

**Kinder Morgan
Western Region
Transportation And Storage Services
Customer Meeting**

July 17, 2019

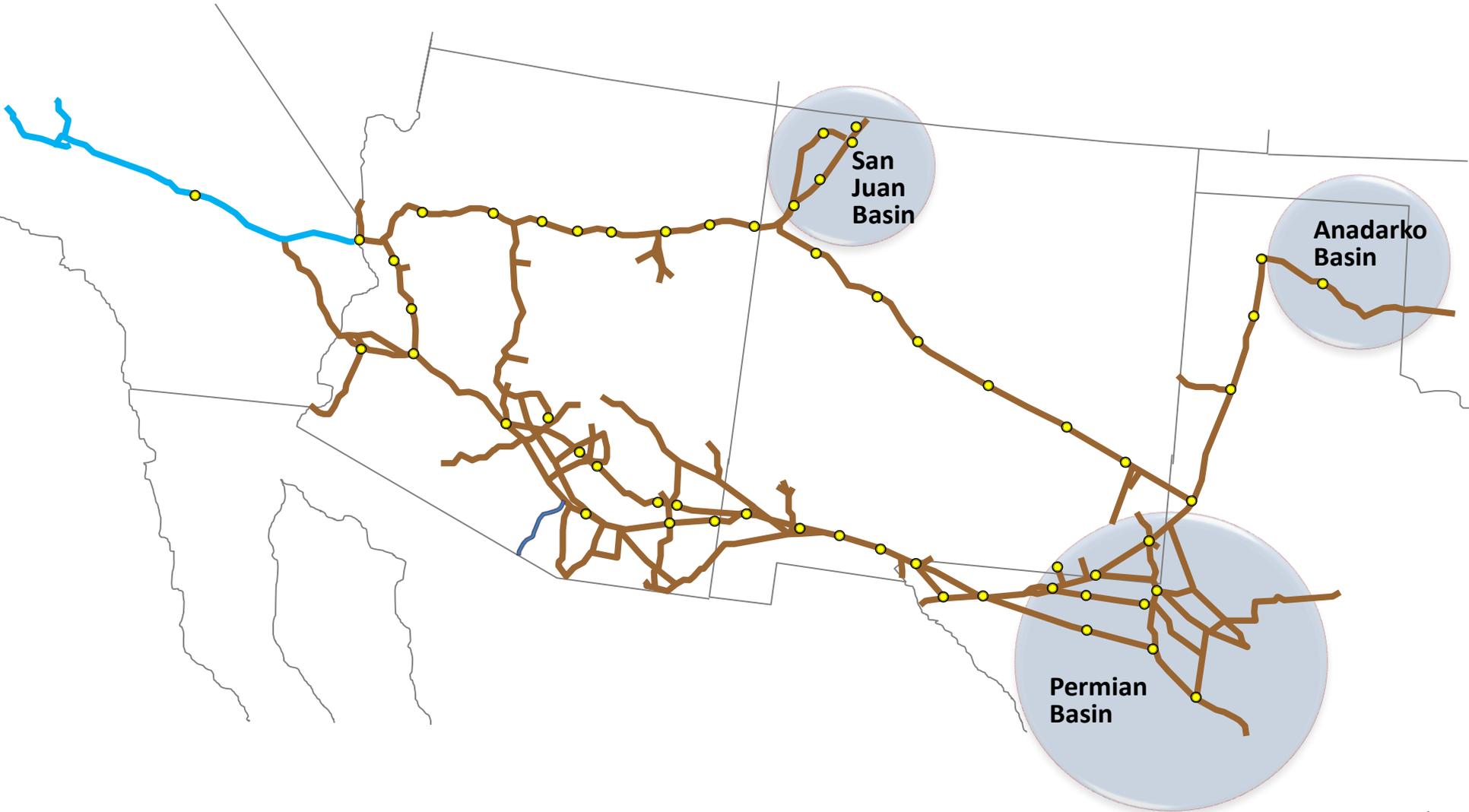
Agenda:

- Opening Remarks – Paul Haas
- Southwest Pipes Update – Freddie Salas
- Break
- Rockies Pipes Update – Rich Aten
- Customer Advisory Board – Paul Haas
- Contracts Update – Sherry Saunders
- Top Golf Logistics

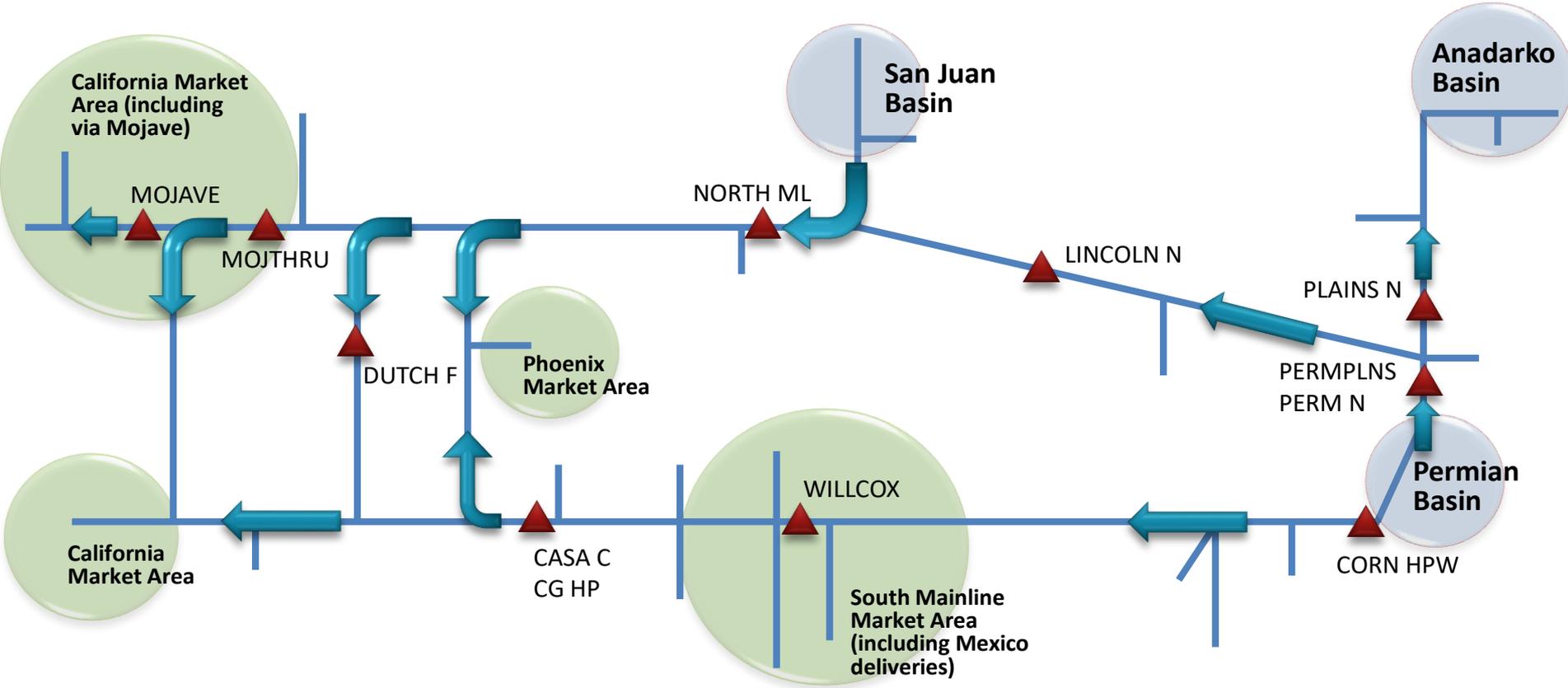
Southwest Pipelines Update

Freddie Salas

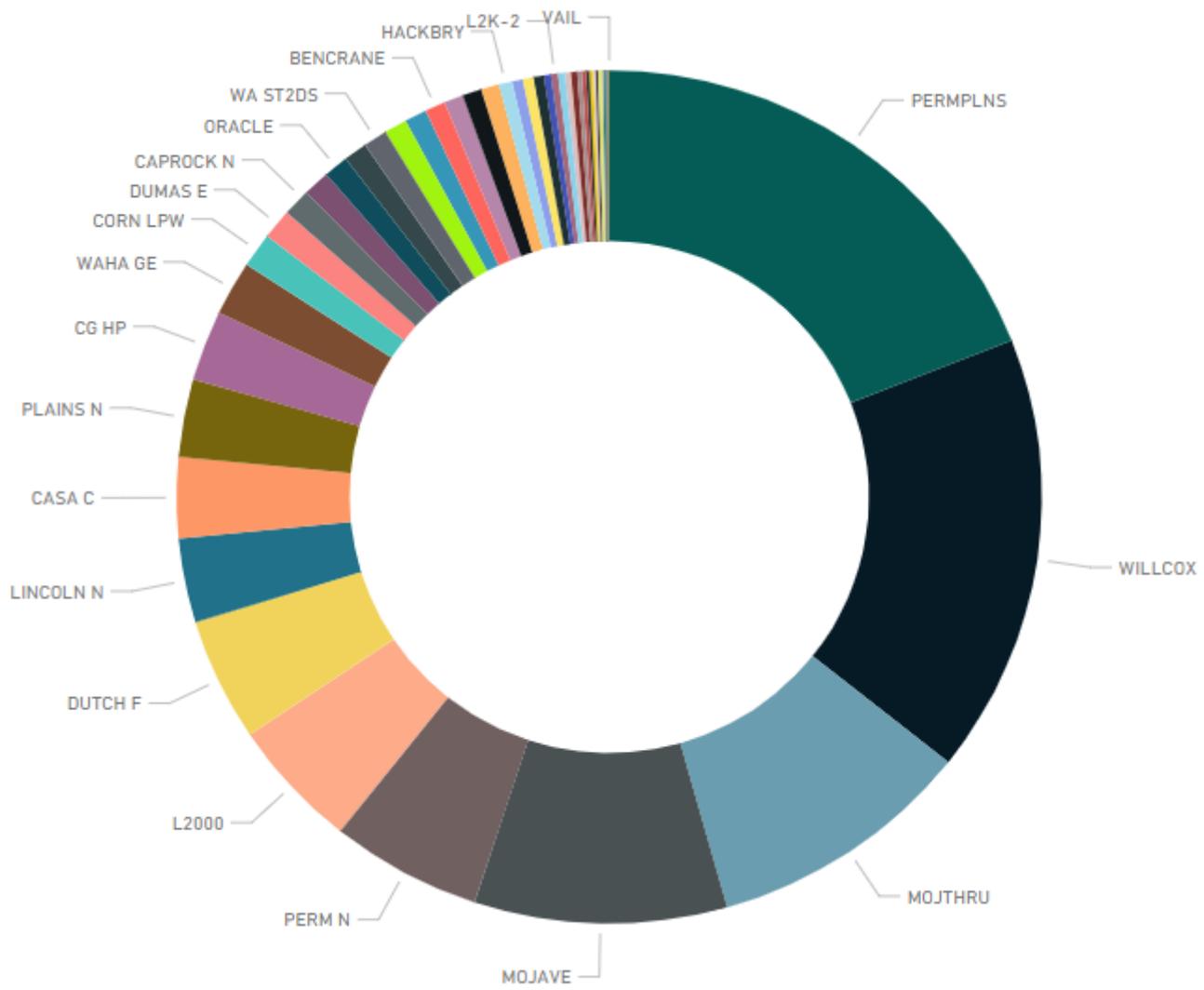
Southwest Pipes (EPNG, Mojave, Sierrita)



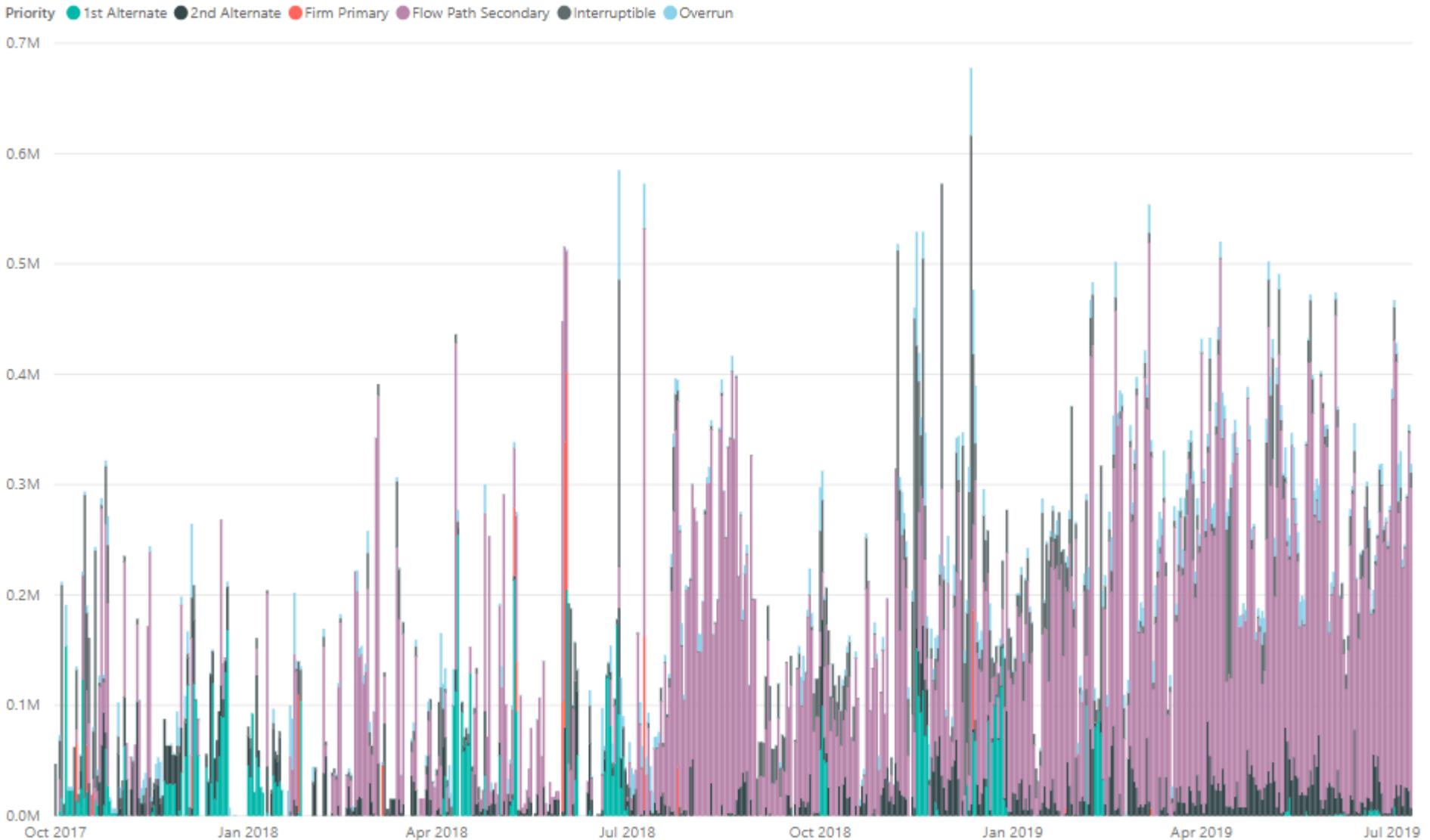
EPNG System Flow and Constraints



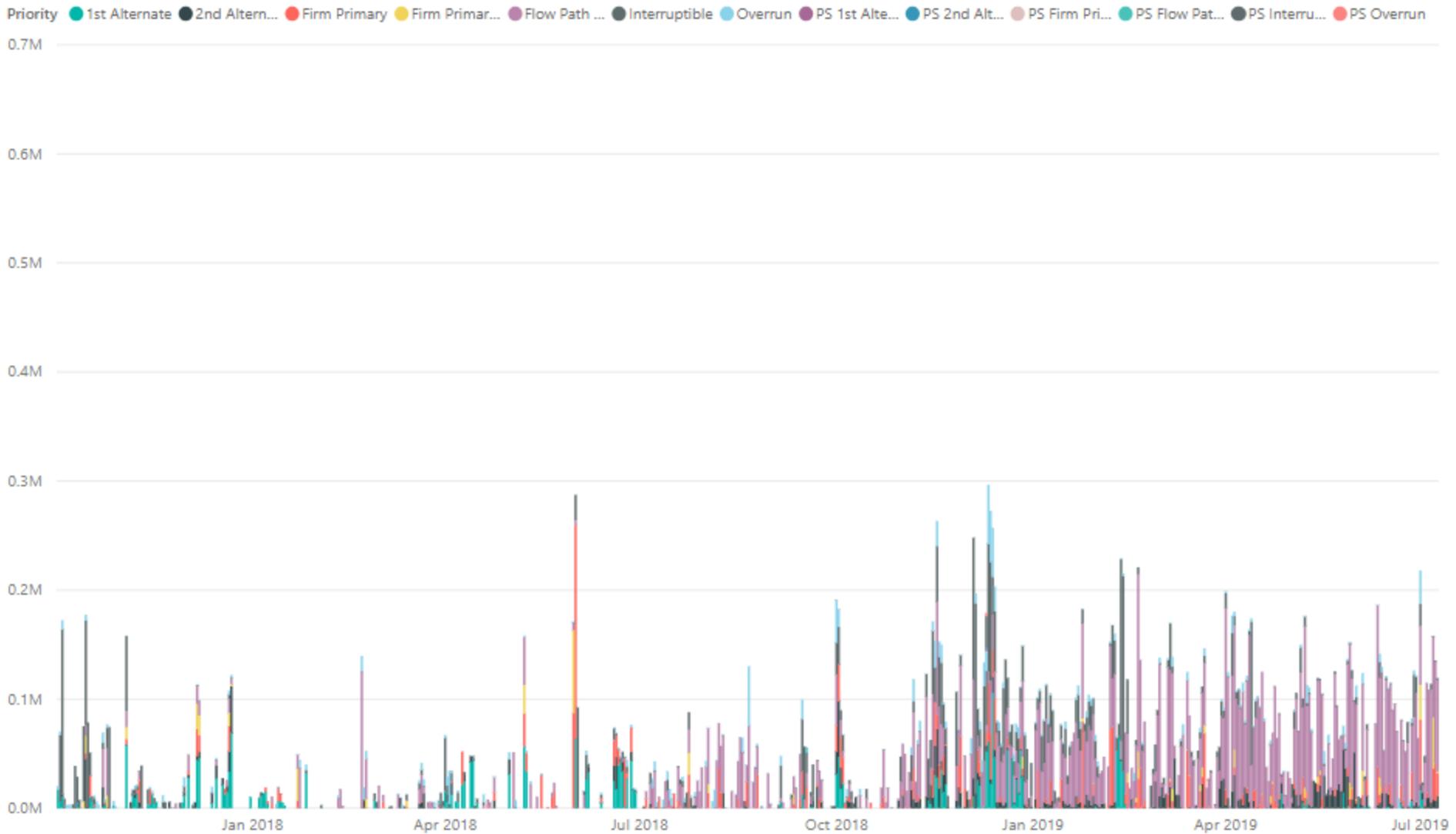
EPNG Segment Cuts



EPNG Segment Constraints (Timely)



EPNG Segment Constraints (Intraday 3)



Flow Path Secondary Priority

- Not firm primary through the constraint, but using part of the primary flow path
- Can be bumped by new firm primary in Cycle 2
- Cut by rate of transaction
 - Can bid up to max rate to improve priority
- Within same rate, cut based on contract utilization percentage

Contract Utilization Pro-Rata Example

Available Capacity 100,000

	Contract A	Contract B	Total
TCD	75,000	50,000	125,000
Nominated Qty	58,000	50,000	108,000

Pro-Rata Percent	60%	40%	100%
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Pro-Rata Split	60,000	40,000	100,000
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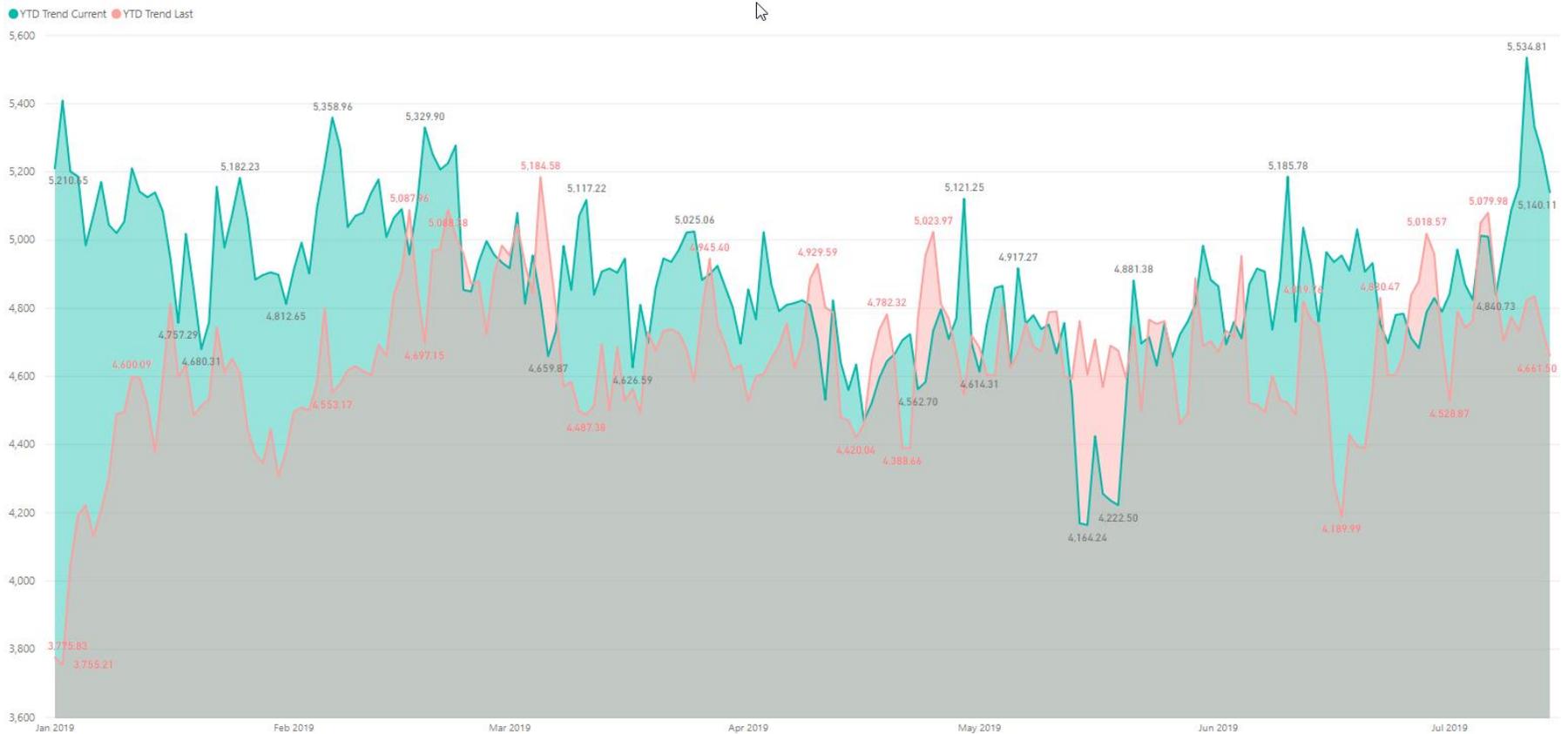
Scheduled Qty	58,000	42,000	100,000
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Importance of Rank in Priority Calculation

- Rank is used to distribute contract entitlements to multiple nominations on the same contract
- “Why is my primary receipt to primary delivery not firm primary through the constraint?”

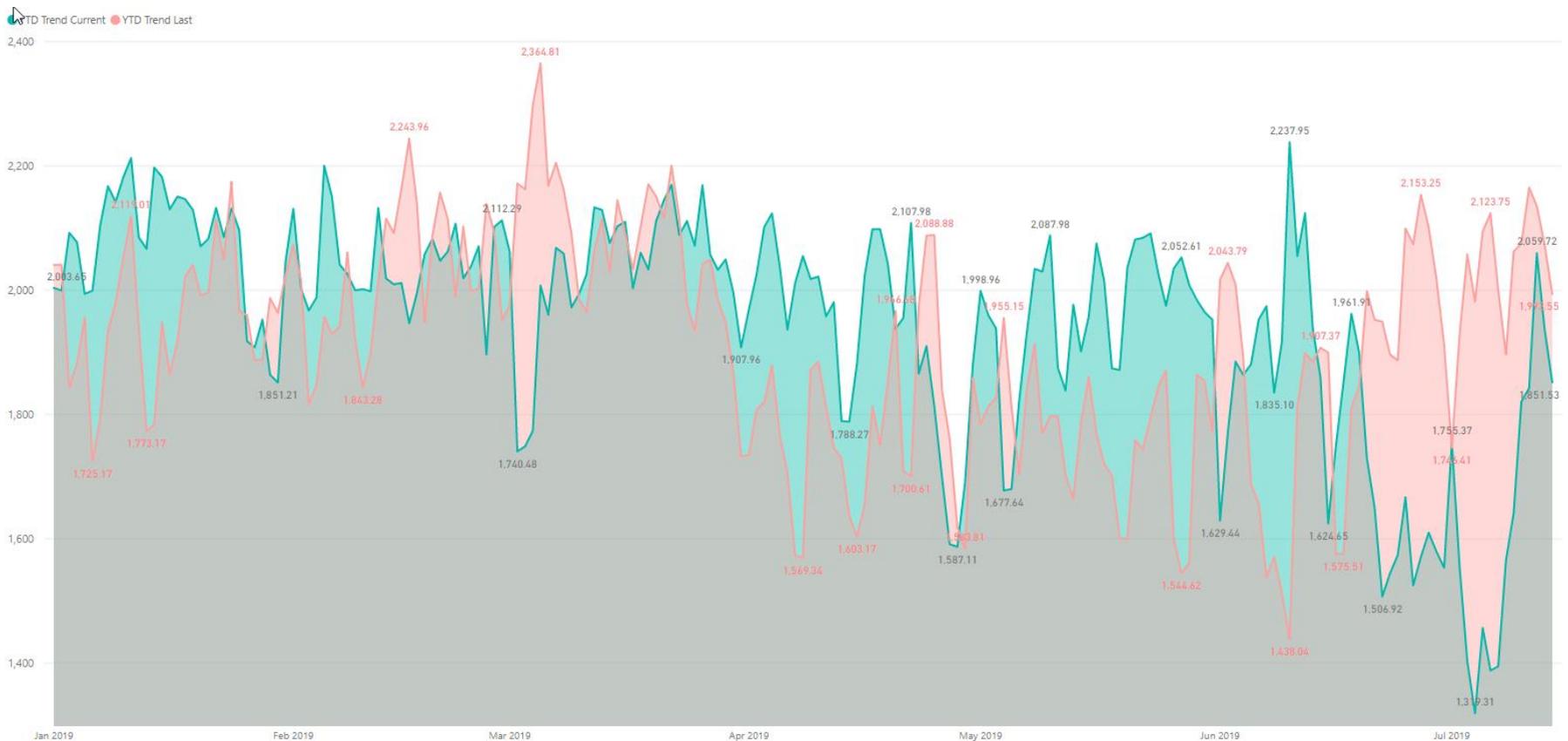
Scheduling Overview – Throughput Trends

EPNG – Total Deliveries YTD 2019 vs. 2018



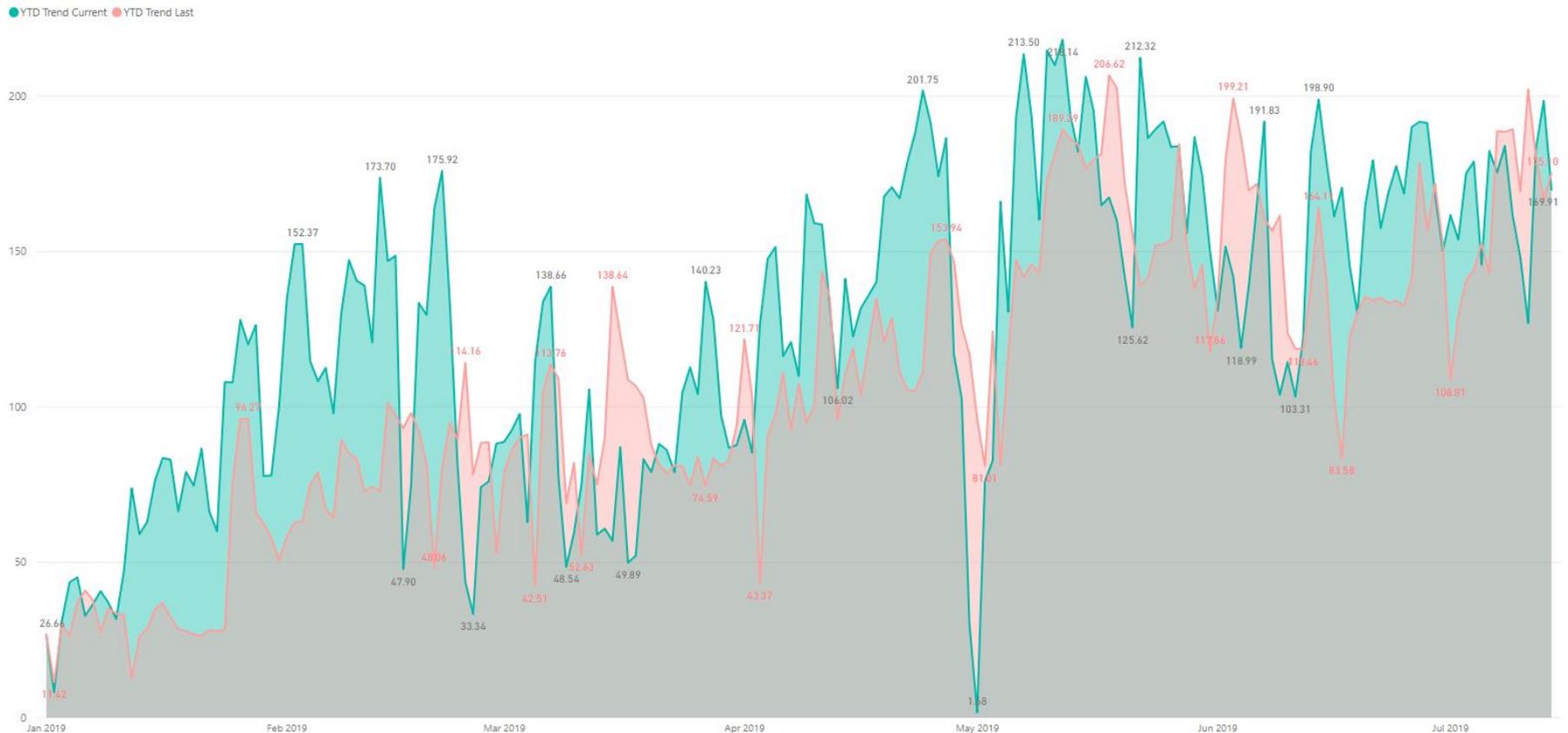
Scheduling Overview – Throughput Trends

Mojave – Total Deliveries YTD 2019 vs. 2018



Scheduling Overview – Throughput Trends

Sierrita – Total Deliveries YTD 2019 vs. 2018



Upcoming EPNG Maintenance

- Crane to Upton (CRANEUPT) hydro test – 7/20 thru 9/3
 - Impact of ~233,000 dth/d, reduce flows through the Permian Virtual Area
- Waha to Cornudas (WA2CORN) maintenance – 8/15
 - Impact of ~720,000 dth/d, reduce flows west out of Permian
- Plains Station (PLAIN ST) ESD – 8/27 thru 8/29
 - Impact of ~762,000 dth/d, will reduce flows north out of Permian
- Keystone Station (KEYST ST) ESD – 9/17 thru 9/20
 - Impact of ~611,000 dth/d, reduce flows through the Permian Virtual Area

DART System Enhancements

- System Stability
- Scheduling Enhancements
- System Performance
- New Functionality
 - Graphical Pipe
 - Preliminary Posting Screen

Graphical Pipe

Flow Date: 7/ 9/2019 Cycle: TIMELY Retrieve Clear

The Scheduling Priority analysis in this page is provided as a matter of customer service and does not affect any of shipper's right or obligations under any contractual agreement or under any provisions of the pipeline's FERC Gas Tariff. This screen utilizes the segmentation rules for determining overrun in scheduling priorities for capacity allocation, which may differ from the segmentation rules used for calculating overrun charges on an invoice, please contact your Marketing Representative for questions regarding overrun charges.

Segment	Distance	Loc PIN	Loc Name	MRQ	MDQ	Path Quantity
100	0.05	301717	NW P/L/EPNG (IIGNACIO) NPC IGNACIO	0	0	35,000
100	0.15	376526	BP PROD/EPNG (IAMOCOAL) AMOCO CPD L	0	0	35,000
100	0.2	314385	BP PROD/EPNG (DAMO SJT) AMOCO FLORI	0	0	35,000
100	3.22	314947	CATAENRG/EPNG (IBLINELM) ELM RIDGE	0	0	35,000
100	3.64	314470	HTFOUR/EPNG (IWMSFLOR) WILLIAMS FLO	0	0	35,000
100	3.79	300724	(BONDADST) BONDAD STATION	0	0	35,000
100	6.4	300720	EPNG (EPNG (BONSTRAN)) BONDAD STATION	0	0	35,000

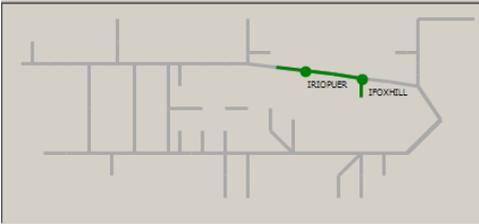
Pathed Nominations R/D Pairs

Contract	Vol Type	Rec PIN	Rec Loc Name	Rec Rank	Rec Zone	Del PIN	Del Loc Name	Del Rank	Del Zone	Rec Qty (Gross)	Fuel %	Fuel Dth	Del Qty (Net)	Pkg Id	Path Rank	Route
	Transport (Current Business)	300724	(BONDADST) BONDAD STATION	2	NM-S	314604	PACGAS/EPNG (DPG&ETOP) TOPOCK OBA	14	CA-N	3,189	0.0227	72	3,117		2	North

Graphical Pipe

Flow Date: Cycle:

The Scheduling Priority analysis in this page is provided as a matter of customer service and does not affect any of shipper's right or obligations under any contractual agreement or under any provisions of the pipeline's FERC Gas Tariff. This screen utilizes the segmentation rules for determining overrun in scheduling priorities for capacity allocation, which may differ from the segmentation rules used for calculating overrun charges on an invoice, please contact your Marketing Representative for questions regarding overrun charges.



Pathed Nominations

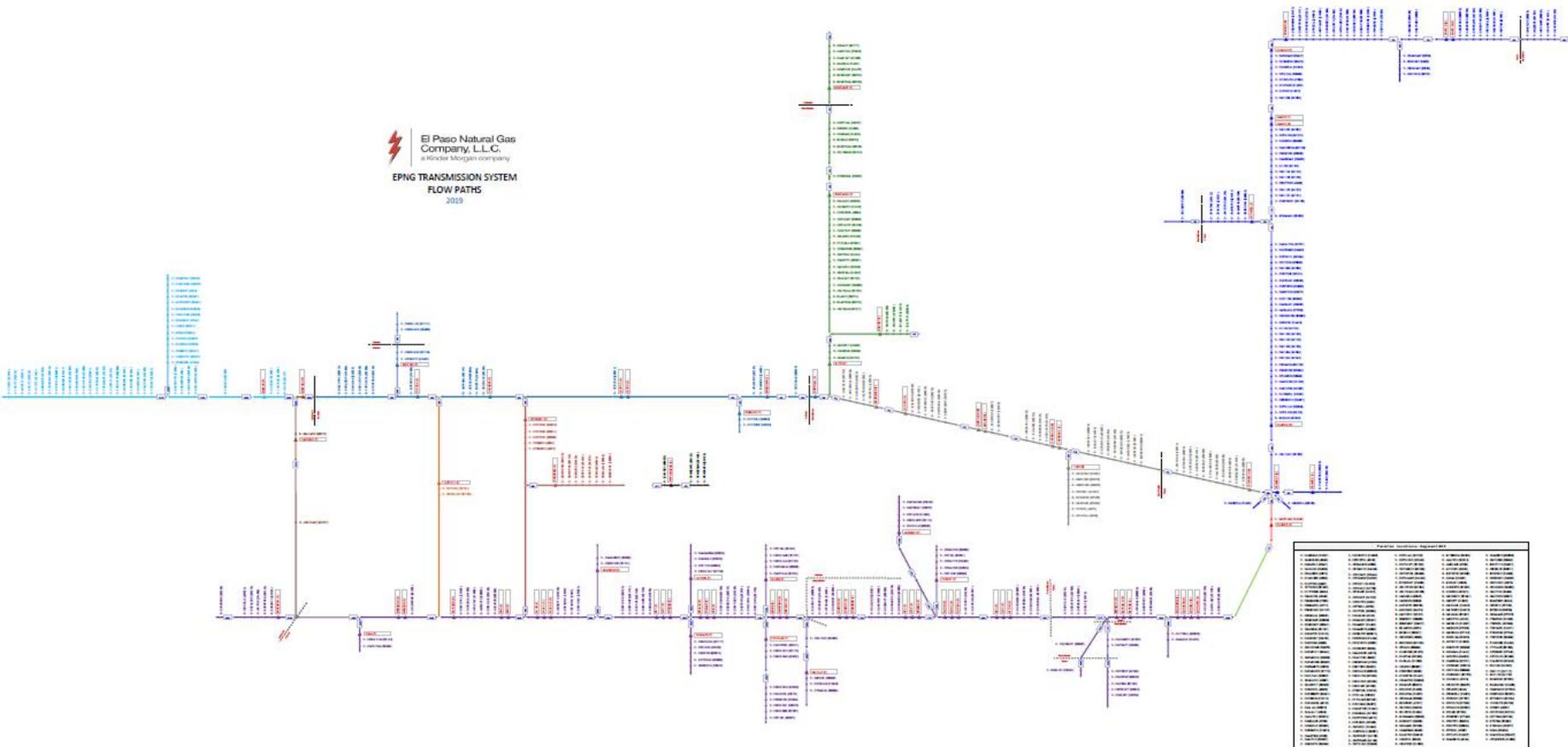
Contract	Rec PIN	Rec Loc Name	Del PIN	Del Loc Name	Route	MDQ
612112-FT1	302132	(KEYSTONE) KEYSTONE POOL	301595	KGS/EPNG (IKEYSTOR) UNOCAL KEYSTONE	VA	50,000
612204-F	48151	DCP OPER/EPNG (IFOXHILL) FOX HILL R	301797	NMGASCO/EPNG (IRIOPUER) RIO PUERC	NN2	30,900
612204-FT1	300109	NNG/EPNG (INN26PLA) 26 IN HOBBS (01	301797	NMGASCO/EPNG (IRIOPUER) RIO PUERCO	SN2	5,222
612204-FT1	300109	NNG/EPNG (INN26PLA) 26 IN HOBBS (01	302250	EPNG/EPNG (PLNSTRAN) PLAINS TRANSFE	AN2	13,878
612309-FT1	302132	(KEYSTONE) KEYSTONE POOL	301595	KGS/EPNG (IKEYSTOR) UNOCAL KEYSTONE	VA	50,000

EPNG Preliminary Posting

Cycle: Gas Flow Date:

Segment	Segment Name	Operating Capacity	Scheduled Quantity	Operationally Available Capacity	Flow Indicator	Constrained Segment
100	BONDADST	726,500	320,593	405,907	TD1	
120	BONDADML	816,500	361,209	455,291	TD1	
145	RIOVISTA	143,400	50,473	92,927	TD1	
160	SJ TRI	2,825,200	1,153,394	1,671,806	TD1	
200	NORTH ML	13,192,800	13,192,800	0	TD1	Y
300	HACKBRY	1,975,400	1,499,128	476,272	TD1	
320	TOPOCK	2,373,400	364,568	2,008,832	TD1	
400	DUTCH F	611,500	611,500	0	TD1	
540	MARICOPA	117,300	117,300	0	TD1	
565	N PHX1	122,300	105,766	16,534	TD1	
635	LINCOLN	631,000	0	631,000	TD1	
635	LINCOLN N	610,700	432,146	178,554	TD2	
640	CAPROCK	642,400	432,146	210,254	TD2	
640	CAPROCK N	554,200	432,146	122,054	TD2	
640	CAPROCK S	642,400	0	642,400	TD1	
645	LUSK	136,200	127,606	8,594	TD2	
690	PLAIN ST	762,800	543,532	219,268	TD1	
715	PLAINS N	318,200	284,638	33,562	TD2	
740	AMAR N	2,530,000	2,530,737	0	TD2	Y
740	AMAR S	314,700	0	314,700	TD1	
760	DUMAS S	315,700	0	315,700	TD1	
780	DUMAS E	518,700	515,382	3,318	TD2	Y
810	SHAFR E	148,400	0	148,400	TD2	
810	SHAFR W	248,000	76,931	171,069	TD1	
920	PERMPLNS	24,820,770	23,446,345	1,374,425	TD1	Y
920	PLAINS S	455,100	0	455,100	TD1	
940	BENCRANE	230,100	230,100	0	TD1	
940	BENSWPK	128,000	59,309	68,691	TD1	
940	CARLSBAD	215,000	191,890	23,110	TD1	
940	CRANESOU	113,000	22,145	90,855	TD1	

EPNG Scheduling Map



Gulf Coast Express (GCX)

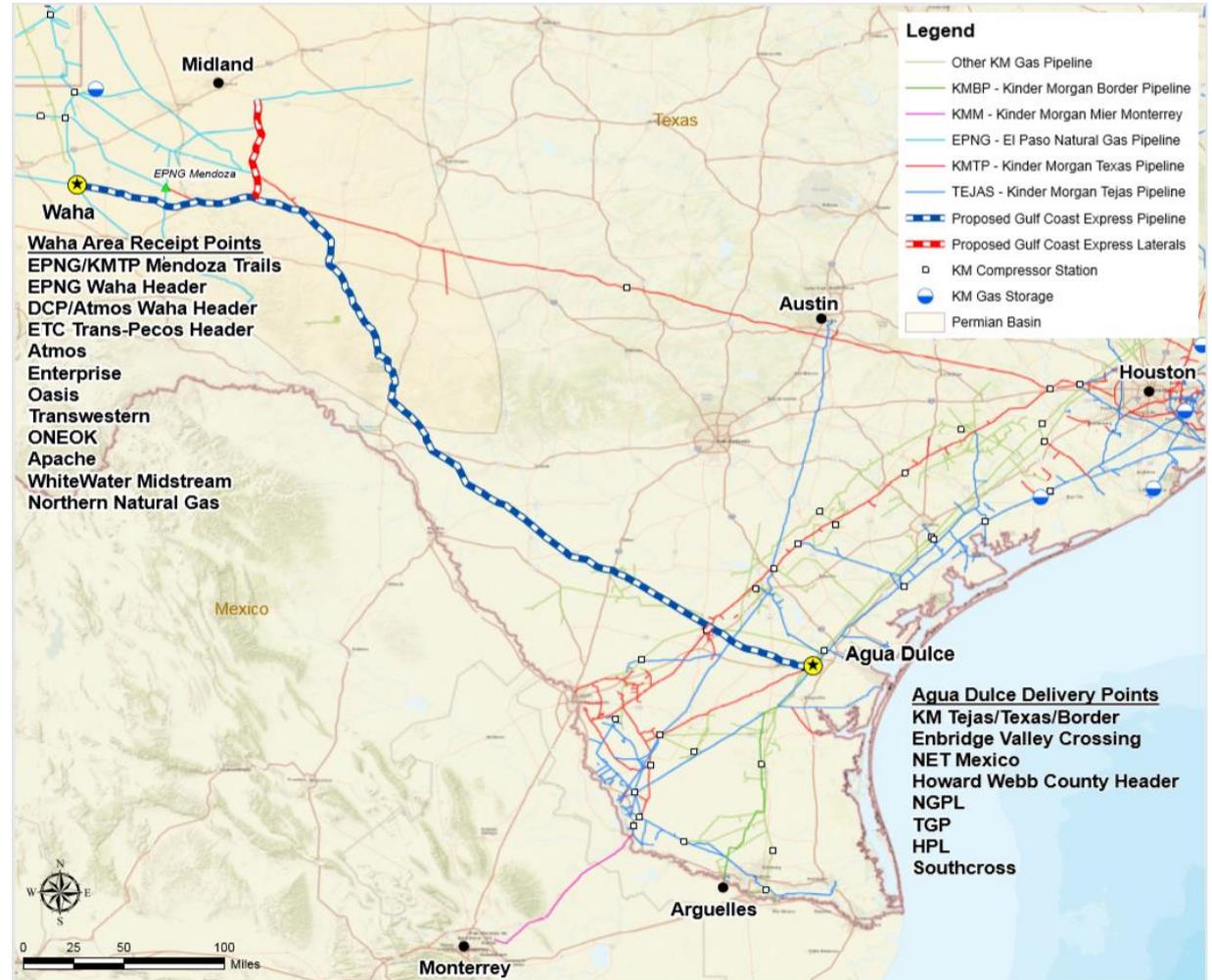
- 3 total interconnects with EPNG in the Permian Area

- IGCXWAHA

- DSTERLNG

- ICENDRBN

- 2 Bcf/d from Permian to Agua Dulce



Southwest Update

- Questions?

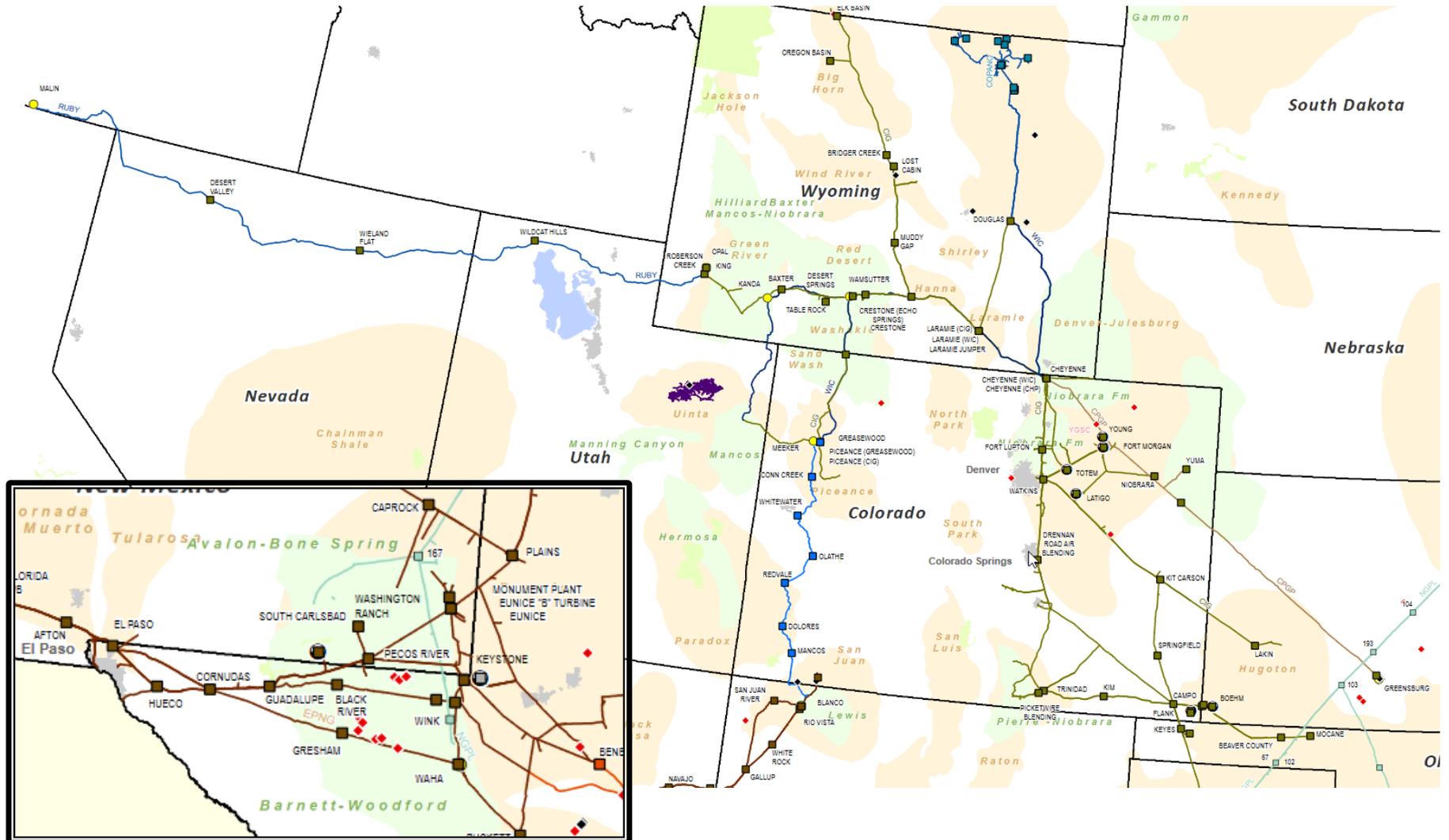
Rockies Pipelines Update

Rich Aten

Rockies Update

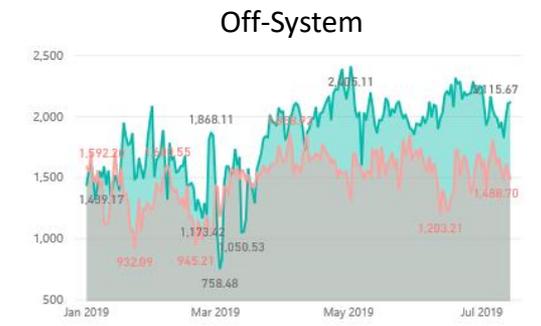
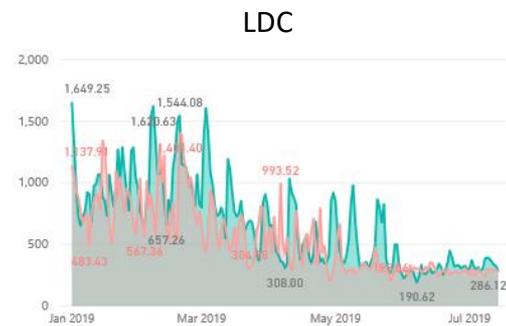
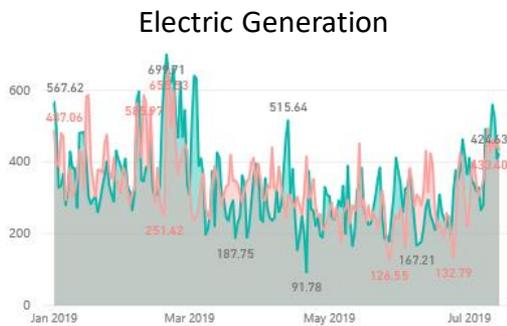
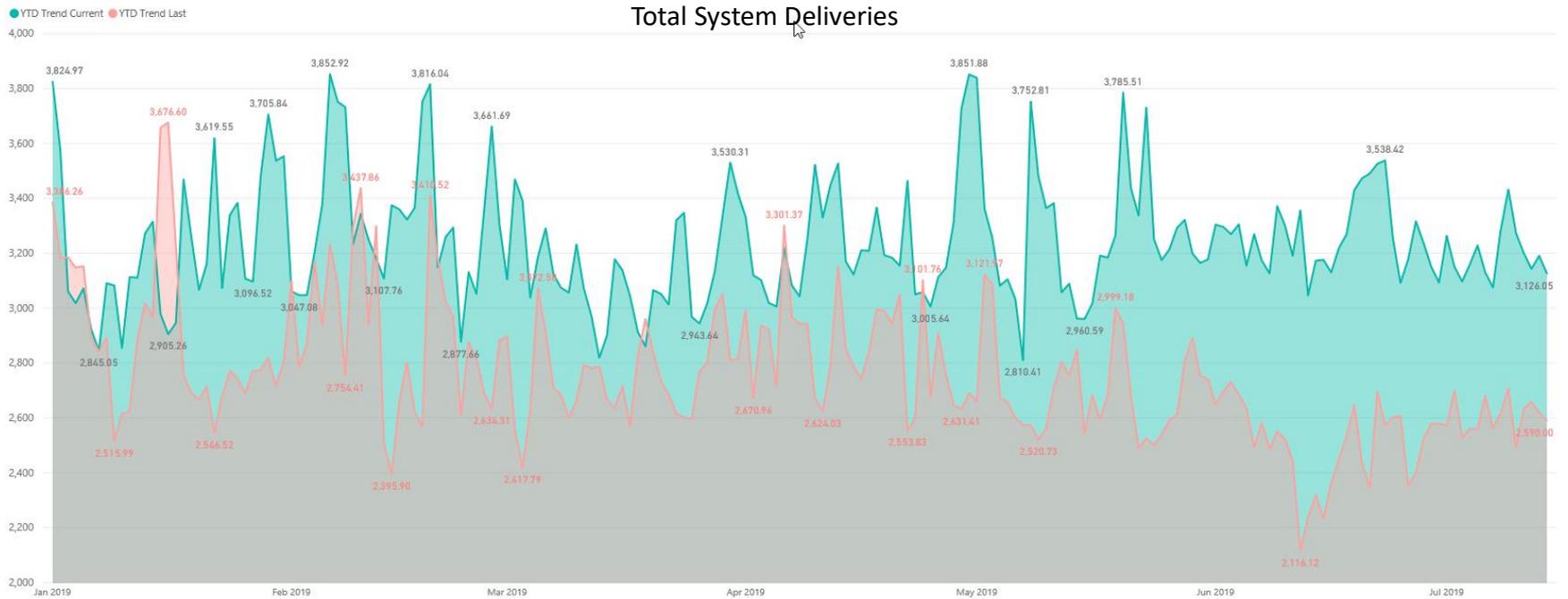
- Scheduling Overview
- Upcoming Pipeline Maintenance
- DART Update
- Upcoming Map Updates/Changes

Scheduling Overview – KM Rockies Assets



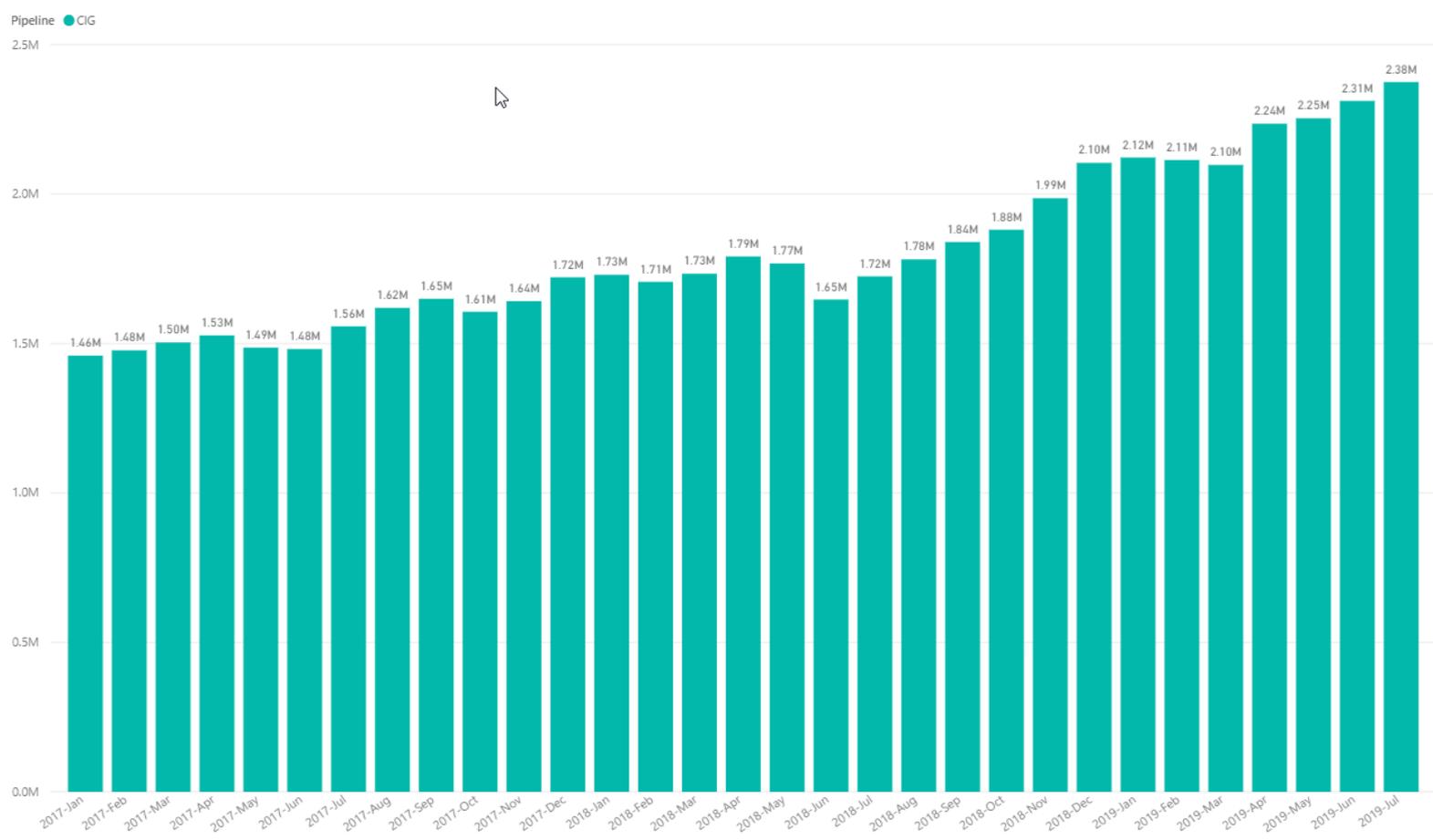
Scheduling Overview – Throughput Trends

Colorado Interstate Gas - YTD 2019 vs. 2018



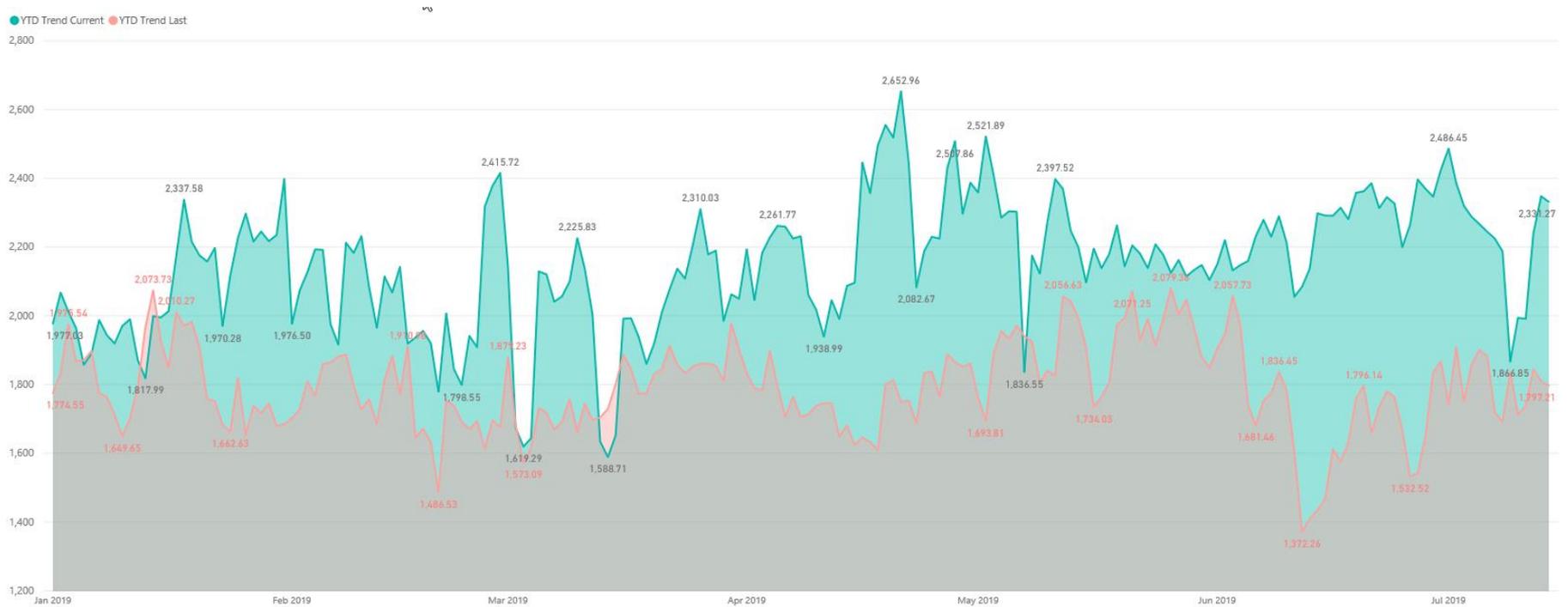
Scheduling Overview – Throughput Trends

Colorado Interstate Gas Denver-Julesburg Basin *Daily Average Receipts 2017 to Present*



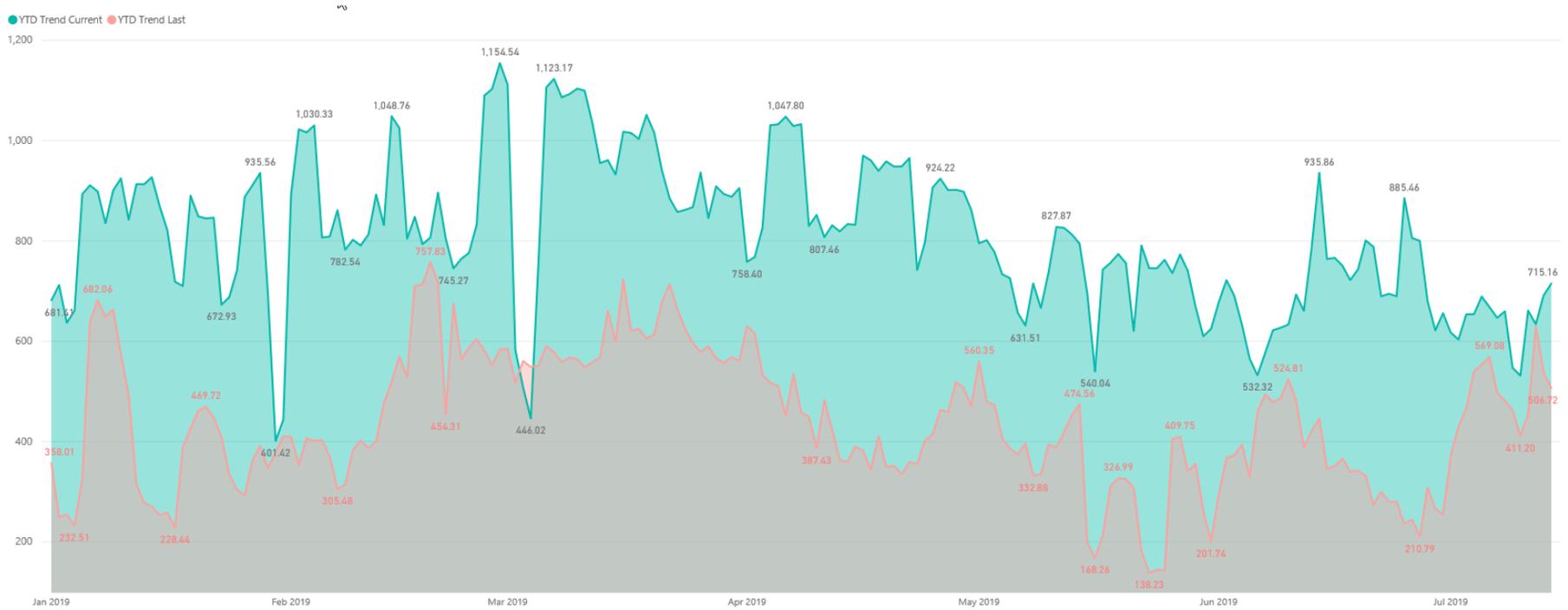
Scheduling Overview – Throughput Trends

WIC – Total Deliveries YTD 2019 vs. 2018



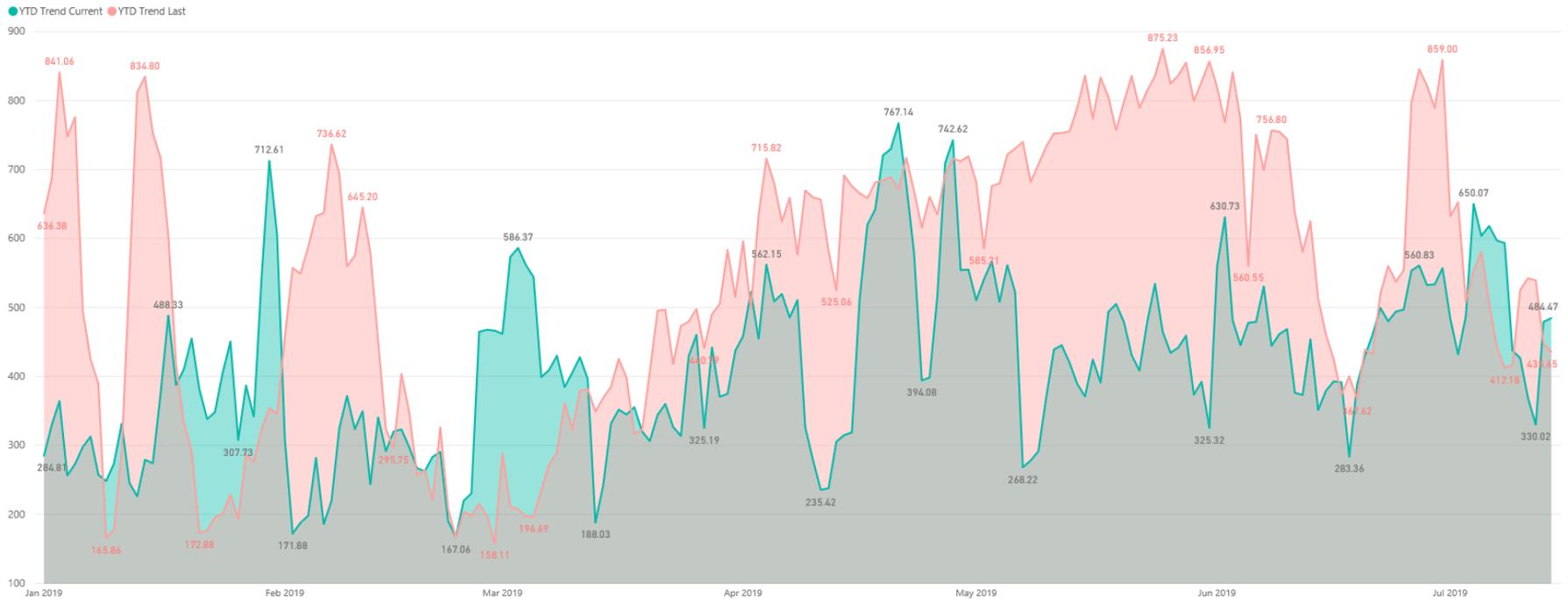
Scheduling Overview – Throughput Trends

RUBY – Total Deliveries YTD 2019 vs. 2018



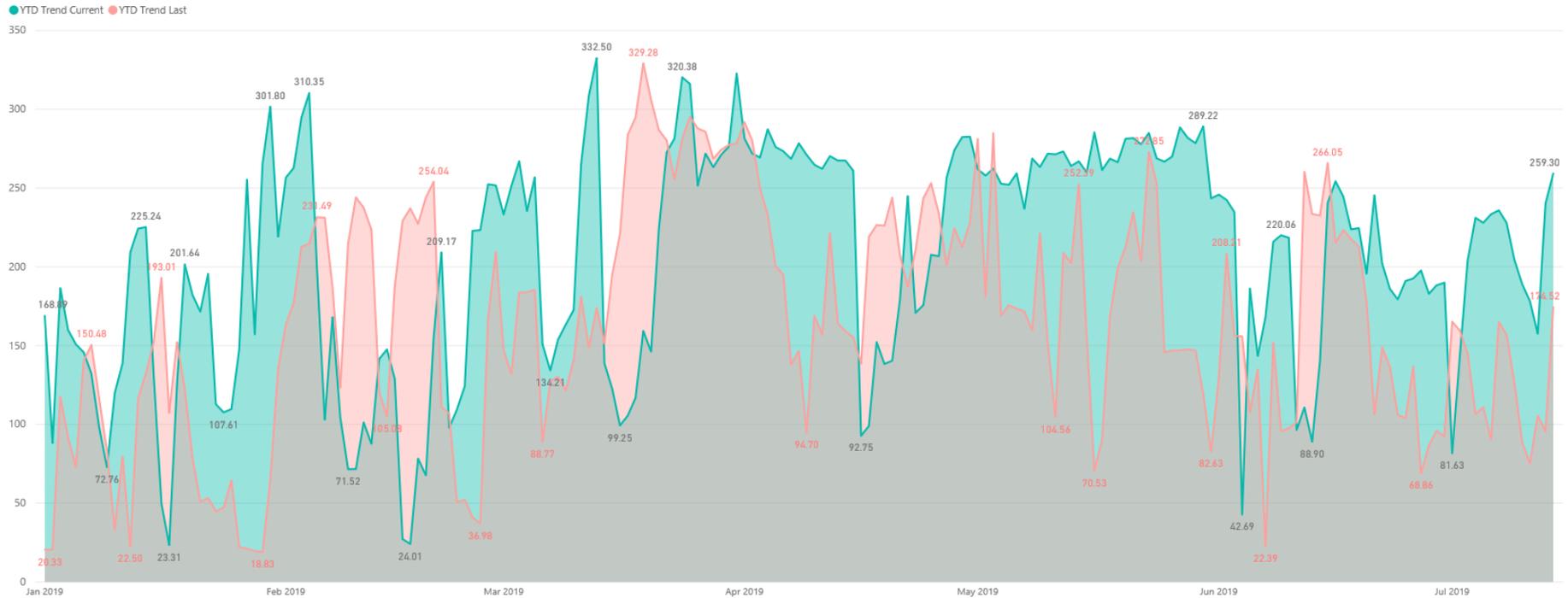
Scheduling Overview – Throughput Trends

Cheyenne Plains – Total Deliveries YTD 2019 vs. 2018



Scheduling Overview – Throughput Trends

Transcolorado – Total Deliveries YTD 2019 vs. 2018



CIG Cold Weather Posting Process and Response to DJ Supply Failures

- Weather Forecast Triggers
 - single day with highs in the teens, lows single digit to sub-zero
 - sustained multi-day winter weather conditions
 - interconnecting pipeline cold weather postings
- By 5am each day
 - Gas Control compiles list of underperforming receipts
- Postings
 - List underperforming receipts and associated scheduling caps to drive receipt/delivery balance

Posting Process

(Items 2 thru 4 Assume Underperforming Receipts)

1. Cold Weather Notice posted days in advance of cold weather
 - States CIG will cap underperforming receipts at the next available cycle during the cold weather period
2. Strained Operating Condition Notice coupled w/ Performance Cap Notice on underperforming receipts
3. Critical Condition Notice
4. Operational Flow Order
 - System at grave risk, may require very specific flow orders
 - Examples
 - “ Shipper A must provide Y MDth/d supply at Flying Hawk”

Upcoming 2019 Maintenance - CI&G

August

1	2	3	4	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	

From	To	Loc	Impact
8/6/2019	8/8/2019	Segment 106 - Kanda West	Capacity net to zero
8/21/2019	8/21/2019	Segment 182	Capacity reduced to 566 Mdth

September

1	2	3	4	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	

From	To	Loc	Impact
9/17/2019	9/18/2019	Segment 169	Capacity reduced to 459 Mdth
9/17/2019	9/18/2019	Segment 182	Capacity reduced to 509 Mdth

October

1	2	3	4	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	

From	To	Loc	Impact
10/15/2019	10/16/2019	Segment 259	Capacity reduced to zero
10/16/2019	10/16/2019	Segment 288	Capacity reduced to 268 Mdth
10/16/2019	10/16/2019	Beaver Meter Station (800078)	Capacity reduced to 142 Mdth
10/25/2019	10/31/2019	Totem Storage	No injection or withdrawal

November

1	2	3	4	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	

From	To	Loc	Impact
11/1/2019	11/1/2019	Totem Storage	No injection or withdrawal
11/6/2019	11/6/2019	Segment 268	Capacity reduced to 185 Mdth
11/7/2019	11/14/2019	Young Storage	No injection or withdrawal
11/13/2019	11/13/2019	Segment 262	Capacity reduced to 301 Mdth

December - None

Upcoming 2019 Maintenance - WIC

August

1	2	3	4	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	

From	To	Loc	Impact
8/7/2019	8/8/2019	Segment 404	Capacity reduced to 521 Mdth
8/13/2019	8/13/2019	Segment 440	No impact

September

1	2	3	4	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	

From	To	Loc	Impact
9/9/2019	9/13/2019	Segment 428	Capacity reduced to 67 Mdth
9/17/2019	9/17/2019	Segment 420	Capacity reduced to zero

October - None

November

1	2	3	4	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	

From	To	Loc	Impact
11/20/2019	11/20/2019	Segment 428	Capacity reduced to 83 Mdth

December - None

Upcoming 2019 Maintenance - RUBY

August

1	2	3	4	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	

From	To	Loc	Impact
8/6/2019	8/6/2019	Segment 30	Capacity reduced to 1,290 Mdth
8/7/2019	8/8/2019	Segment 30	Capacity reduced to 1,437 Mdth
8/20/2019	8/20/2019	Segment 20	Capacity reduced to zero for 8 hours
8/21/2019	8/23/2019	Segment 20	Capacity reduced to 1,337 Mdth

September

1	2	3	4	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	

From	To	Loc	Impact
9/24/2019	9/26/2019	Segment 50	Capacity reduced to 1,388 Mdth

October

1	2	3	4	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	

From	To	Loc	Impact
10/2/2019	10/3/2019	Segment 60	Capacity reduced to 500 Mdth

November - None

December - None

Upcoming 2019 Maintenance – Cheyenne Plains

August - None

September - None

October

1	2	3	4	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	

From	To	Loc	Impact
10/16/2019	10/16/2019	Segment 605	Capacity reduced to 744 Mdth

November

1	2	3	4	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	

From	To	Loc	Impact
11/5/2019	11/6/2019	Totem Storage	Capacity reduced to 30 Mdth

December - None

Upcoming 2019 Maintenance - TransColorado

August

1	2	3	4	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	

From	To	Loc	Impact
8/13/2019	8/15/2019	Segment 250	Dependent on Sched Vols

September

1	2	3	4	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	

From	To	Loc	Impact
9/4/2019	9/4/2019	Segment 220	Dependent on Sched Vols
9/18/2019	9/18/2019	Segment 230	Dependent on Sched Vols

October

1	2	3	4	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	

From	To	Loc	Impact
10/1/2019	10/3/2019	Segment 240	Dependent on Sched Vols

November - None

December - None

Upcoming 2019 Maintenance – KGS

August

1	2	3	4	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	

From	To	Loc	Impact
8/19/2019	8/23/2019	All	Limited injection capability
8/26/2019	8/30/2019	All	Limited injection capability

September

1	2	3	4	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	

From	To	Loc	Impact
9/23/2019	9/27/2019	All	Limited injection capability
9/30/2019	9/30/2019	All	Limited injection capability

October

1	2	3	4	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

From	To	Loc	Impact
10/1/2019	10/4/2019	All	Limited injection capability

November - None

December - None

Upcoming 2019 Maintenance – KGS

August

1	2	3	4	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	

From	To	Loc	Impact
8/19/2019	8/23/2019	All	Limited injection capability
8/26/2019	8/30/2019	All	Limited injection capability

September

1	2	3	4	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	

From	To	Loc	Impact
9/23/2019	9/27/2019	All	Limited injection capability
9/30/2019	9/30/2019	All	Limited injection capability

October

1	2	3	4	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

From	To	Loc	Impact
10/1/2019	10/4/2019	All	Limited injection capability

November - None

December - None

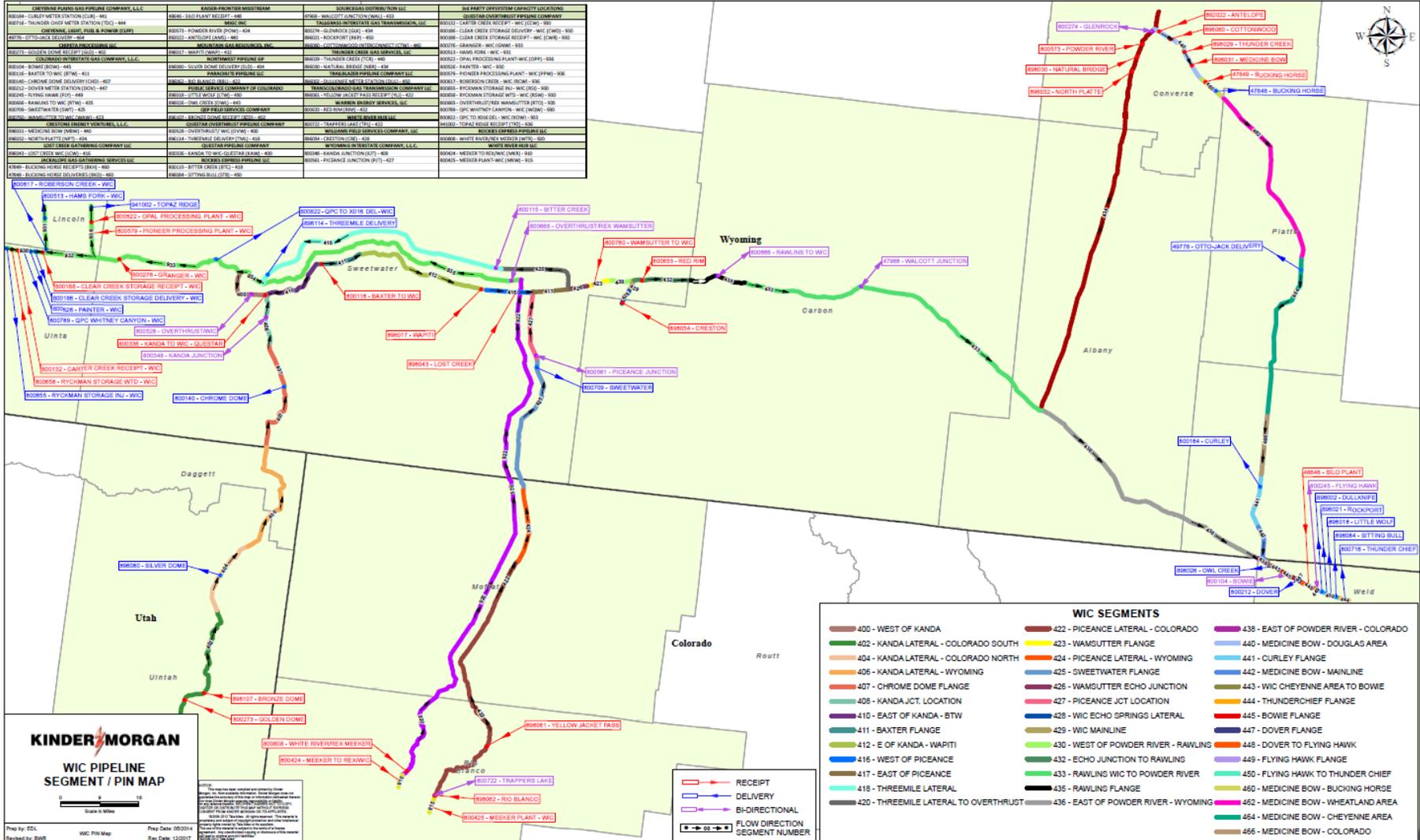
DART Update – Recent/Current Improvements

- Added ability to have multiple pipeline constraints on a segment
 - Wasn't available at DART conversion from Xpress
 - Will allow return to showing/reporting constraint capacities by named constraint in addition to segment number (Cheyenne South, Kit Carson Compressor, Morton East, etc..)
 - Example: recent CIG segment 106
- Ongoing performance upgrades
- Streamlining of existing NAESB screens and reports
 - NAESB Storage Screens
 - NAESB Shipper Imbalance
 - NAESB Measurement Info

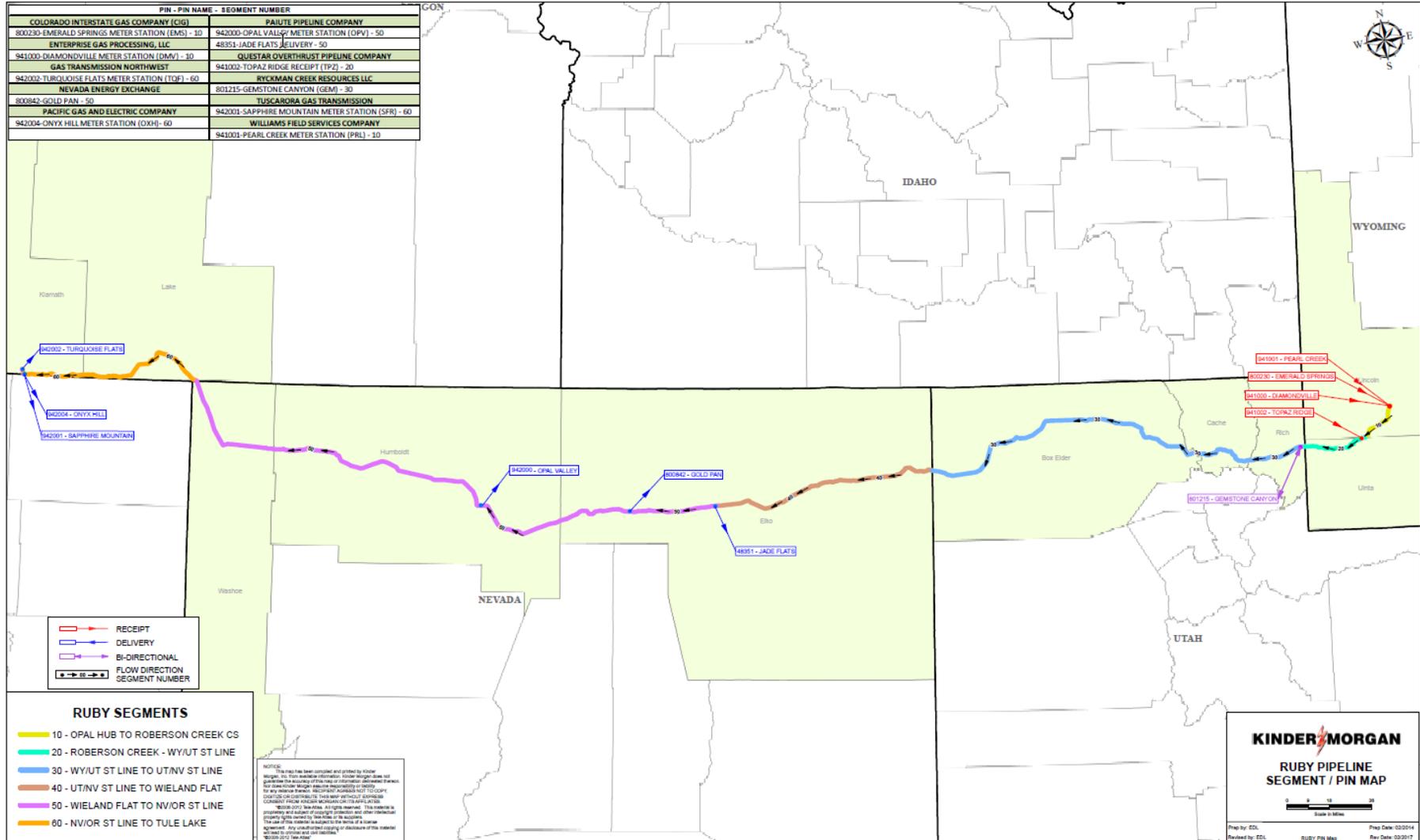
DART Update

- Upcoming Improvements
 - CIG 2/4 Hour NNT Notice Enhancements - Waiver Functionality
 - Allow 2/4 Hour Notice requirement to be suspended for a specified time frame
 - During waiver time frame, automatically grant 4 Hour Notice for all NNT customers and suspend notice emails during Waiver
 - Graphical Pipe for Rockies' Pipelines
 - Similar to EPNG's graphical pipe shown earlier
 - Potential additional enhancements

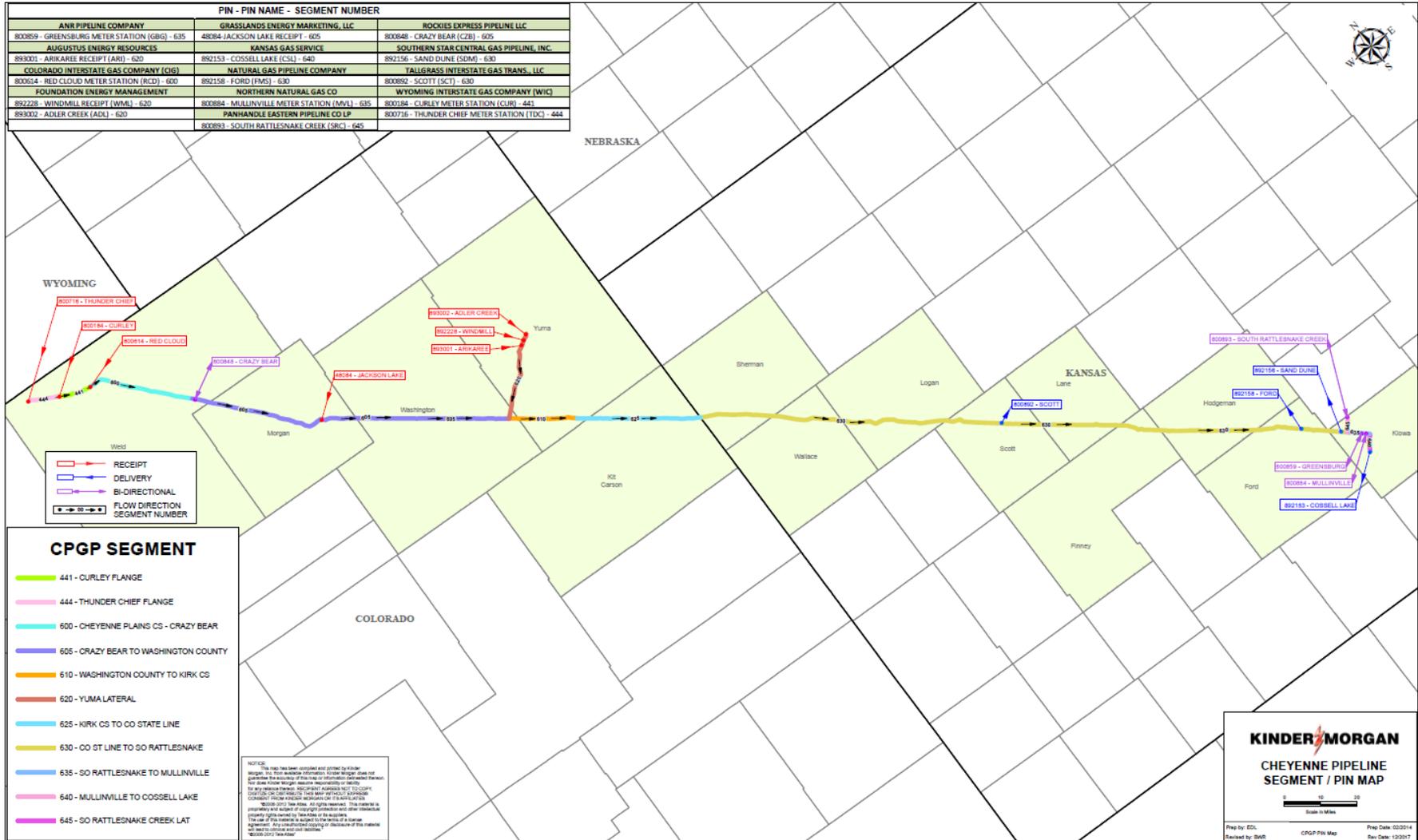
Current WIC System Map



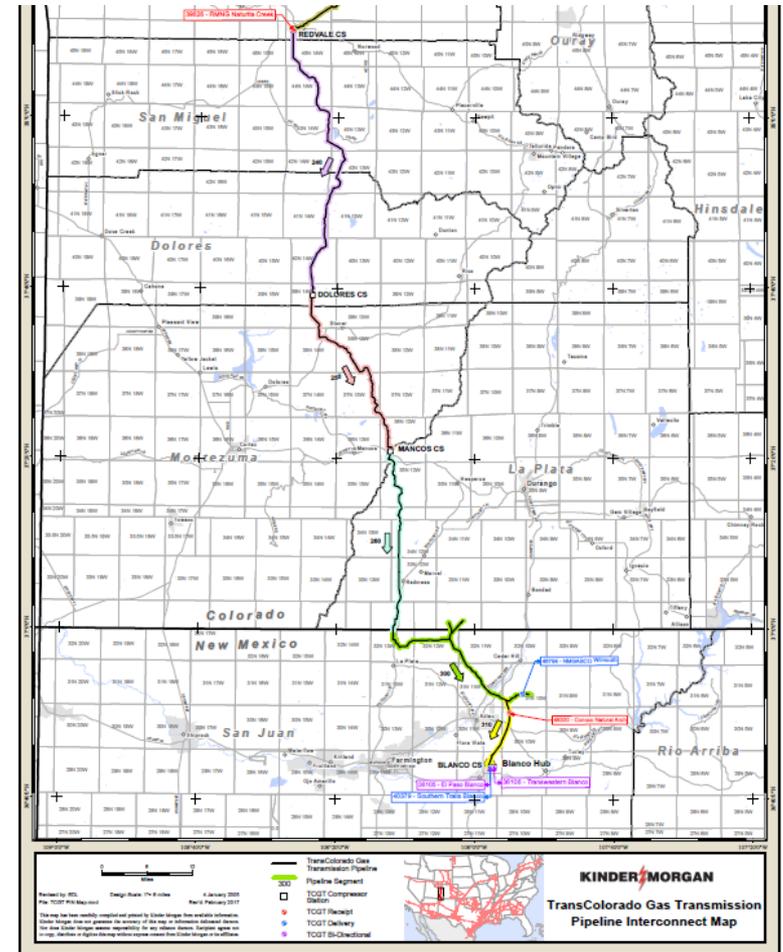
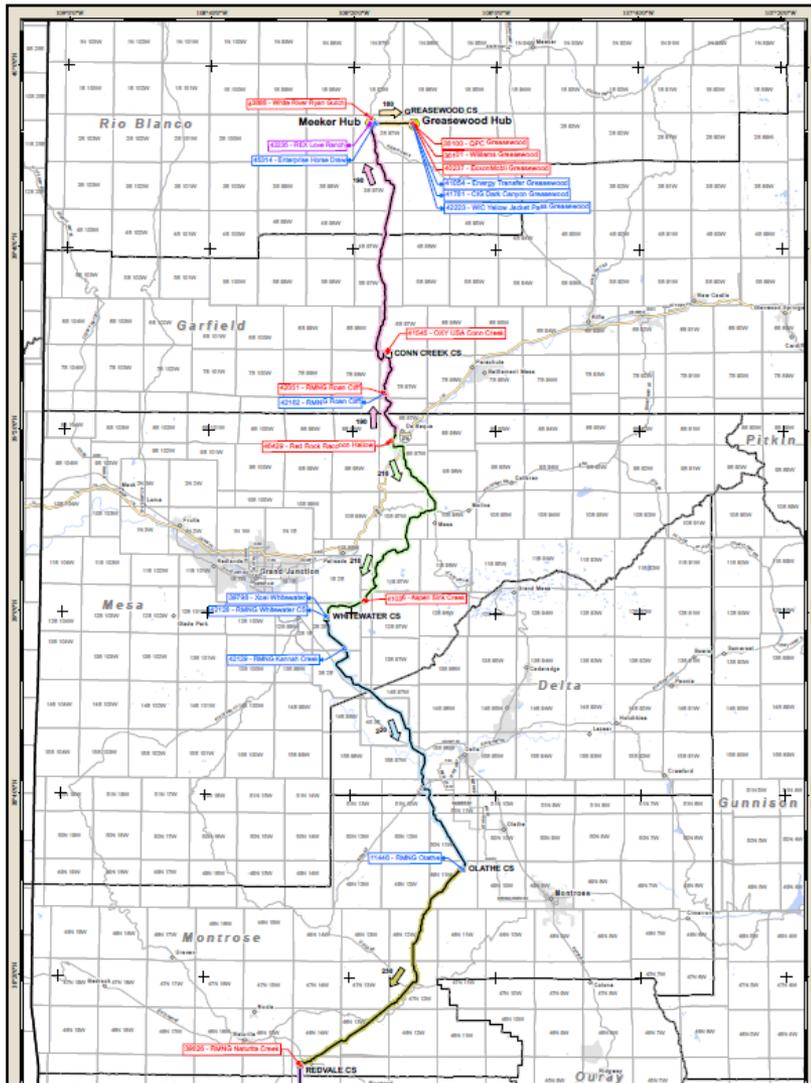
Current RUBY System Map



Current Cheyenne Plains System Map



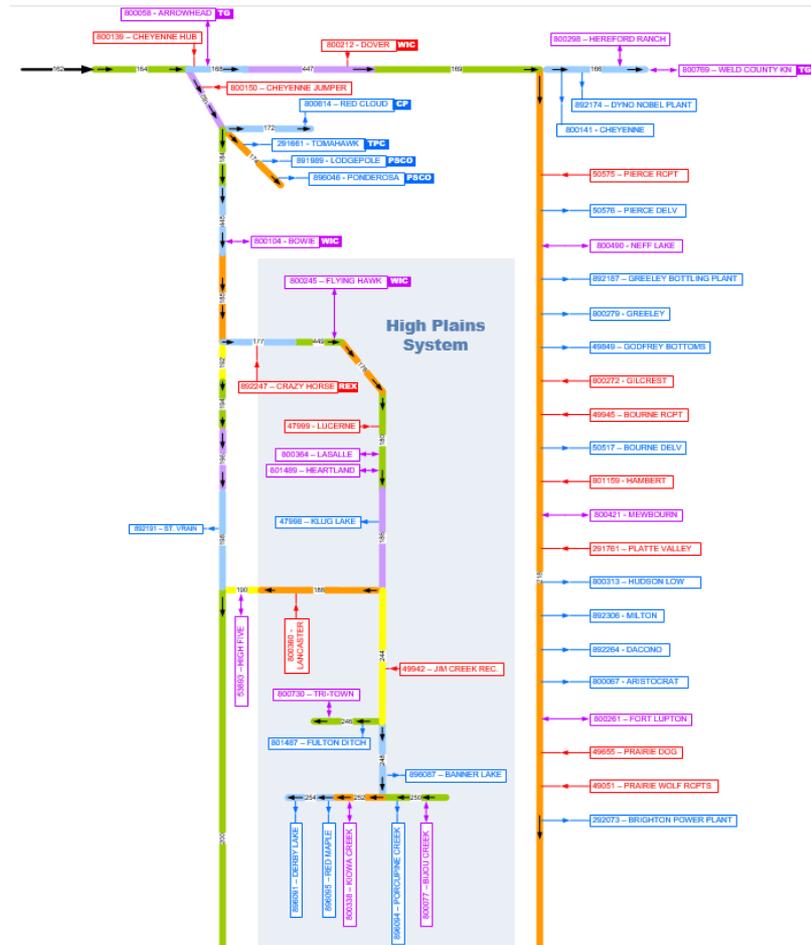
Current TransColorado System Map



Recent CIG System Map Changes

Simplified and more closely tied to physical orientation:

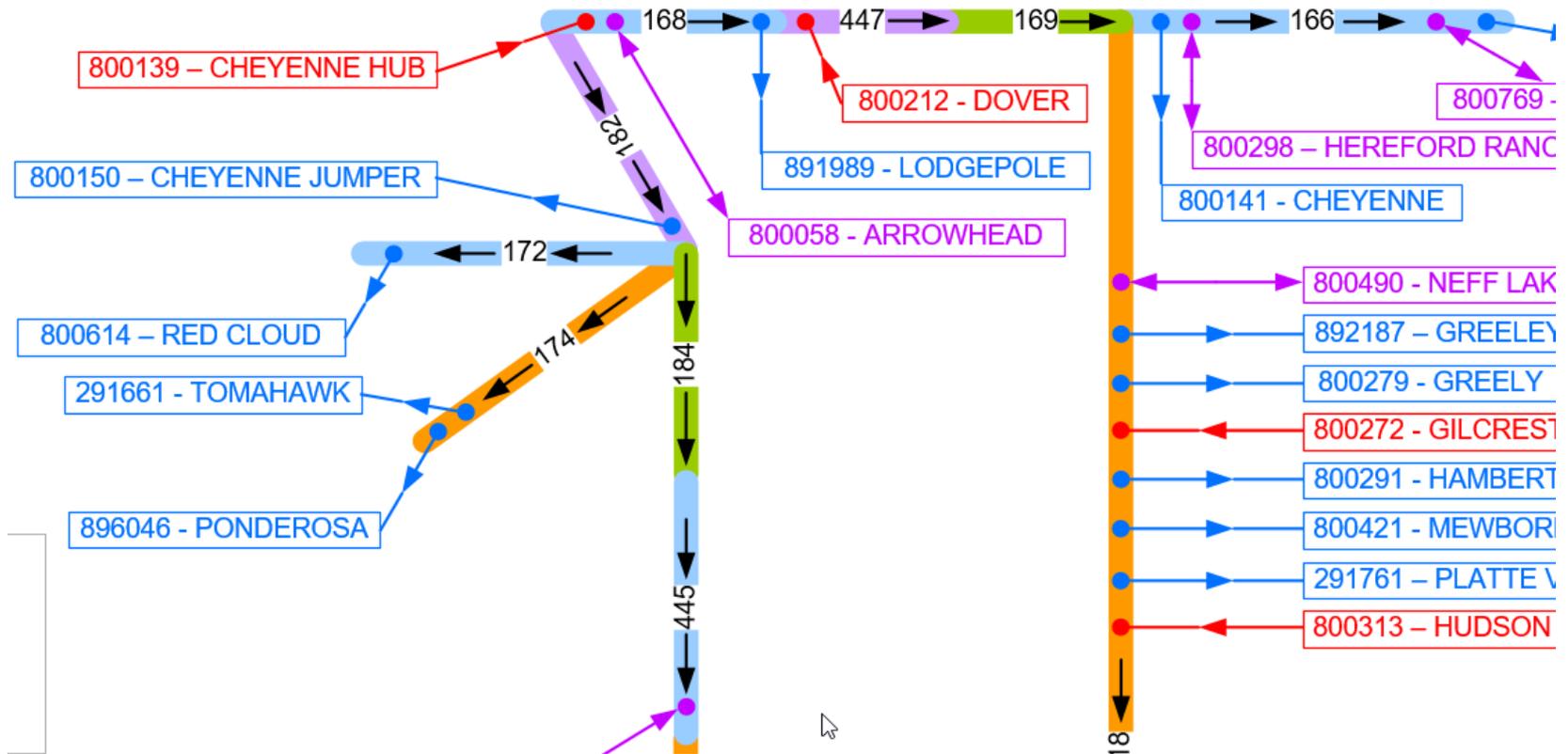
After example:



Recent CIG System Map Changes

Added pipeline Interconnect indicators to inset map:

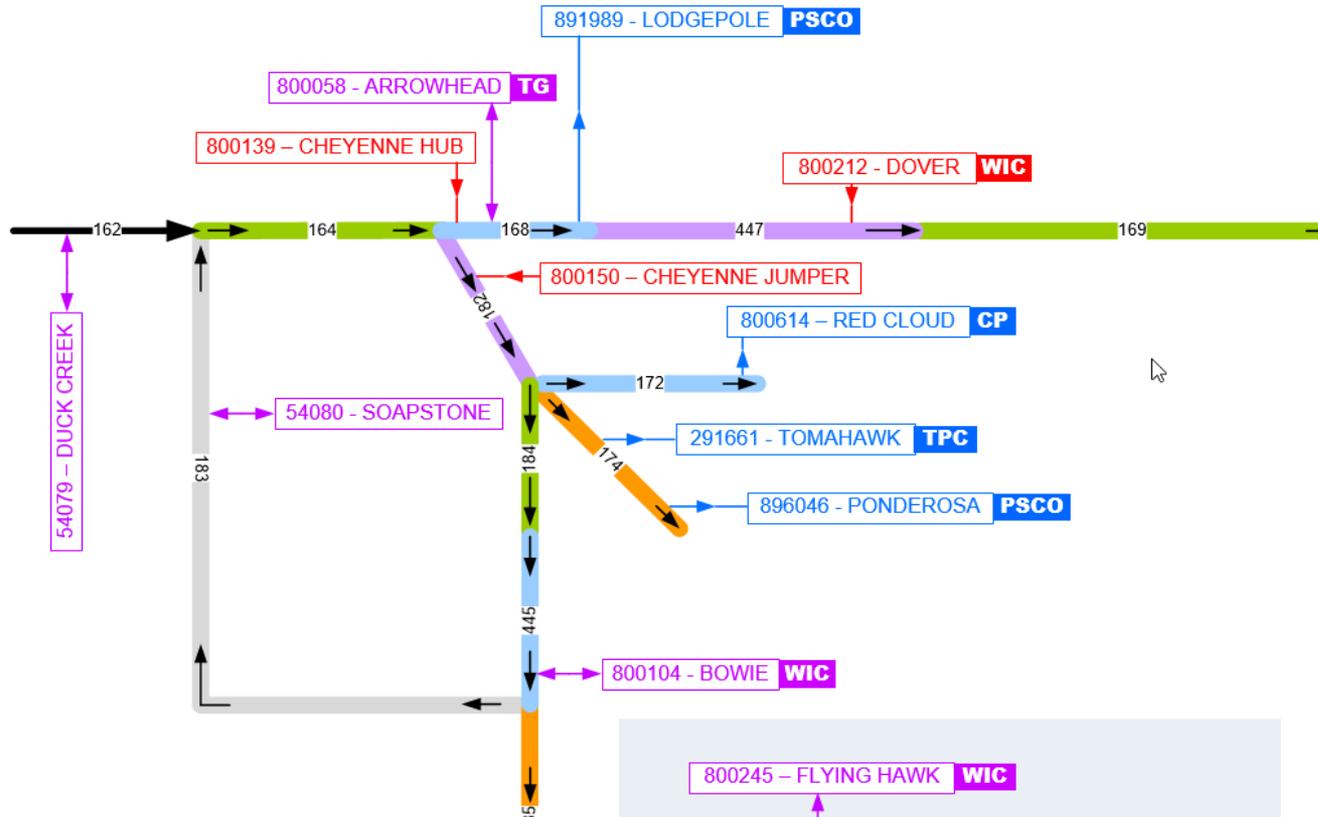
Before example:



Recent CIG System Map Changes

Added pipeline Interconnect indicators to inset map:

After example:

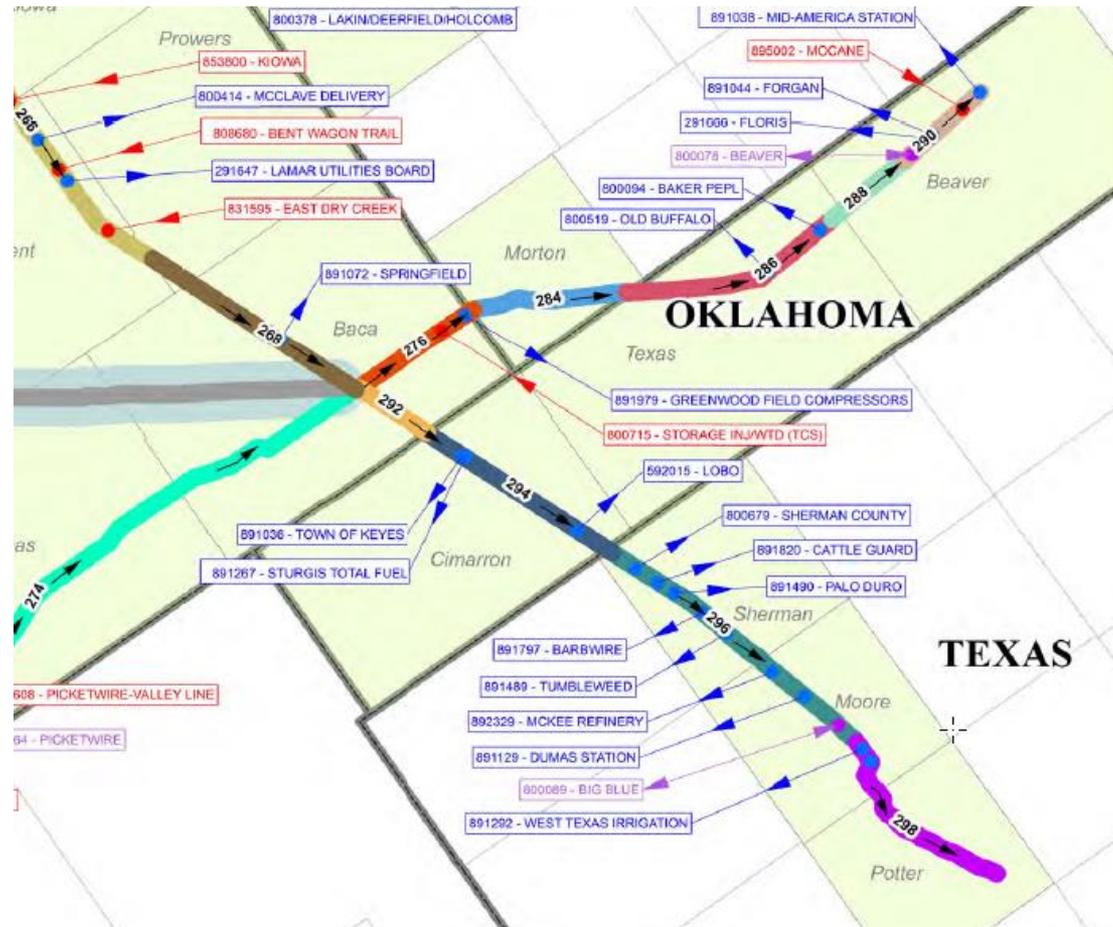


Upcoming System Map Changes

Return to simpler “Stick-Figure Map” layout for all Rockies’ pipes:

Before example:

- Only segments shown, no clarity where a constraint is on a segment or what kind of constraint it is.
- PIN numbers small and harder to distinguish at small sizes
- Lots of wasted space
- Colors that distinguish D/B very similar
- Virtually unreadable when printed in smaller sizes like 11” x 17”

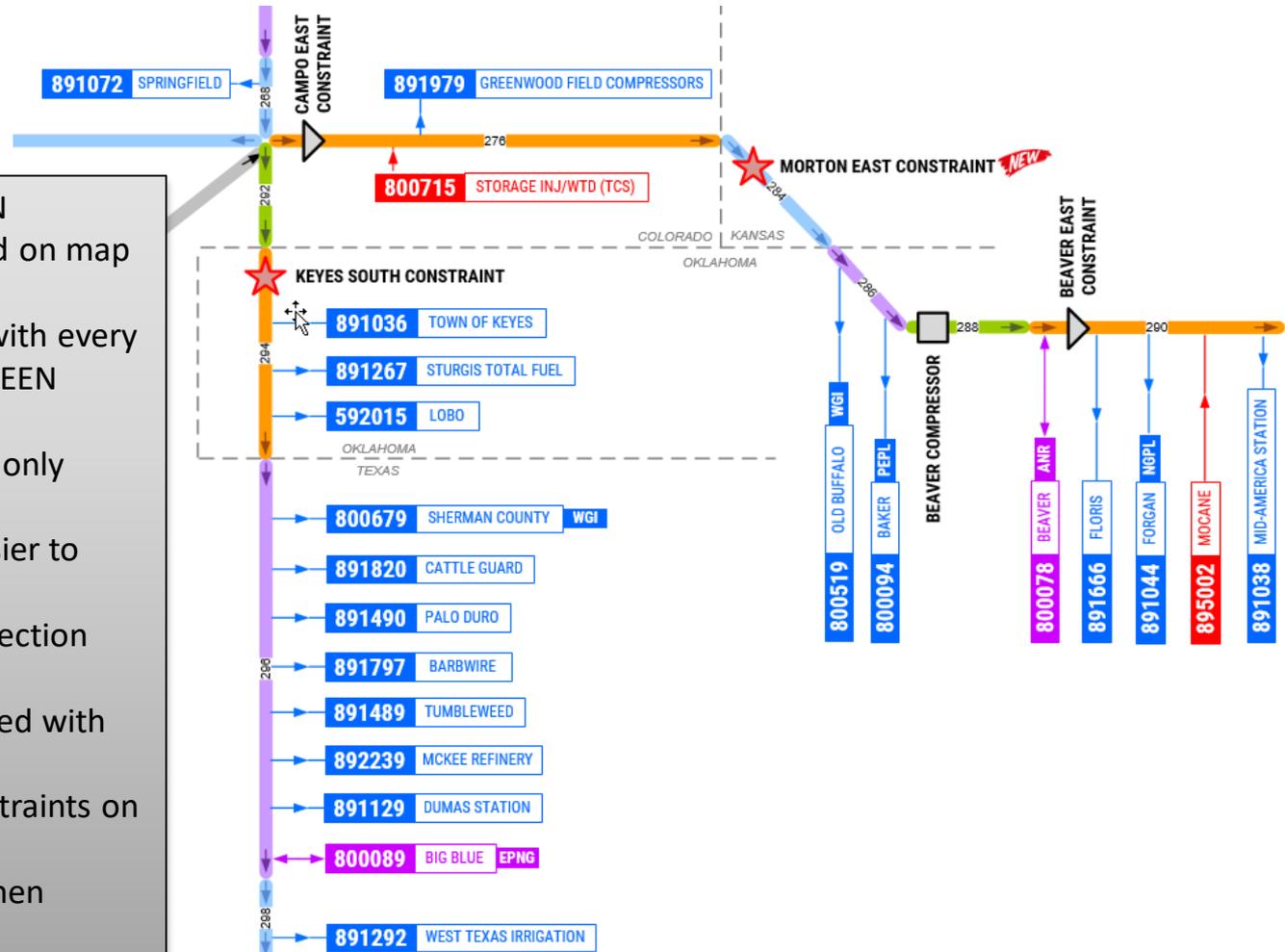


Upcoming System Map Changes

Return to simpler “Stick-Figure Map” layout for all Rockies’ pipes:

After example:

- Pipe, Compressor and HEEN constraints clearly displayed on map and will match OAC.
- No need for giant legends with every segment name and every HEEN segment name
- State boundaries displayed only where applicable
- PIN numbers larger and easier to read
- Easier to distinguish PIN direction R/D/B
- Pipeline Interconnects tagged with pipe abbreviation
- Callout of new PINs or constraints on map updates
- Designed to be readable when printed on 11x17 paper



Rockies Update

- Questions?

Customer Advisory Board

Paul Haas

Customer Advisory Board

- Objectives:
 - Engage customer community
 - Solicit feedback for DART system enhancements
 - Identify common training opportunities
- Initial Emails sent out in early/mid August
- Follow up online meeting will be scheduled in Q4

Contracts Update

Sherry Saunders