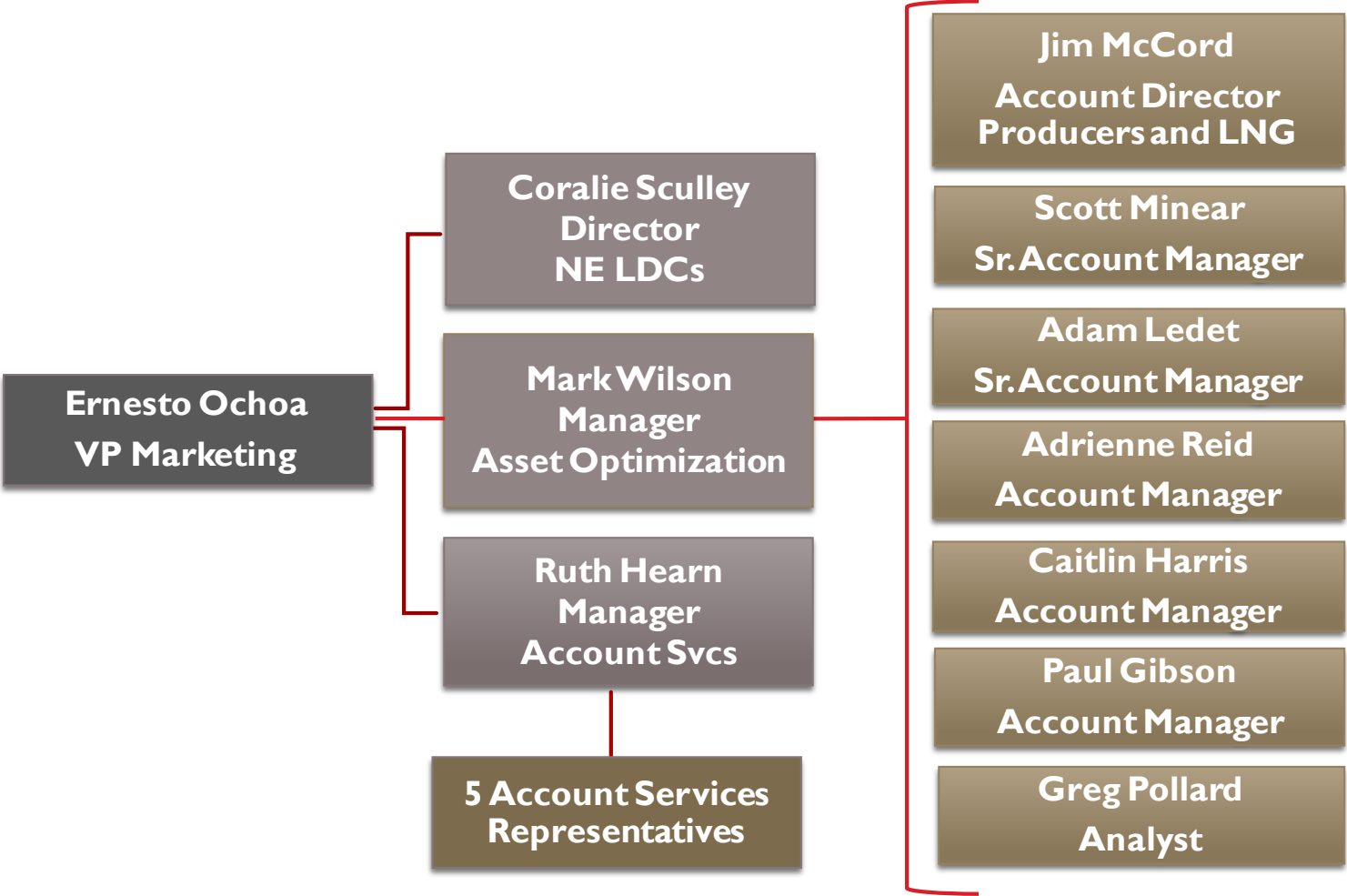
ESG RISK RATING^(a)

#1

in Oil & Gas Storage &
Transportation subindustry
(102 companies)



(a) – as of 8/10/2020



TGP Contact List



Gas Control

24 hour and emergency
800-231-2800

Ganesh Venkateshan – Manager
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Cell –832-980-8296

Layne Sanders – Director
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Cell – 832-563-5024

Rob Perkins - VP
713-420-5229
Cell – 205-527-0650

Tom Dender – VP
713-420-3833
Cell – 205-572-1549

Transportation and Storage

24 hour Scheduling Hotline
713-420-4999

Cathy Soape – Manager
713-420-3814
Cell – 713-922-5083

Adam Harris – Manager
713-420-2672
Cell – 281-389-0024

Katie Cornutt – Manager
713-420-5648
407-902-8027

Gina Mabry – Director
713-420-3685
Cell – 281-744-8666

Gene Nowak – VP
713-369-9329
Cell – 713-252-9759

Commercial/Marketing

Coralie Sculley- Director, Marketing
713-420-6336
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Ruth Hearn-Manager, Acct Svcs
713-420-3881
Cell- 281-352-7975

Mark Wilson – Manager, Optimization
713-420-7205
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Ernesto Ochoa – VP
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Tom Burgett– Director (Northeast)
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John Pannel – Director (Central)
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Chris Bradberry – Director (Southeast)
205-325-7277
Cell – 205-567 - 0777

Cy Harper – Director (South)
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Cell – 205-613-6701

Ron Bessette– VP
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