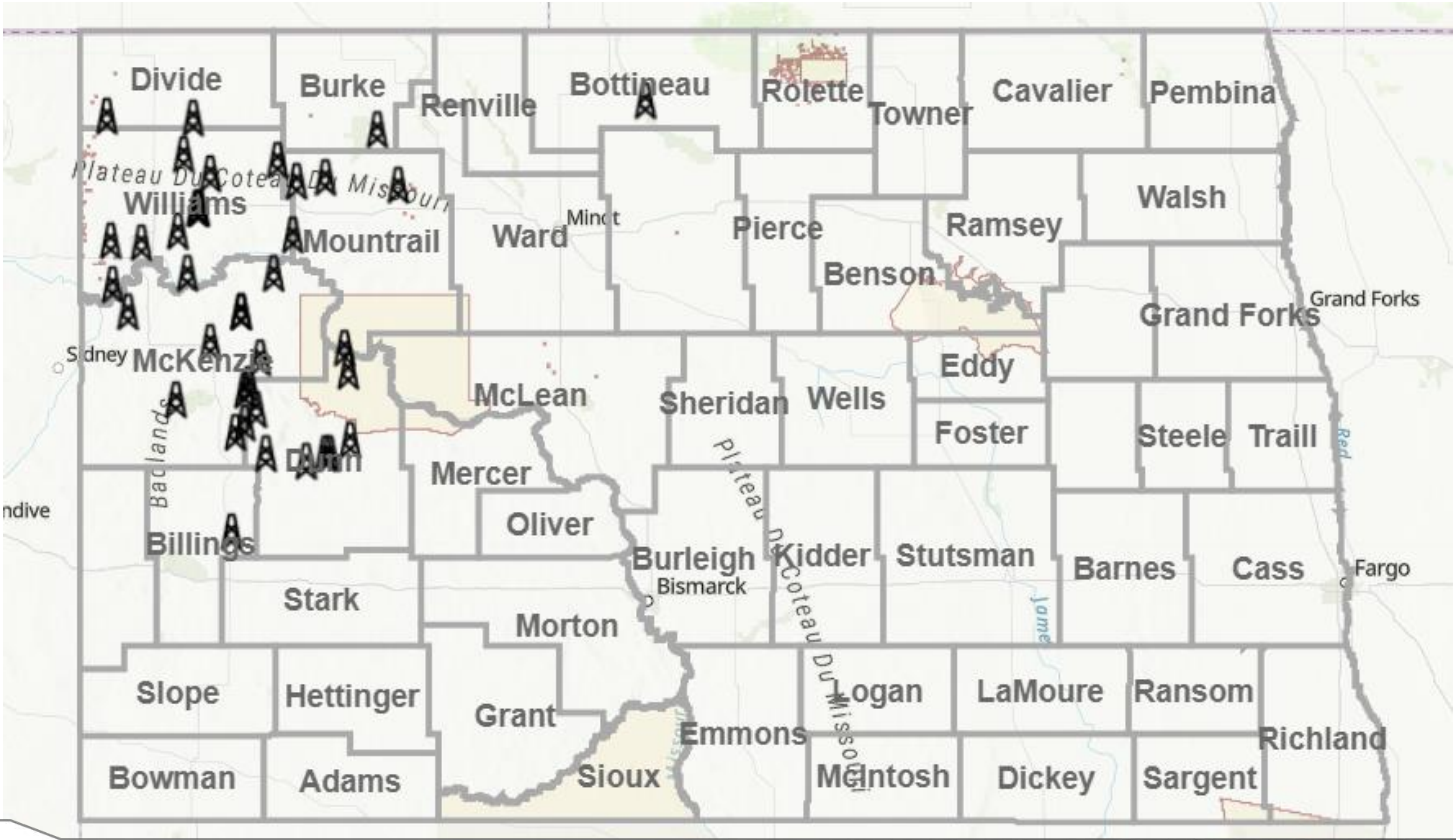
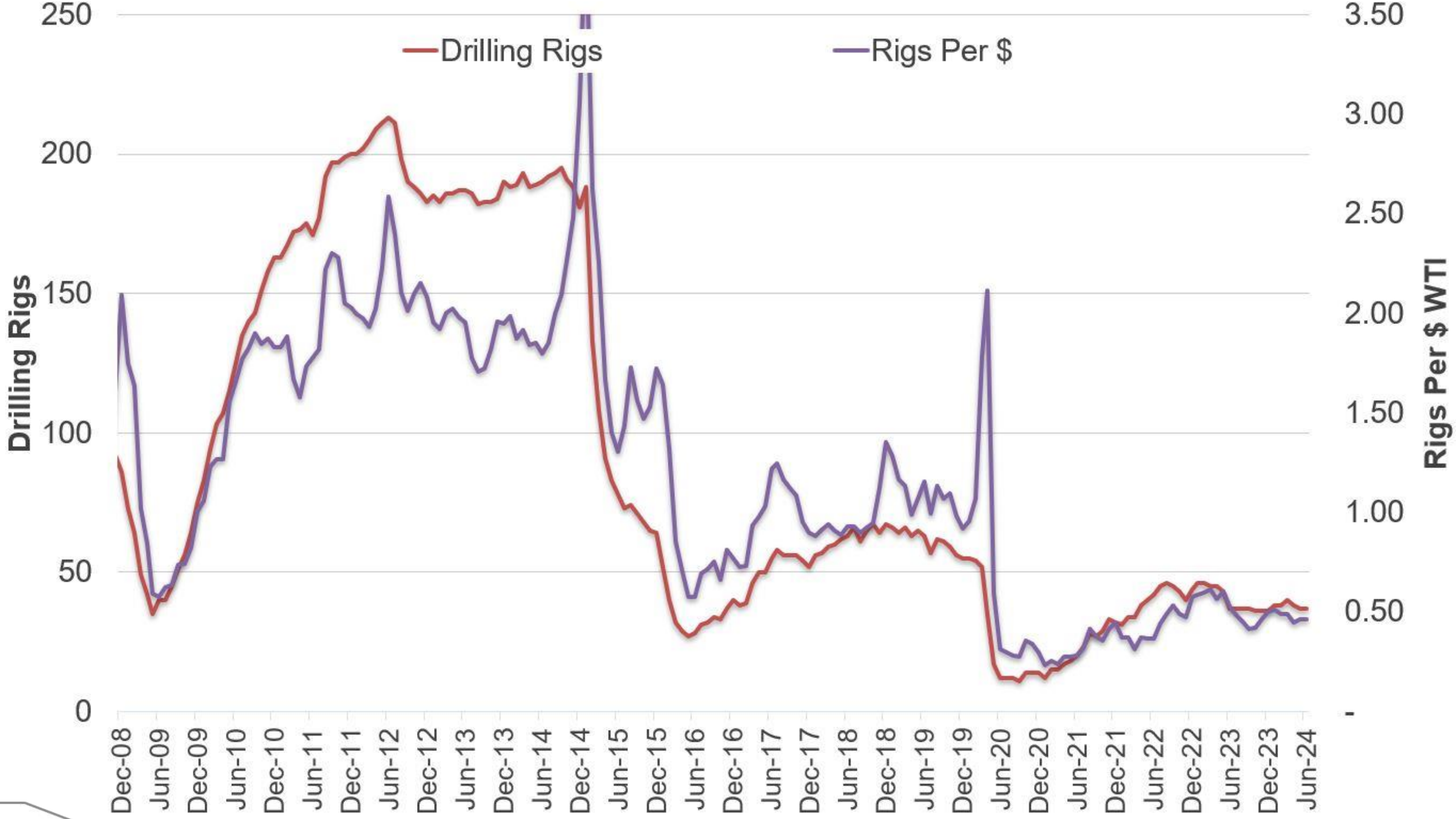
Pipeline Authority Update

Image: Library of Congress

North Dakota Drilling Rigs: 39 (July 17, 2024)



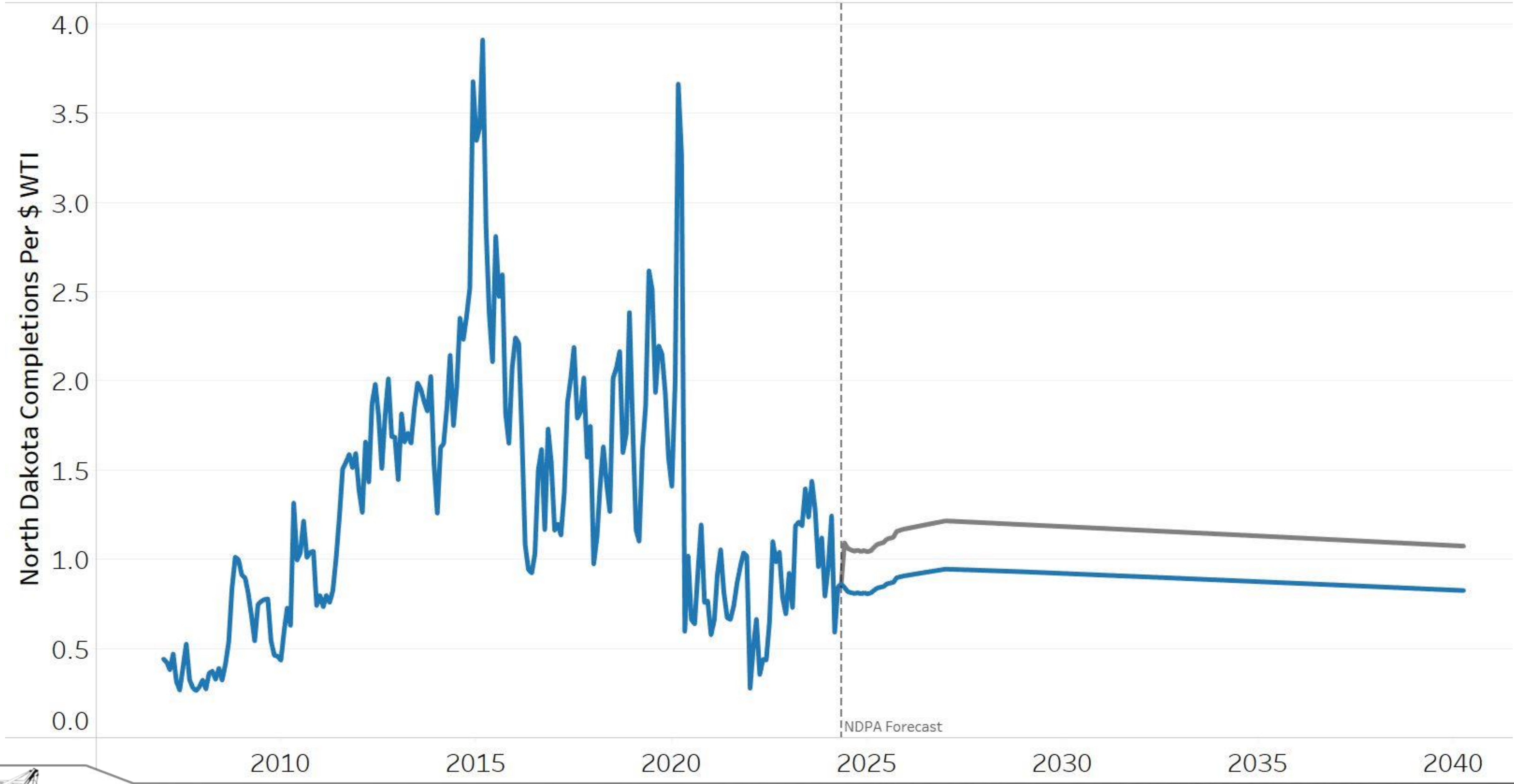
North Dakota Drilling Rig Relationship With Oil Price



Monthly Completion* Scenarios - Oil

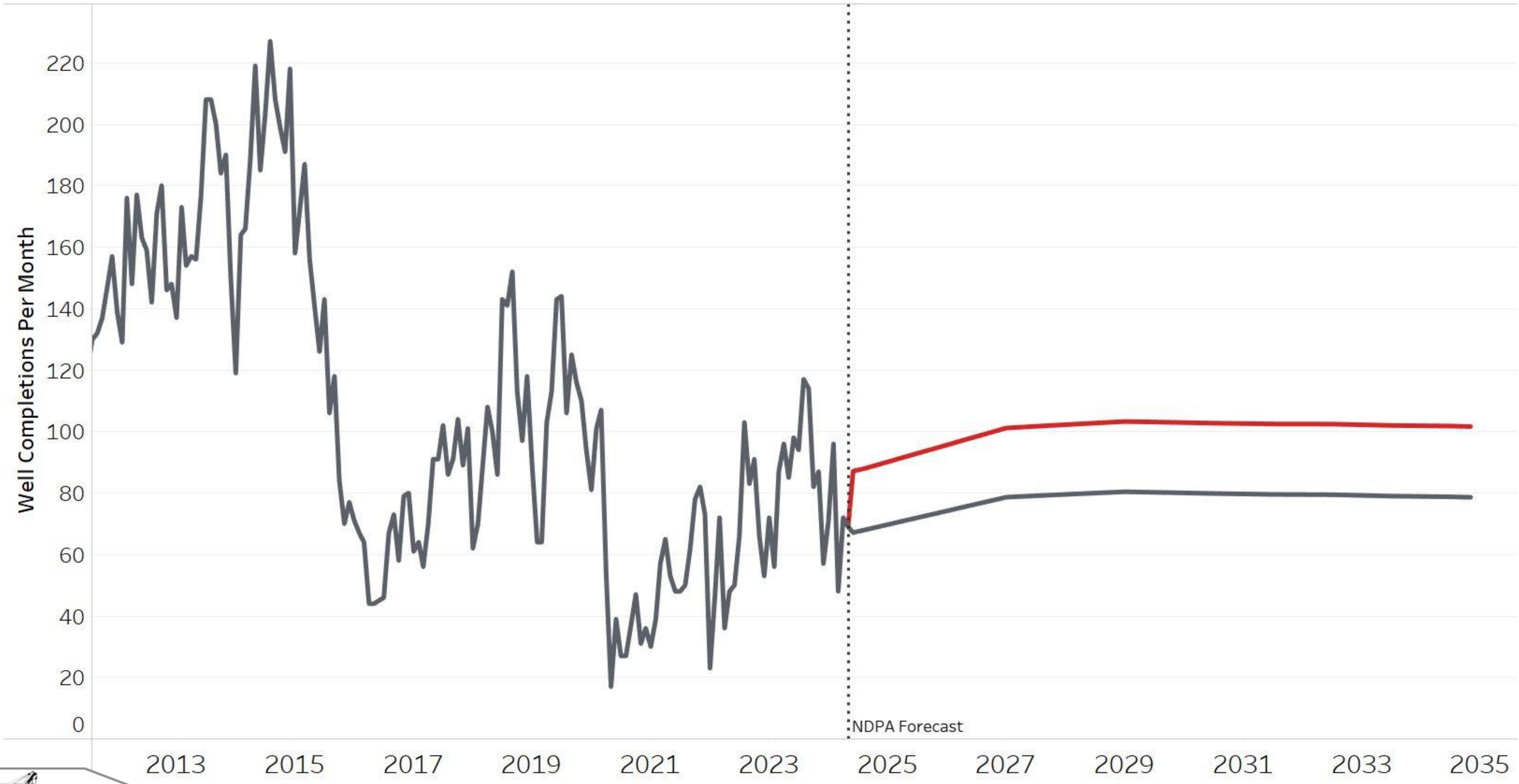
**1,280 Acre Equivalent Spacing*

North Dakota Well Completions and Oil Price (History & Forecast)



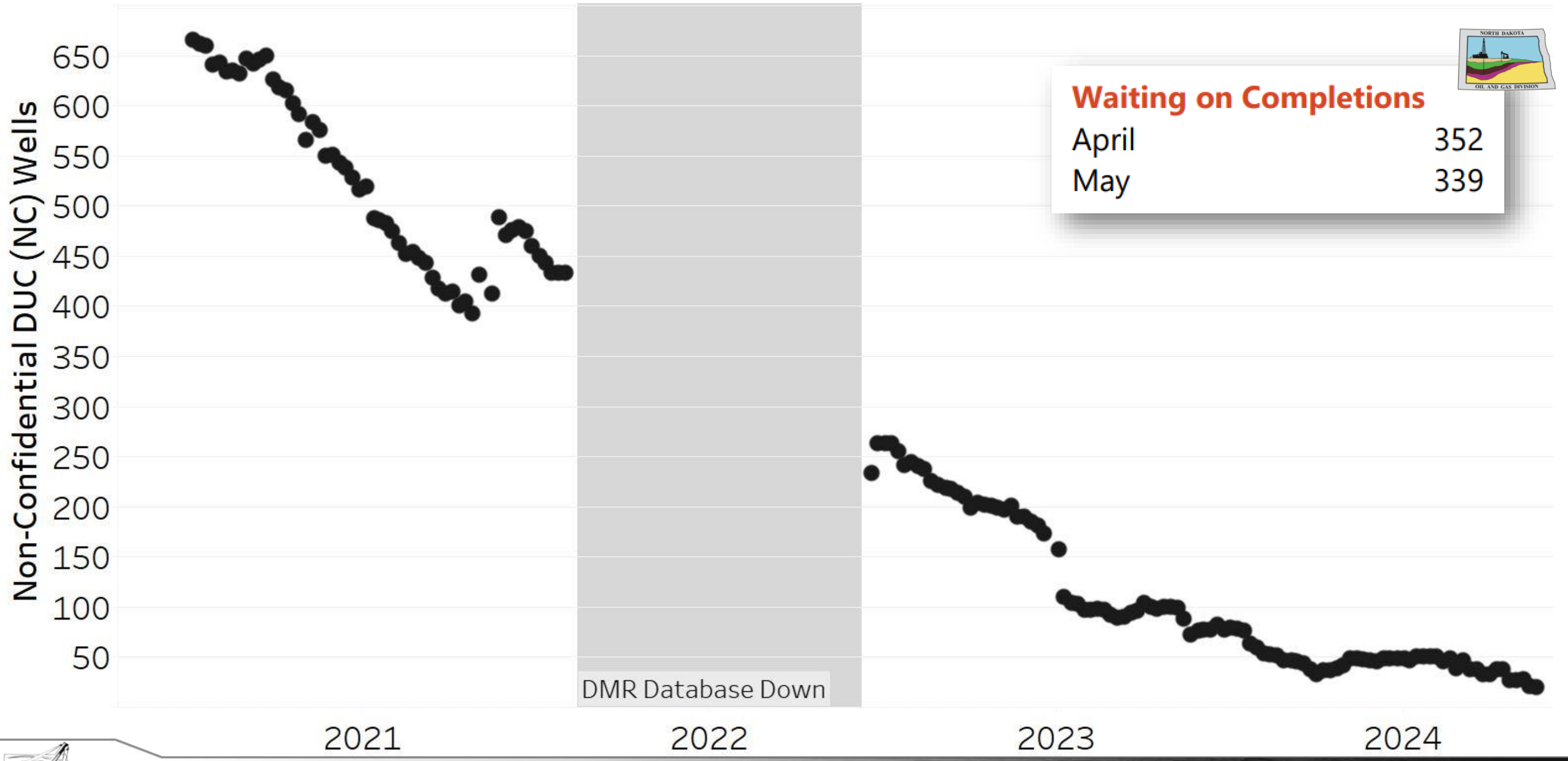
**1,280 Acre Equivalent Spacing*

North Dakota Well Completions (NDPA Forecast)



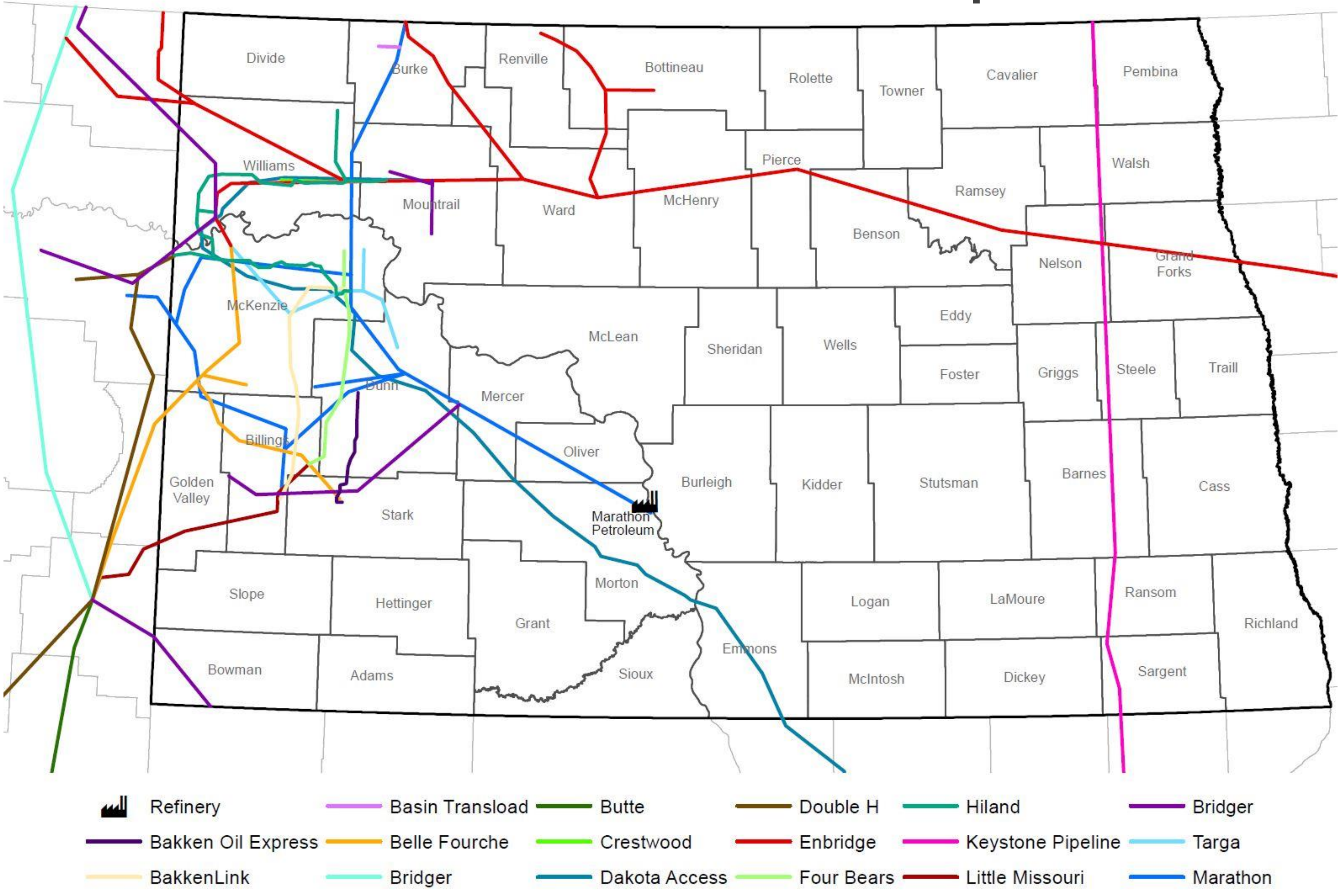
*1,280 Acre Equivalent Spacing

North Dakota DUC/NC Well Counts

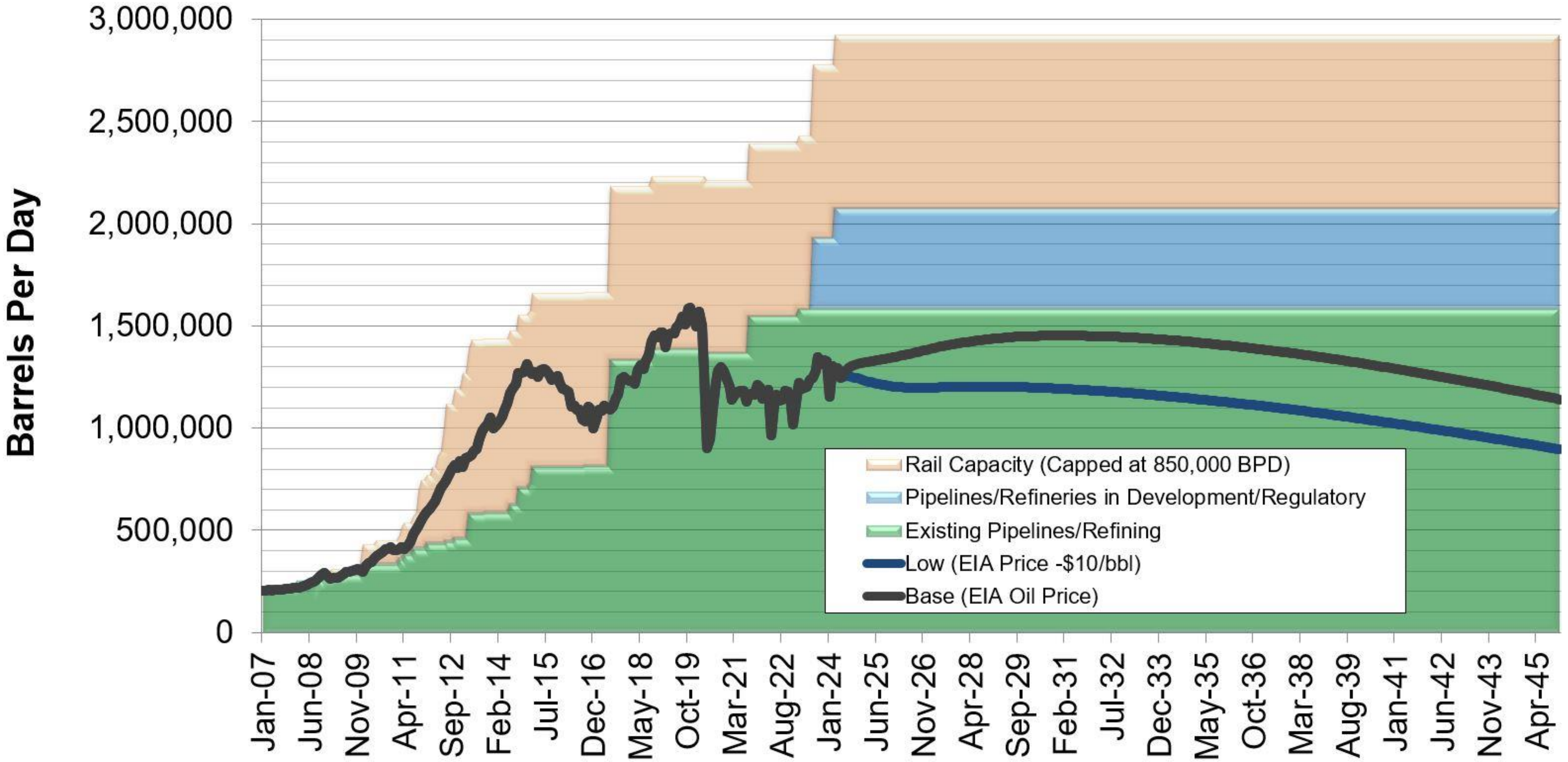


ND Oil Production: EIA Price Deck

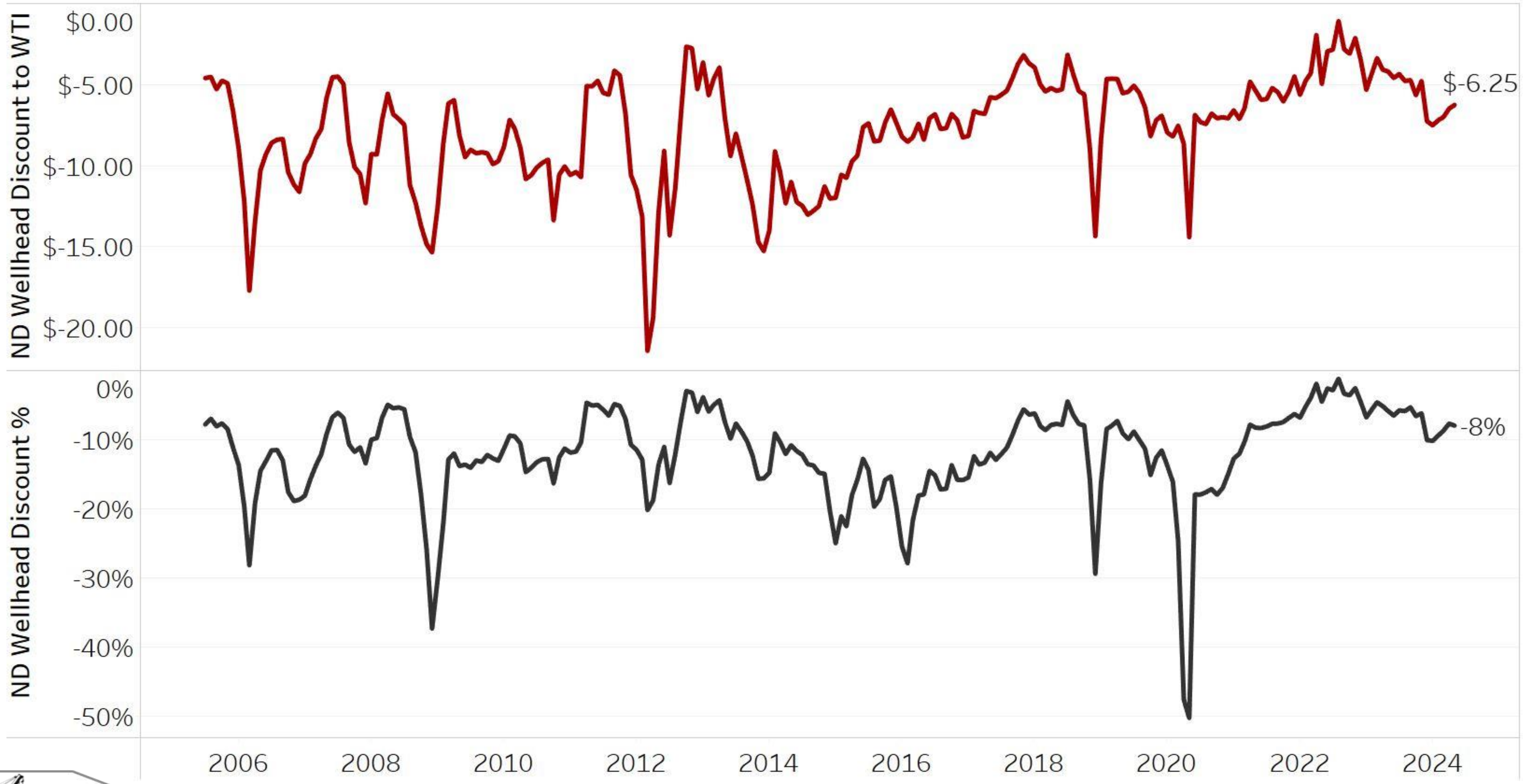
North Dakota Oil Transmission Pipelines



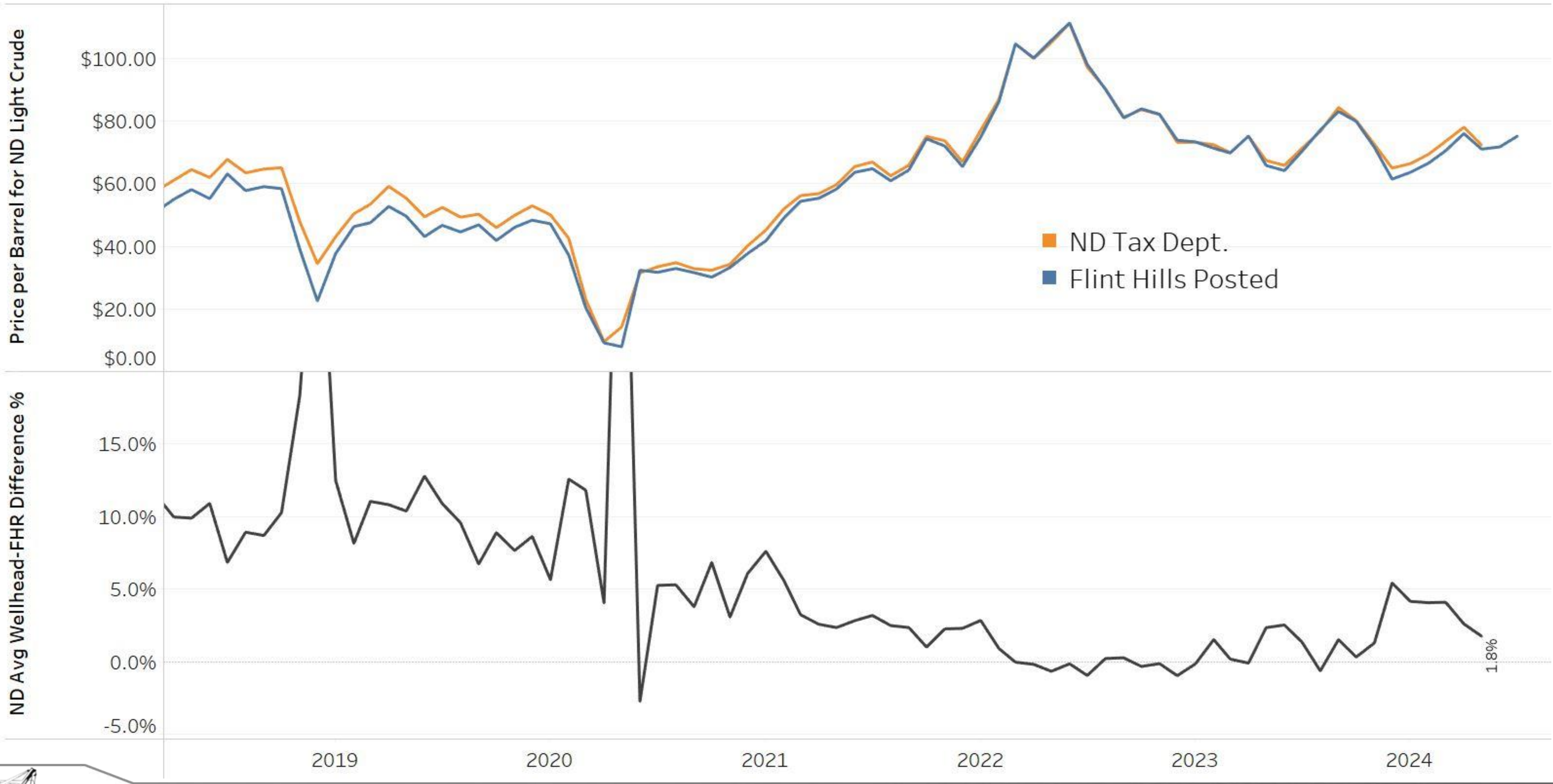
Williston Basin Oil Production & Export Capacity, BOPD



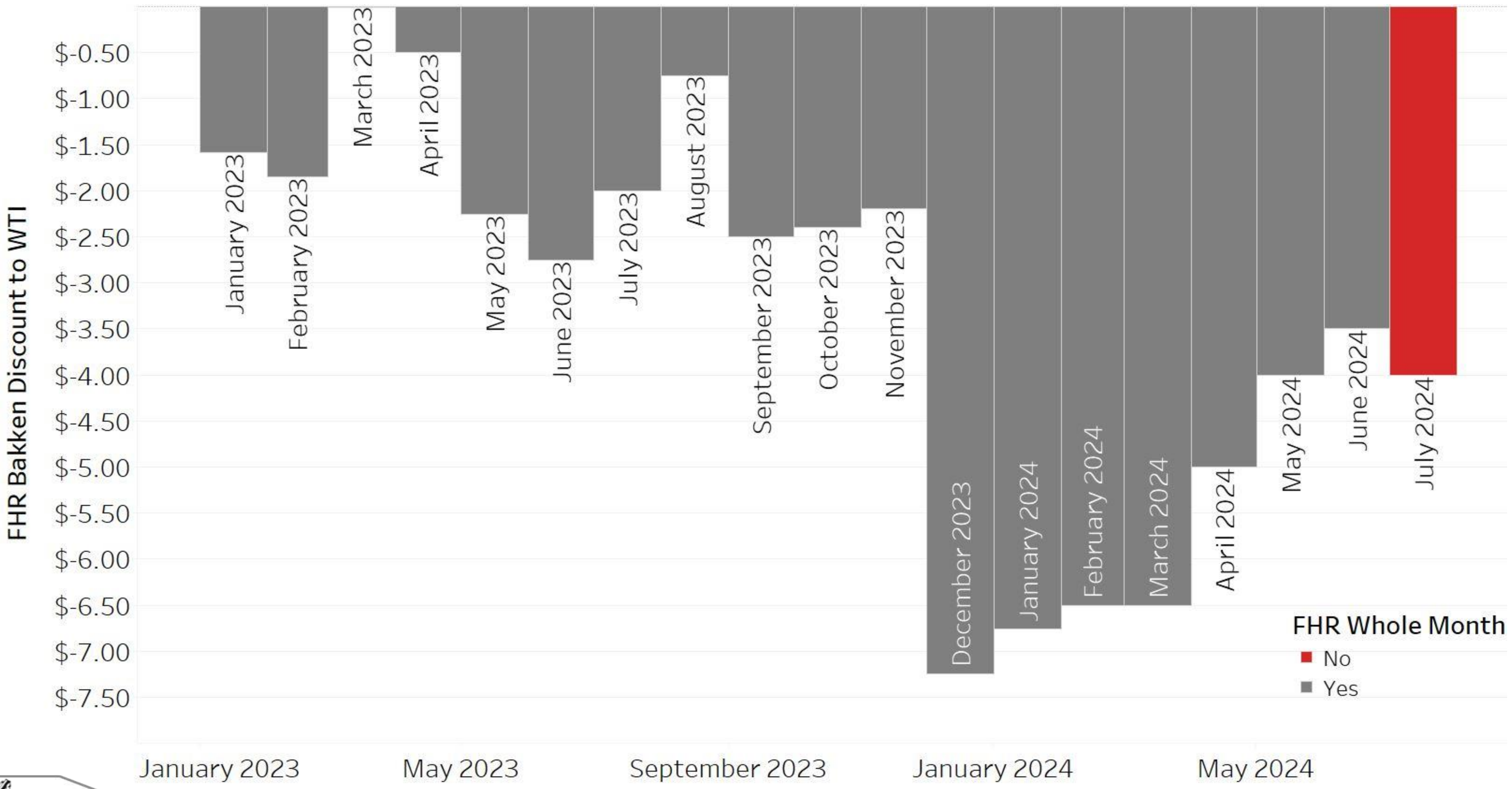
Average North Dakota Oil "Discount" to WTI



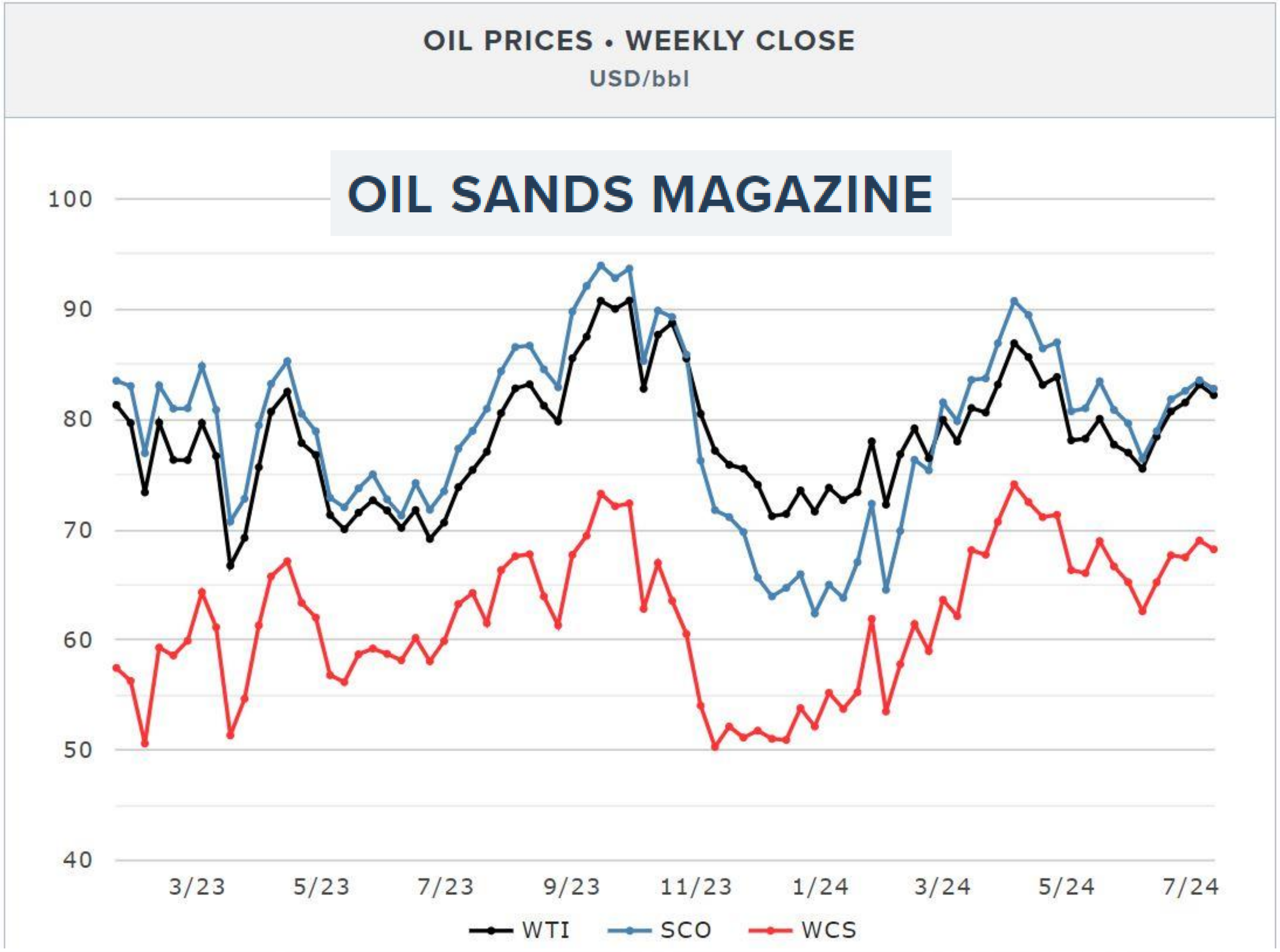
ND Wellhead Vs Flint Hills Postings



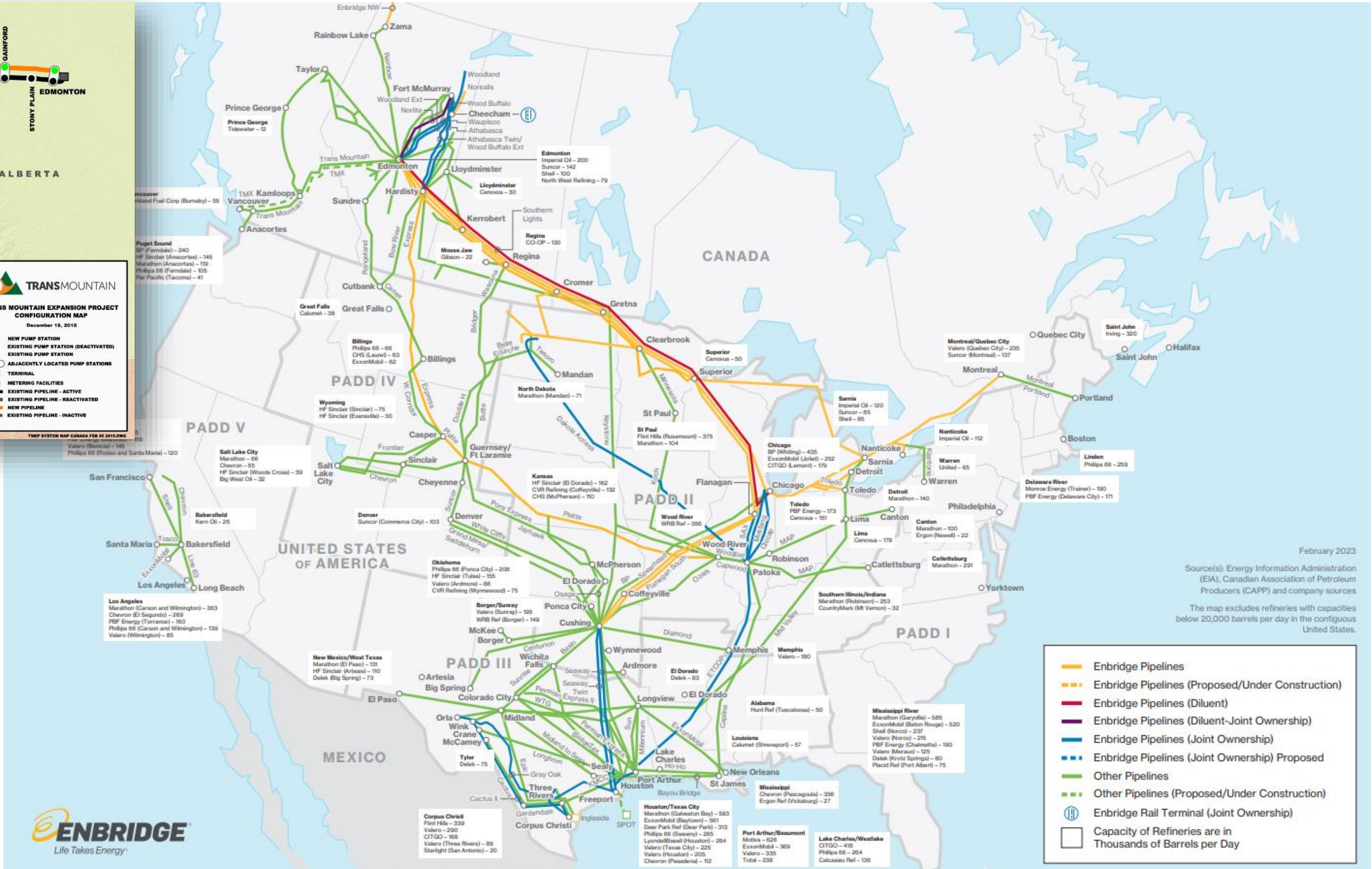
FHR ND Light Sweet Discount to FHR WTI



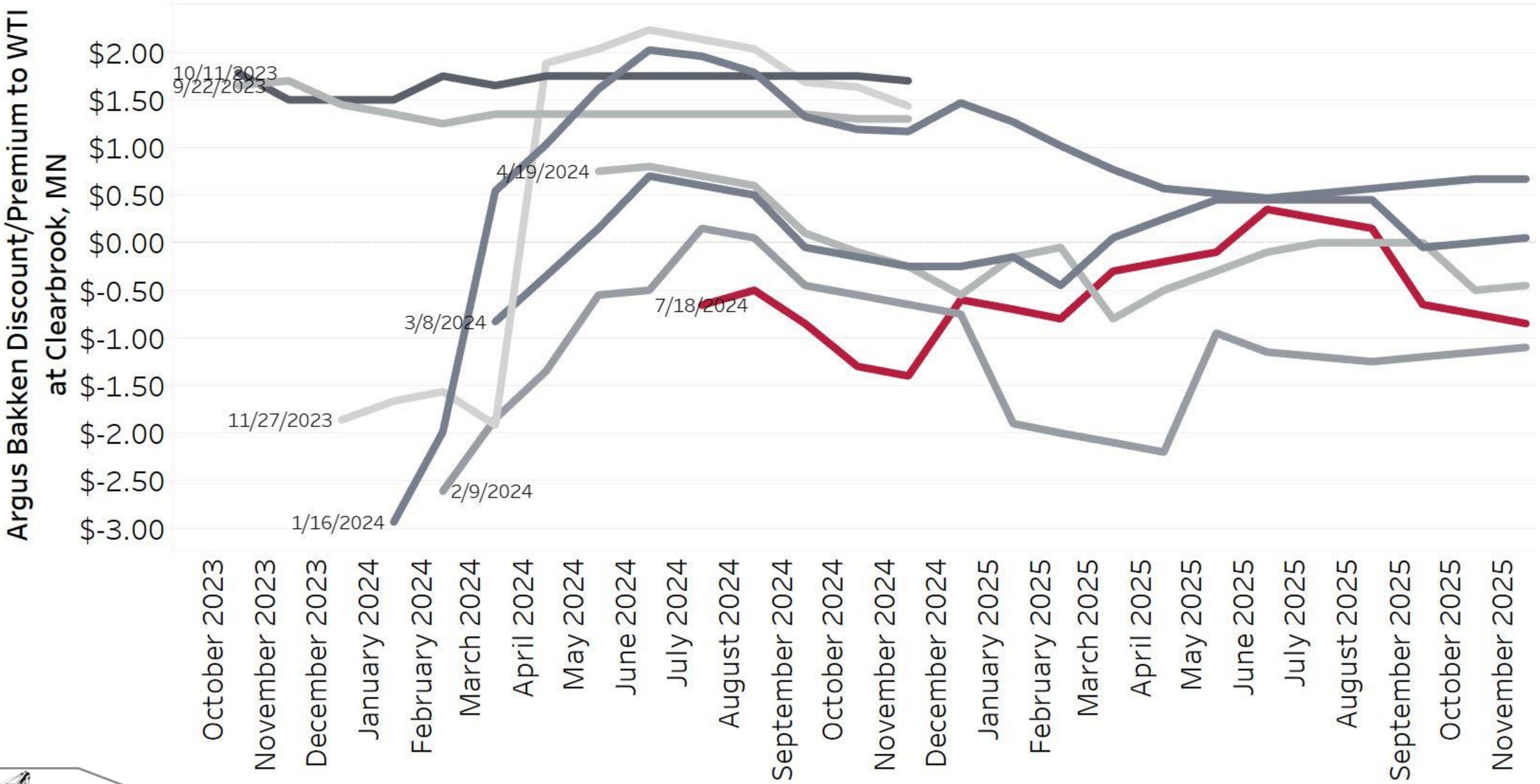
Canadian Oil Prices



Trans Mountain Pipeline



Clearbrook, MN Bakken Futures*



*Referenced to WTI

A Complete Natural Gas Solution

Production

- Technology
- Markets
- Forecasting

Gathering

- Capacity
- Connections
- Compression

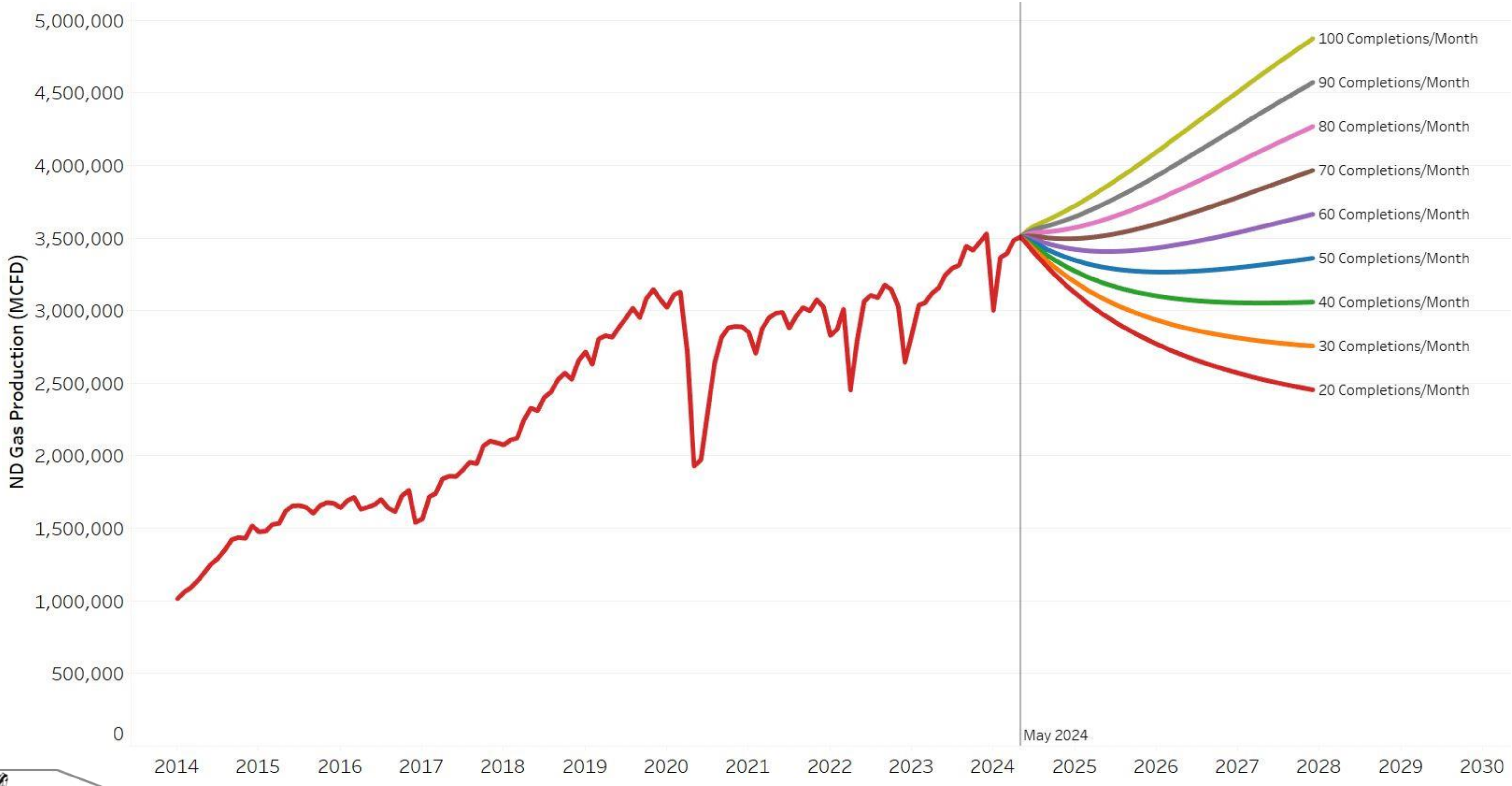
Processing

- Capacity
- Location
- Configuration

Transmission

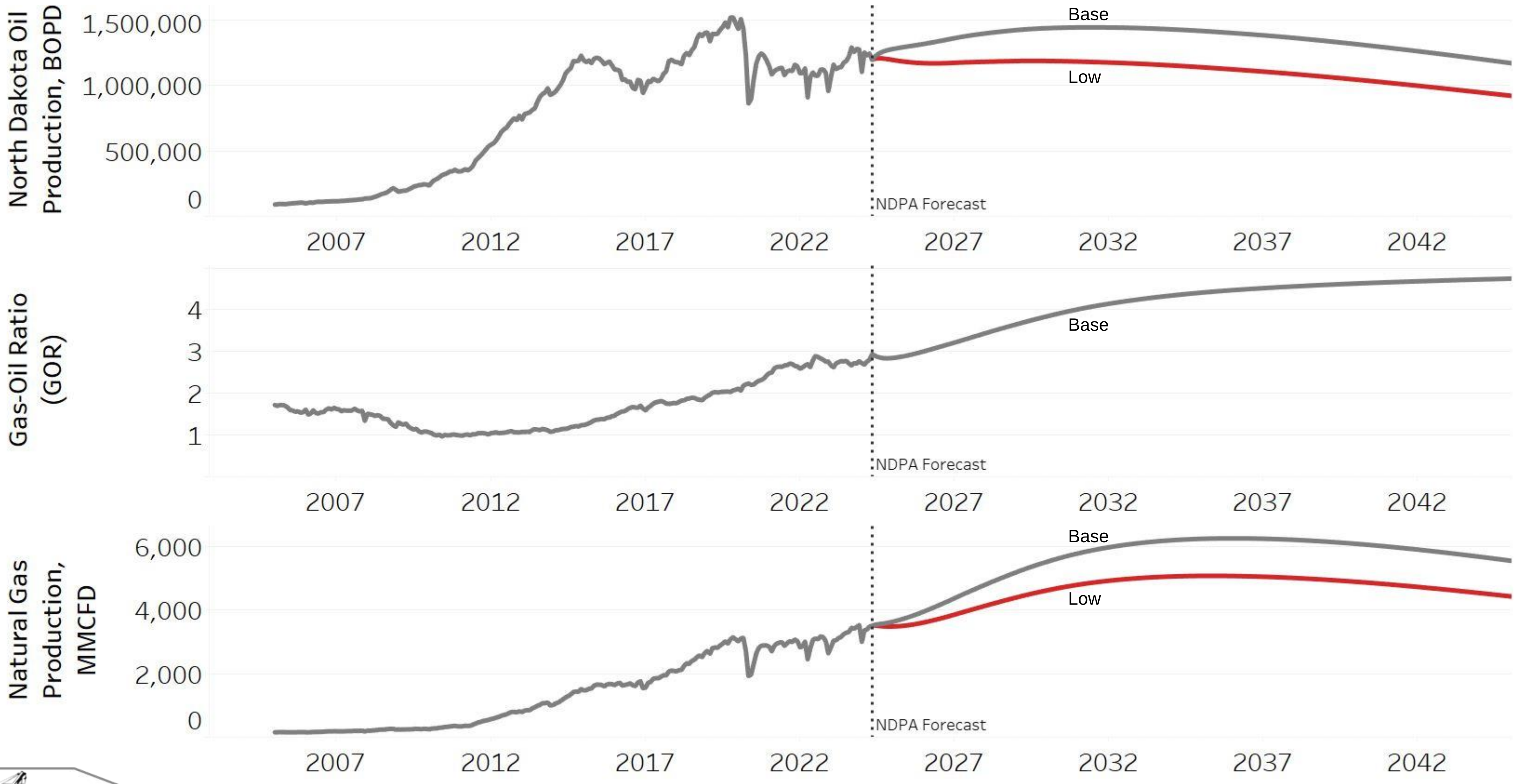
- Dry Gas
- Natural Gas Liquids

Monthly Completion* Scenarios - Gas

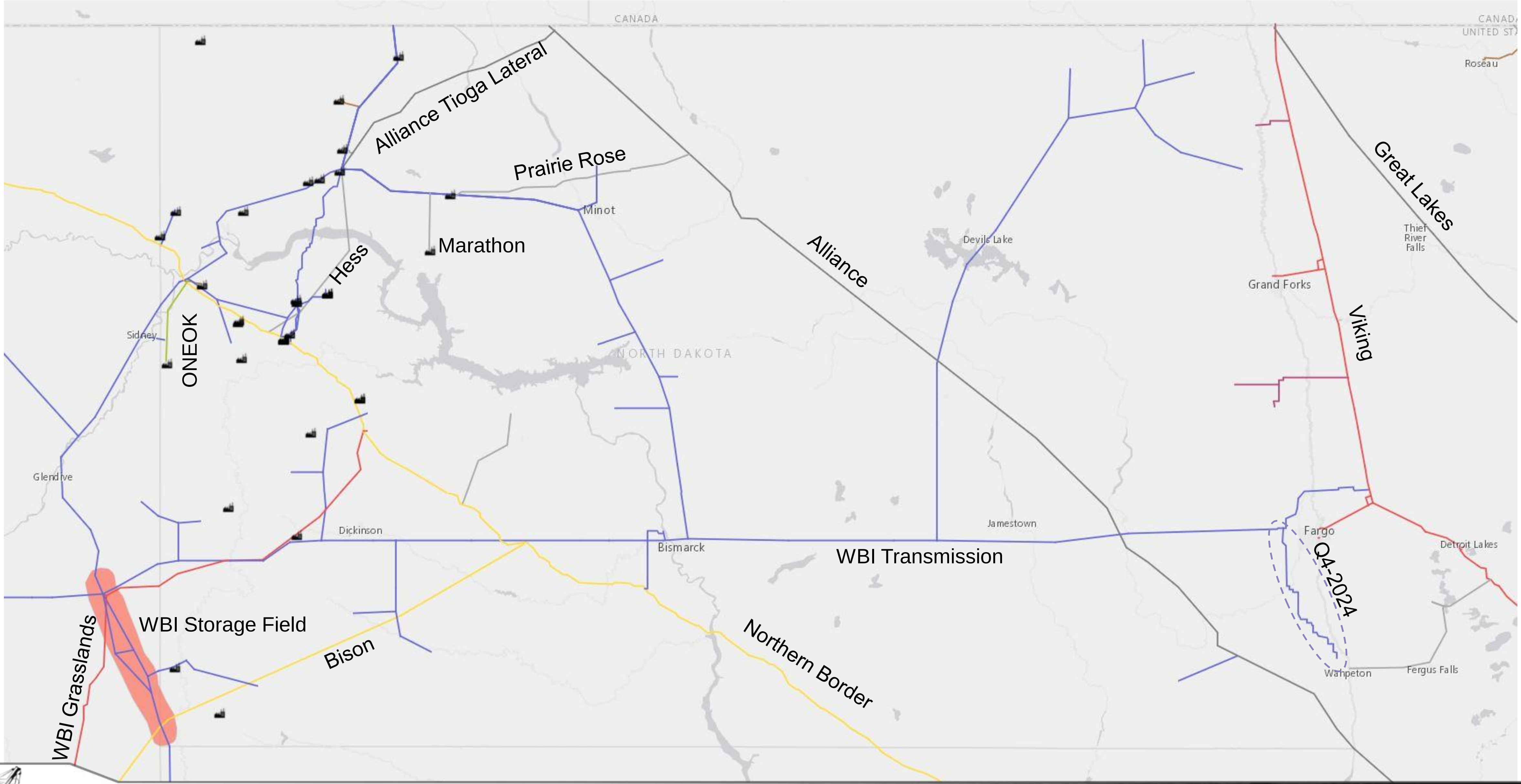


*1,280 Acre Equivalent Spacing

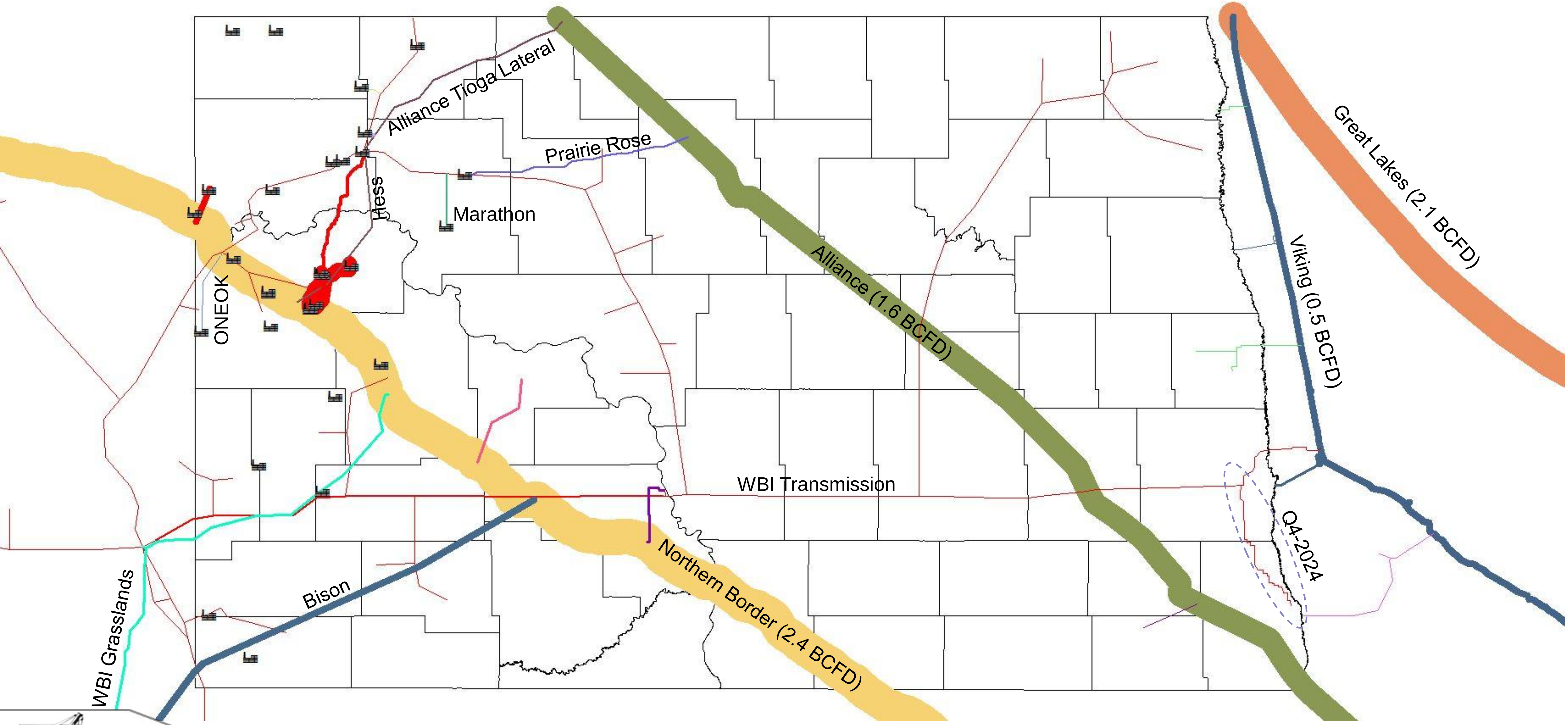
ND Production Forecast: EIA Price Deck



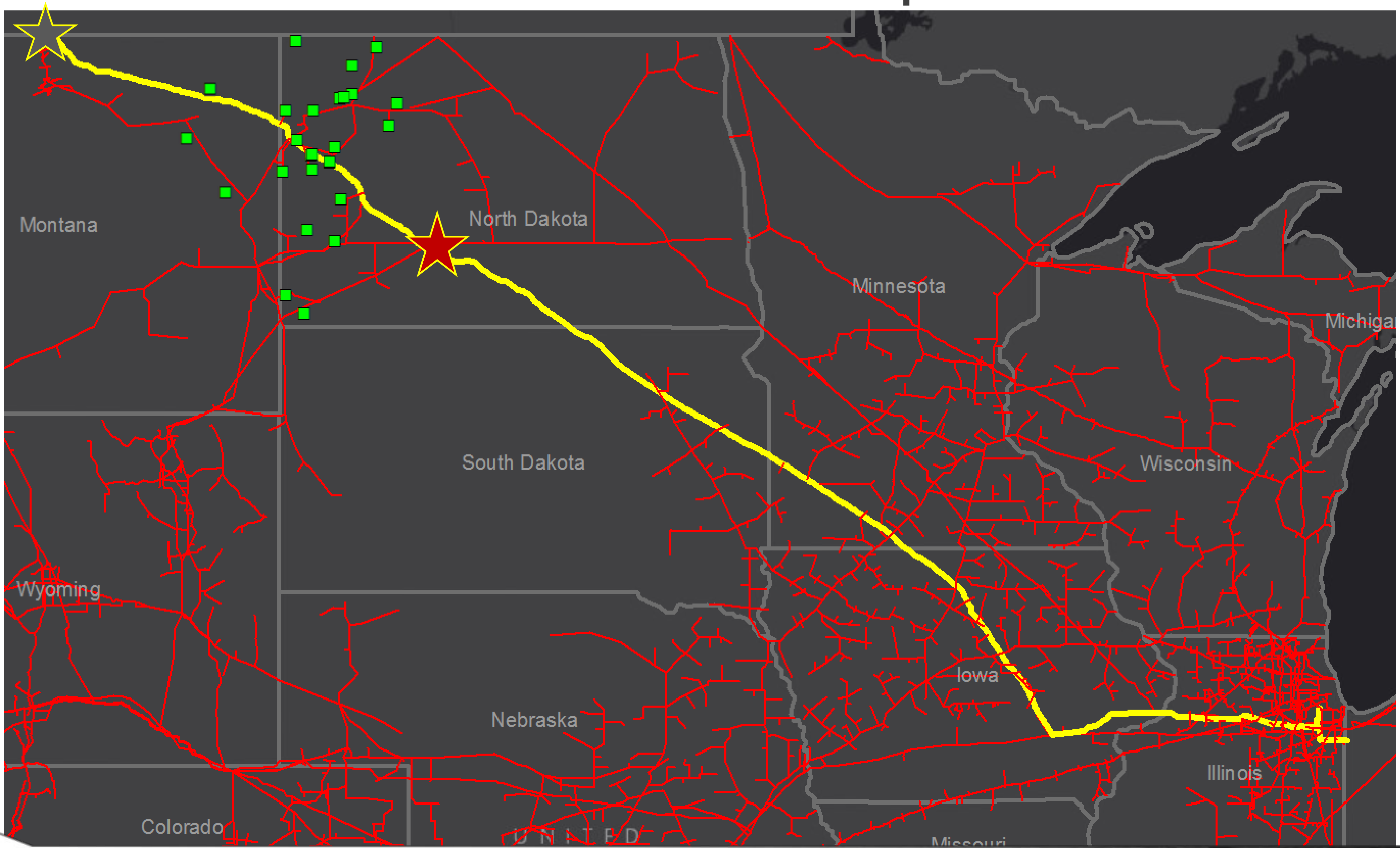
Major Residue Gas Pipeline Infrastructure



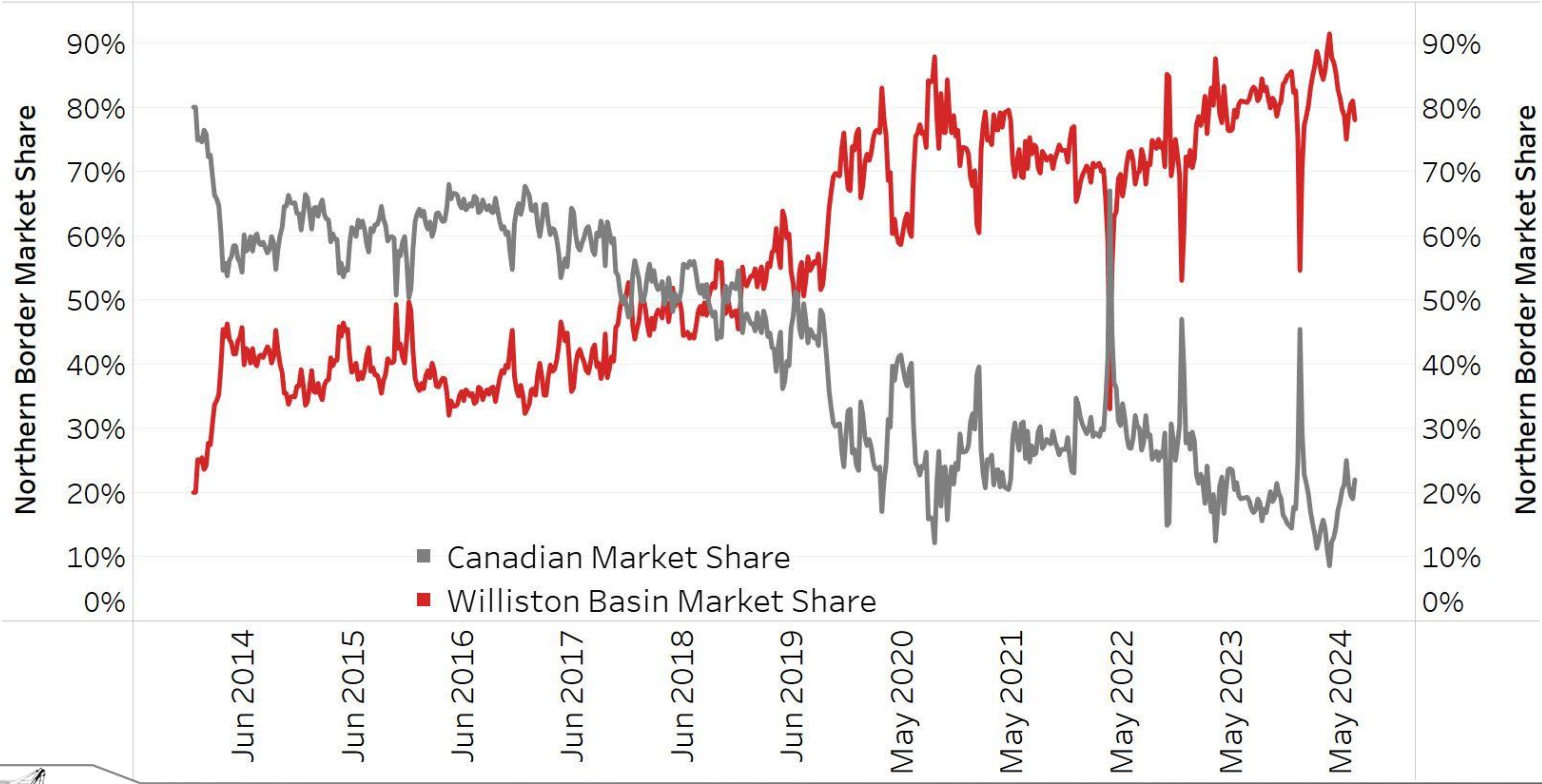
Residue Gas Pipeline Capacity Visualization



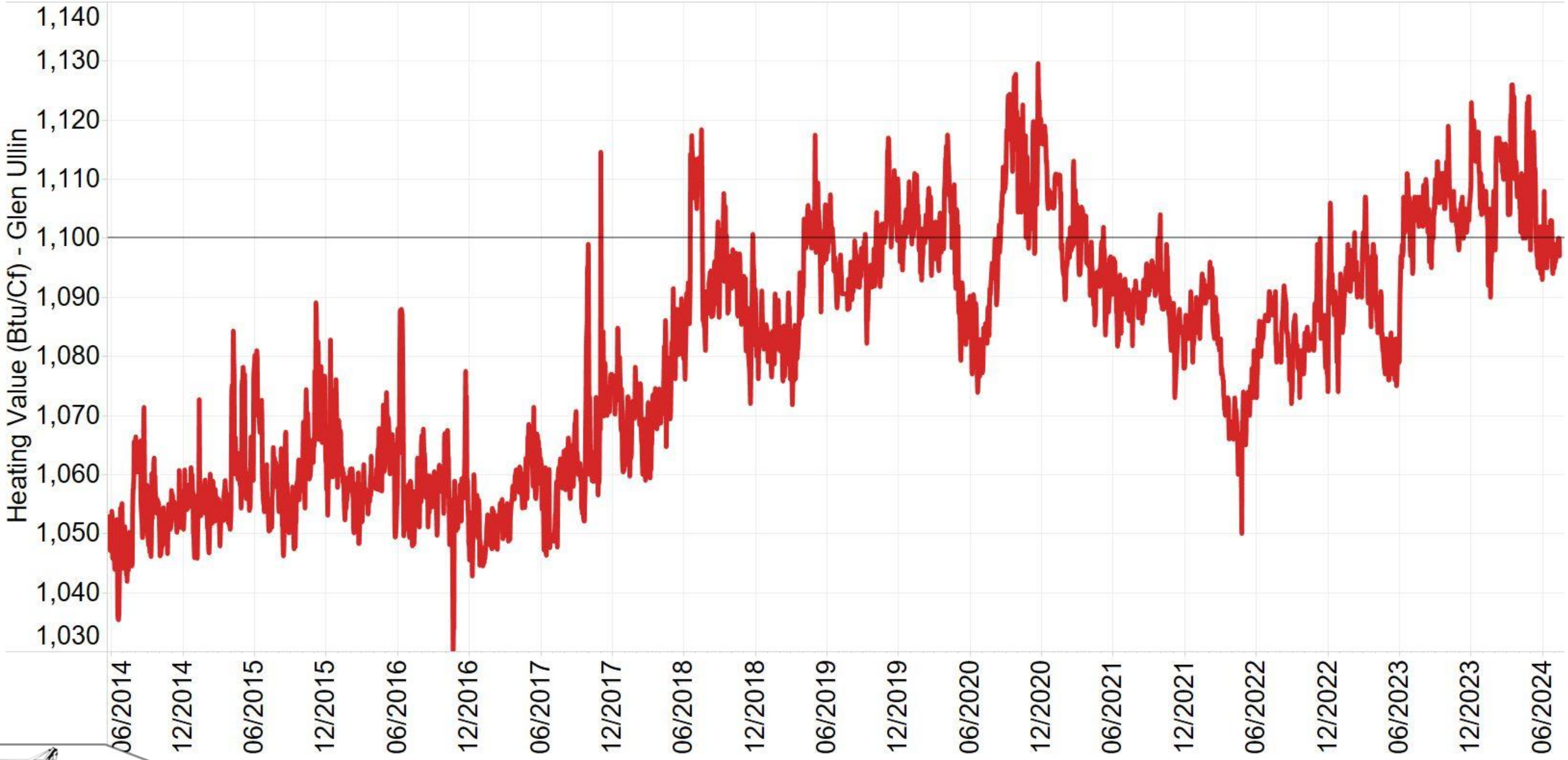
Northern Border Pipeline



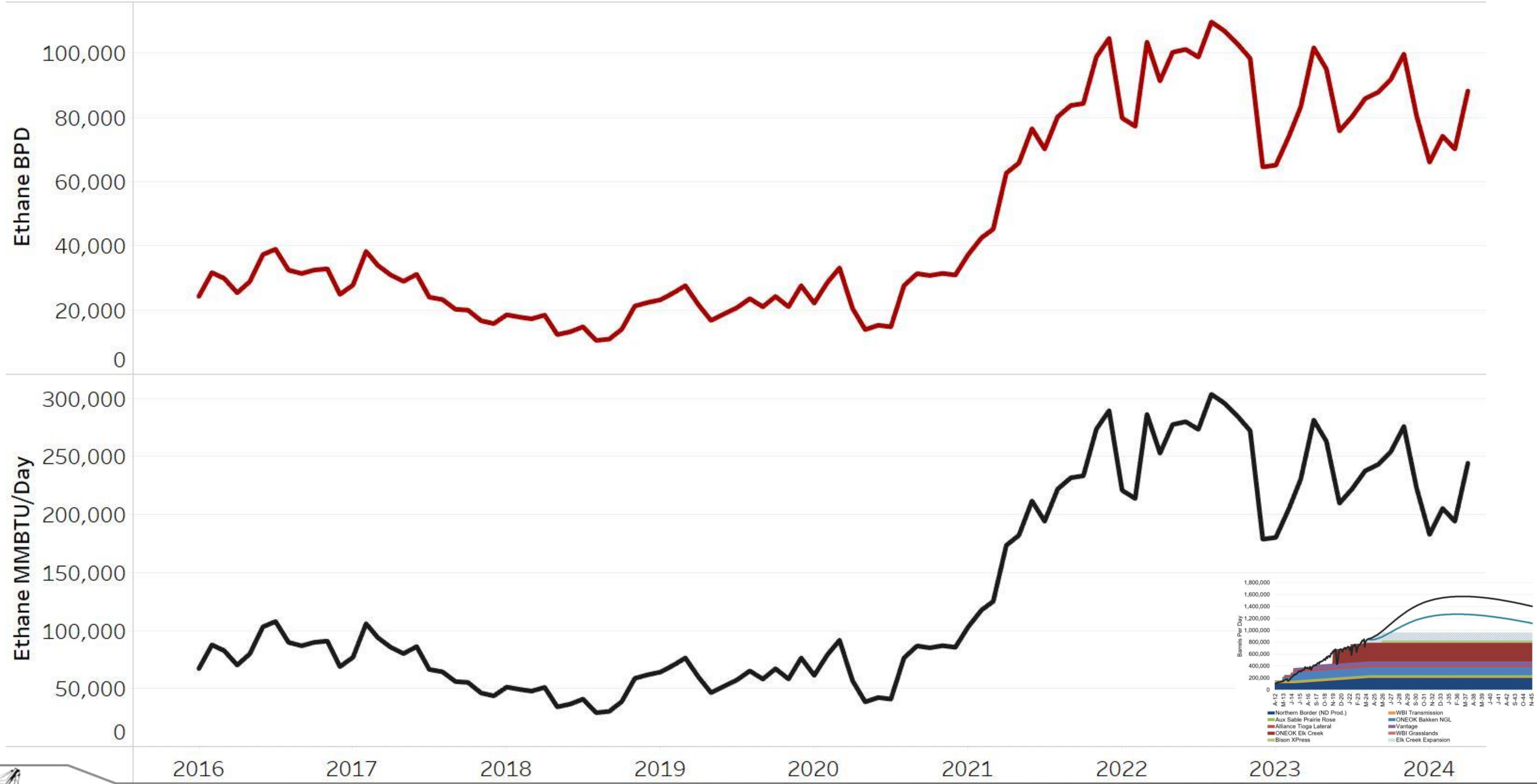
Northern Border Pipeline Market Share



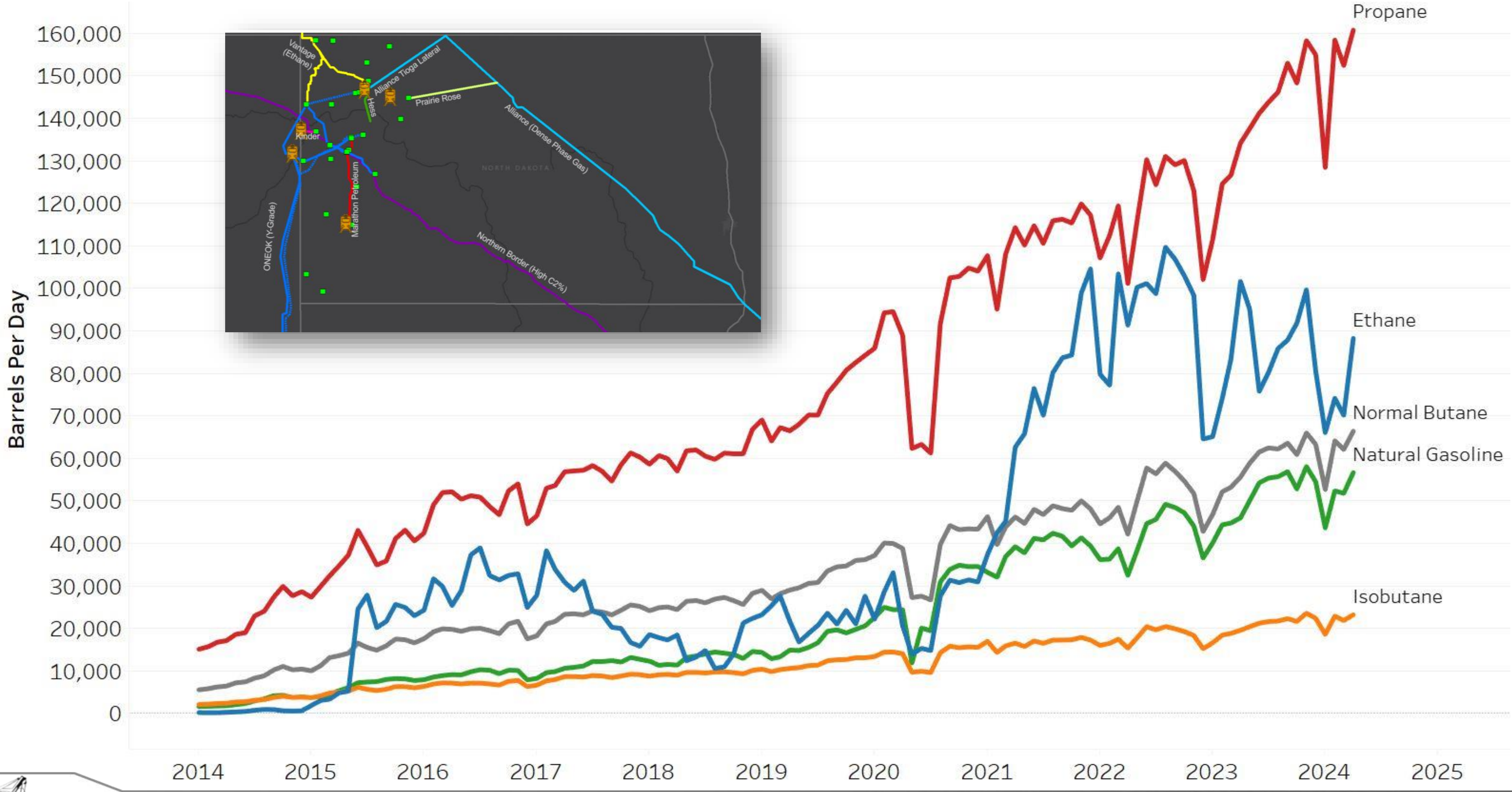
Northern Border BTU at Glen Ullin, ND



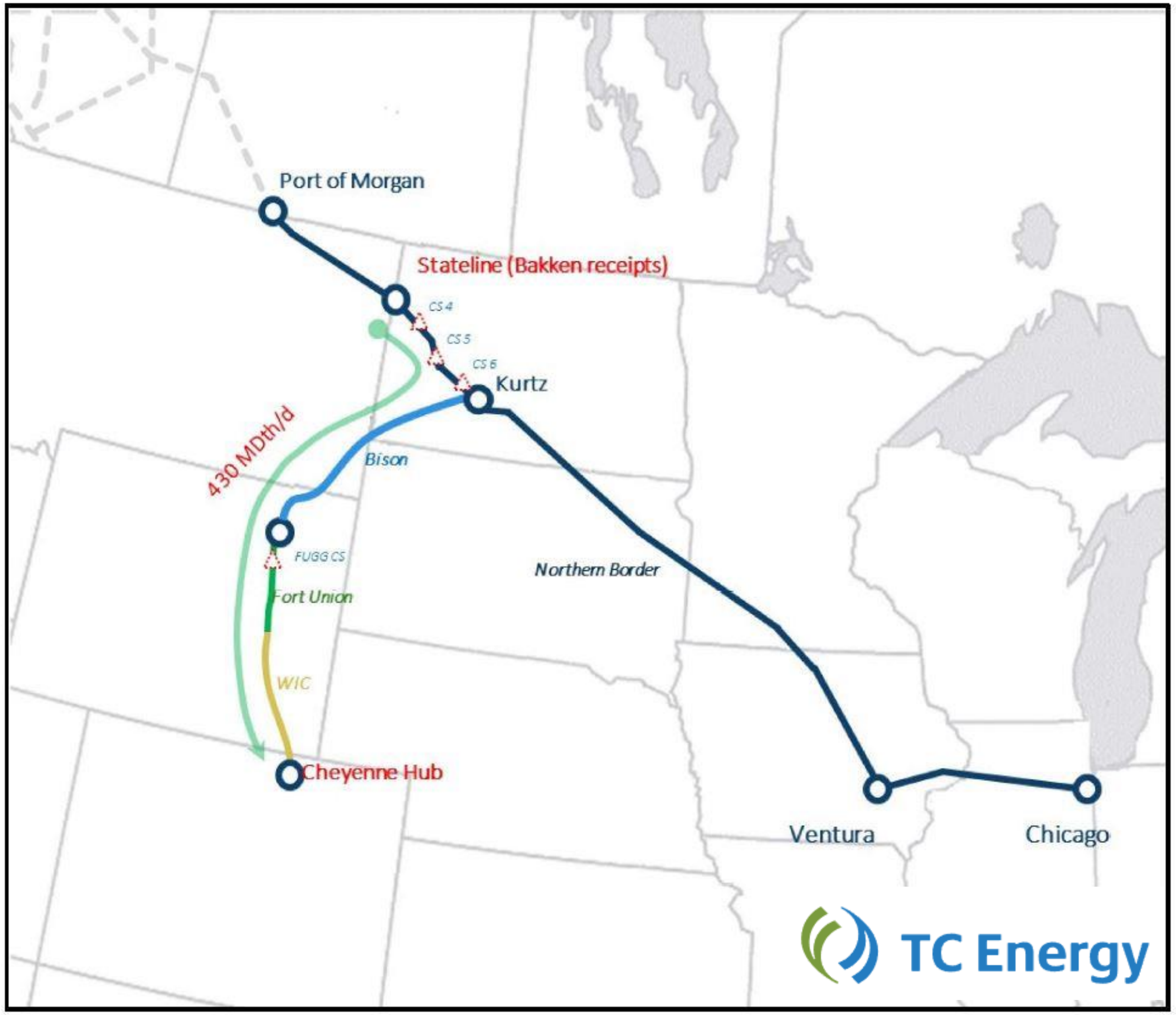
Rockies NGL Pipes Driving Down NB BTU & Market Share



PADD II to PADD IV NGL Pipeline Flows



TC Energy / Kinder Morgan: Bakken xPress Project



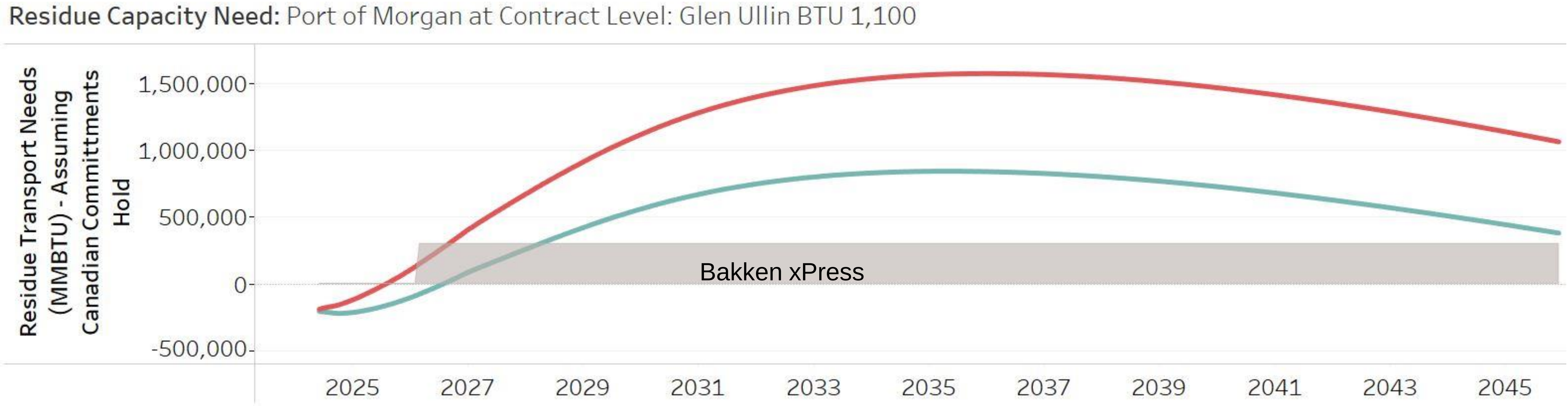
Project Highlights

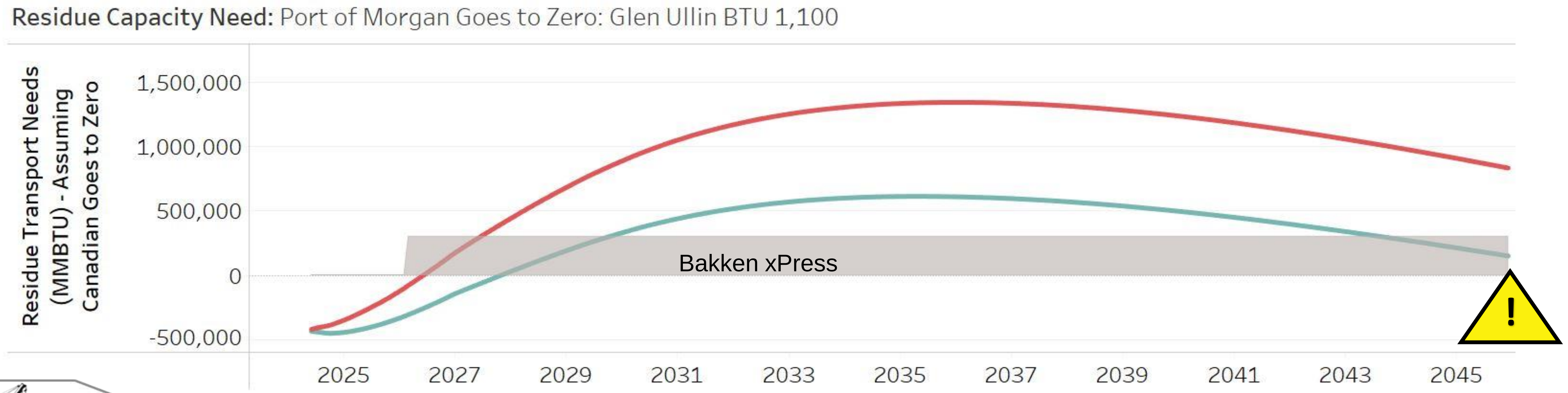
- Non-binding open season April 4 - May 6, 2022
- Binding Open Season: June 1-30, 2023
- Three compressor upgrades in North Dakota
- Reverse the idle Bison Pipeline (30" – 302 Mile)
- Capacity 300,000 Dth/Day (430,000 Offered)
- March 2026 targeted in-service date
- Fort Union Gas Gathering and Wyoming Interstate Company provide further transport to Cheyenne hub.
- Seeking commitments 10yrs or Longer
- $555 million: $347 Replacement/$208 Expansion

Proposed Rates

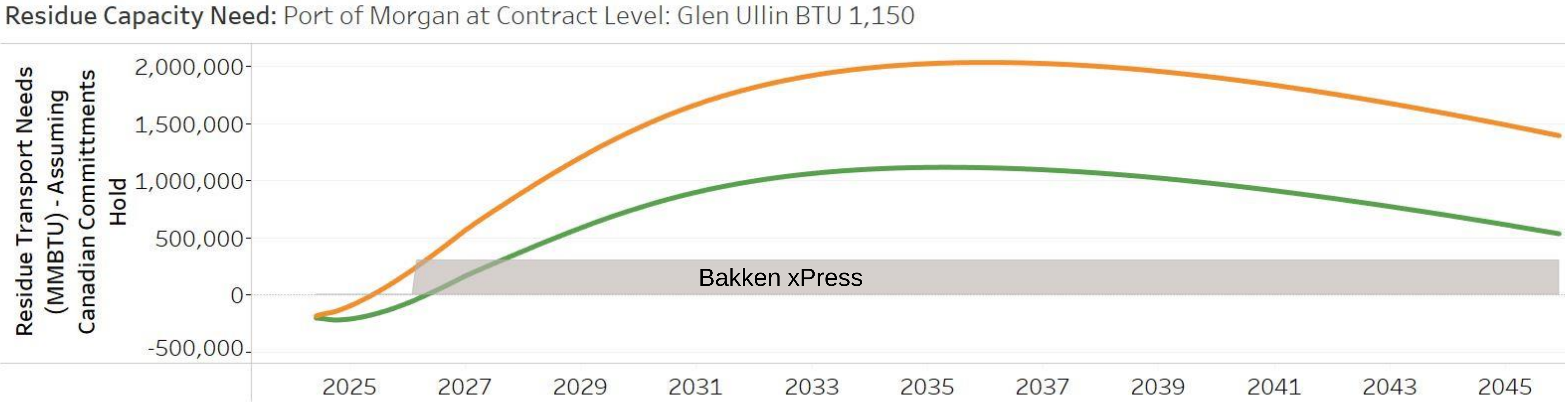
- NBPL/Bison $0.45/Dth + Fuel/Elec to WIC/FUG Interconnect
- WIC/FUG to Cheyenne $0.30/Dth + Fuel/Elec
- Anchor Shipper Minimum: 50,000 Dth/Day

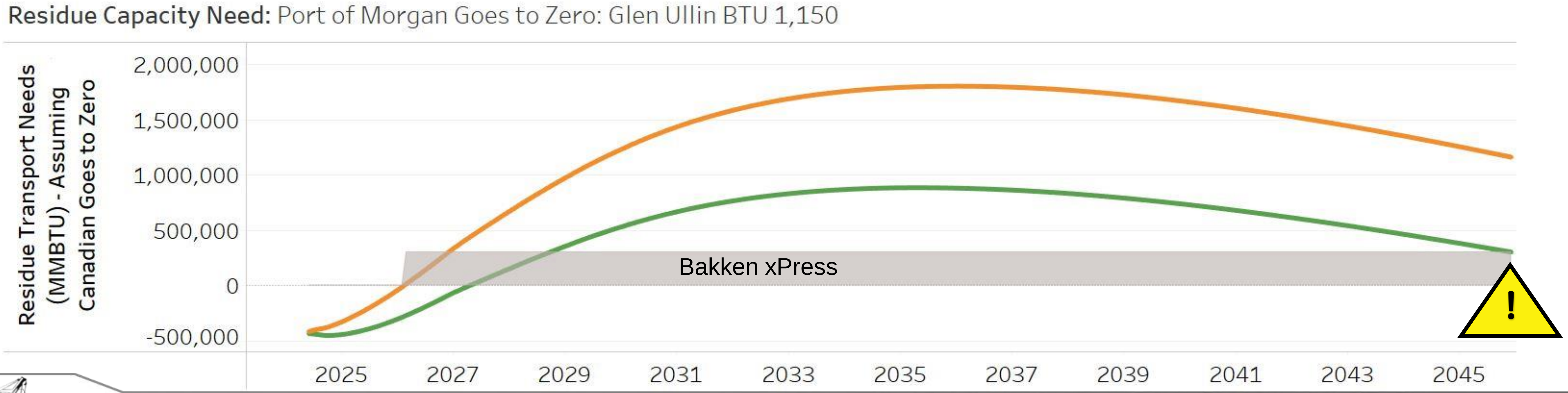
Residue Capacity Needs : **Glen Ullin 1,100 BTU**



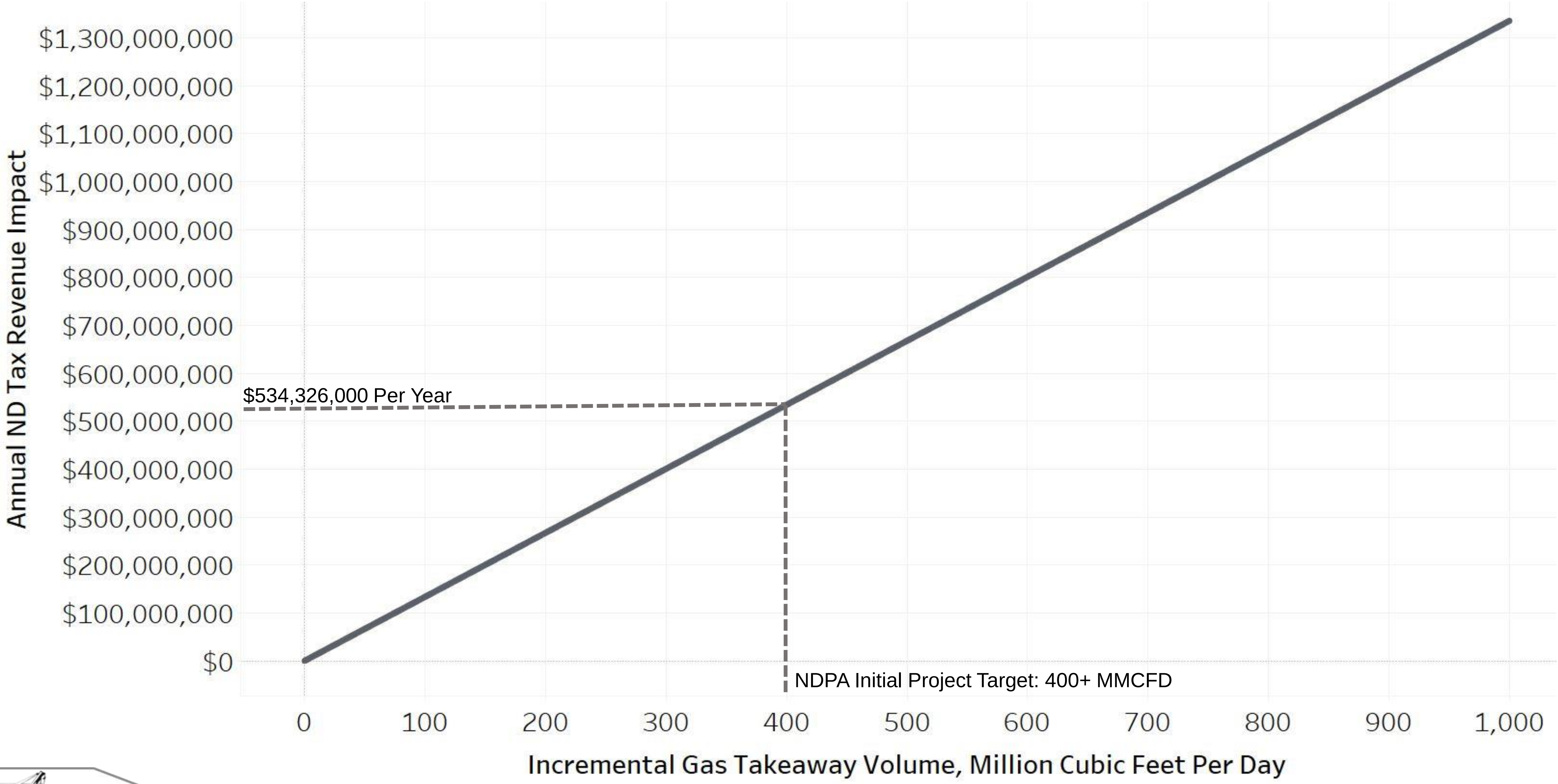


Residue Capacity Needs : **Glen Ullin 1,150 BTU**





ND Tax Impact of Incremental Gas Capacity



Oil & Nat Gas Taxes Only - Assumes $70/BBL Avg. Wellhead Oil Price

Options Beyond 2026: The 5 “C’s”

Construction (Interstate)

- Long-haul Pipe to New or Expanded Markets

Compete

- Price Canadian Volumes to Flow Elsewhere

Compression

- Increase Capacity on Existing Interstate Systems

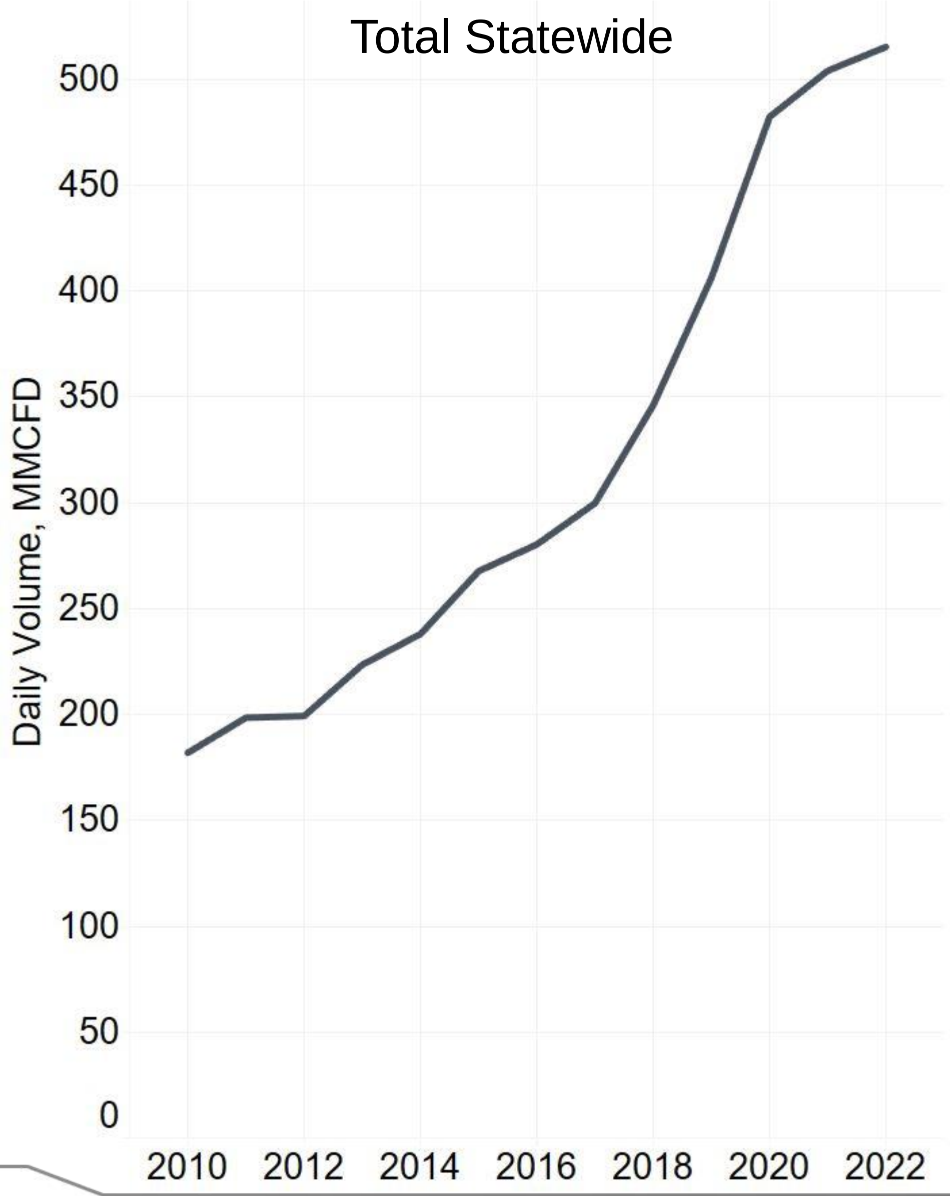
Consumption

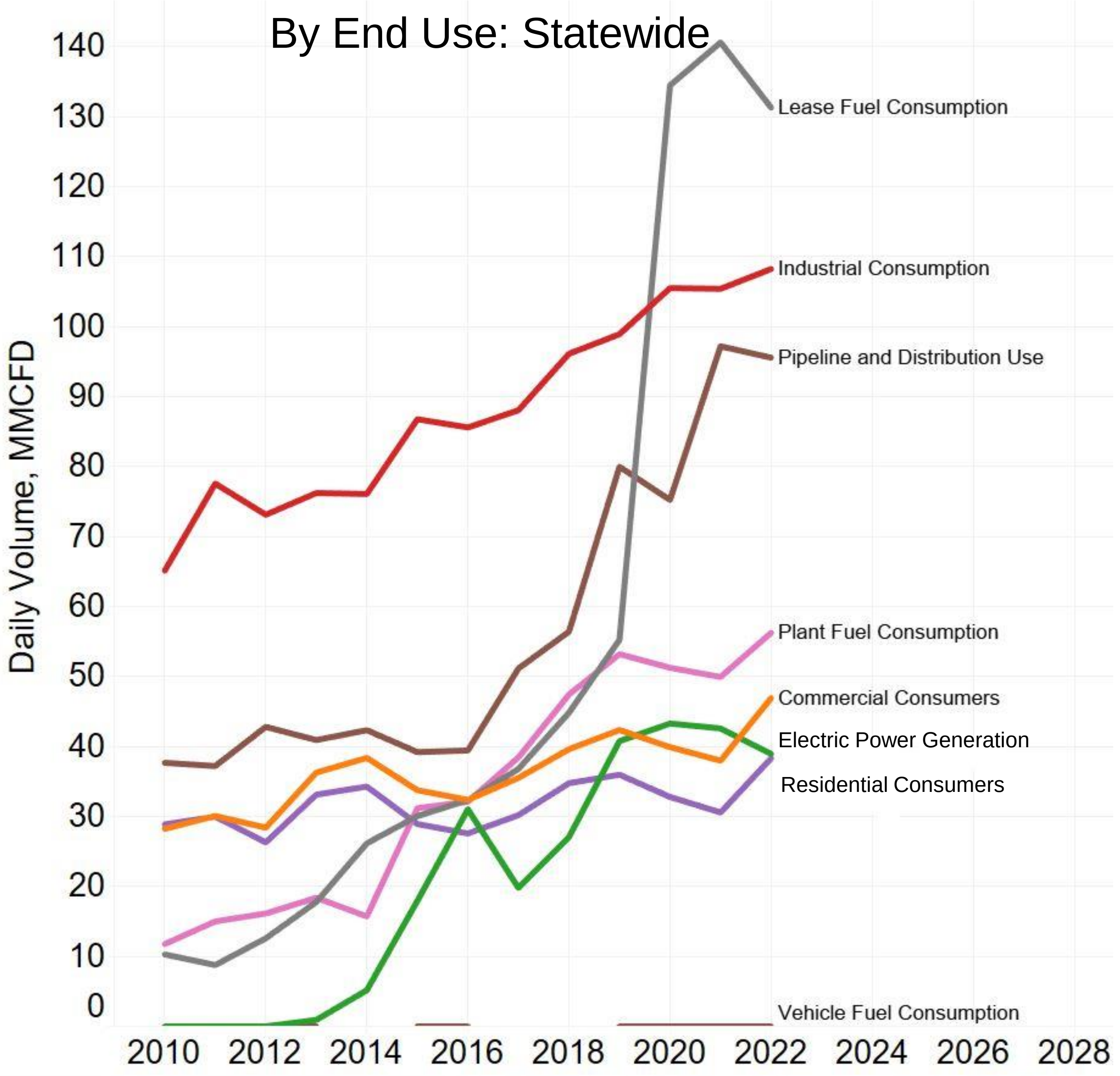
- Intra Region Gas Demand Expansion

Contraction

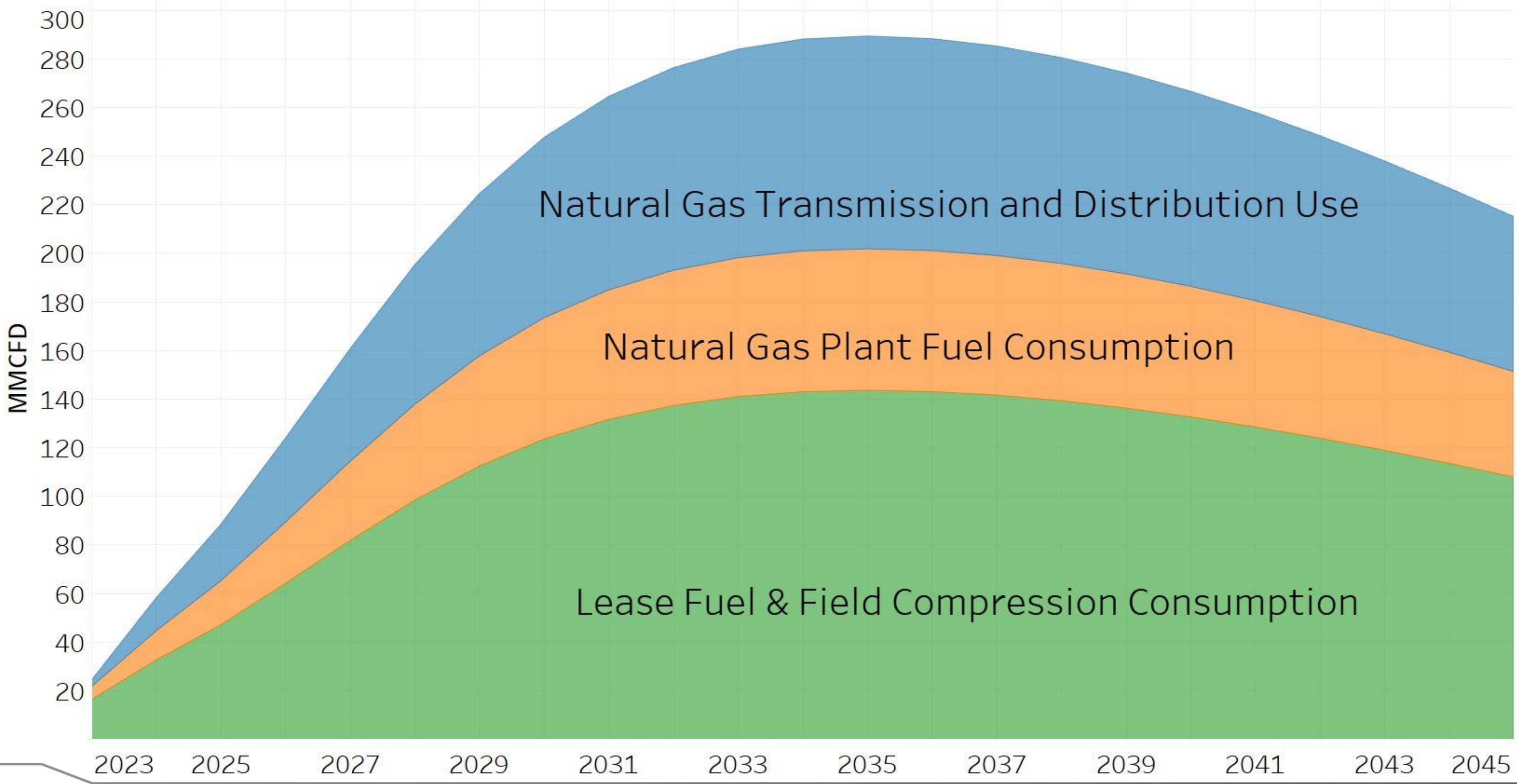
- Reduce E&P Activity to Meet Limited Gas Options

North Dakota Gas Consumption (Annual)



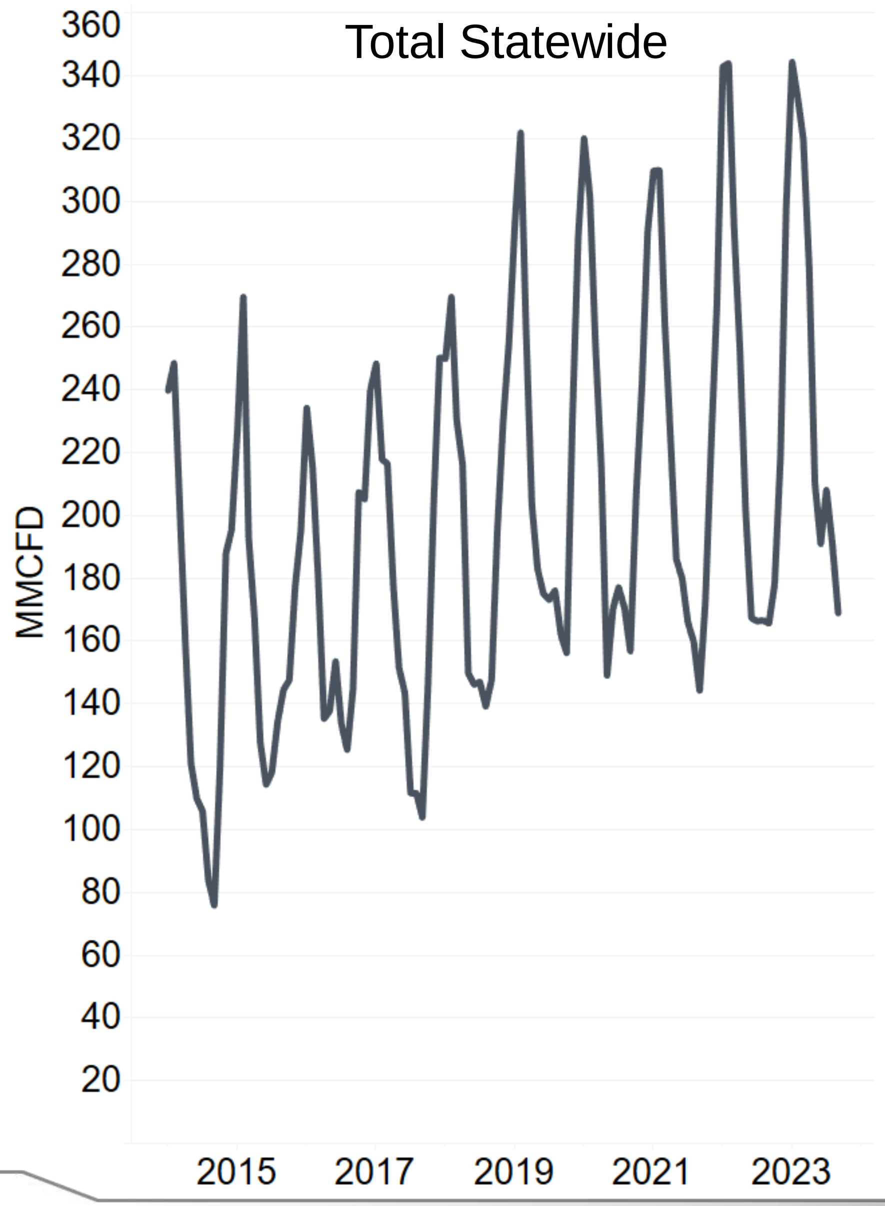


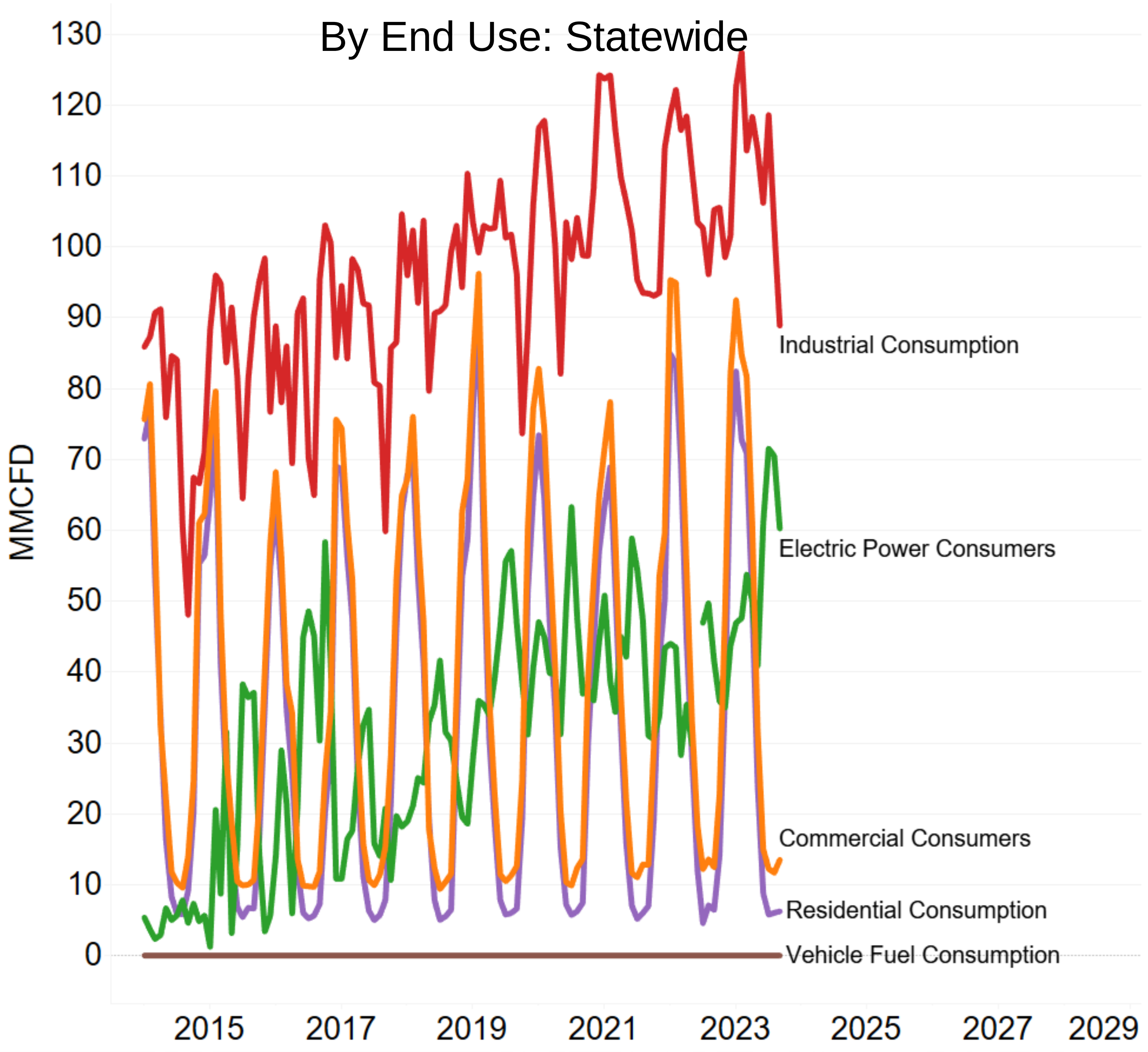
Midstream Consumption (Incremental*)



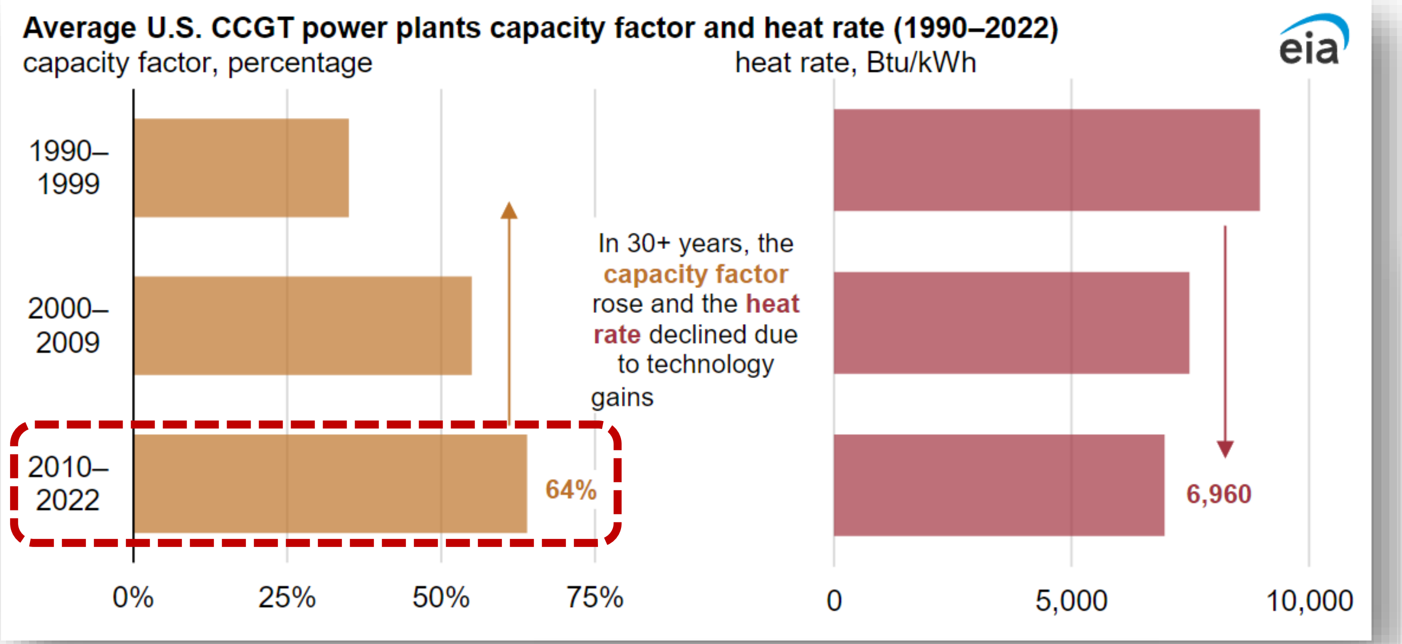
*Base Case Forecast

Non-Midstream Consumption (Monthly)

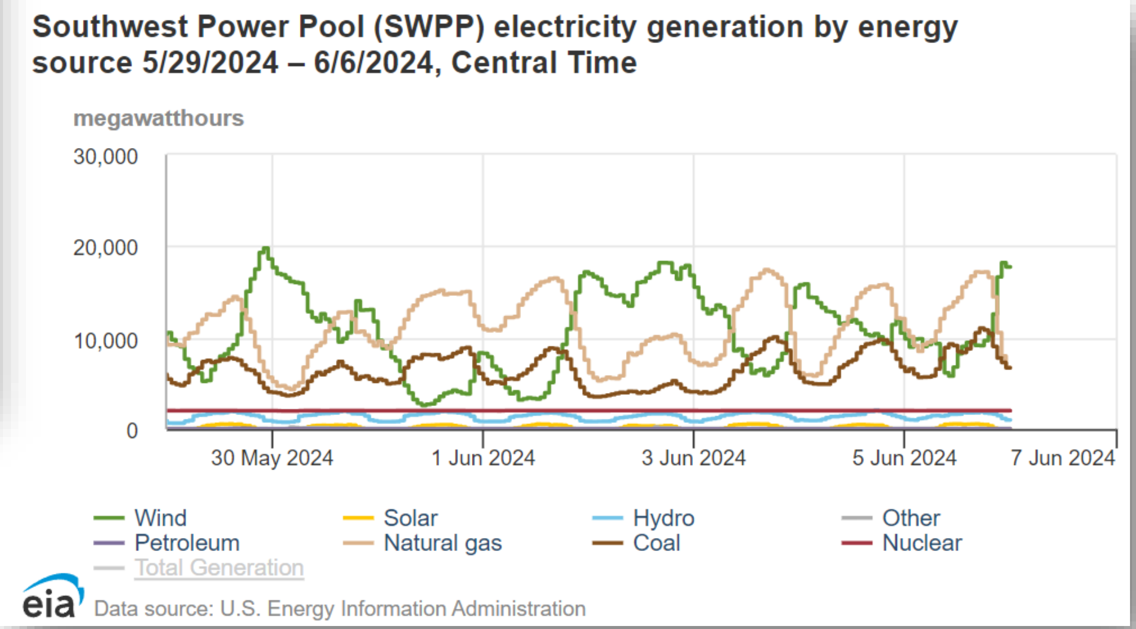


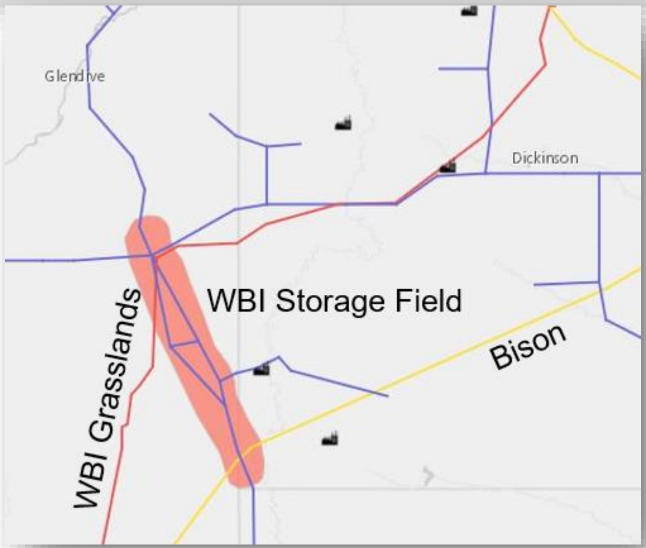


Intermittent Gas-Fired Generation Challenging to Match Oilfield Output



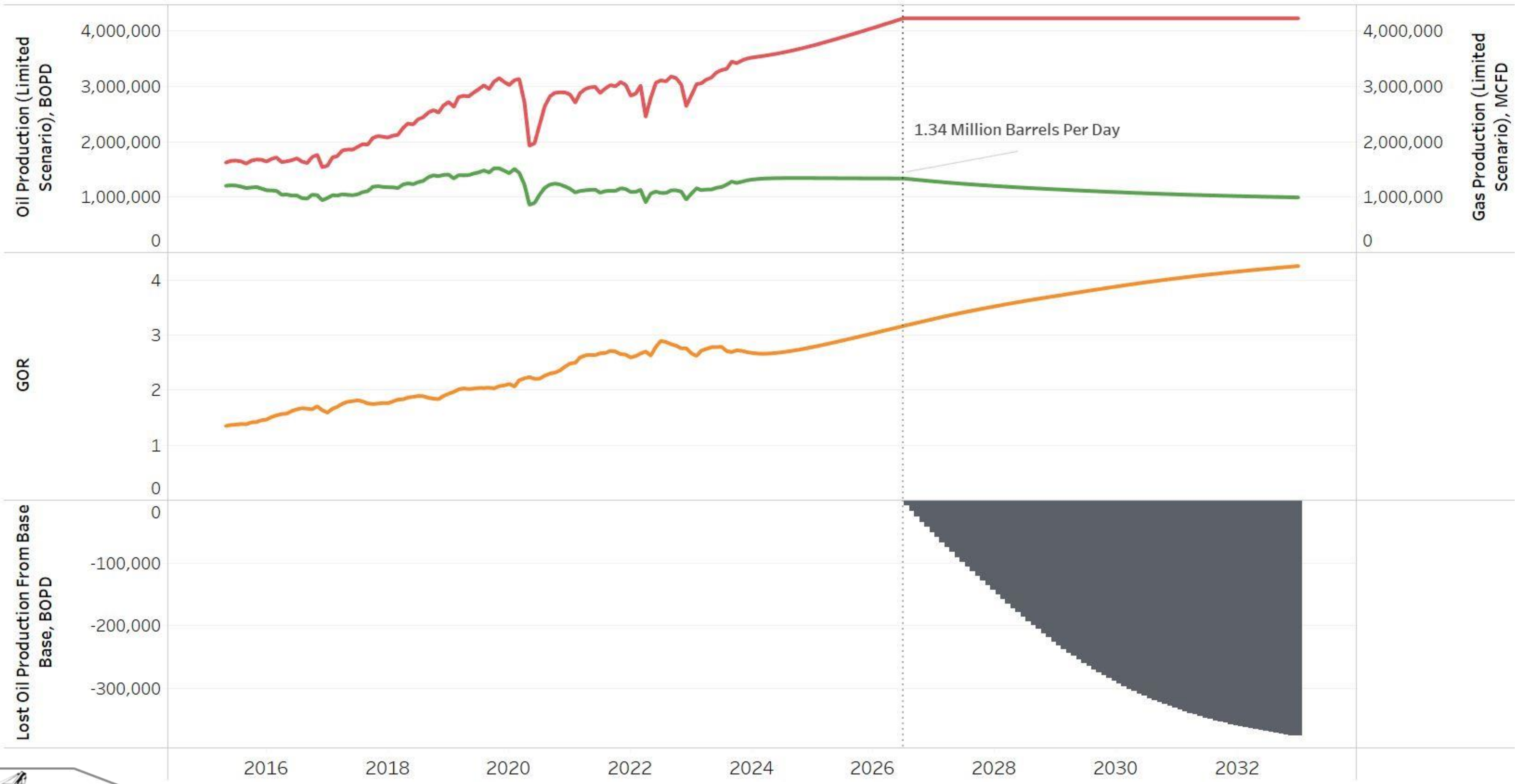
Gas-fired demand can fluctuate hourly, daily, and weekly, depending on system load, weather, etc.





Regional gas storage could provide a balancing solution for intermittent generation, but who pays for the required expansion?

Gas Limitations Could Force Oil Production Down As GOR Rises



Assumes Canadian Flows at 231,000 MMBTU & 1100 BTU (Jan-2024)

Driving Forces for New Gas Pipelines

Supply Push

Demand Pull

System Reliability/Security

Who Signs Up For Capacity?

Shippers

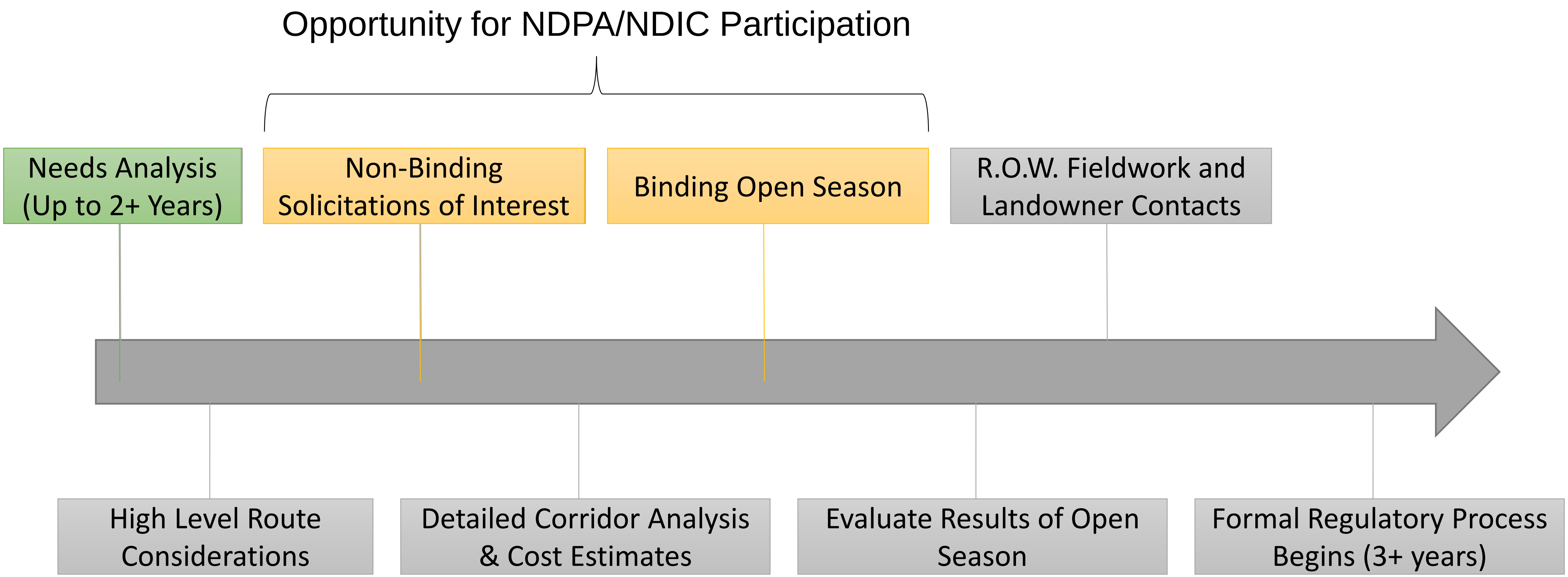
Producers/Midstream

Marketing Firms

Industrial Consumers/LDC

State of North Dakota (PA/IC)

Early Stages of Pipeline Development



Pipeline Authority Century Code– 54-17.7-04.

3. Acquire, purchase, hold, use, lease, license, sell, transfer, and dispose of an undivided or other interest in or the right to capacity in any pipeline system or systems, including interconnection of pipeline systems, within or without the state of North Dakota in order to facilitate the production, transportation, distribution, or delivery of energy-related commodities produced in North Dakota. If the authority acquires, purchases, holds, uses, or leases capacity positions, the authority shall sell, transfer, release, or dispose of the capacity positions at intervals that are no more frequent than monthly and in an amount that is equal to or greater than the market rate, but only if the sale, transfer, release, or disposal of the capacity positions is sufficient to cover the expenses and obligations incurred. The authority's contract obligations for the capacity positions are limited to the capacity rates, charges, and terms.

Key Terms

Shipper	• Holds contractual rights to transport natural gas on a pipeline system between two or more pipeline points.
Anchor Shipper	• One of a few, large volume, long duration shippers supporting a new or expanding pipeline system.
Asset Management Arrangement (AMA)	• Contractual arrangement where one party agrees to manage gas marketing obligations for another party.
Capacity Release	• Method for firm transportation capacity holders to resell all, or a portion, of their capacity to a third party on a short or long term basis.
Tariff	• Formal documentation outlining a pipeline provider's transportation services, rates, terms, and conditions.

Key Terms (Continued)

Non-Binding Open Season	• Formal event where a pipeline operator solicits interest from potential shippers for a new or expanding project. No binding commitments required.
Binding Open Season	• Formal solicitation of interest by a pipeline operator to secure contractual take or pay commitments from customers to use a new or expanding pipeline system.
Reservation Rate	• AKA “demand charge”. Fee paid to reserve space on a gas pipeline based on contract specifications. Paid whether or not gas is transported.
Residue Gas	• AKA “dry gas”. Consumer ready natural gas exiting the tailgate of a gas processing facility that has been stripped of heavier natural gas liquids. Mostly comprised of methane and some ethane. BTU is typically 1,010 to 1,200 in North Dakota.
Gas Units	• 1 MCF = 1 MMBTU = 1 Dekatherm (Dth) @ 1,000 btu • 1,150 btu “Bakken”: 1 MCF = 1.15 MMBTU = 1.15 Dth

Firm Gas Transport Rate Breakdown

Reservation Charge

- Fixed charge for firm shippers based on maximum daily contracted quantity. Must be paid for the duration of contract term regardless if gas moves or not.
- Units = $/Dekatherm

Commodity Charge

- Charges for physical gas transported.
- Units = $/Dekatherm

Fuel/Electric

- Charges for fuel used to operator system compressors and ancillary equipment.
- Typically expressed as a percentage of gas transported and/or $/Dekatherm.

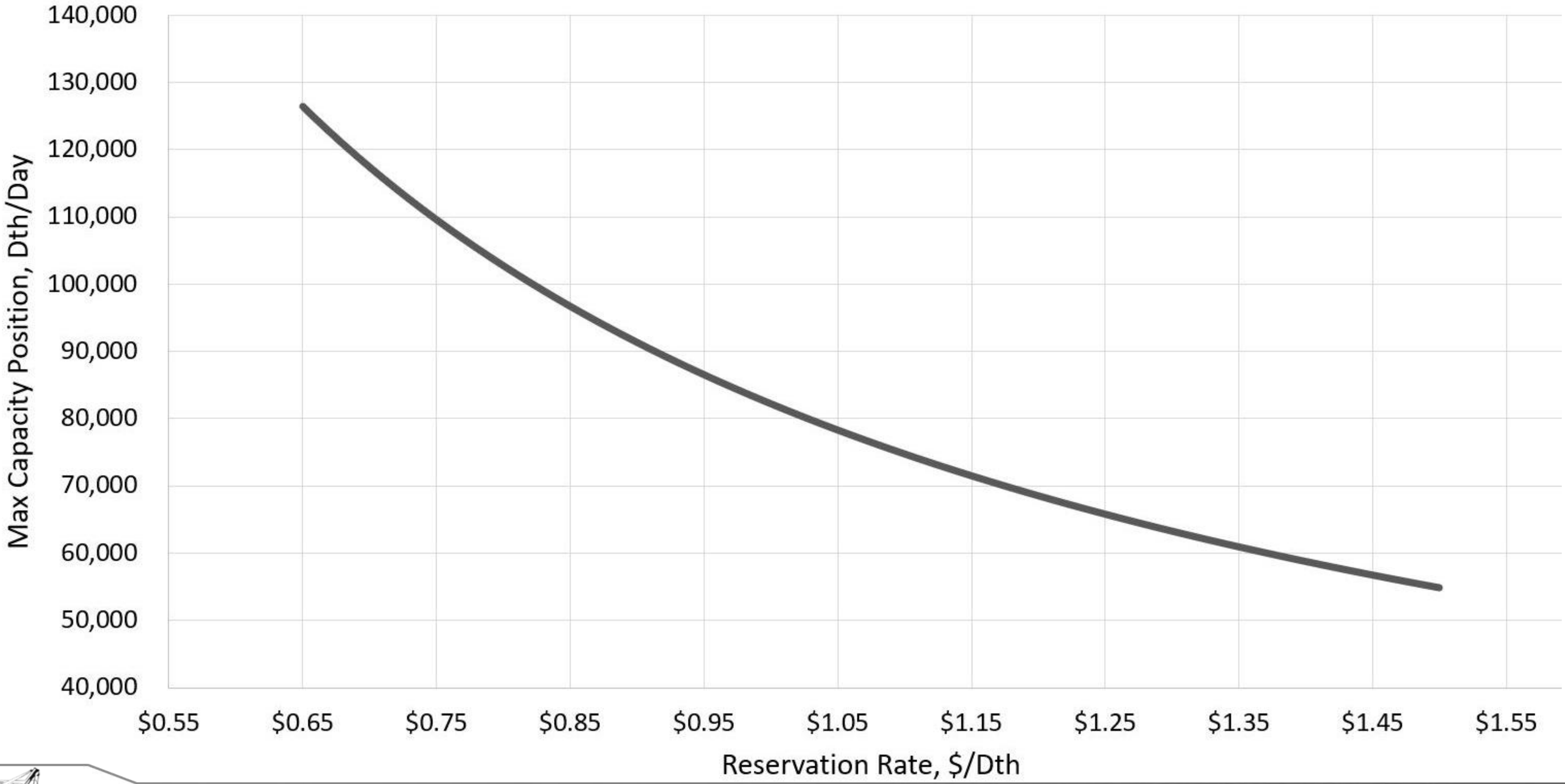
Example Pipeline Case
Reservation: $0.37356
Commodity: $0.02546
Electric: $0.00433
Subtotal: $0.40335

Fuel: 1.387%
If gas value is $2.00/Dth
Fuel expense: $0.02774

Total Transport:
$0.43109/Dth

Tariff Rate Charges (1)						
			Fuel Reimbursement %		Electric Power Charge	
Firm Service Charges	**Maximum**	**Minimum**	**Effective as of 4/1/2024**	**Effective as of 10/1/2023**	**Effective as of 4/1/24**	**Effective as of 10/1/2023**
FT-1 (Firm Transportation)						
Reservation Charge (per month)	11.36247	.00000				
Commodity Charge (1)	.02546	.02546	1.387%	1.114%	.00433	.00724
Reservation Charge (per day)	.37356	.00000				

Capacity and Reservation Rate at $30M/Yr



Simple Example Case

- Total project: 400,000 Dth/Day (~333.3 MMCFD @ 1,200 btu)
- Private sector anchor shippers: 320,000 Dth/Day
- NDPA/NDIC is anchor shipper: 80,000 Dth/Day
- NDPA/NDIC Precedent Agreement @ $0.80 ($23.4 Million/Yr)
- Term timeline: 2028-2038
- Final project recourse rate $0.83 (AKA “Max Rate”)

Capacity Release Term Considerations

31 Days or Less

FERC permitted with certain criteria

Forbidden under NDCC *54-17.7-04 Subsection 3*

32 Days to 1 Year

- Any rate (*NDCC Restrictions*)
- Bidding required
- AMA allowed without bidding
- Rollovers allowed

Greater than 1 year

- Max tariff rate only
- No bidding required
- AMA allowed without bidding
- Rollovers allowed at max rate only

Summarized from 18 CFR § 284.8 (FERC)

How Will NDPA Manage Contracted Capacity?

Most Desirable

Least Desirable

Release capacity to replacement shipper(s) in increments greater than one year at max rate

Release capacity to replacement shipper(s) in increments less than one year at bid rates *(Limited by 54-17.7-04 Subsection 3)*

Release of capacity to an asset manager for an appropriate term length

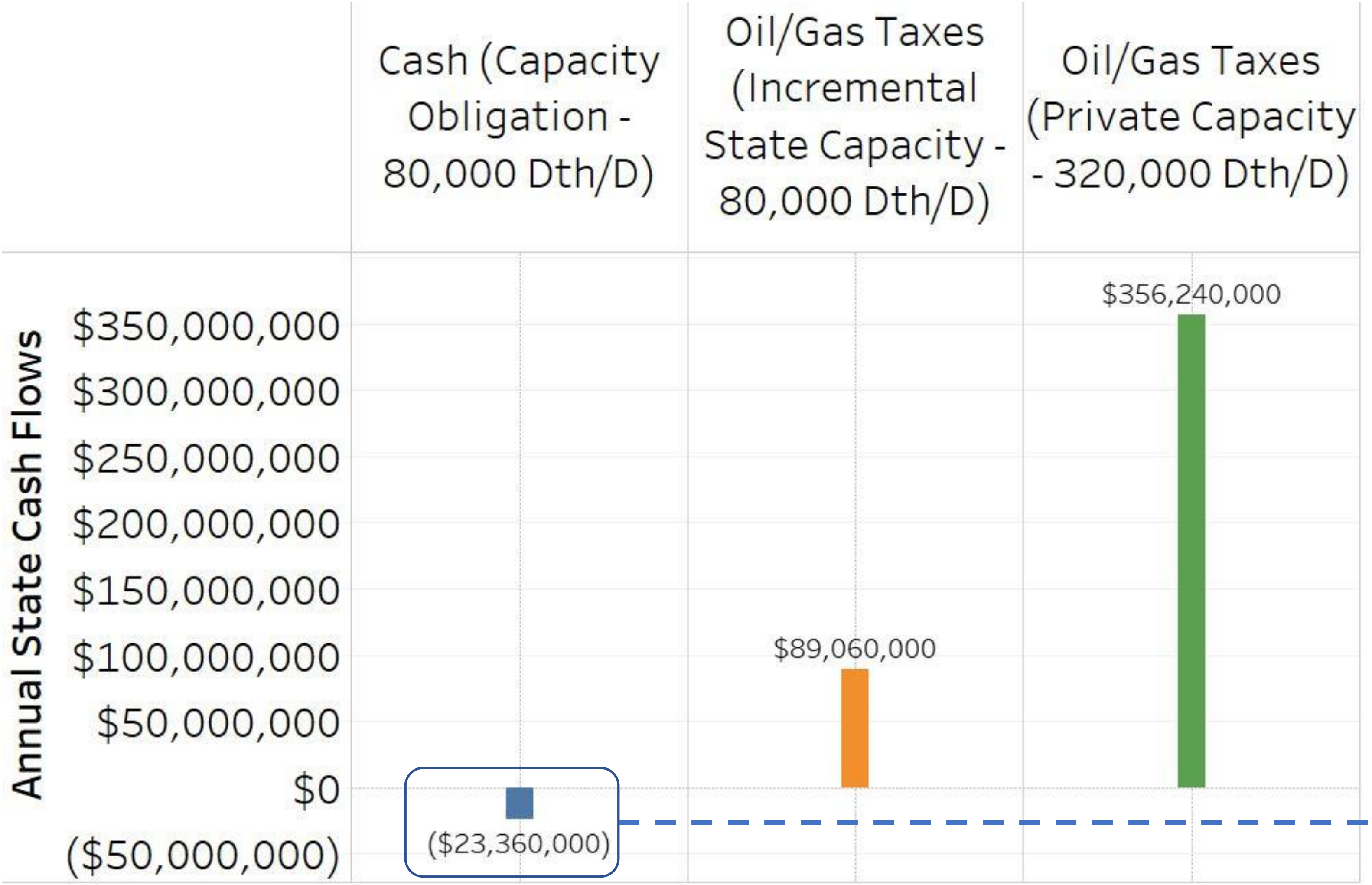
Pay obligated precedent agreement rates until a release or asset management agreement is established

Example Capacity Release Scenarios

- New gas pipeline requiring 10 year anchor shipper terms
  - Party A: 3 year position (Years 1-3)
  - State of ND: 7 year position (Years 4-10)
  - State of ND has a prearranged agreement in place with Party A to release 13 month intervals of capacity at max rate with rollover (ROFR) rights to continue in 13 month intervals at max rate until term expires at year 10.
  - *May require similar arrangements with Parties B/C/… to release entire capacity position*

- New gas pipeline requiring 10 year anchor shipper terms
  - State of ND: 10 year position
  - ND has a prearranged agreement in place with Party A to release 13 month intervals of capacity at max rate with rollover (ROFR) rights to continue in 13 month blocks at max rate until term expires at year 10.
  - *May require similar arrangements with Parties B/C/… to release entire capacity position*

Example Operating Project Cashflows



Hypothetical Project Needs 400,000 Dth/D Capacity Commitment to Move Forward

Options for State Capacity Obligation

- Release (full or partial) to private sector
- Monetize capacity through asset management agreement (AMA)
- Worst case – Continue to pay obligations without recovery or release on 80,000Dth

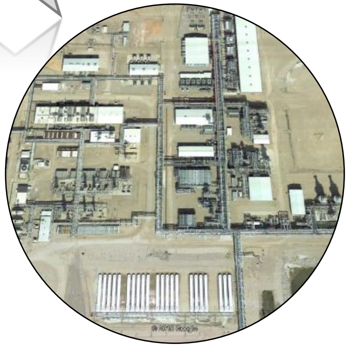
Natural Gas Update

Production

- Technology
- Markets

Gathering

- Capacity
- Connections



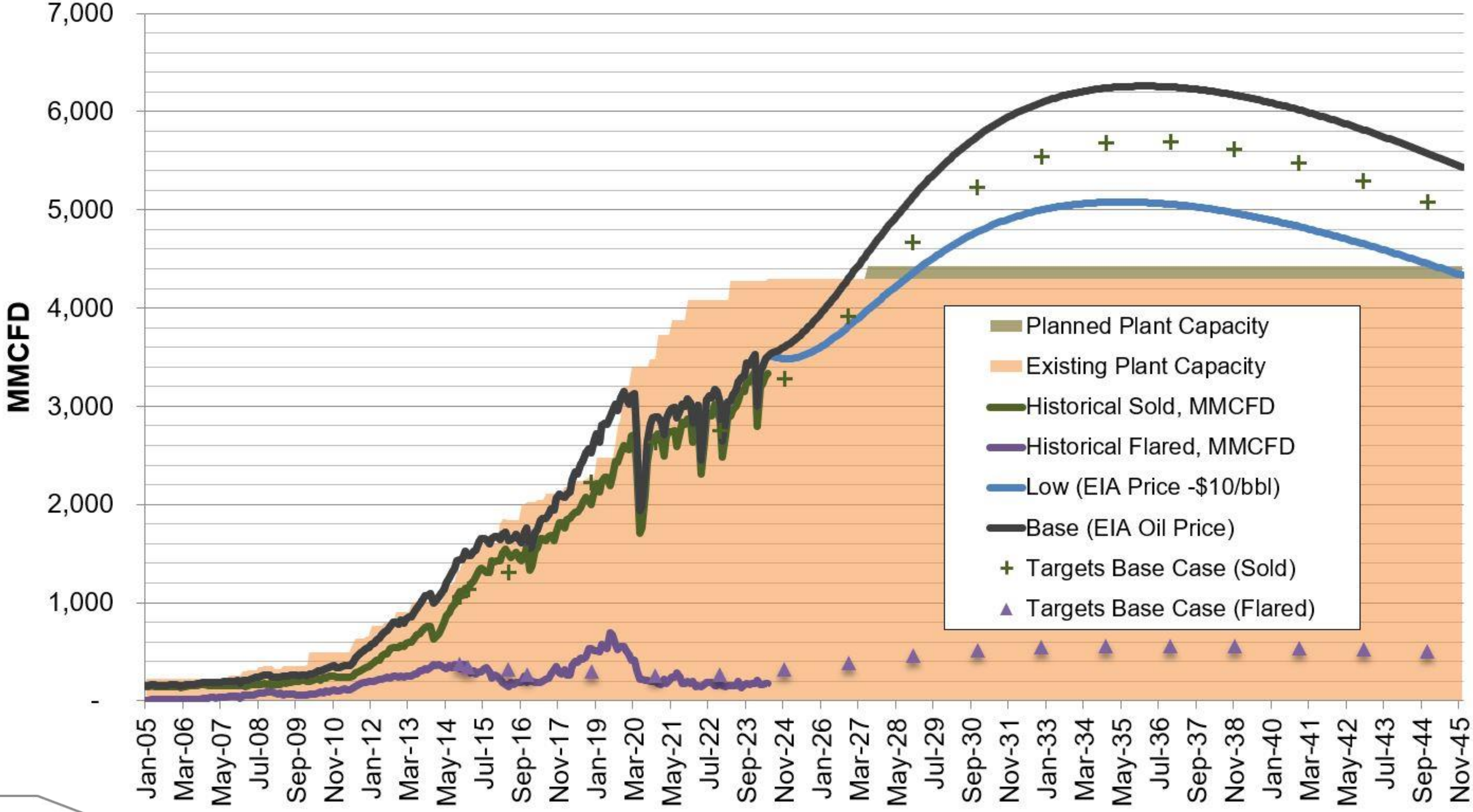
Processing

- Capacity
- Location

Transmission

- Dry Gas
- Natural Gas Liquids

North Dakota Natural Gas Processing Capacity



Natural Gas Update

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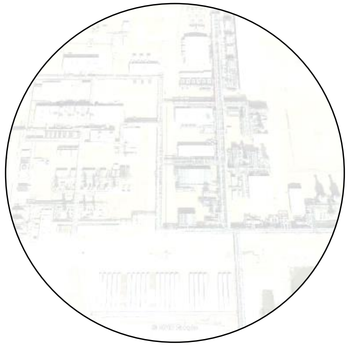

Processing

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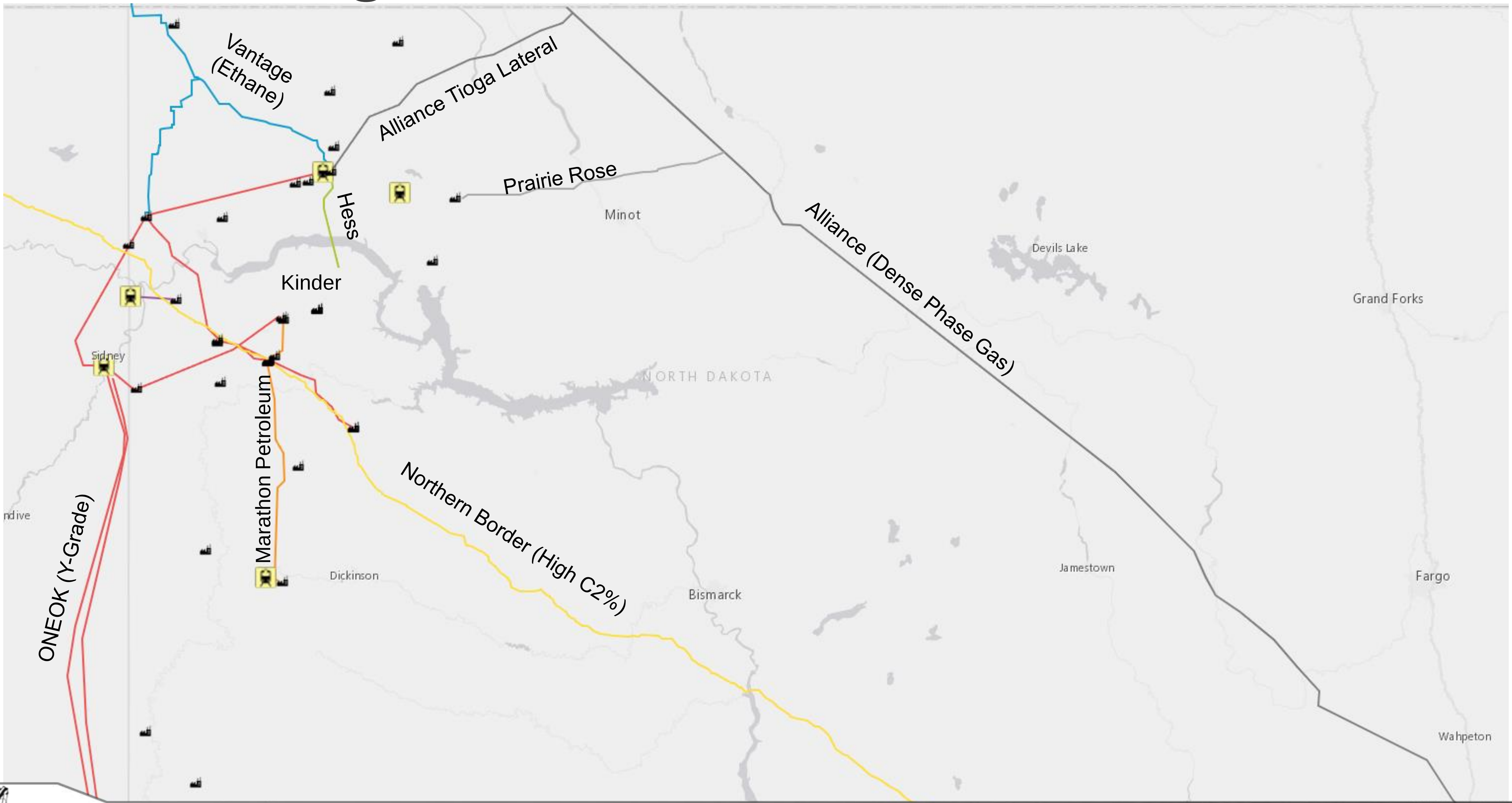
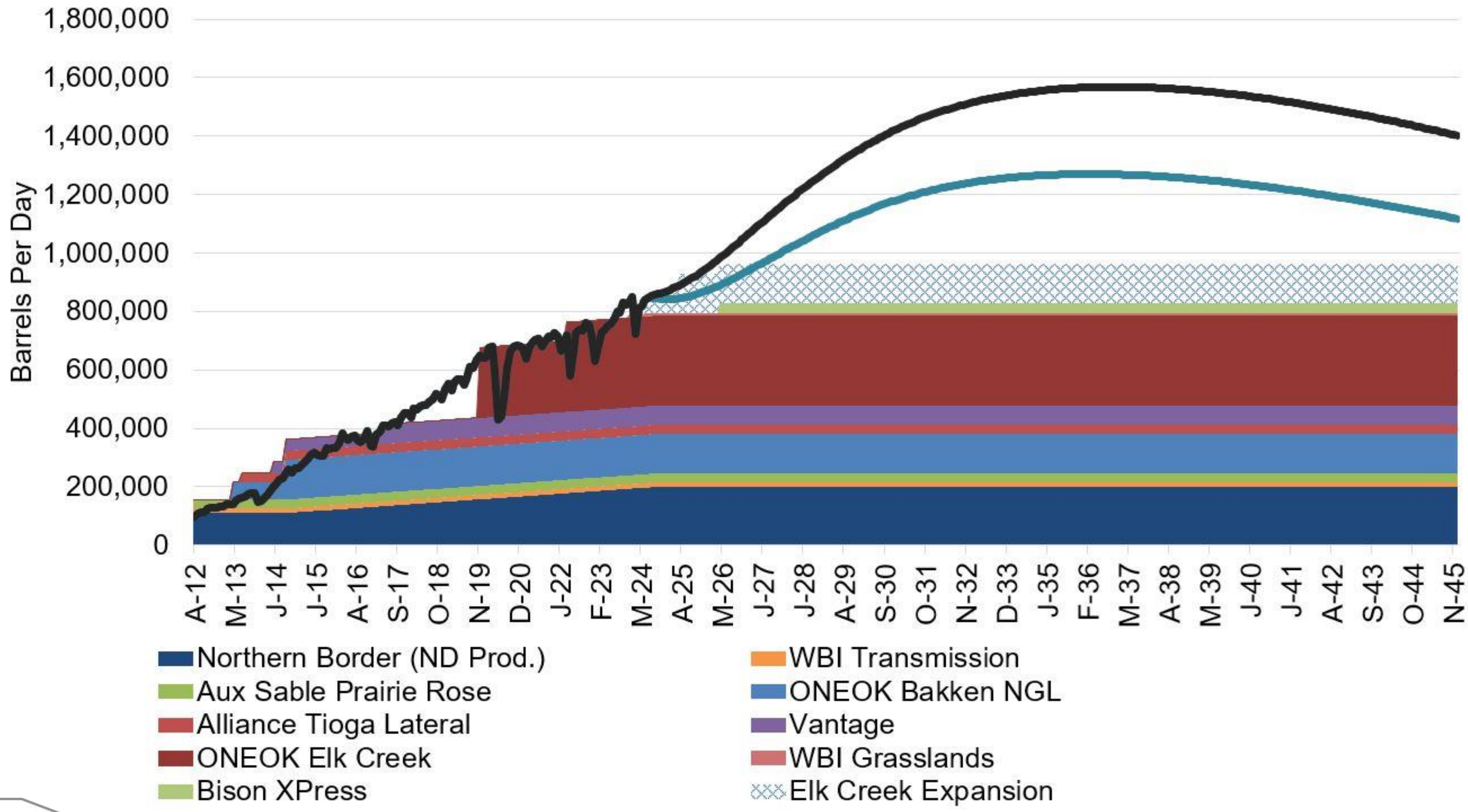
Regional NGL Infrastructure



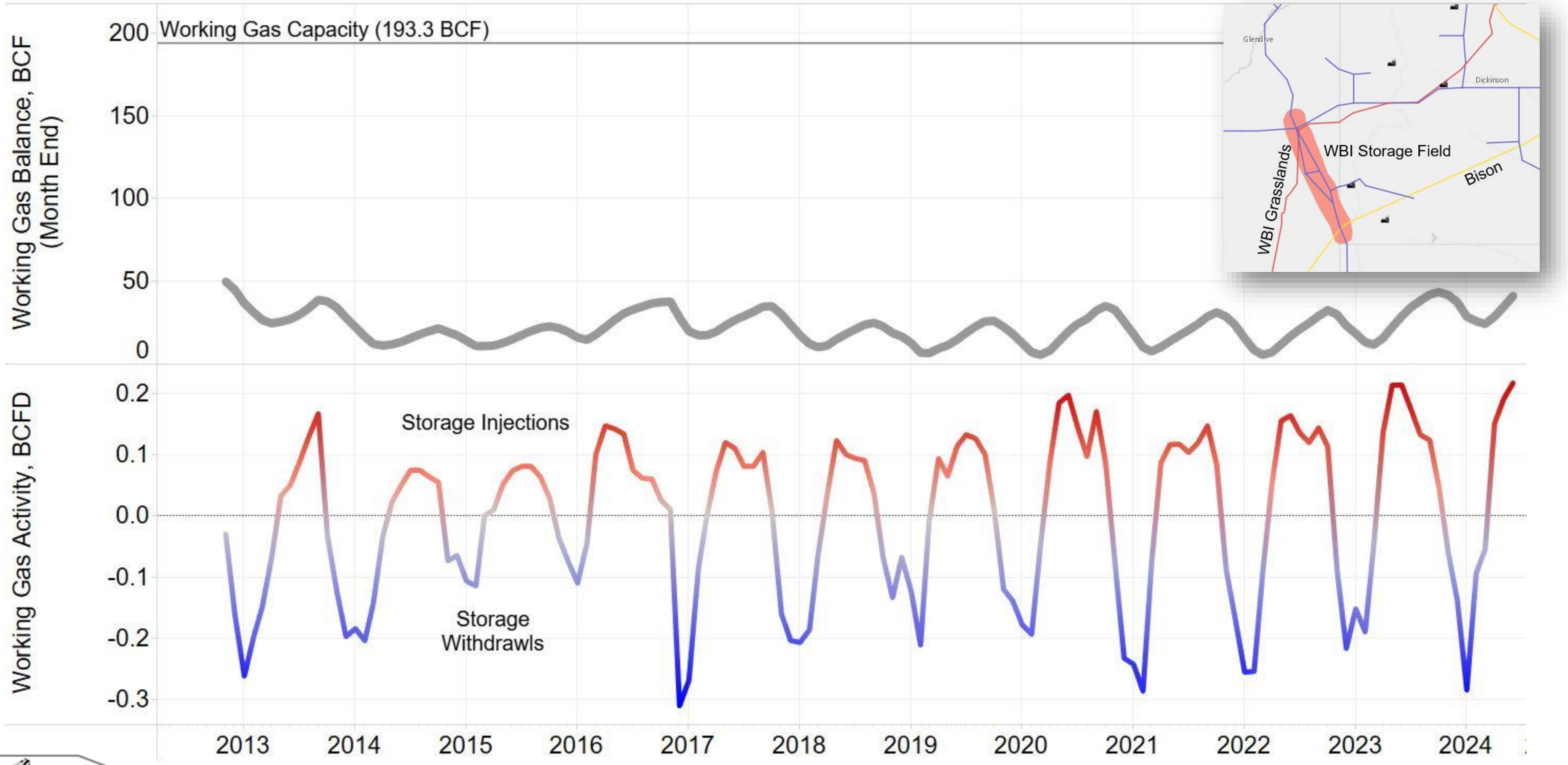
NGL Transport Needs* – With New Cheyenne Pipes



*Rail and Local Trucking Not Included

Regional Natural Gas Storage

Residue Gas Storage – WBI Energy*



*WBI Energy Storage Fields: Baker & Elk Basin

Contact Information

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Bismarck, ND 58505-0840

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E-mail: jjkringstad@ndpipelines.com

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www.pipeline.nd.gov

www.northdakotapipelines.com

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