



Website Slide Deck
North Dakota Pipeline Authority
Justin J. Kringstad
April 1, 2014

Crude Oil

Understanding production potential

Understanding current transportation dynamics and potential transportation constraints

Understanding current and future market conditions



Crude Oil

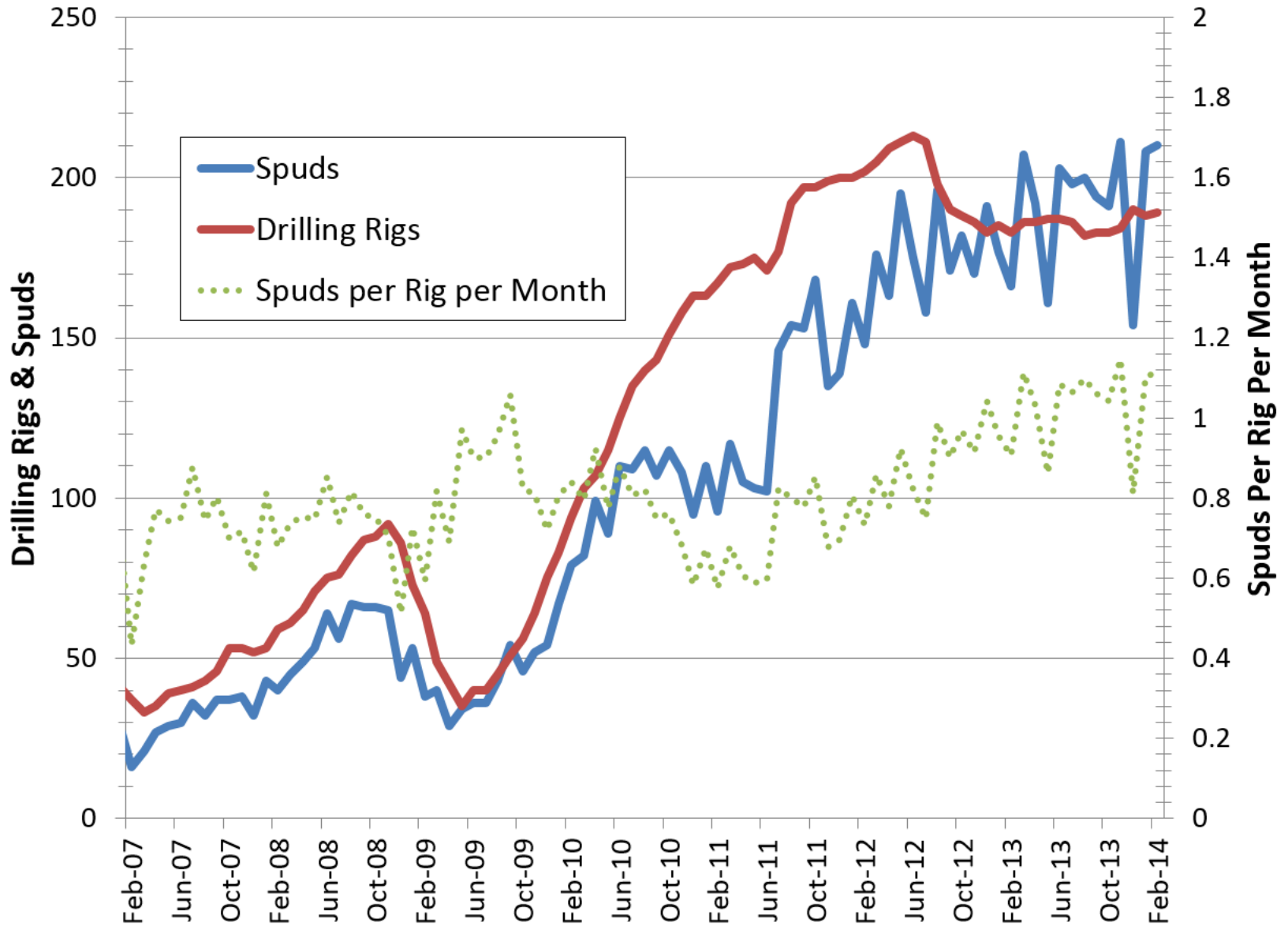
Understanding production potential

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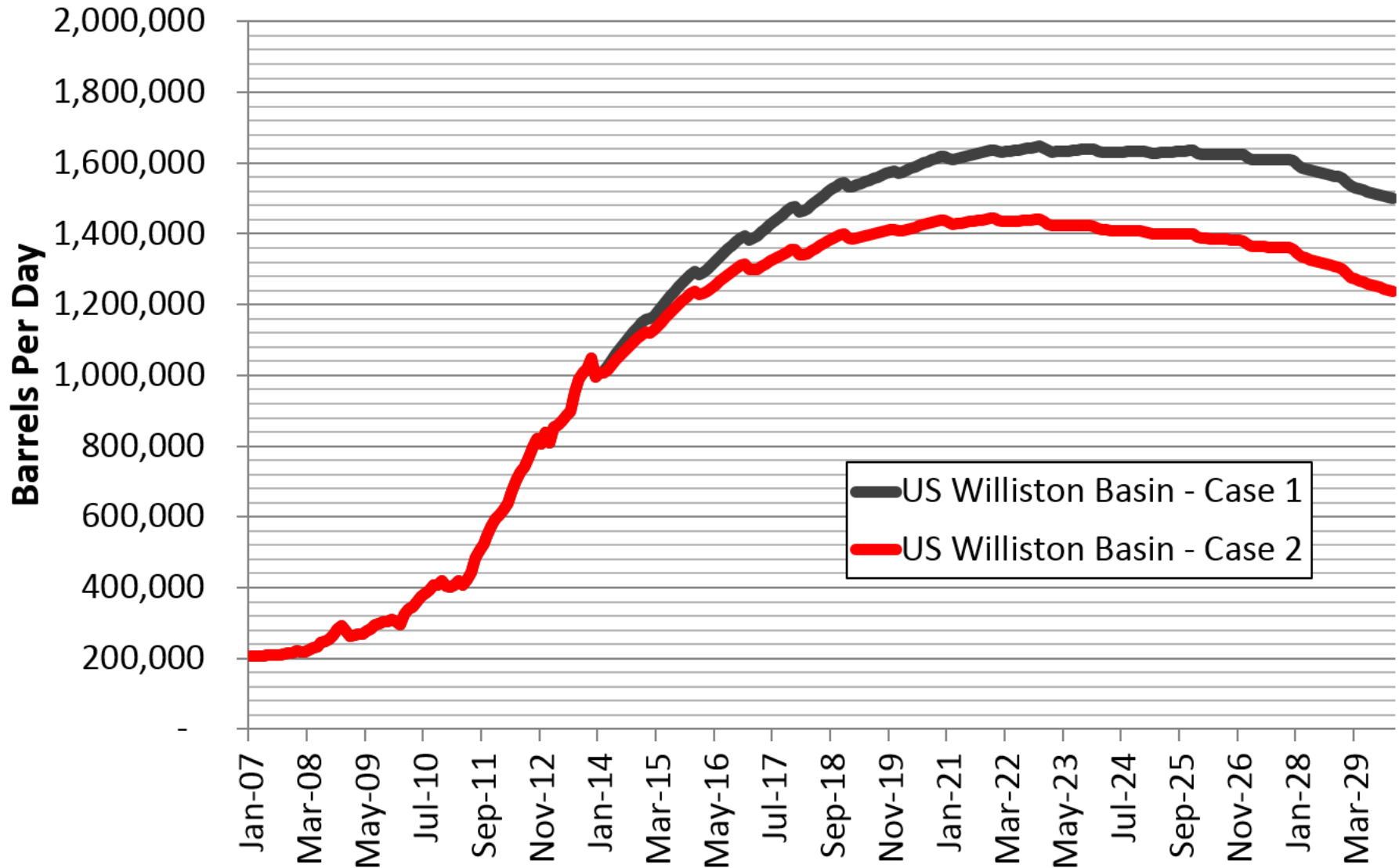
Understanding current and future market conditions



ND Drilling Stats



Forecasting Williston Basin Oil Production, BOPD



Production forecast is for visual demonstration purposes only and should not be considered accurate for any near or long term planning.



Crude Oil

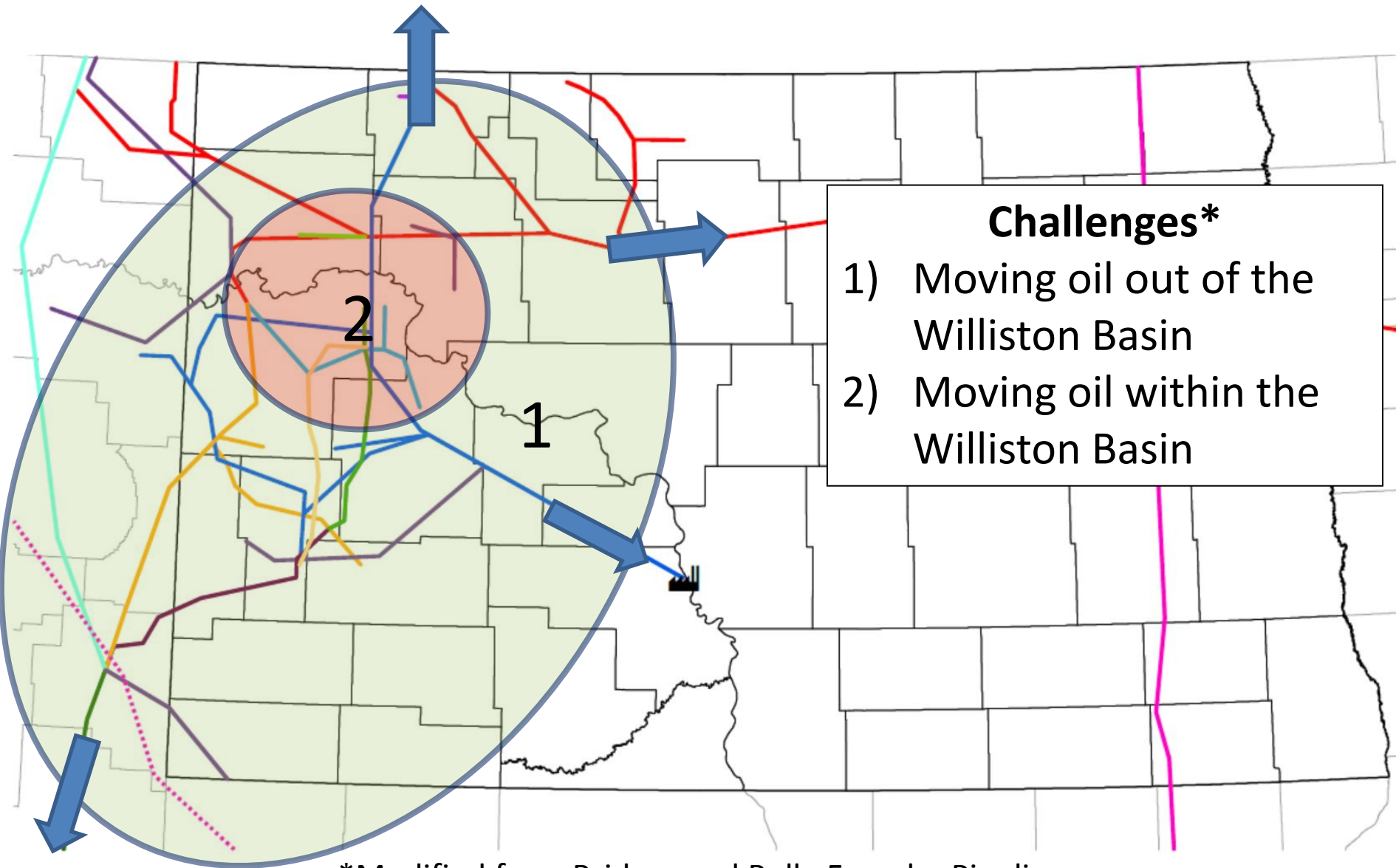
Understanding production potential

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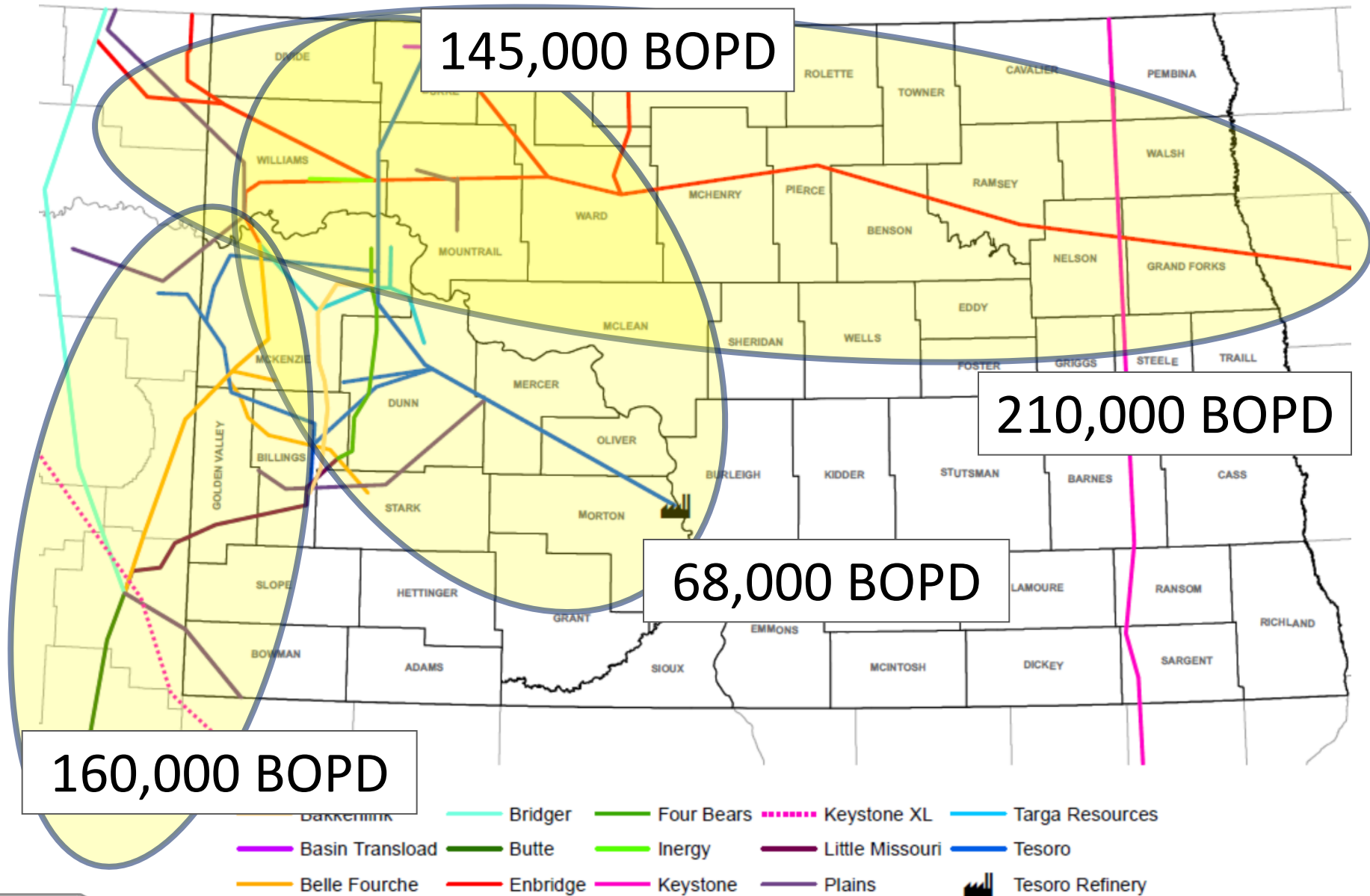
North Dakota Crude Oil Pipelines



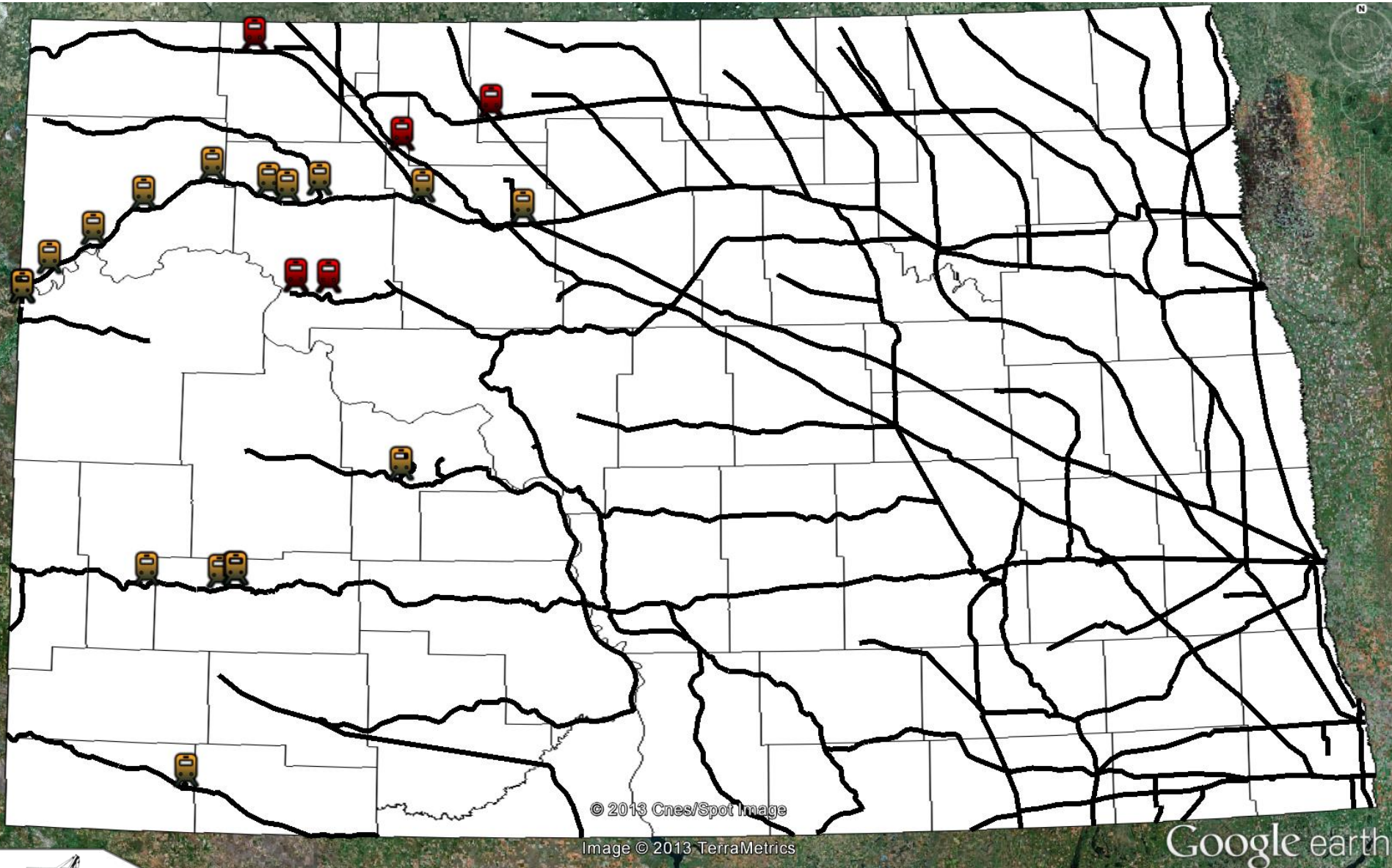
*Modified from Bridger and Belle Fourche Pipelines



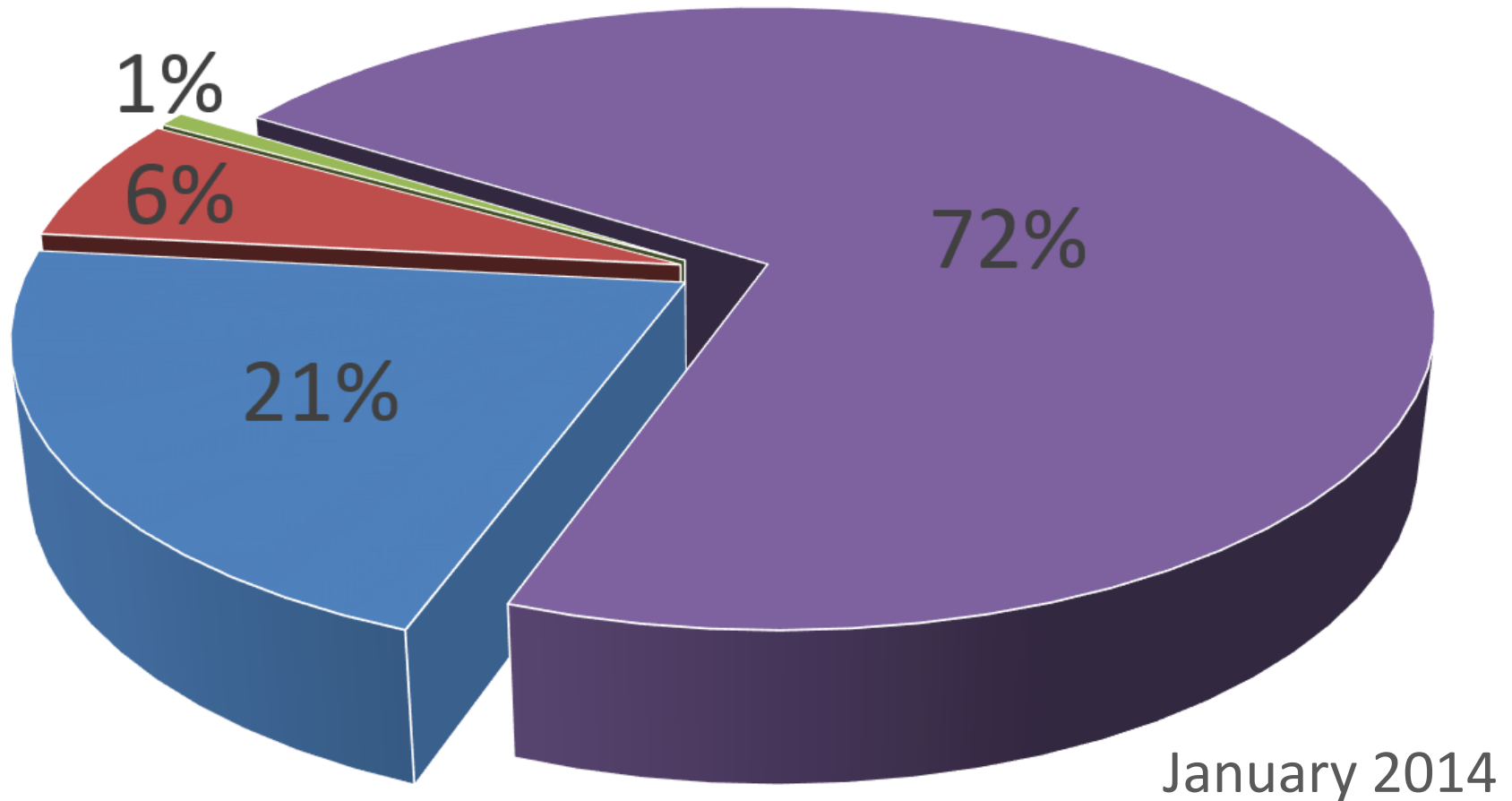
North Dakota Crude Oil Pipelines



Oil Loading Rail Facilities



Estimated Williston Basin Oil Transportation



■ Estimated Pipeline Export

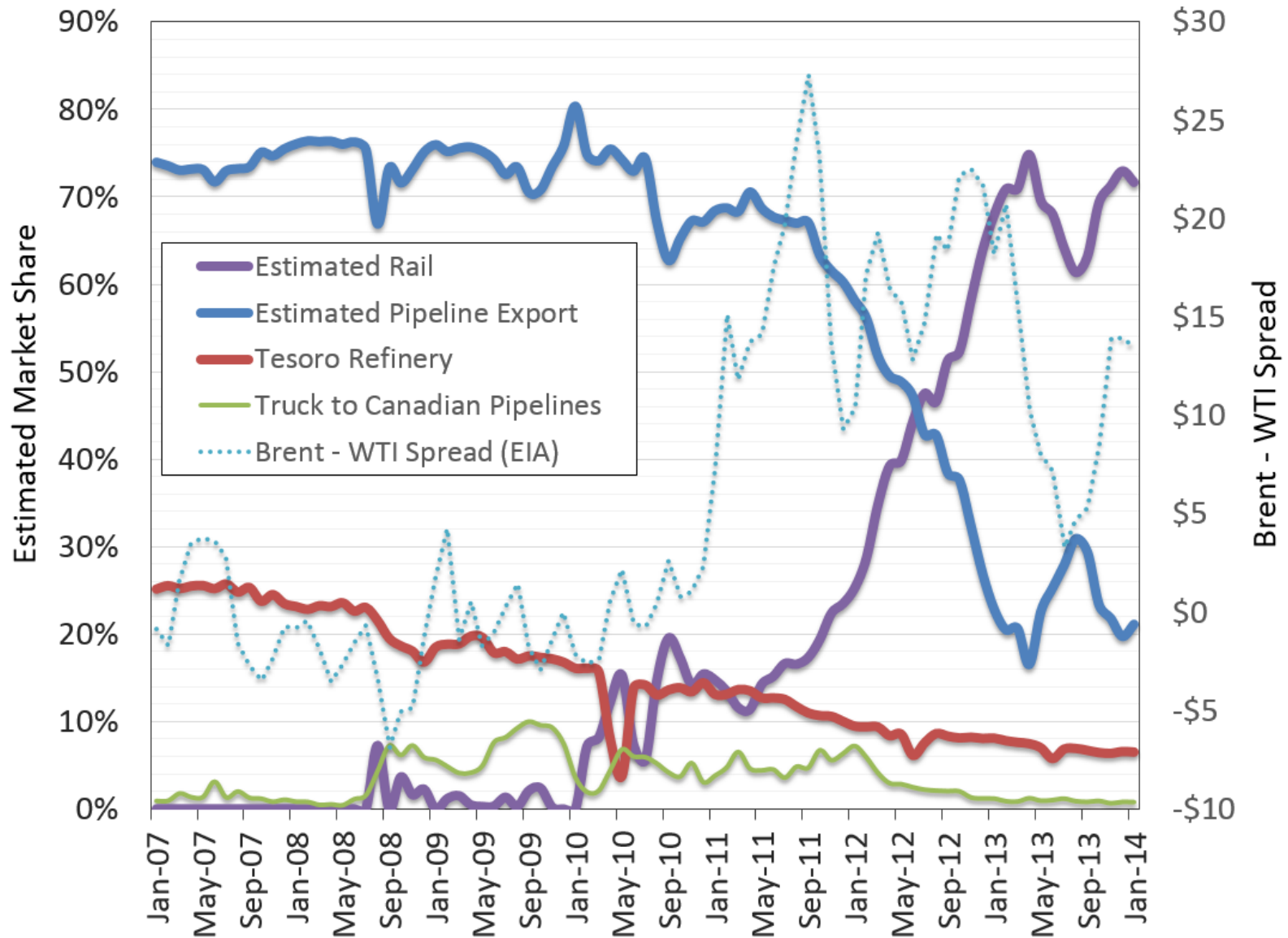
■ Tesoro Refinery

■ Truck to Canadian Pipelines

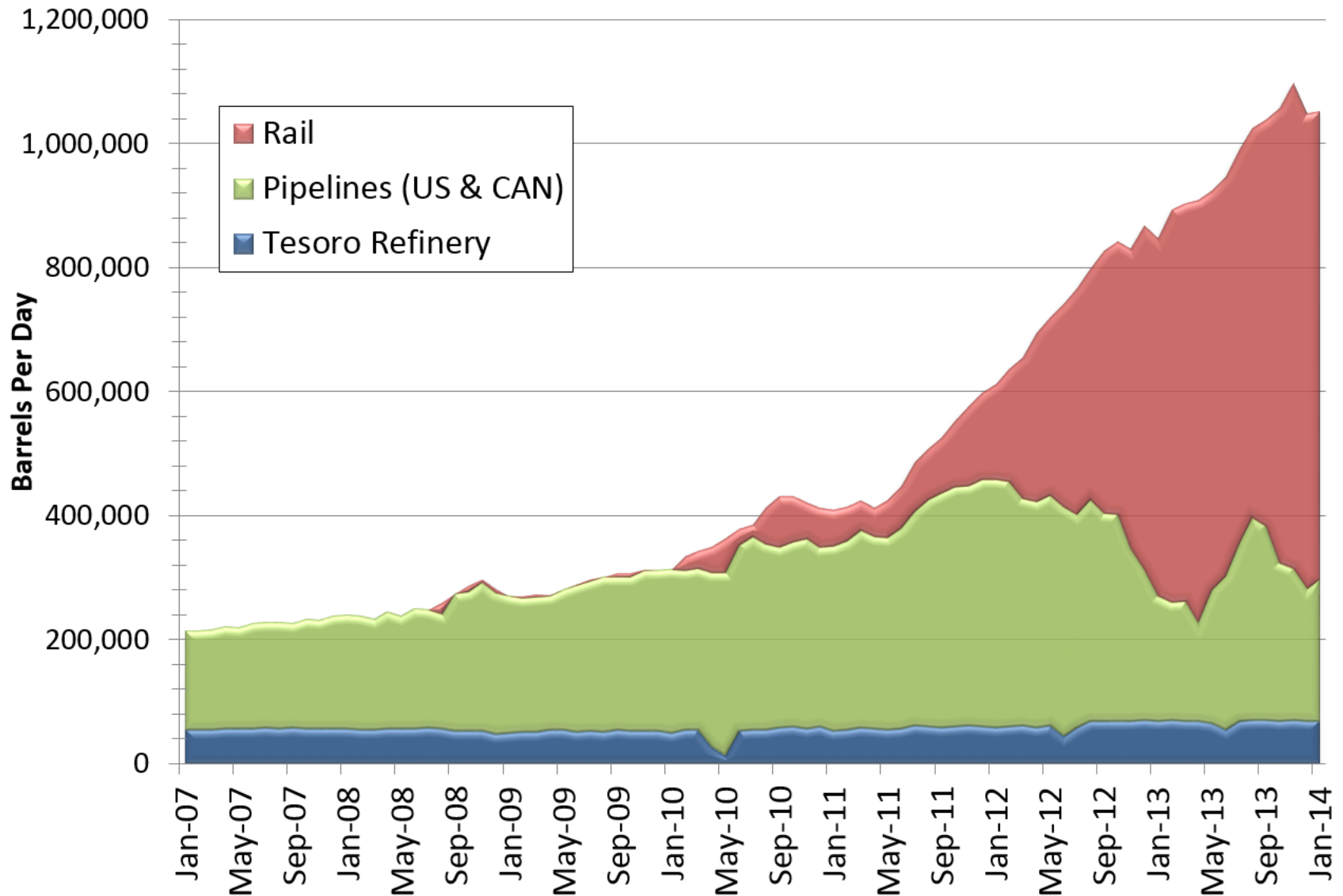
■ Estimated Rail



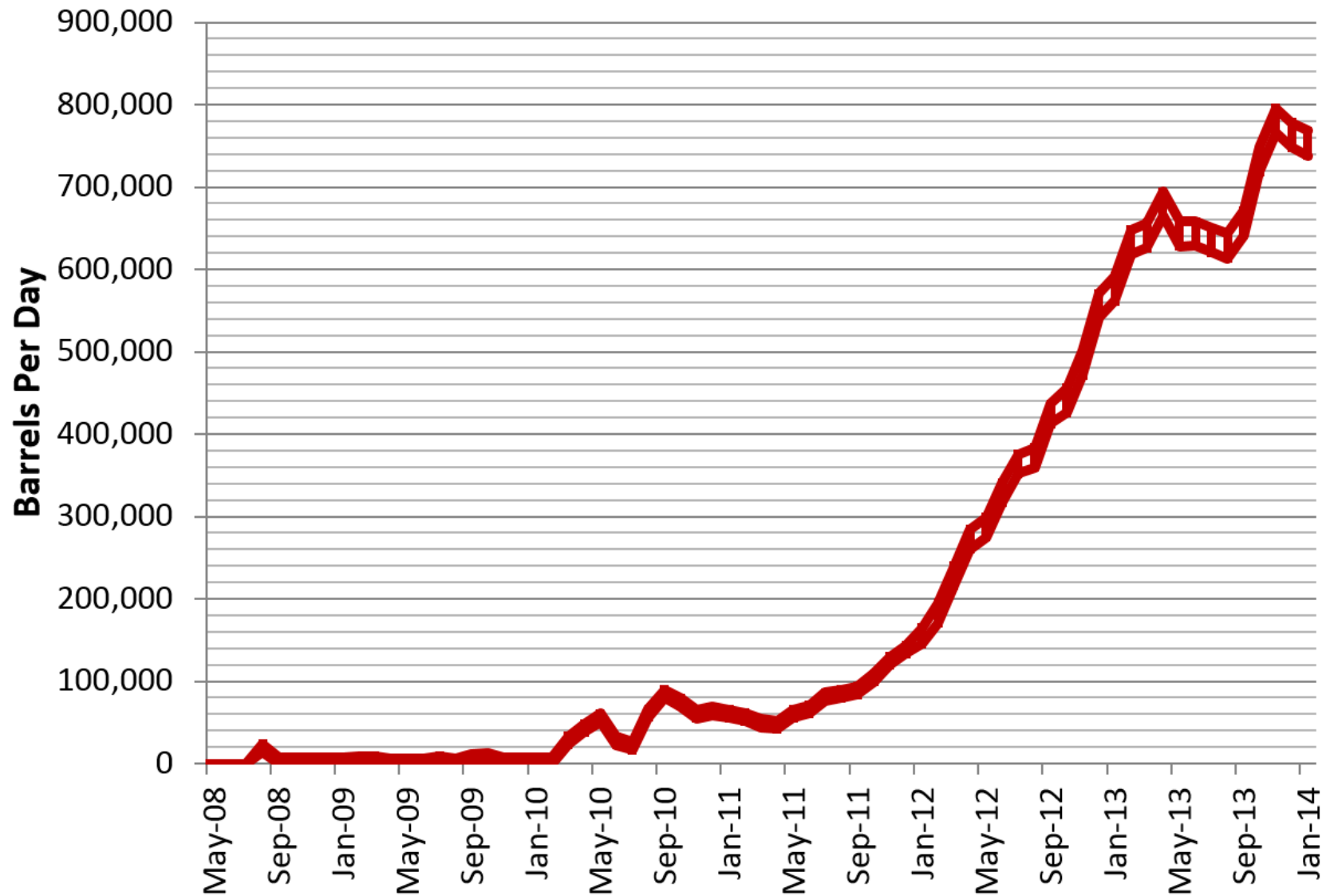
Estimated Williston Basin Oil Transportation



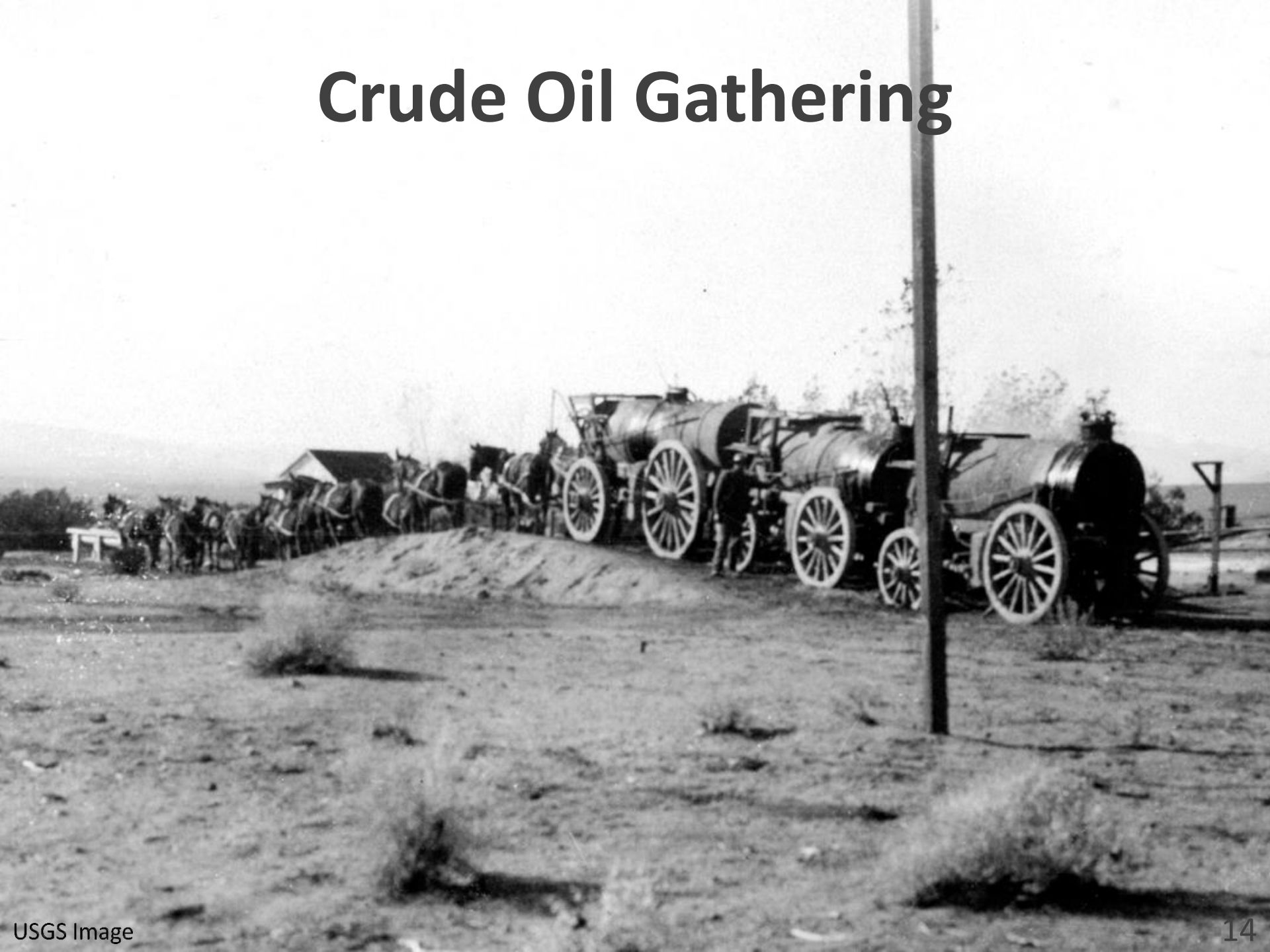
Estimated Williston Basin Oil Transportation



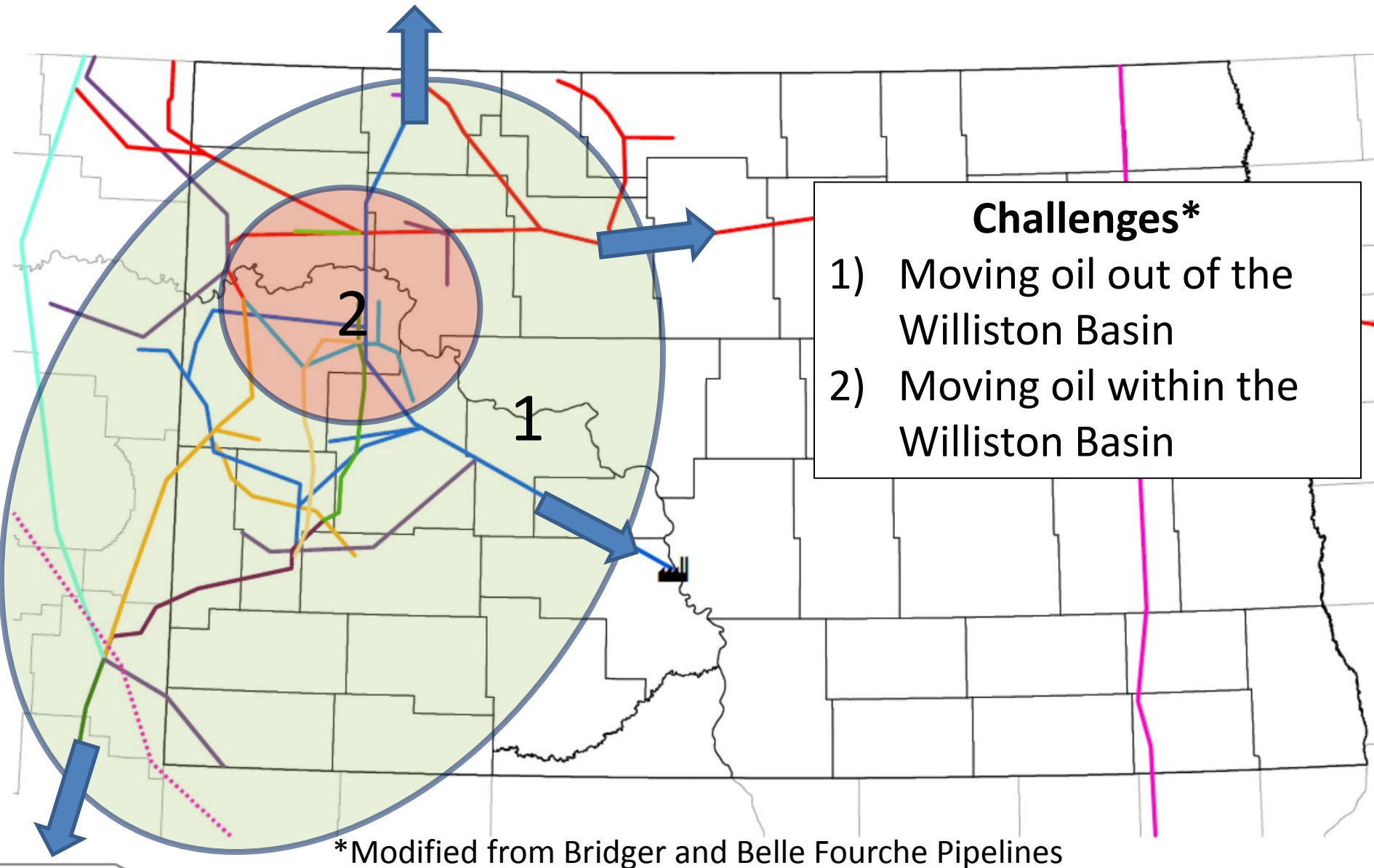
Estimated ND Rail Export Volumes



Crude Oil Gathering

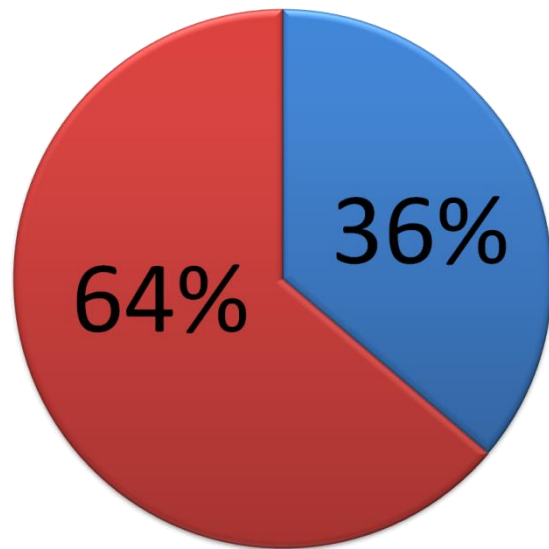


North Dakota Crude Oil Pipelines



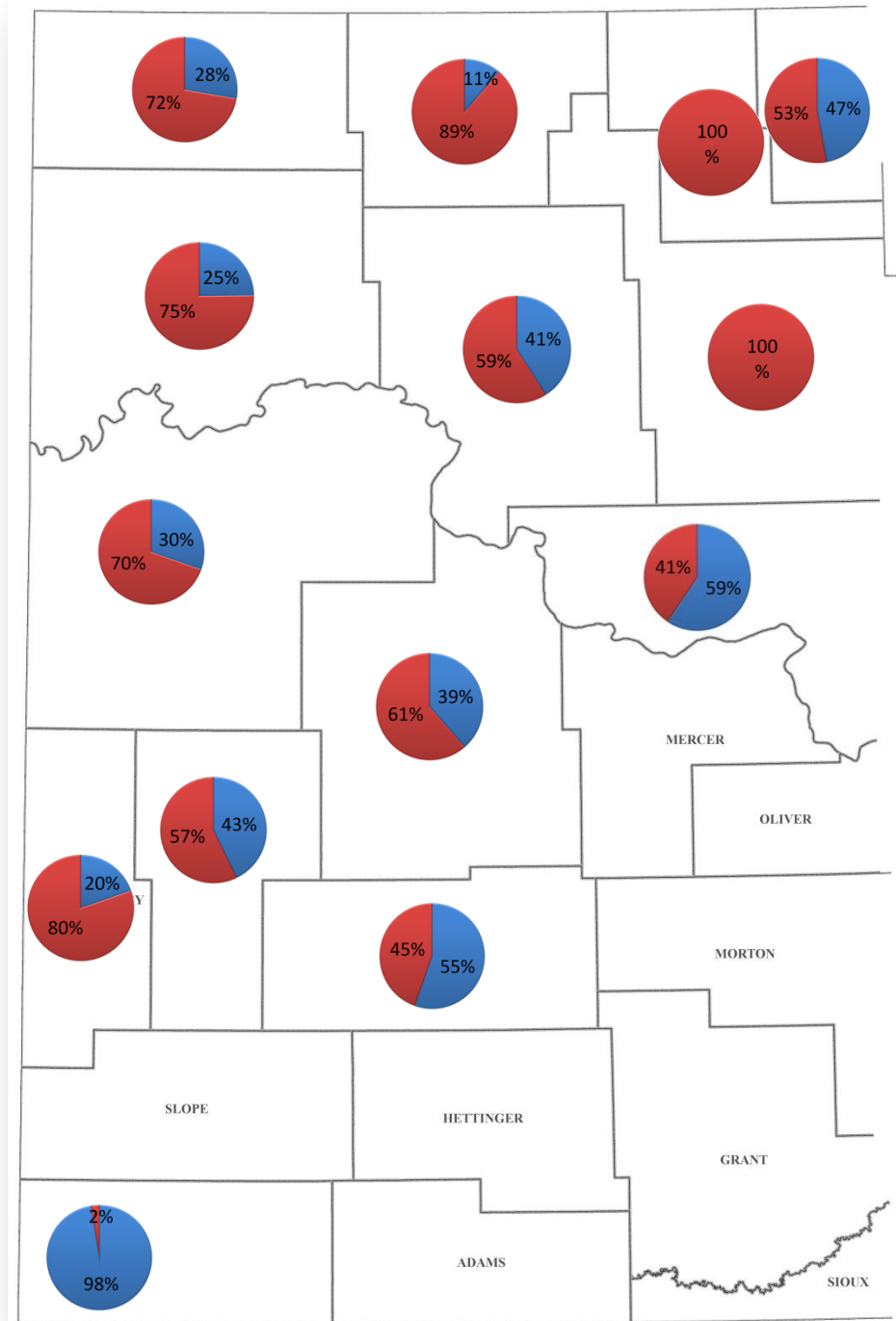
ND Crude Oil Gathering

Red – Trucked
Blue – Pipeline



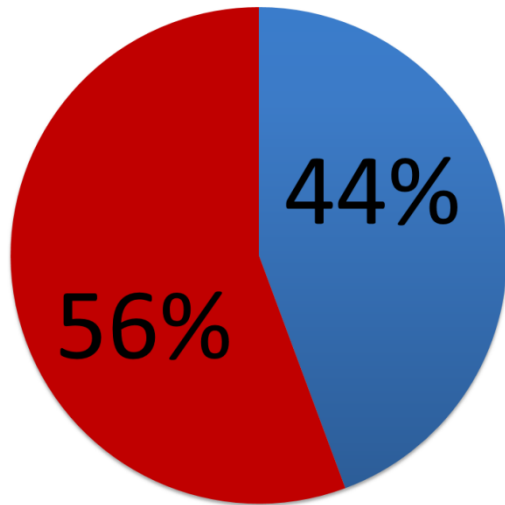
All ND Production

Sep 2012 Estimates – Some data incomplete or unavailable



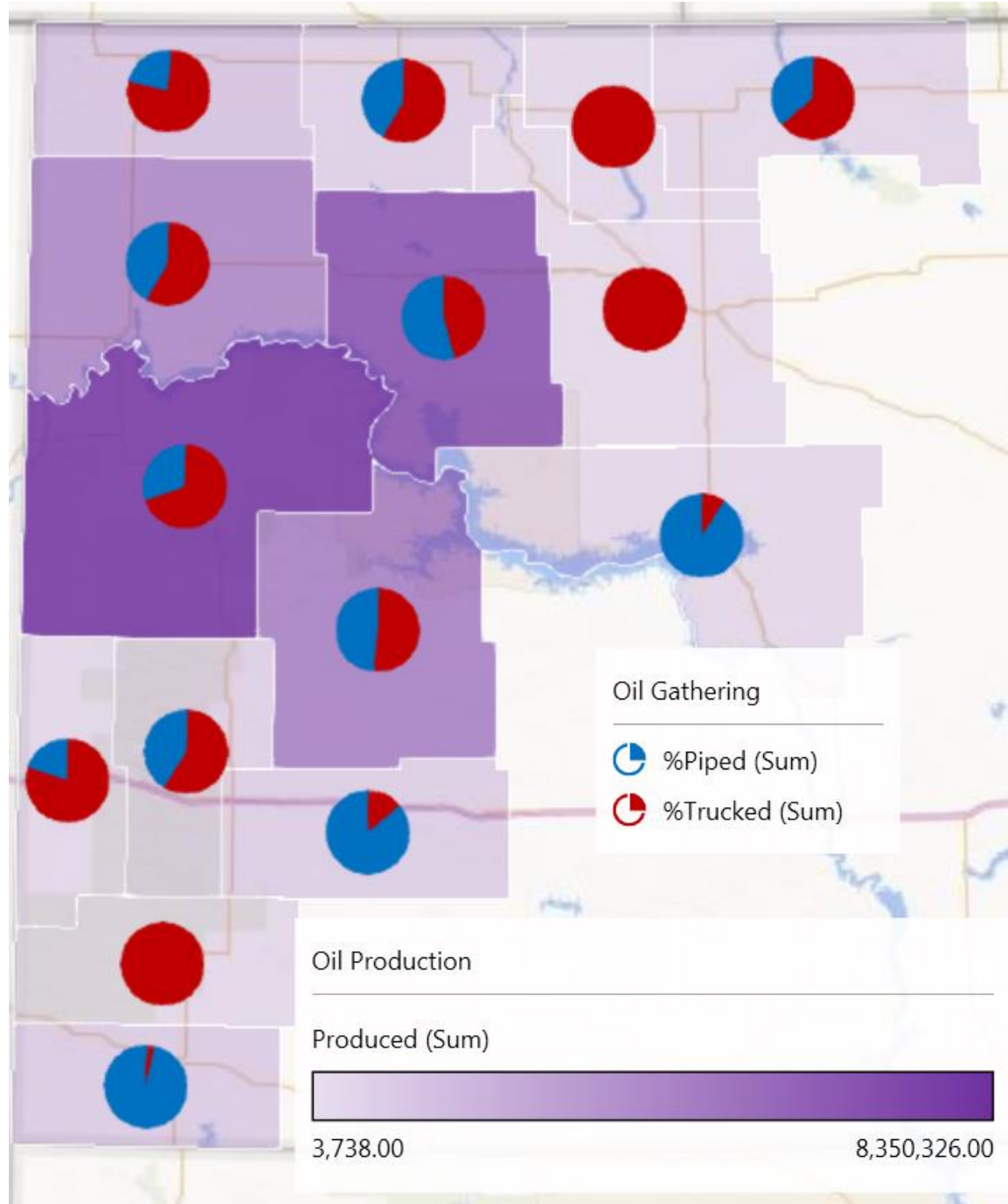
ND Oil Gathering

Red – Trucked
Blue – Pipeline



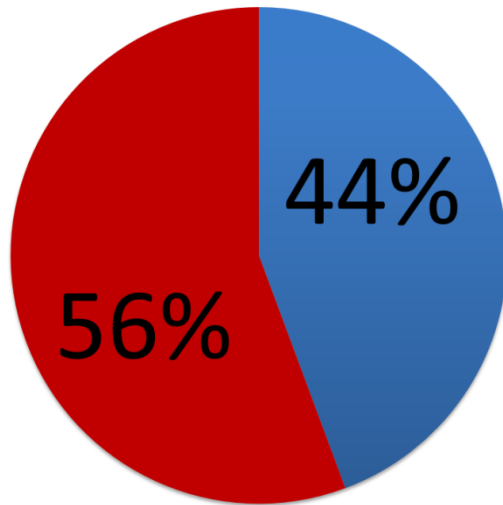
All ND Production

Sep 2013 Estimates
Some data incomplete or unavailable



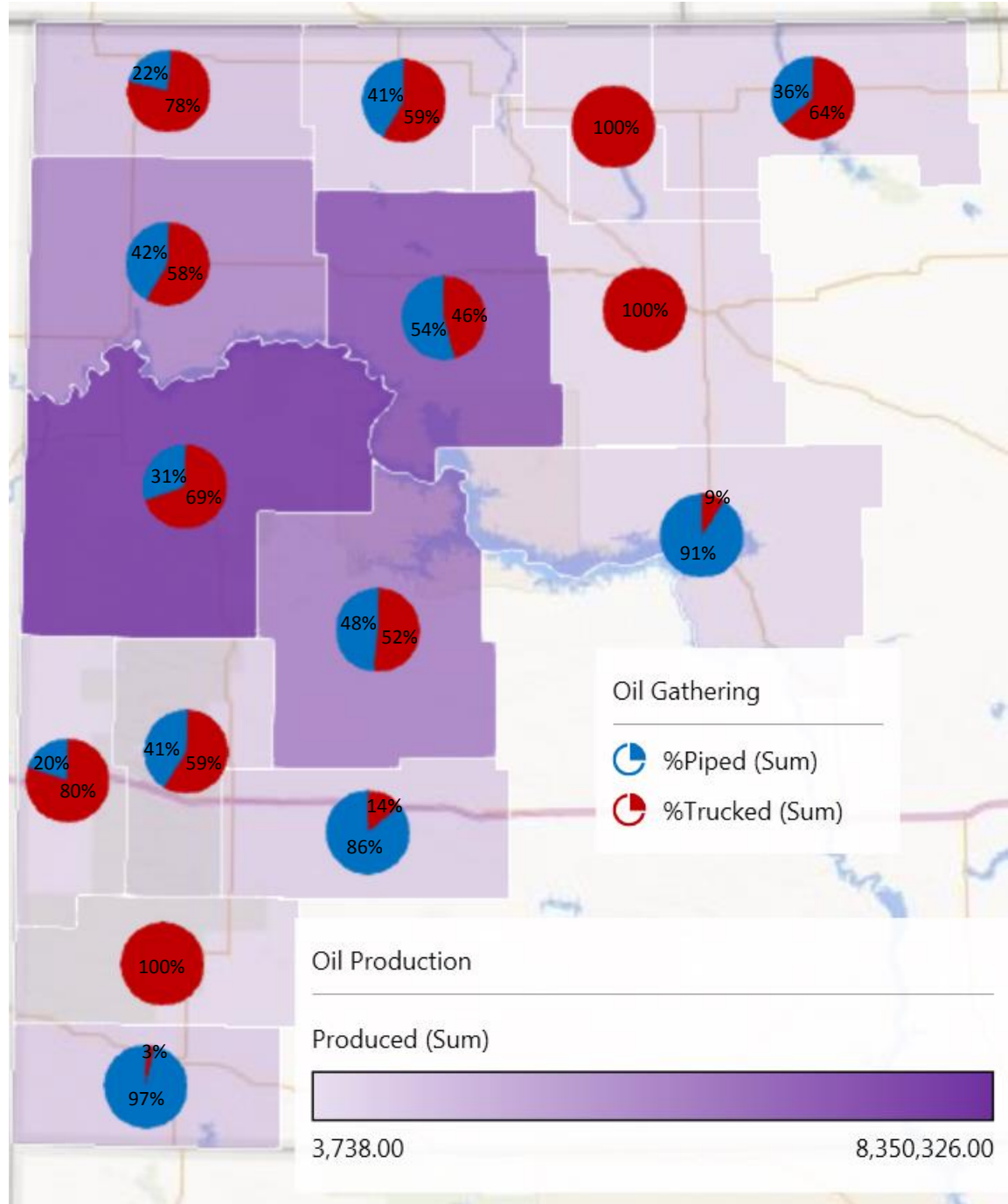
ND Oil Gathering

Red – Trucked
Blue – Pipeline

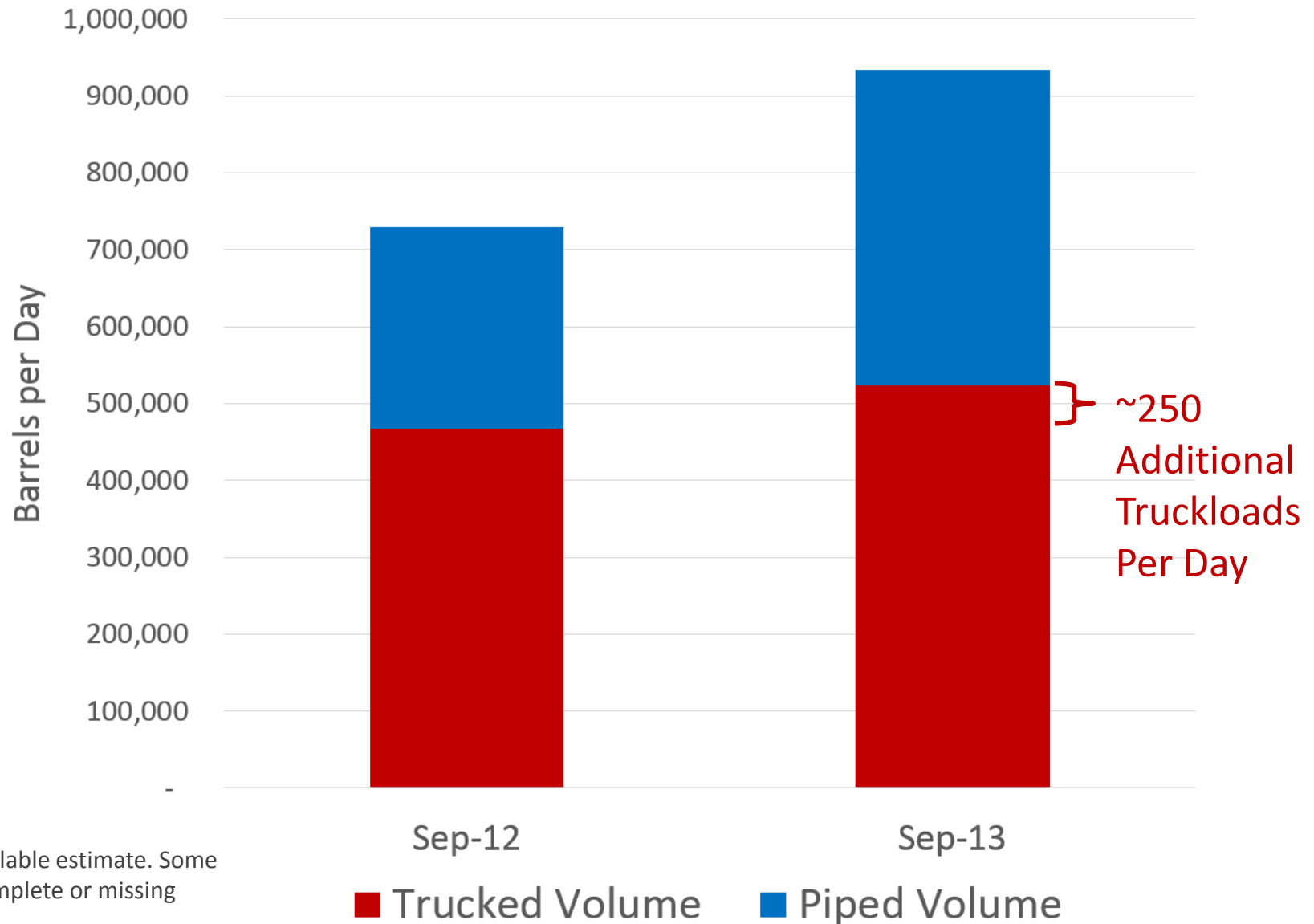


All ND Production

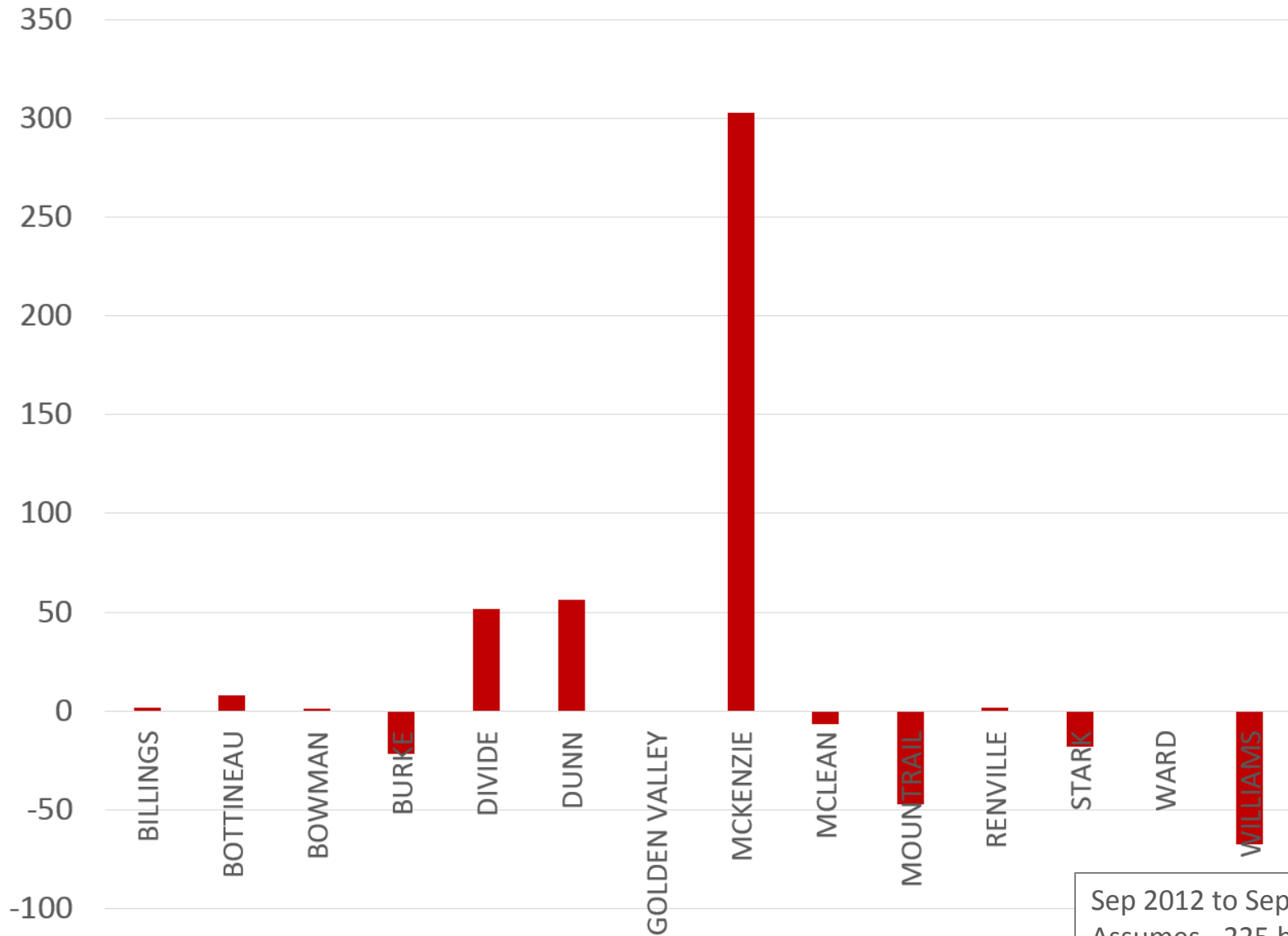
Sep 2013 Estimates
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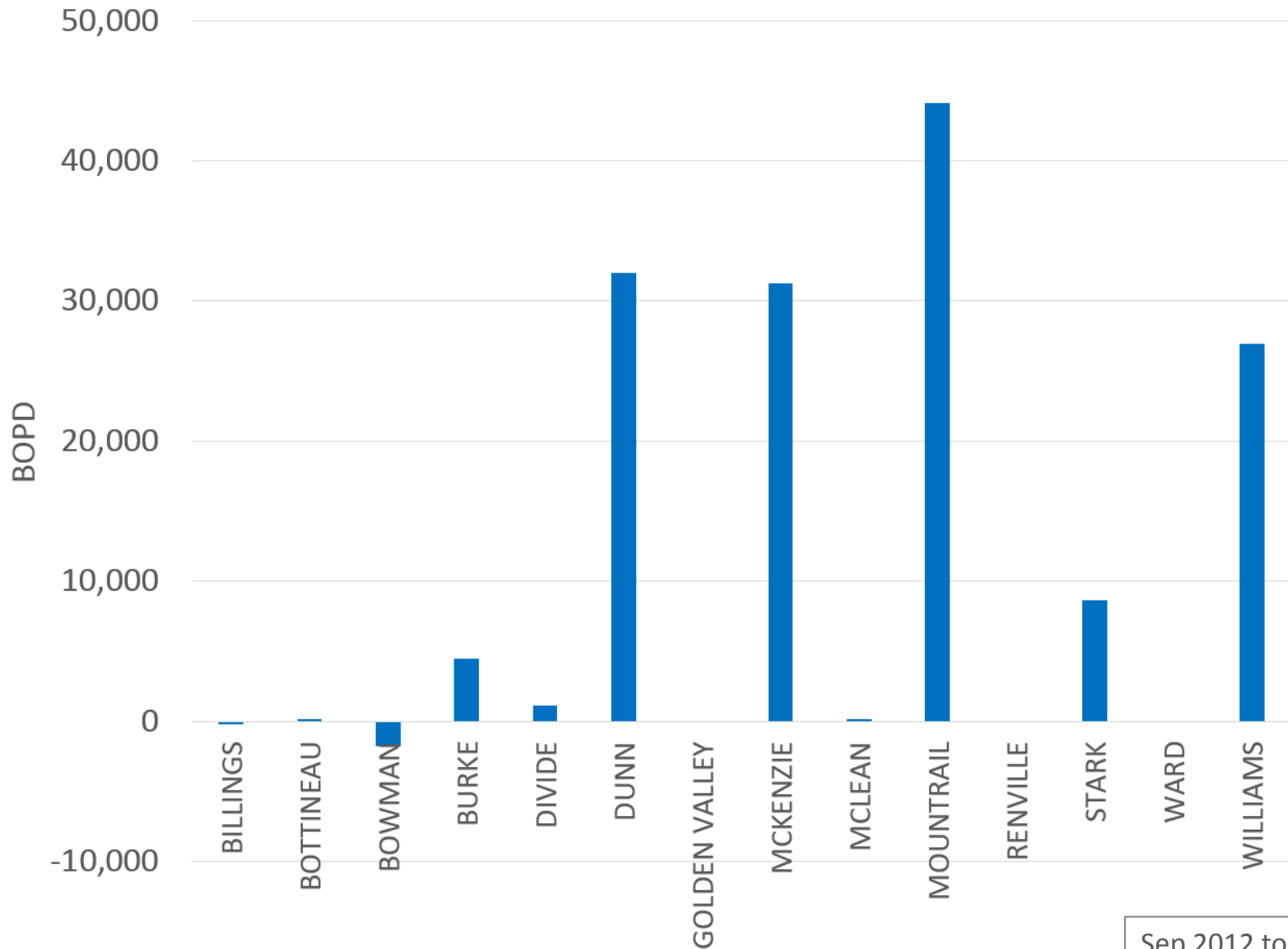
Year-Over-Year Oil Gathering Changes*



Estimated YOY Daily Truckload Change



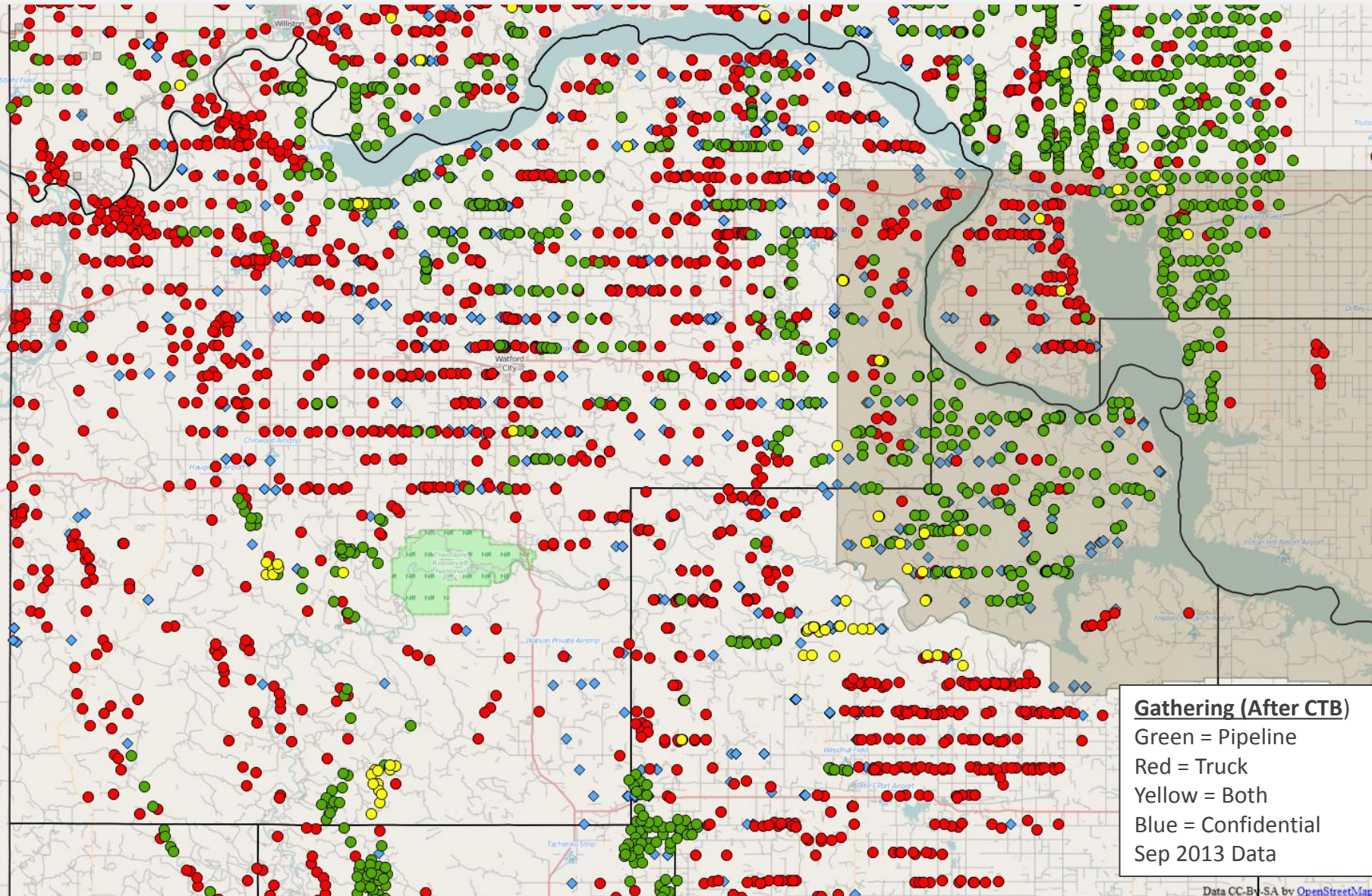
Estimated YOY Oil Gathering Change



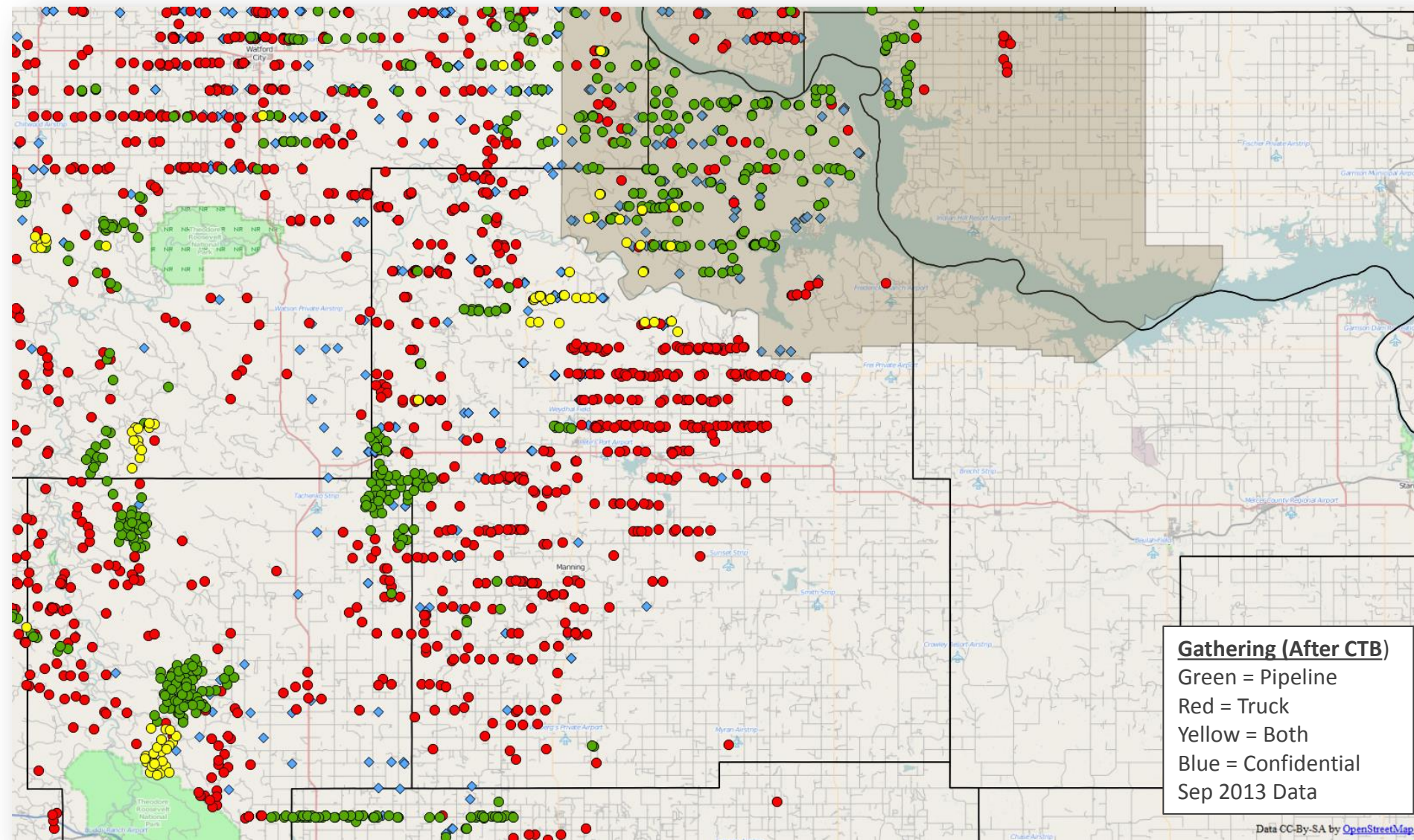
Sep 2012 to Sep 2013



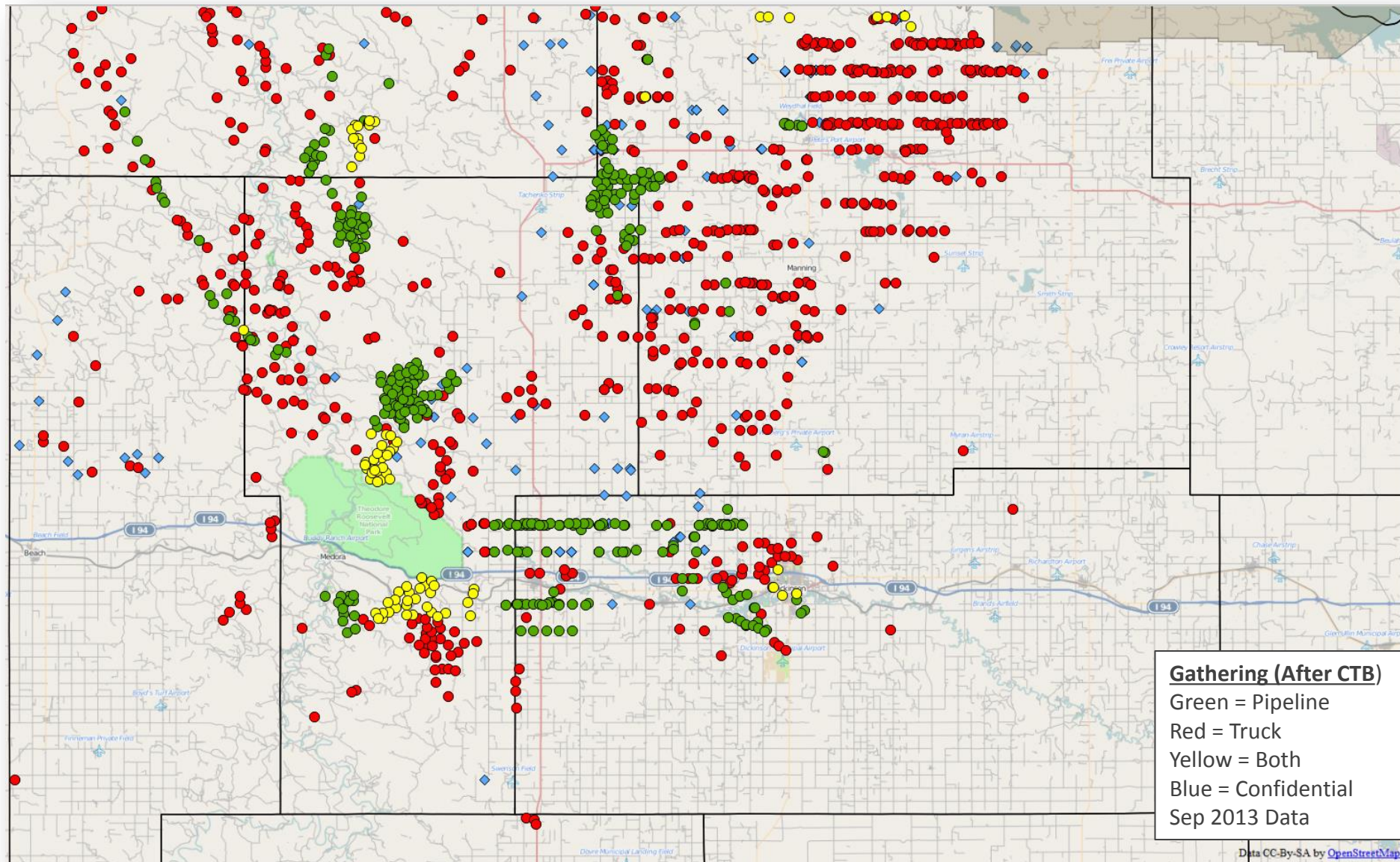
Closer Look at Gathering Type



Closer Look at Gathering Type



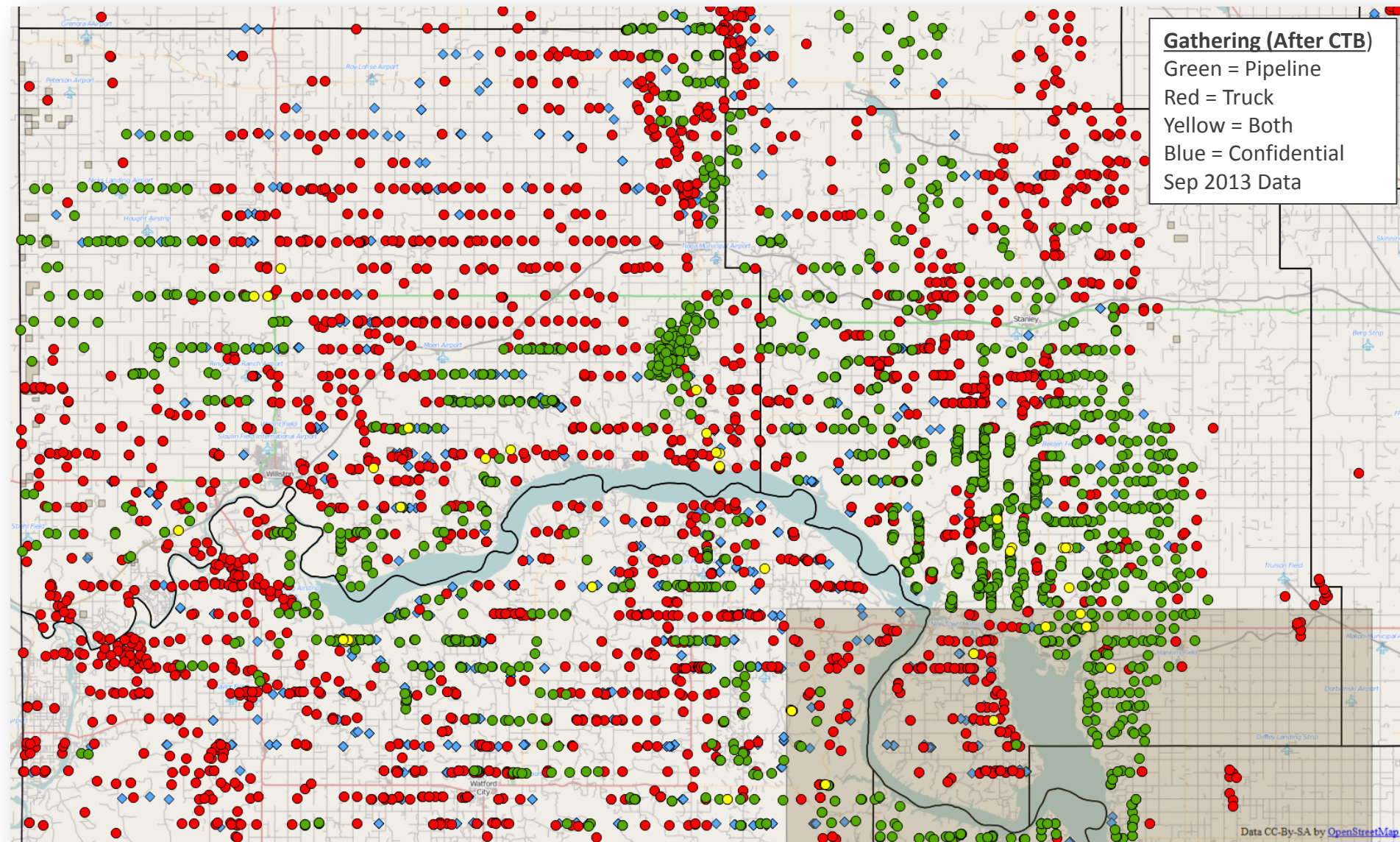
Closer Look at Gathering Type



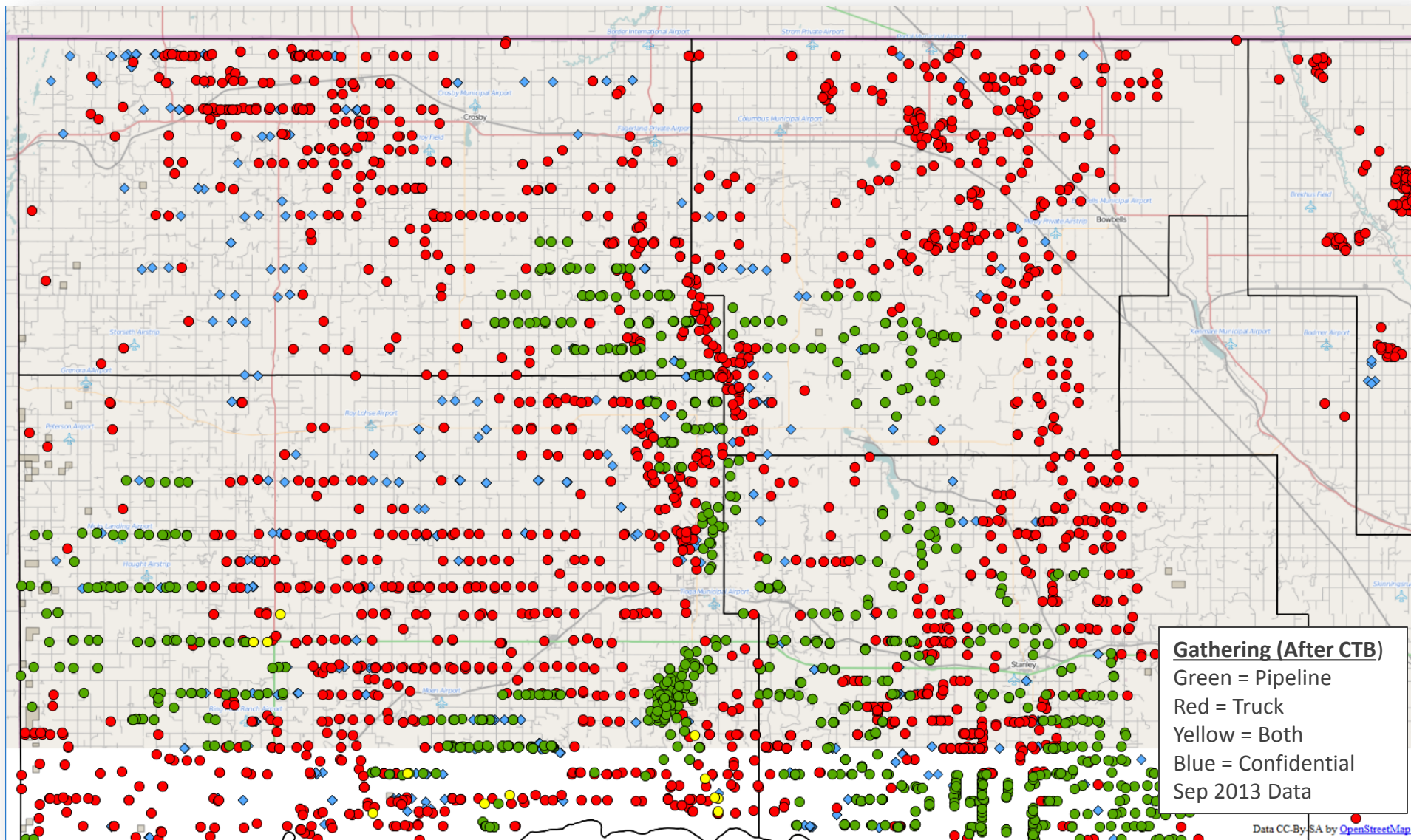
Data CC-BY-SA by [OpenStreetMap](#)

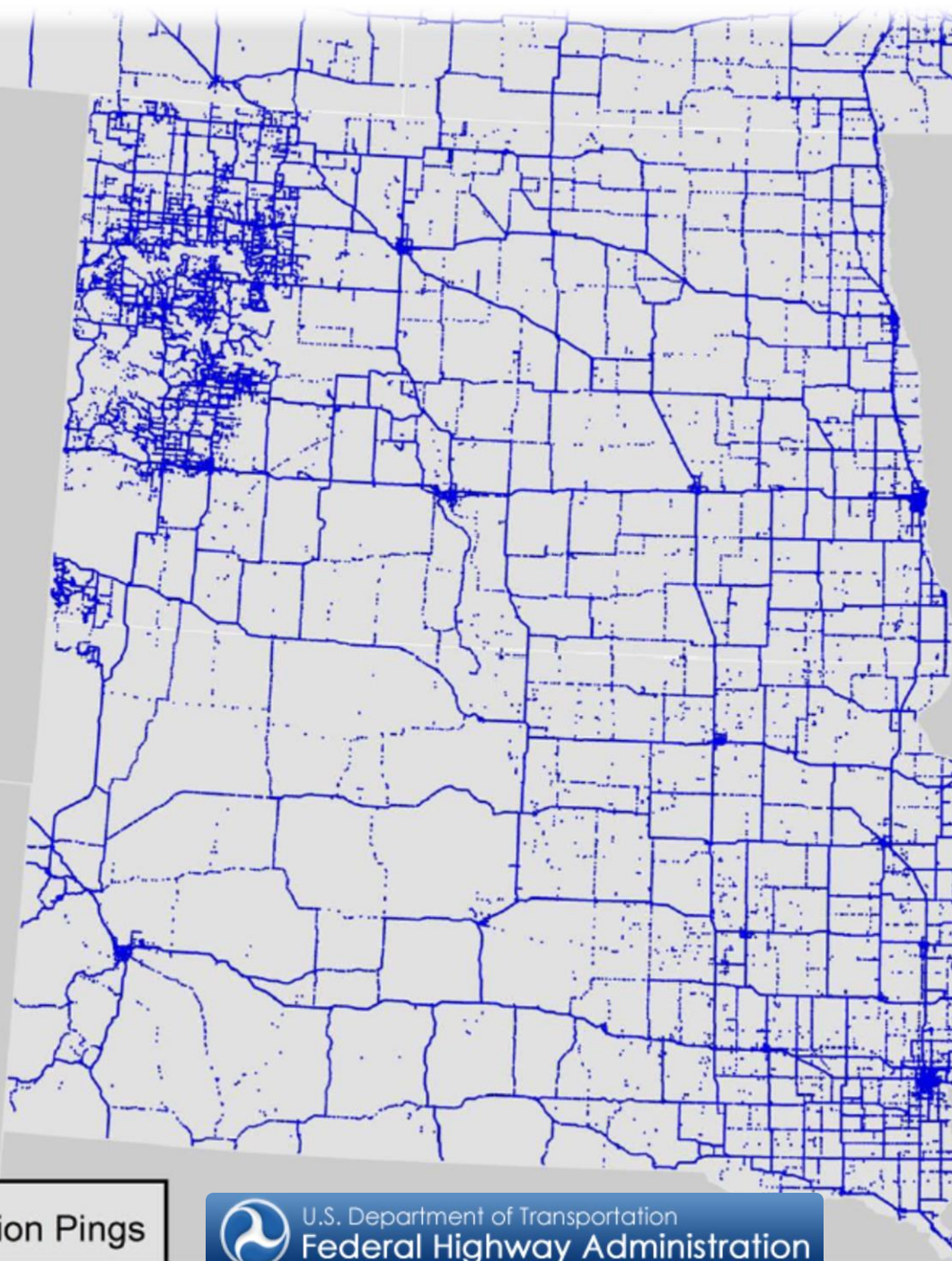


Closer Look at Gathering Type



Closer Look at Gathering Type

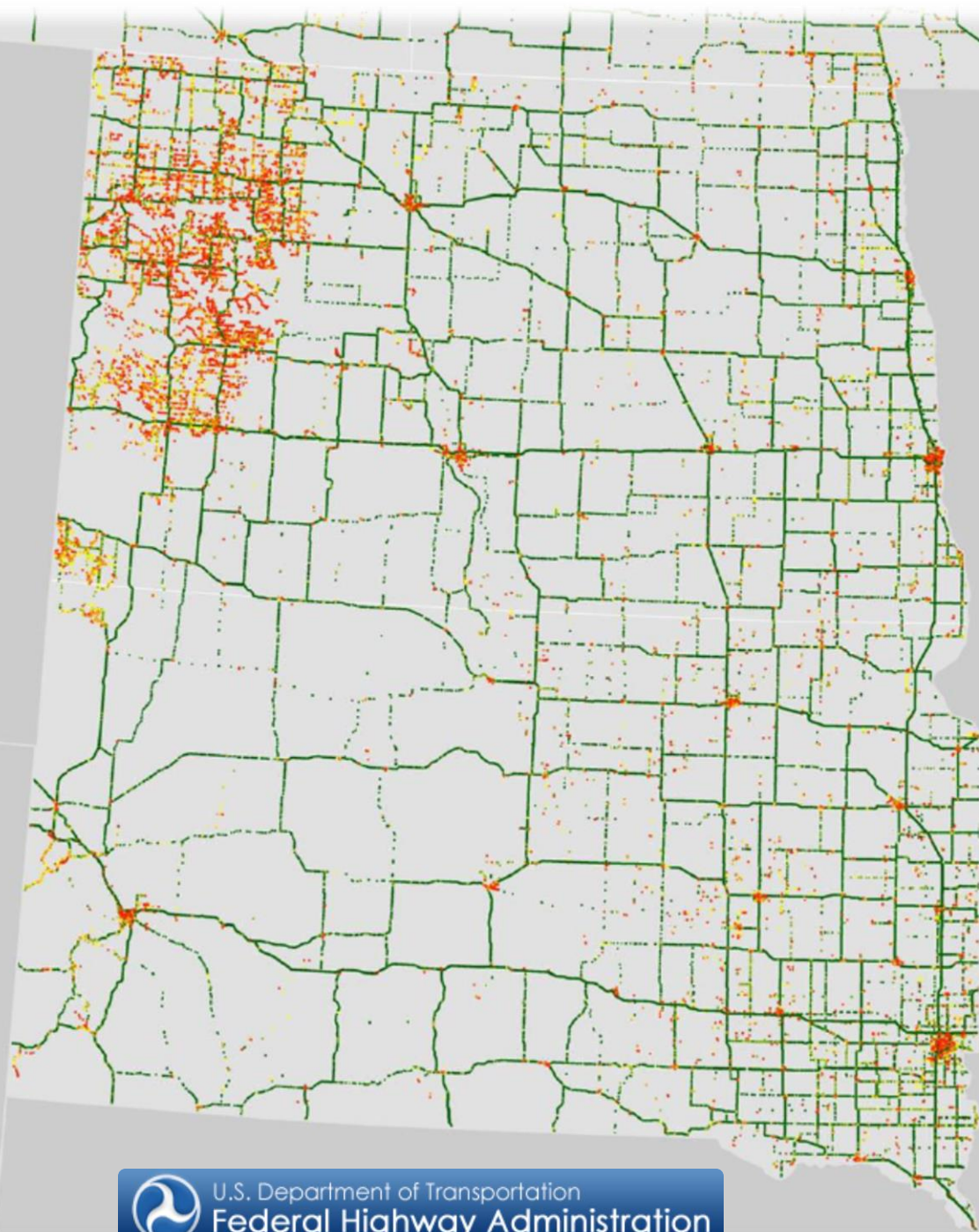




- Truck Position Pings



U.S. Department of Transportation
Federal Highway Administration



Moving Truck Position Pings
Speed - MPH

- 1 - 25
- 26 - 35
- 36 - 45
- 46 - 55
- > 55



U.S. Department of Transportation
Federal Highway Administration

Crude Oil

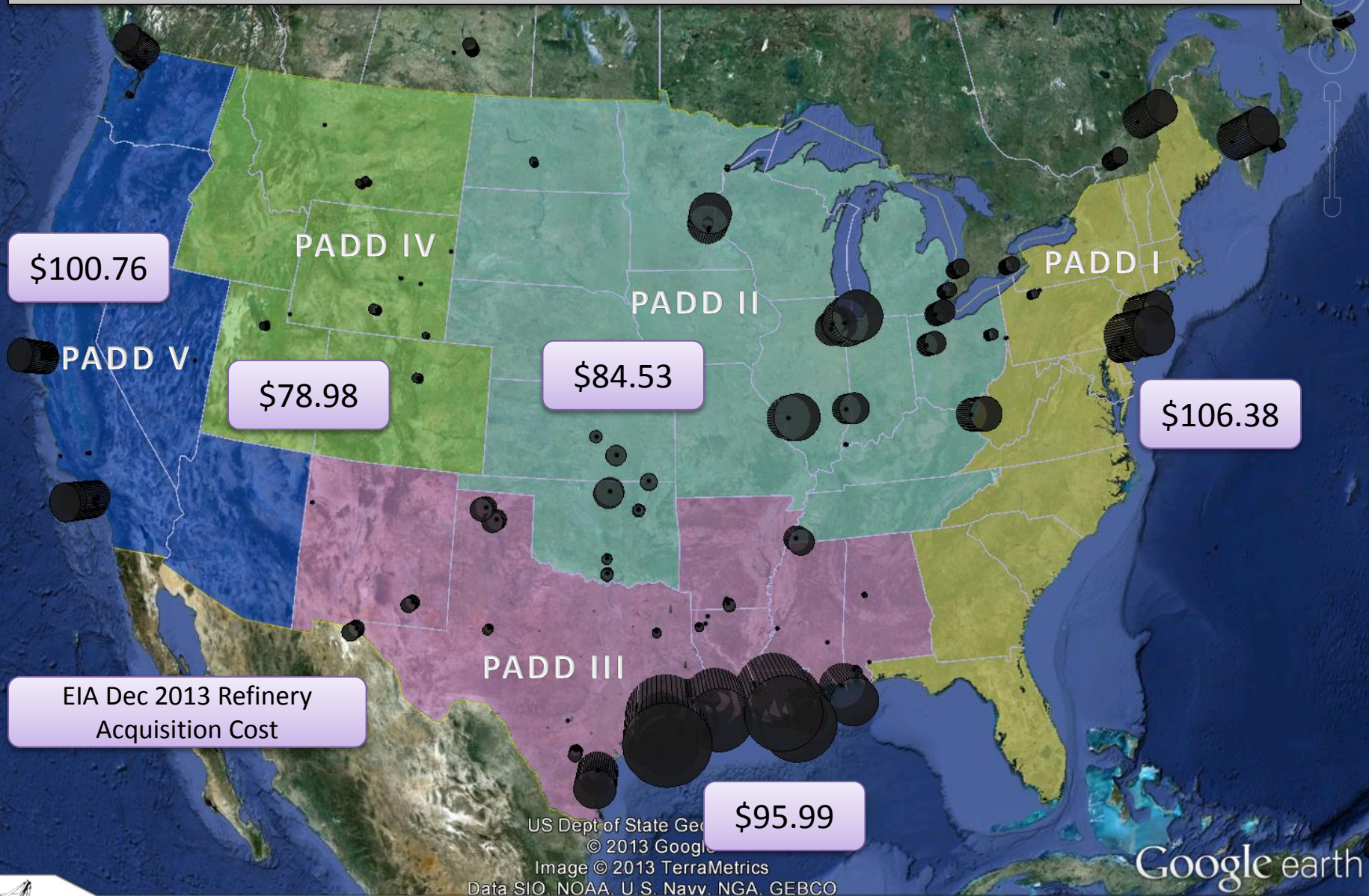
Understanding production potential

Understanding current transportation dynamics and potential transportation constraints

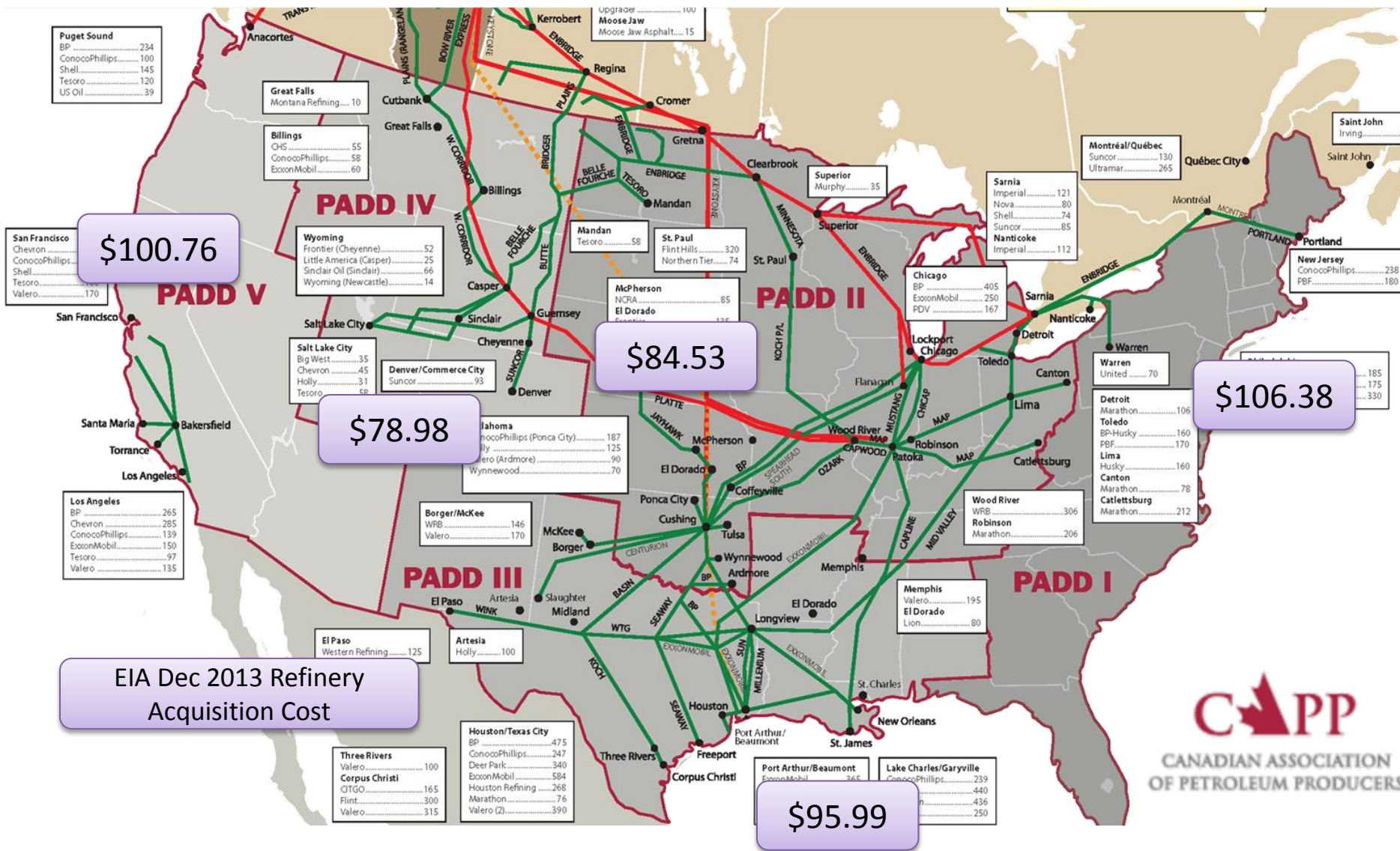
Understanding current and future market conditions



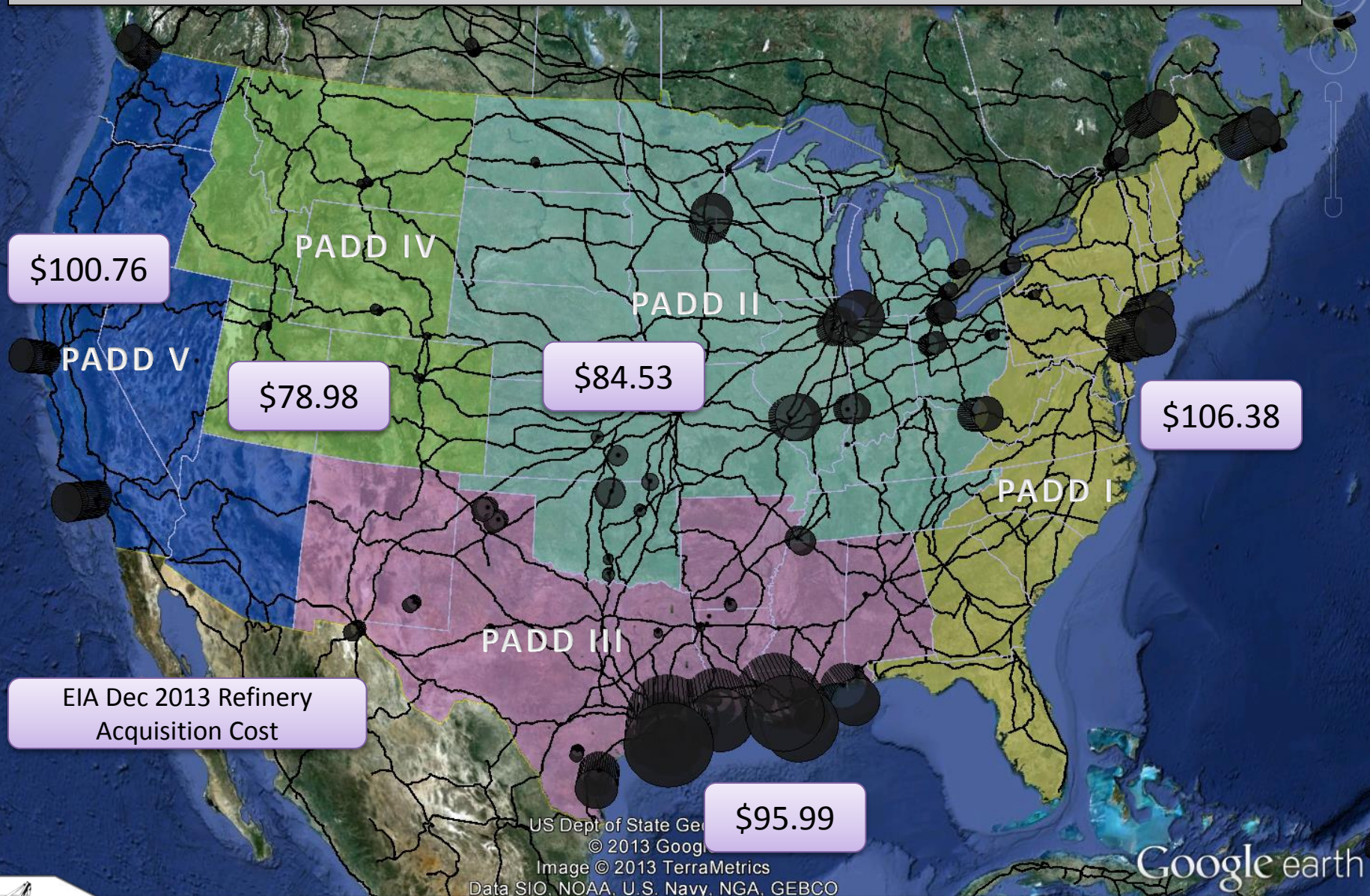
US Refining Infrastructure



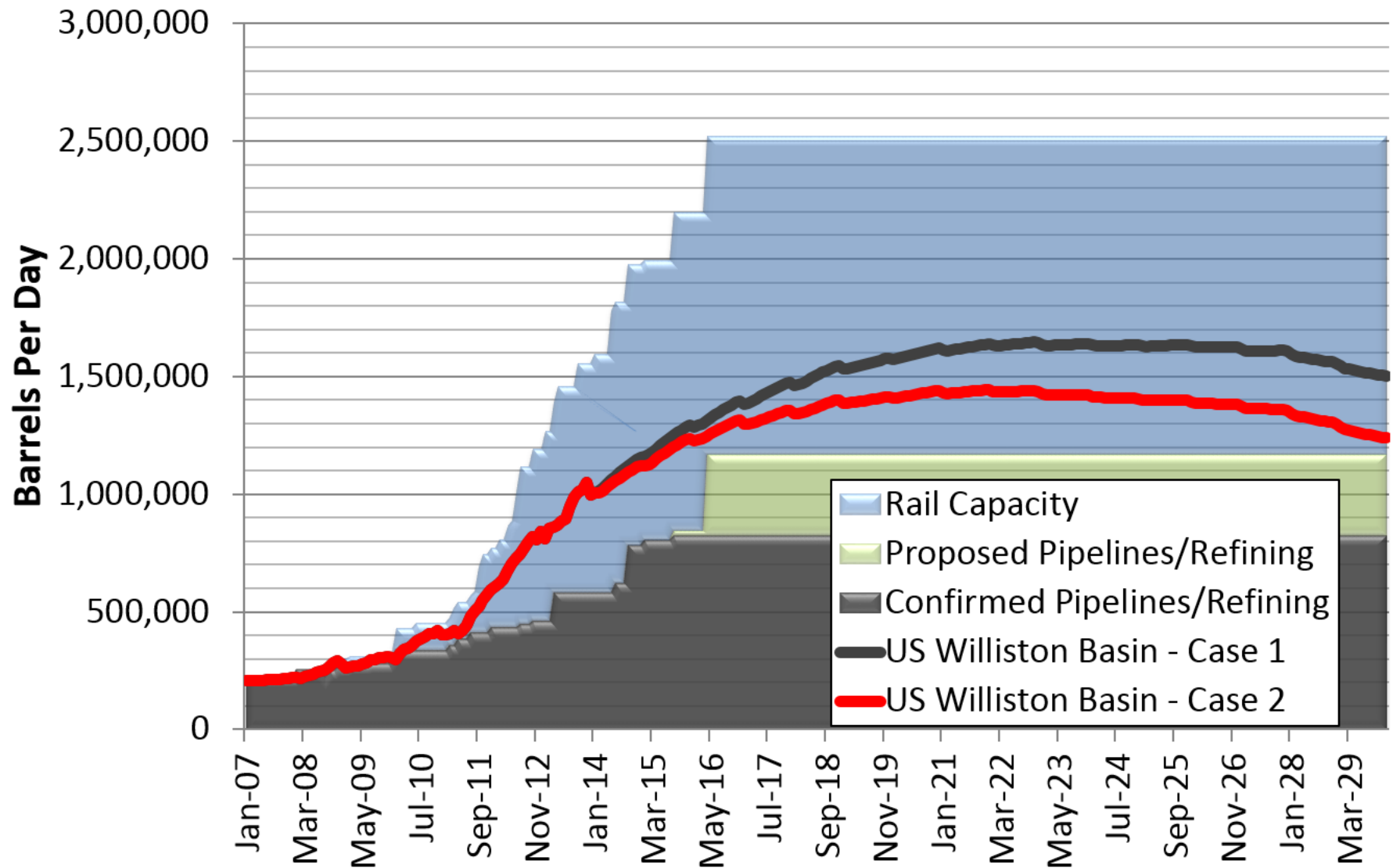
Major Pipelines and Refining Centers



Major Rail Lines and Refineries



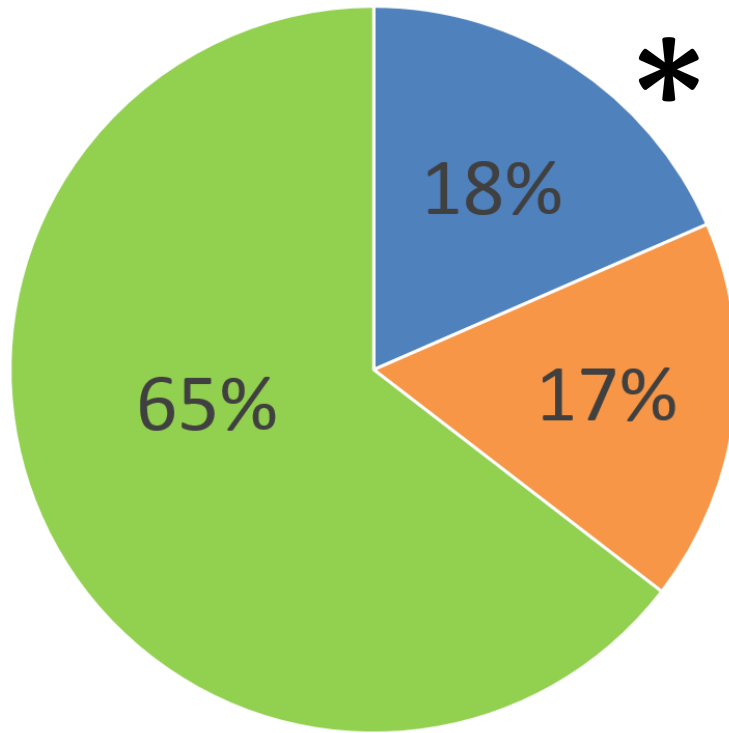
Williston Basin Oil Production & Export Capacity, BOPD



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Solving the Flaring Challenge



Statewide

GREEN – % of gas captured and sold
Blue – % flared from zero sales wells
Orange – % flared from wells with at least one mcf sold.

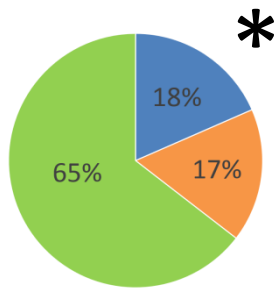
Simple Terms

Blue – Lack of pipelines
Orange – Challenges on existing infrastructure

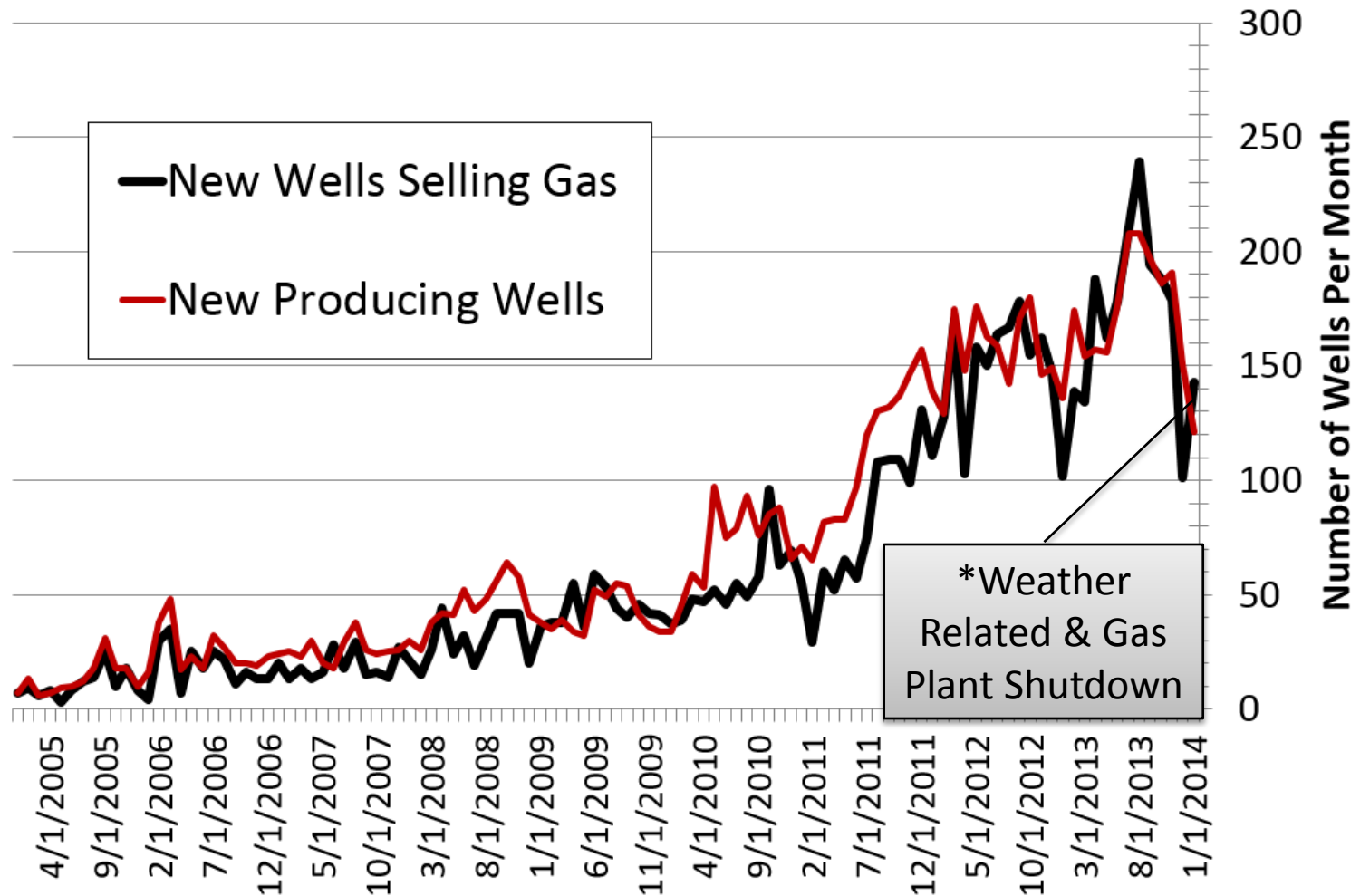
January 2014 Data – Non-Confidential Wells

**Hess Tioga Gas Plant shut-in for 140 MMCFD expansion starting in November*

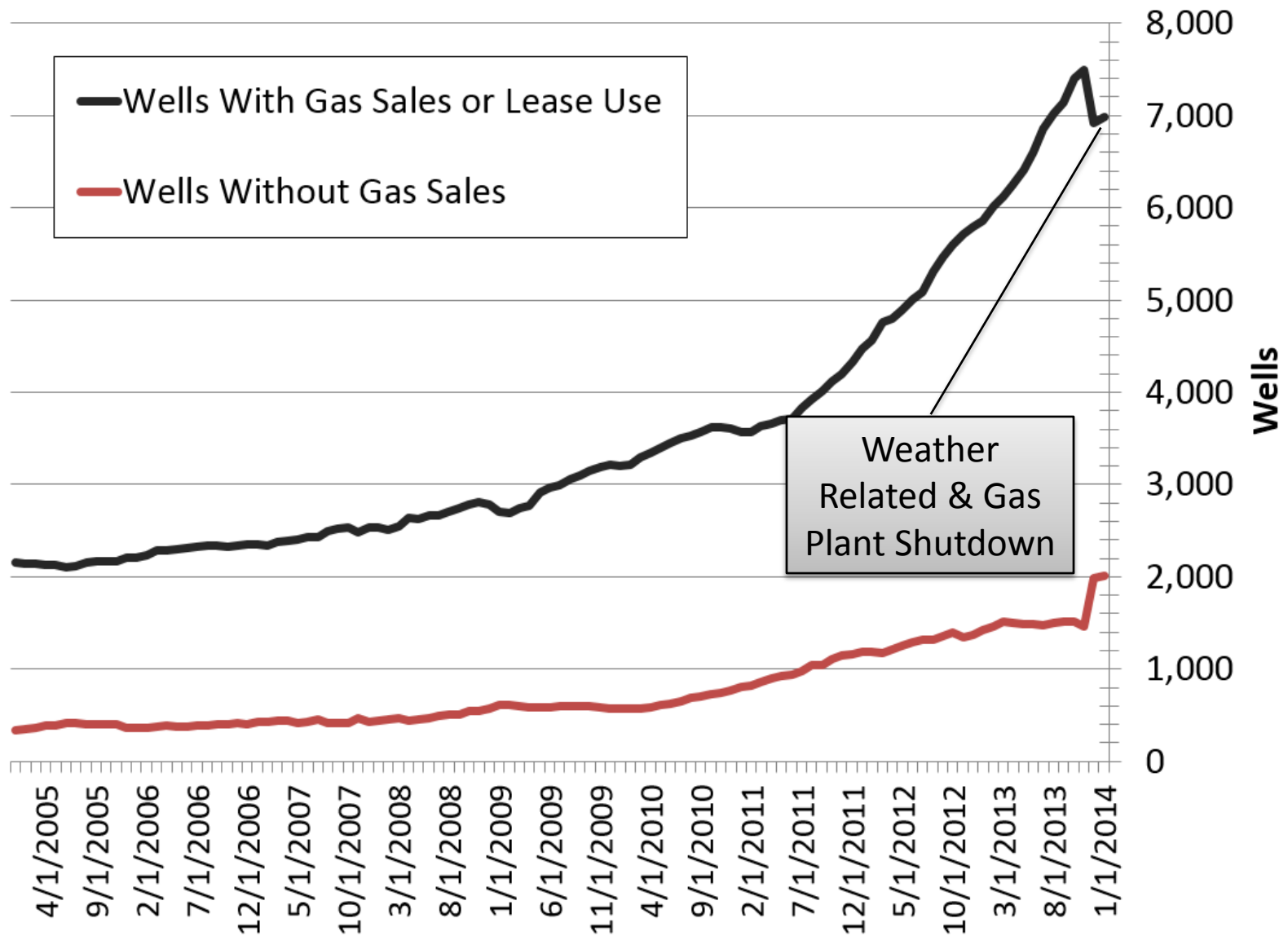




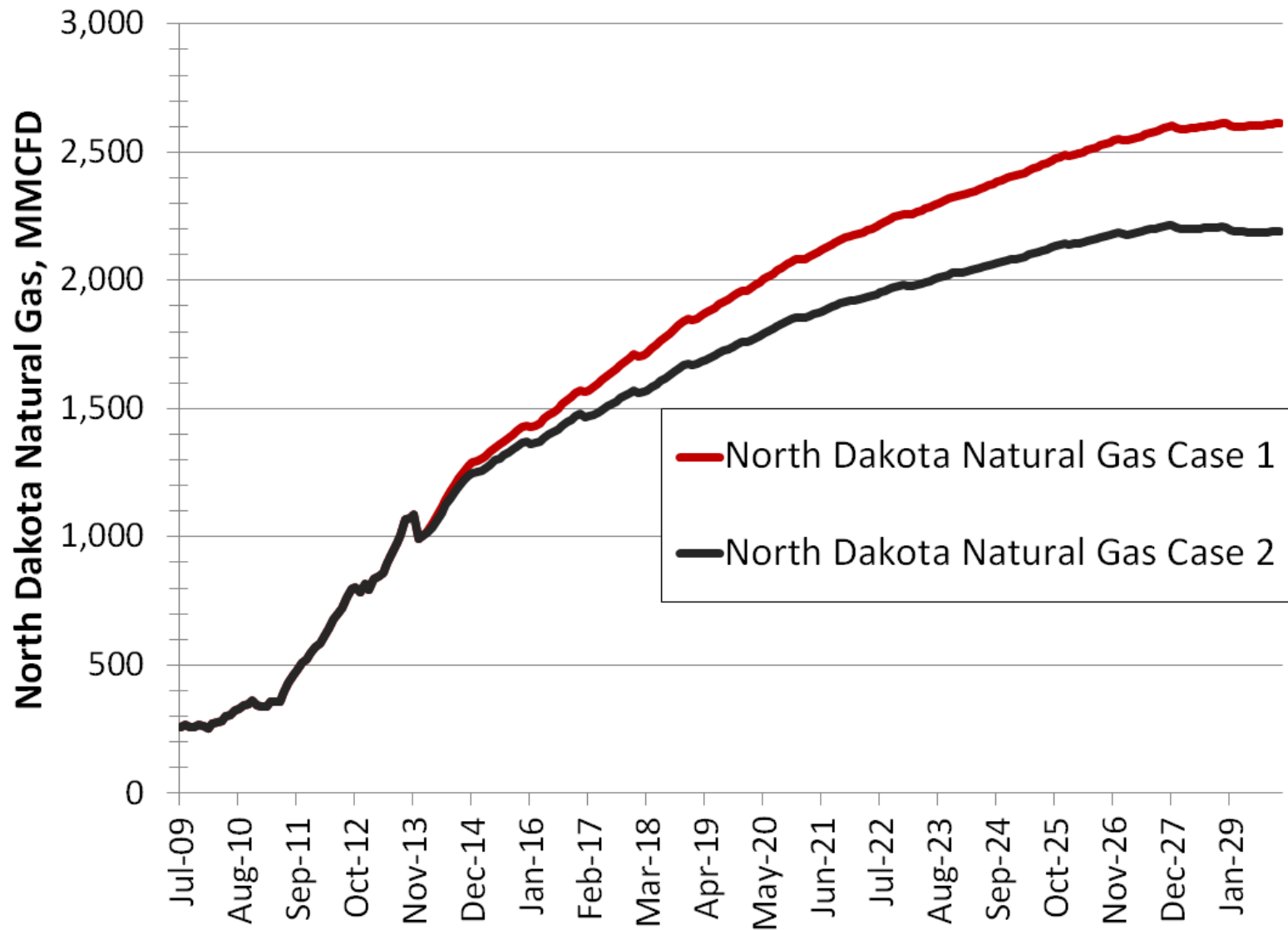
Capturing the 18% Faster Well Connections



ND Gas Gathering Statistics



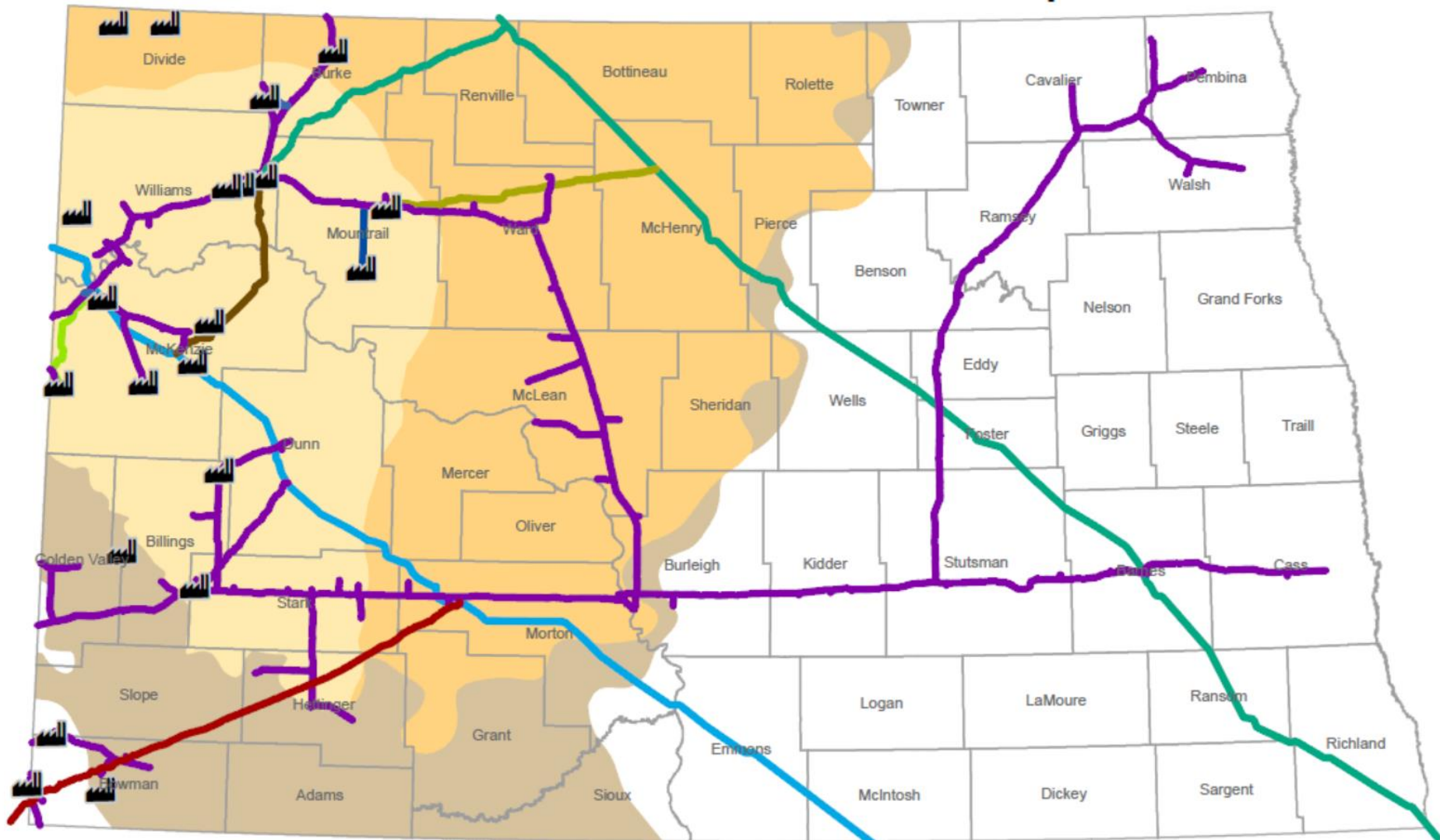
North Dakota Natural Gas Production Forecast



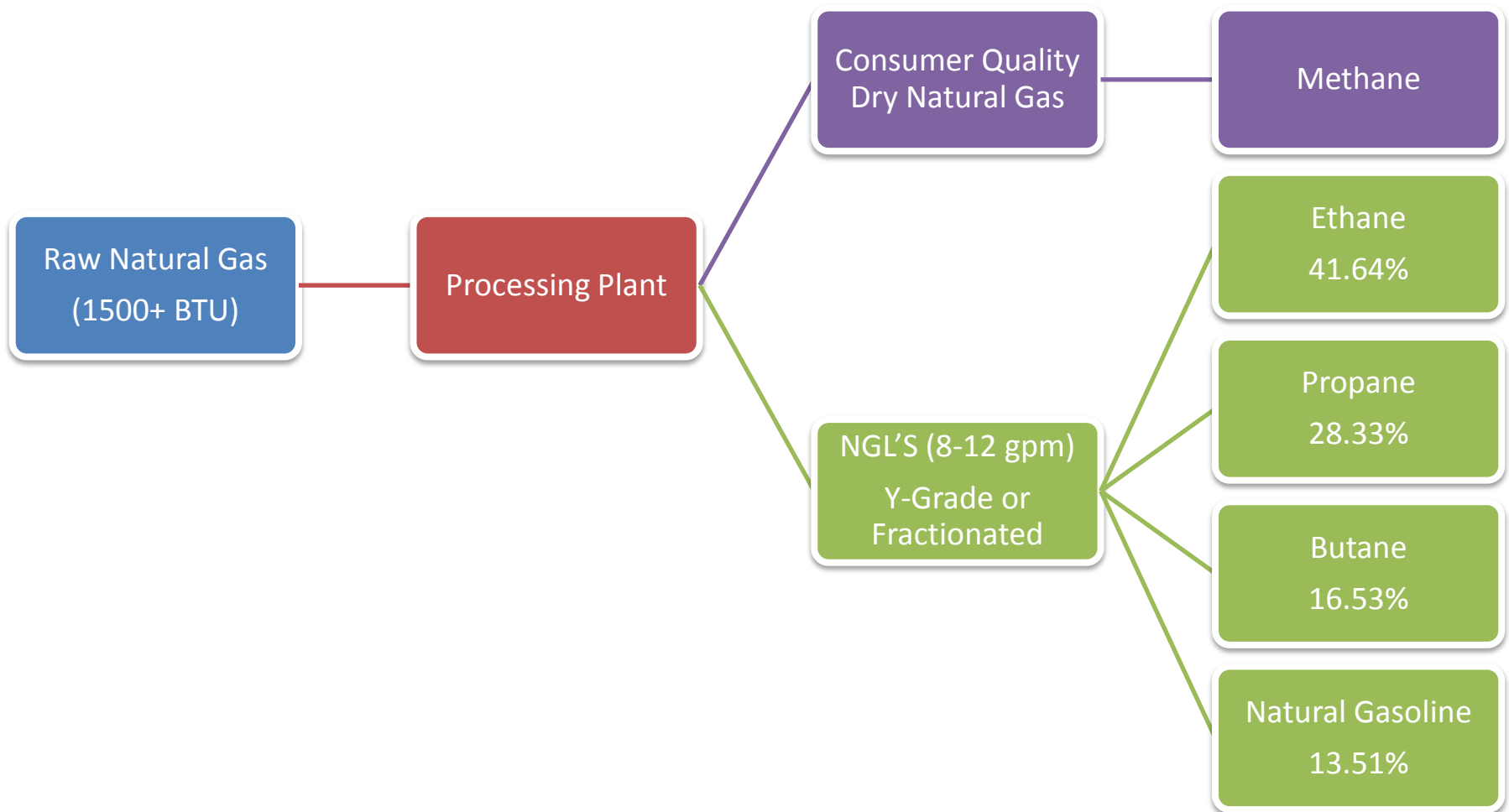
Production forecast is for visual demonstration purposes only and should not be considered accurate for any near or long term planning.



ND Gas Transmission and Processing



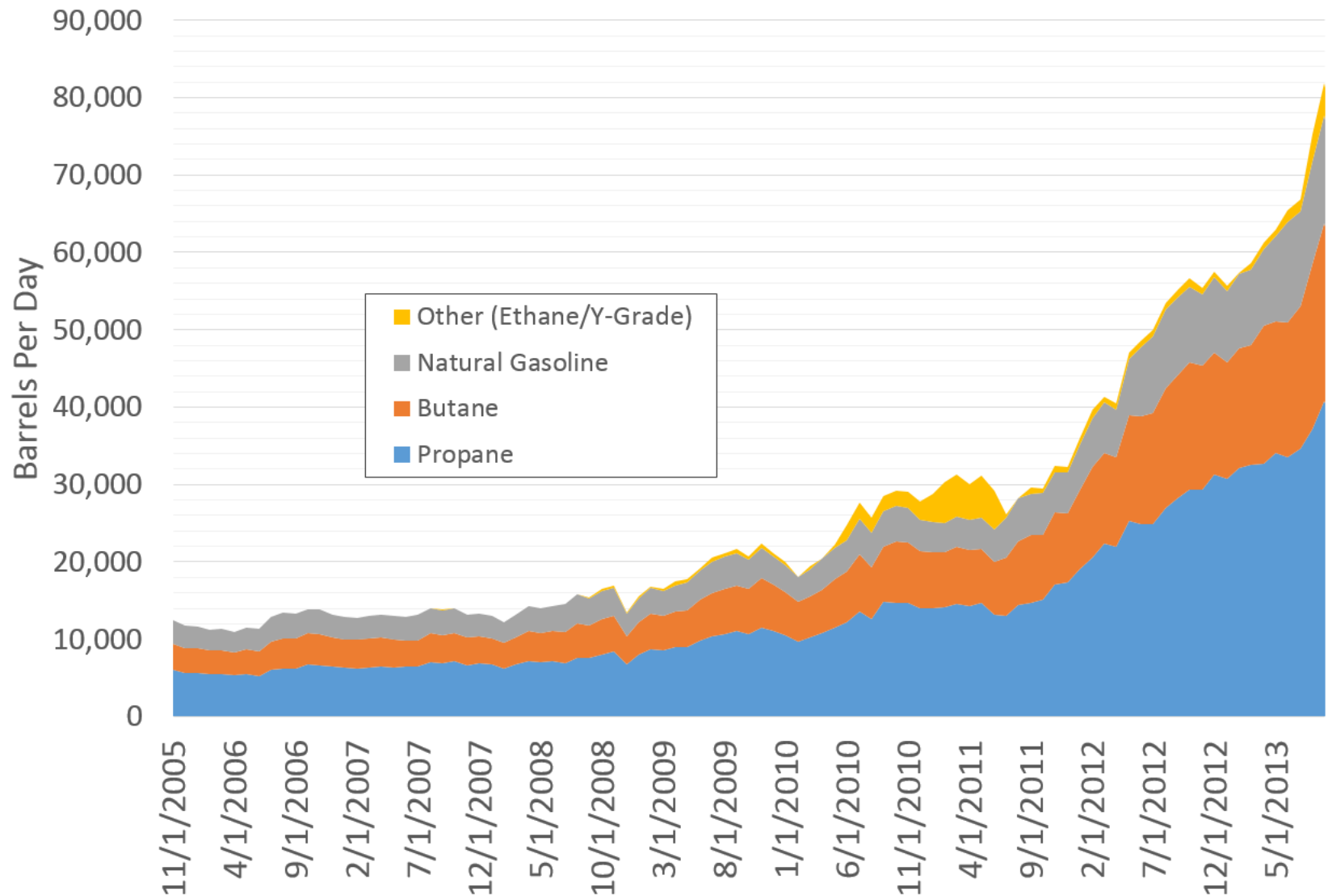
Rich Natural Gas



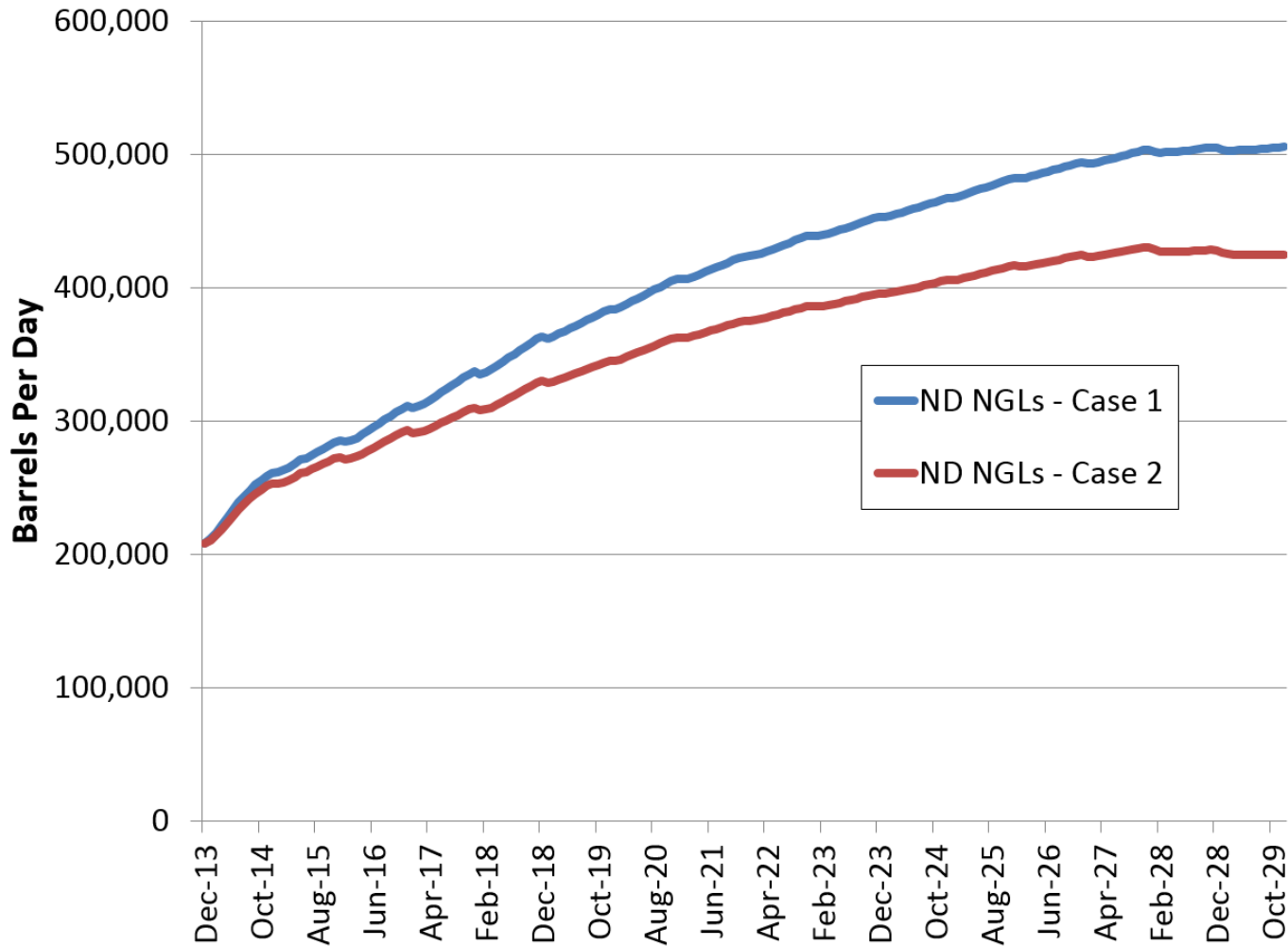
**Using NGL breakdown from the July 2012 BENTEK Natural Gas Study*



ND Gas Plant NGL Production



North Dakota NGL Potential

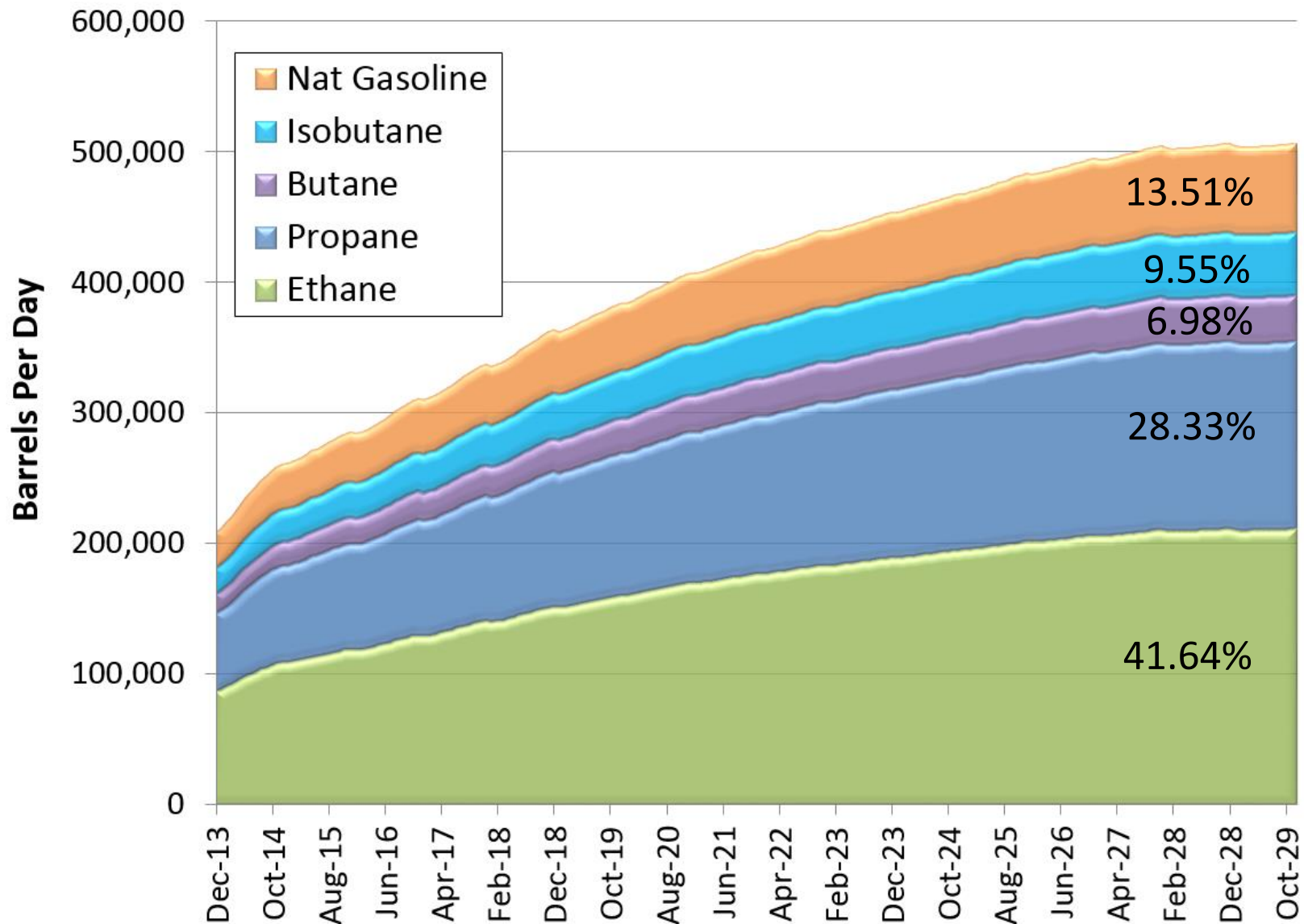


Assumptions

- No Flaring
- 8 Gal/MCF
- All liquids extracted



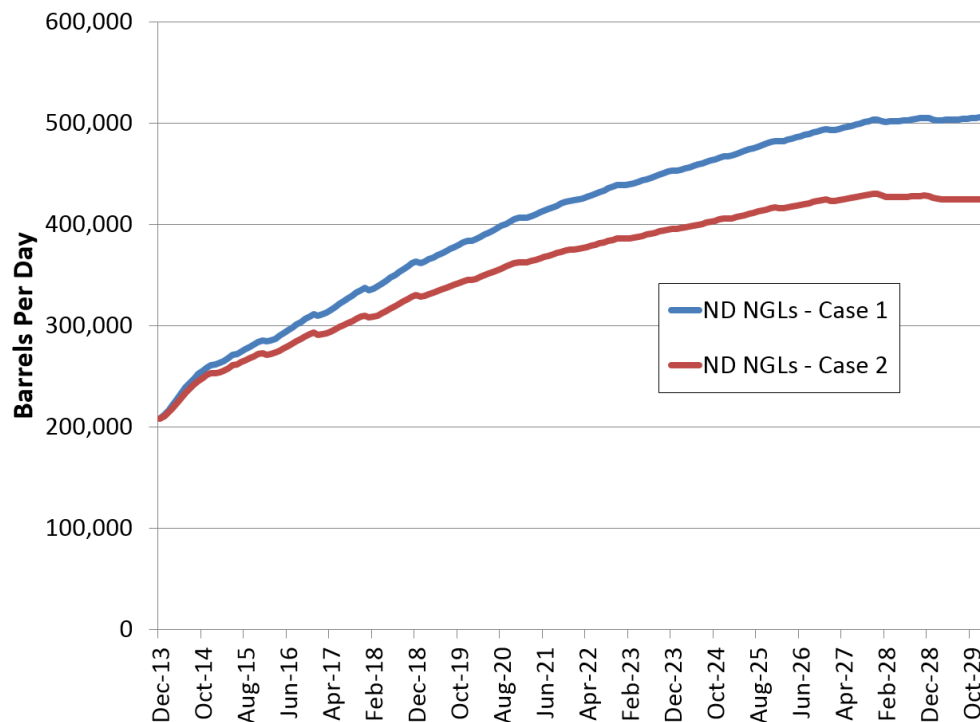
Case 1: ND NGL Potential*



*Using NGL breakdown from the July 2012 BENTEK Natural Gas Study



Moving Future NGL Volumes

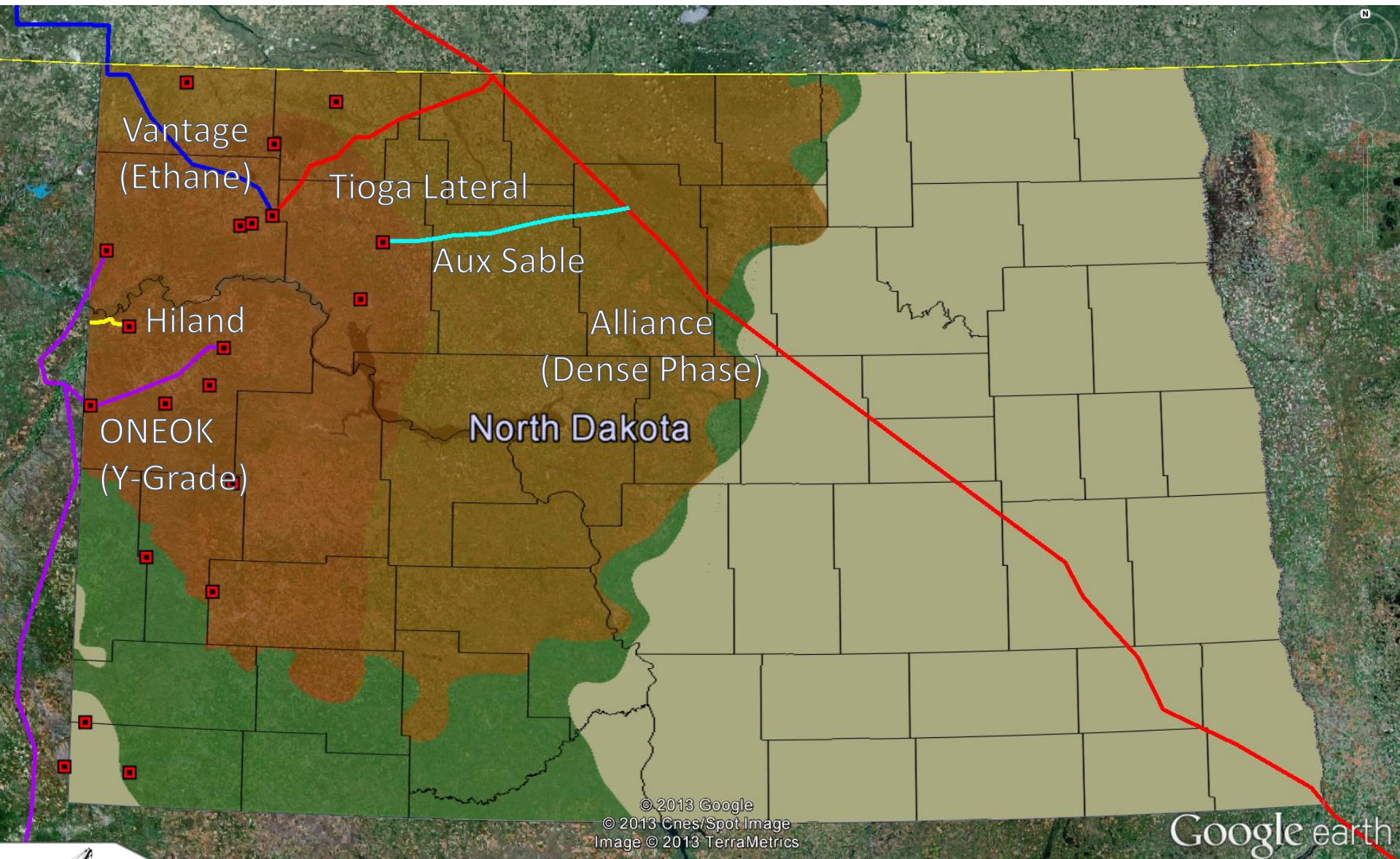


Transportation Options

- Trucking Regionally
- Rail Transportation
- Vantage Pipeline (Ethane)
- ONEOK Bakken Pipeline (Y-Grade)
- Alliance Pipeline (Rich Gas)
- New Pipeline Infrastructure??



NGL Pipeline Transportation



Contact Information

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www.pipeline.nd.gov

www.northdakotapipelines.com



**Know what's below.
Call before you dig.**

