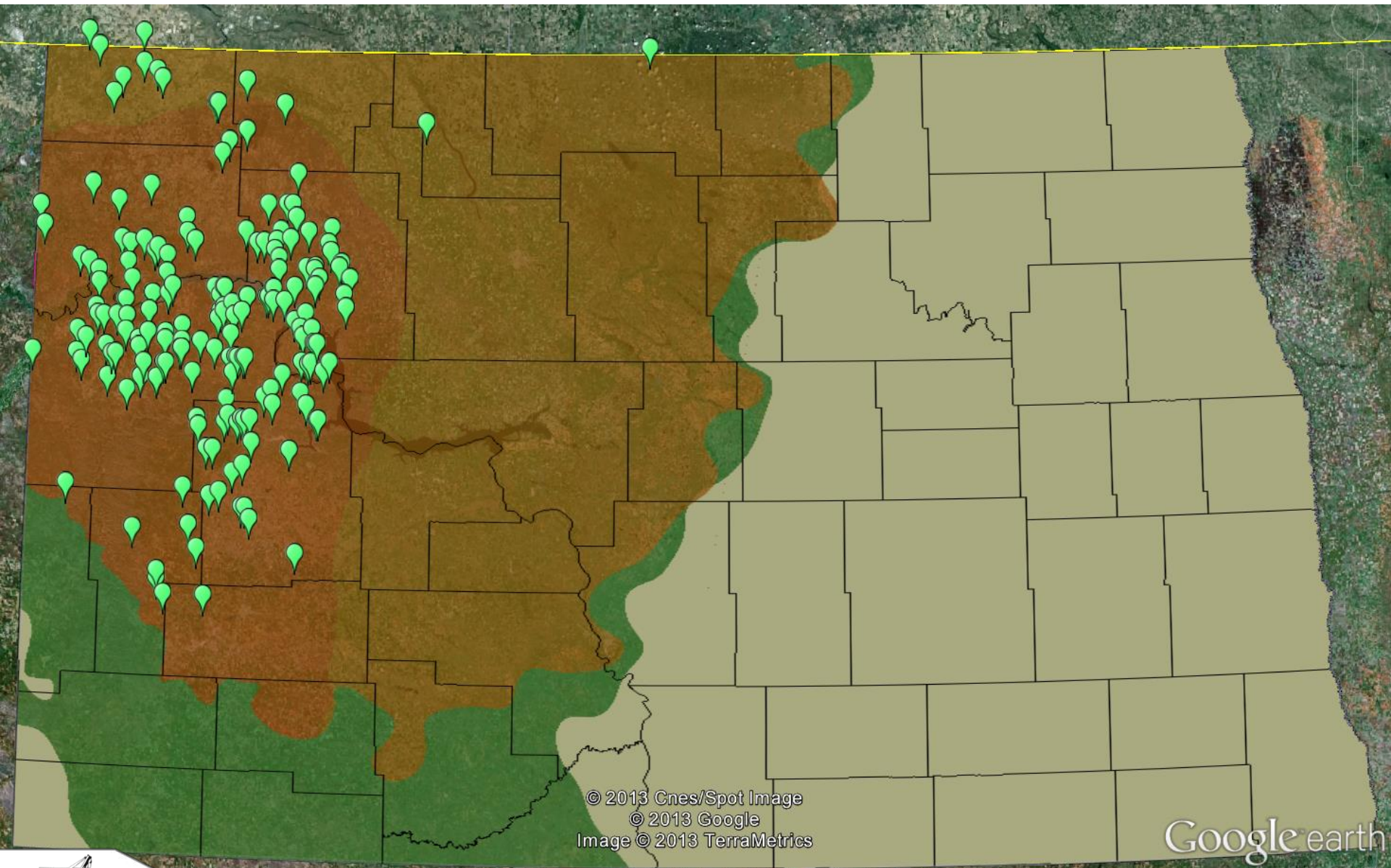


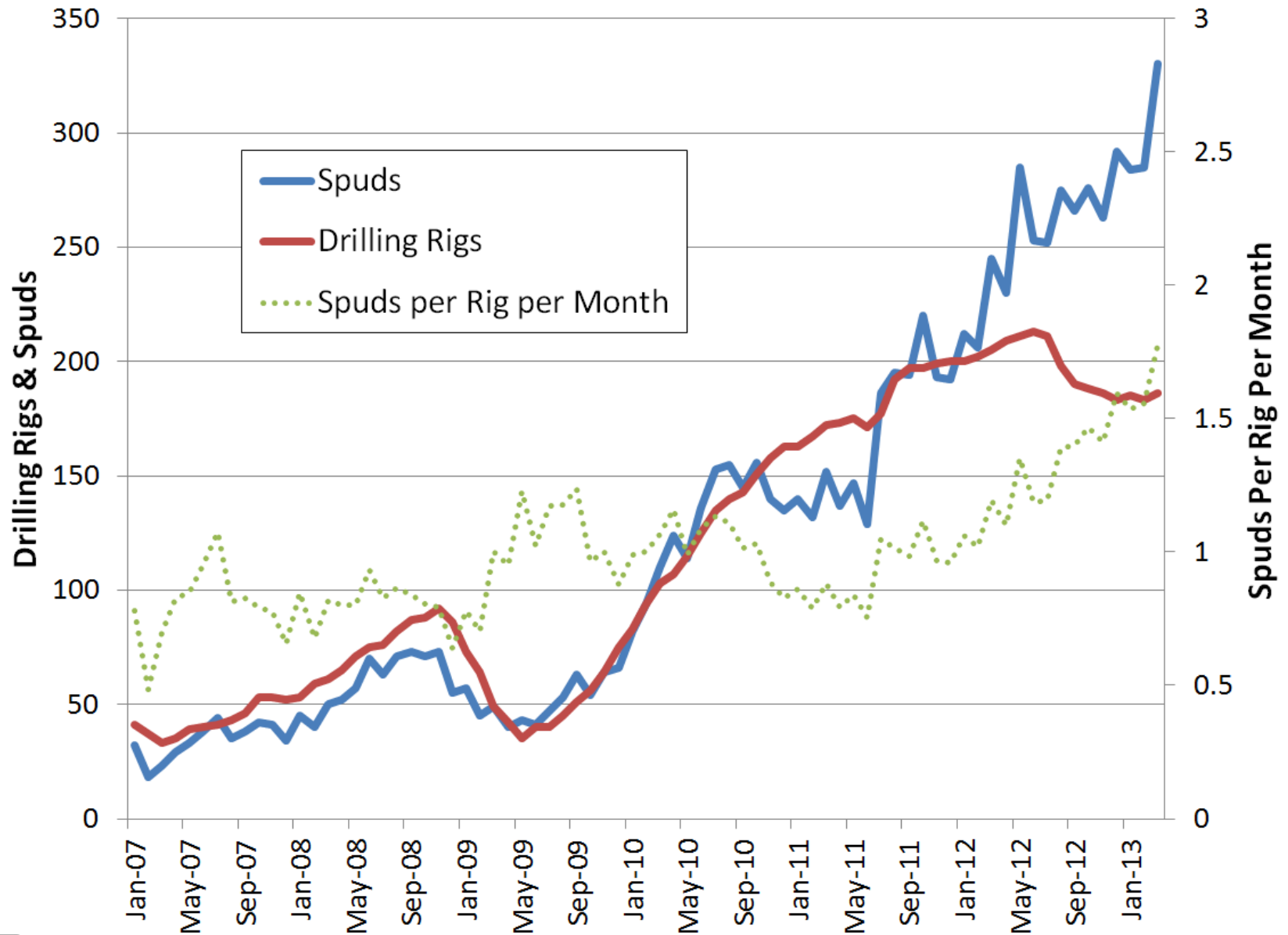


North Dakota Pipeline Authority
Justin J. Kringstad
May 17, 2013 - Bismarck, ND

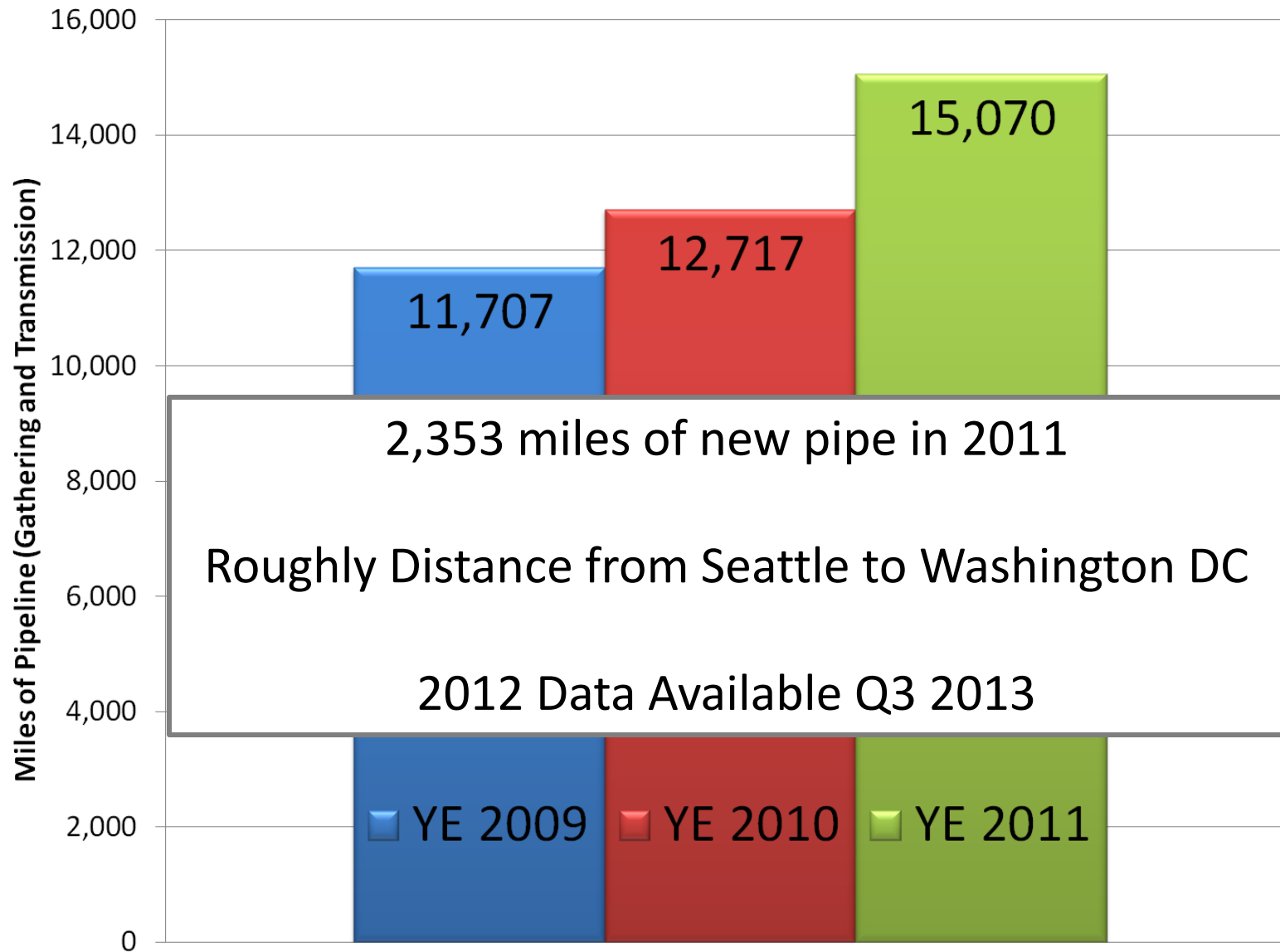
May 16, 2013 – 193 Drilling Rigs



ND Drilling Stats



North Dakota Pipeline Miles



Crude Oil

Understanding production potential

Understanding current transportation dynamics and potential transportation constraints

Understanding current and future market conditions



Crude Oil

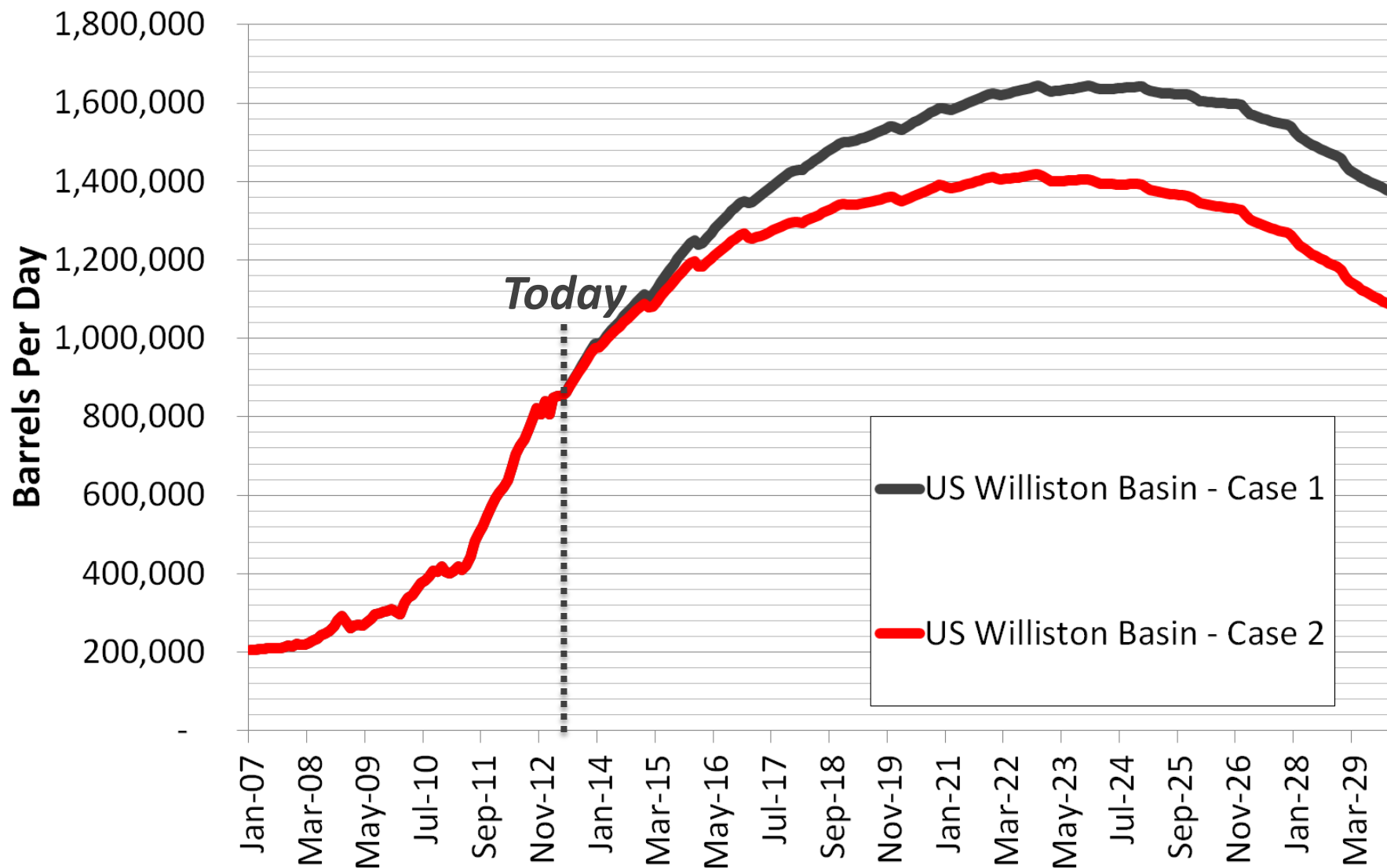
Understanding production potential

Understanding current transportation dynamics and potential transportation constraints

Understanding current and future market conditions



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

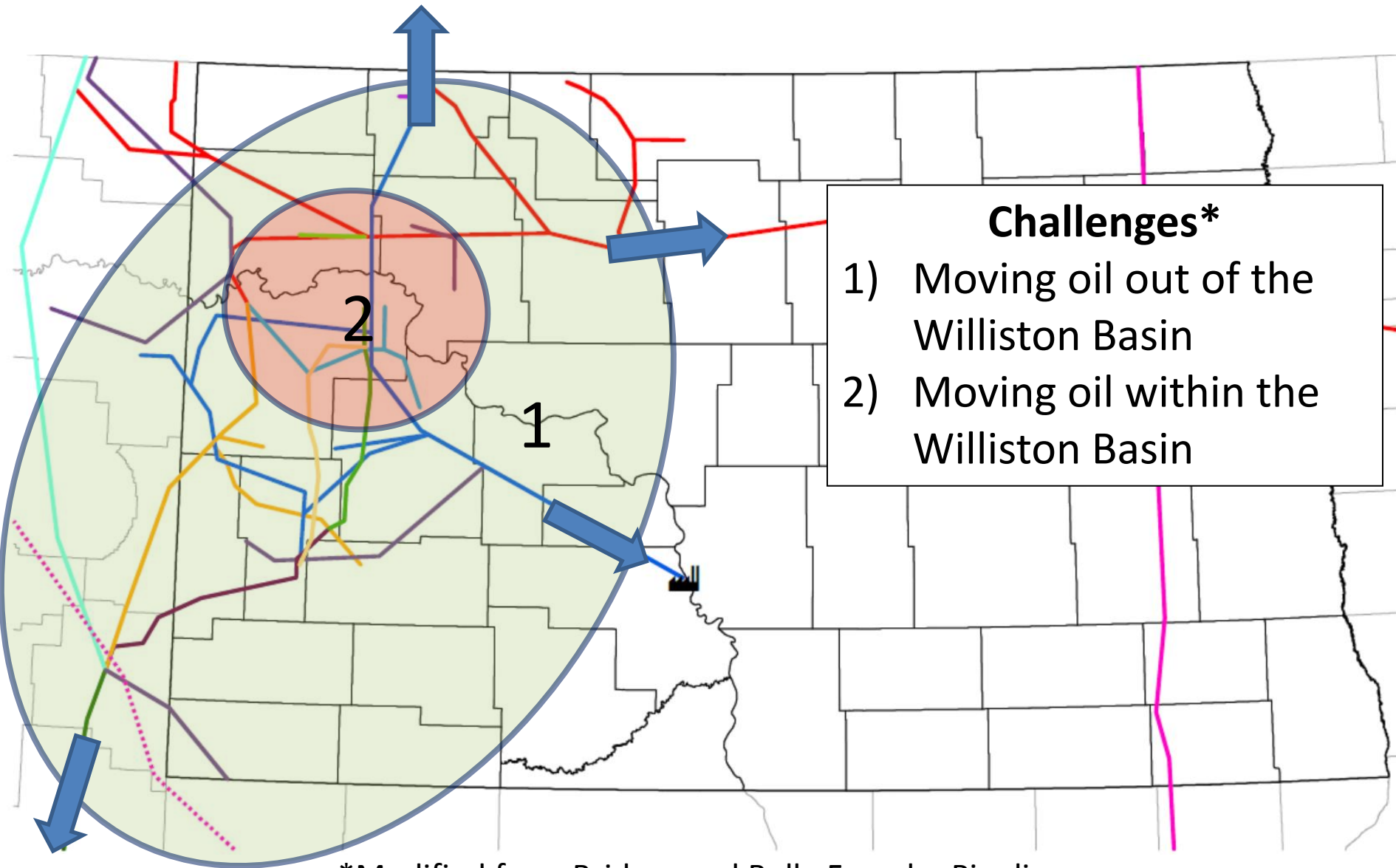
Understanding production potential

Understanding current transportation dynamics and potential transportation constraints

Understanding current and future market conditions



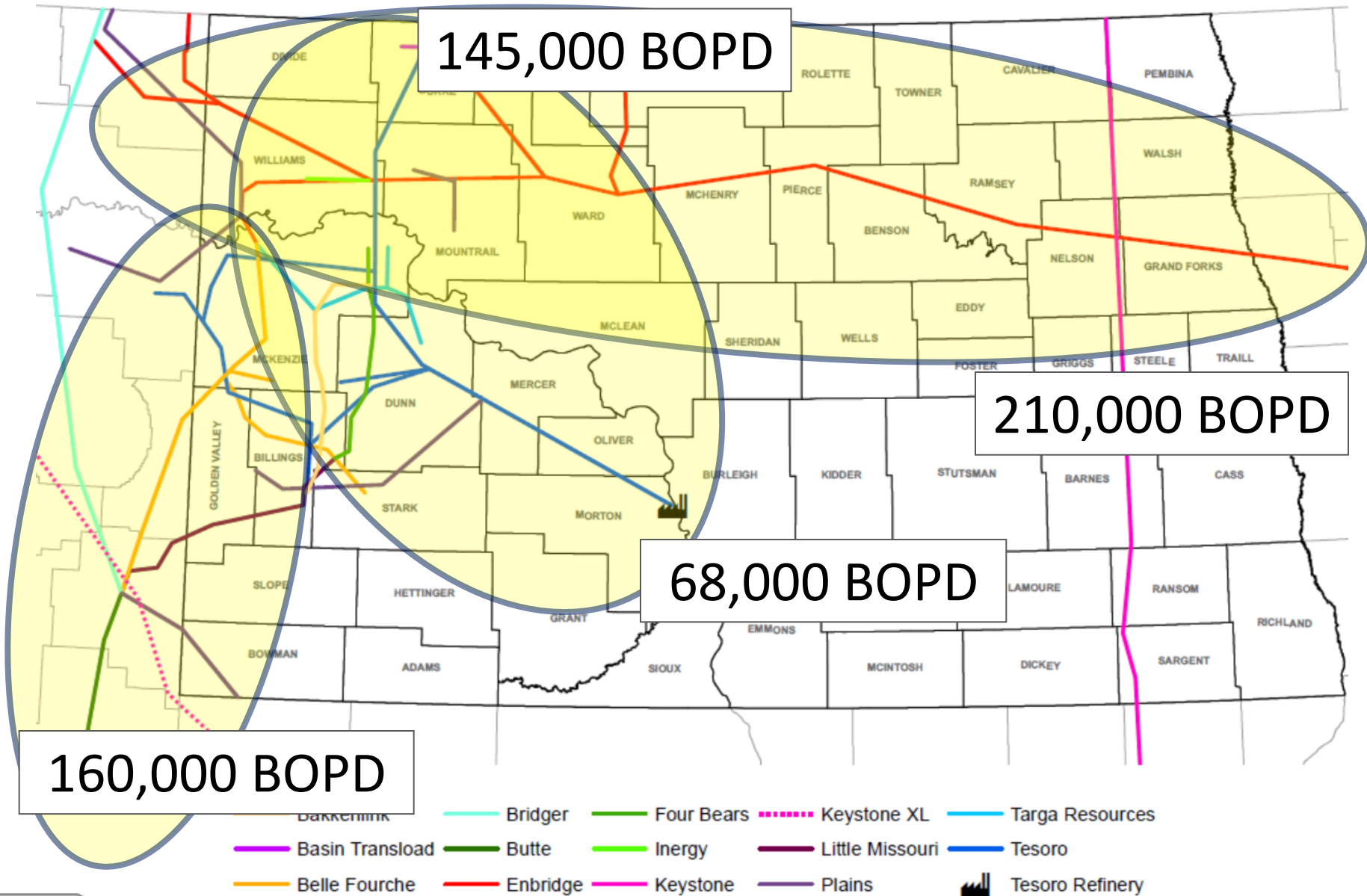
North Dakota Crude Oil Pipelines



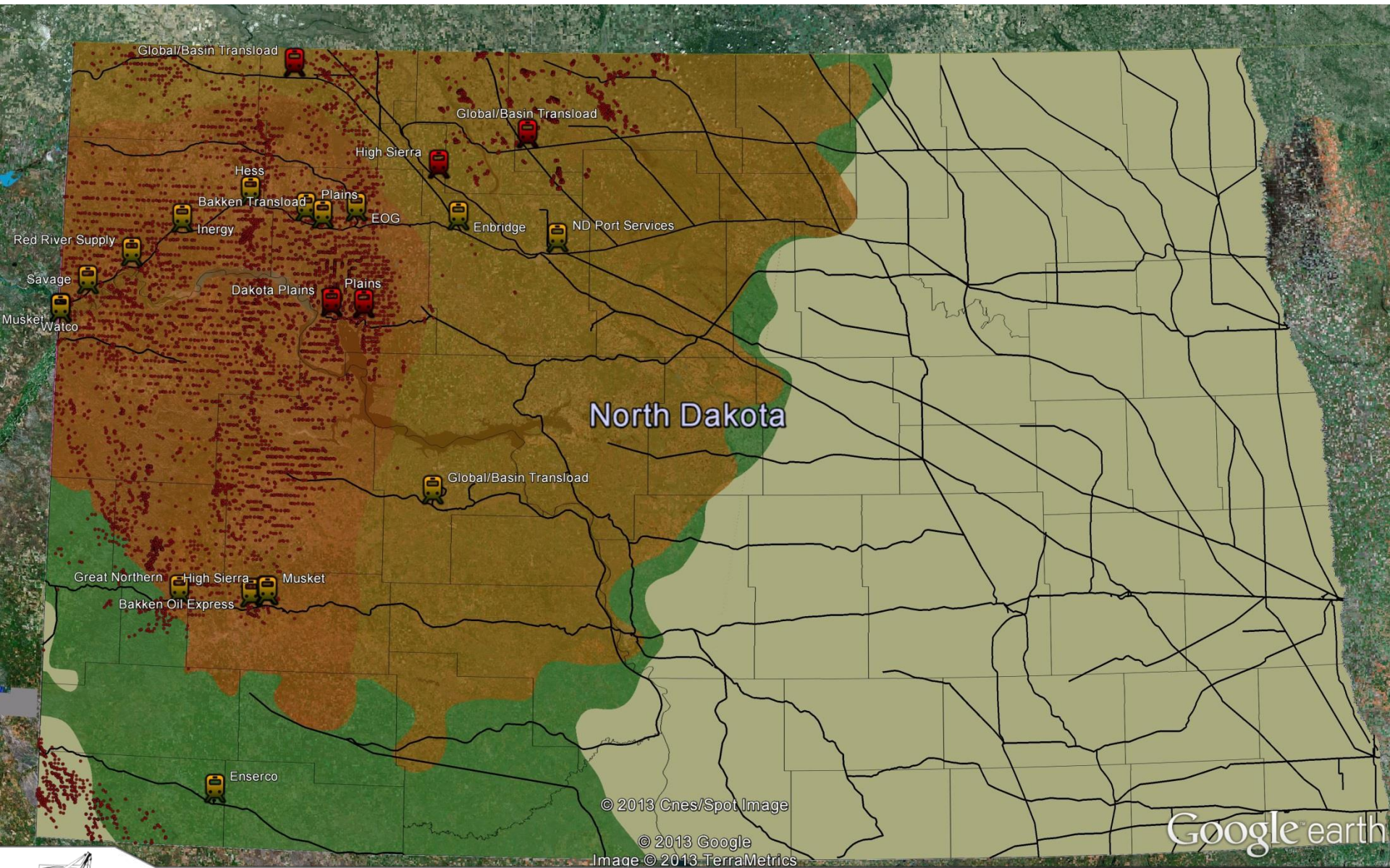
*Modified from Bridger and Belle Fourche Pipelines



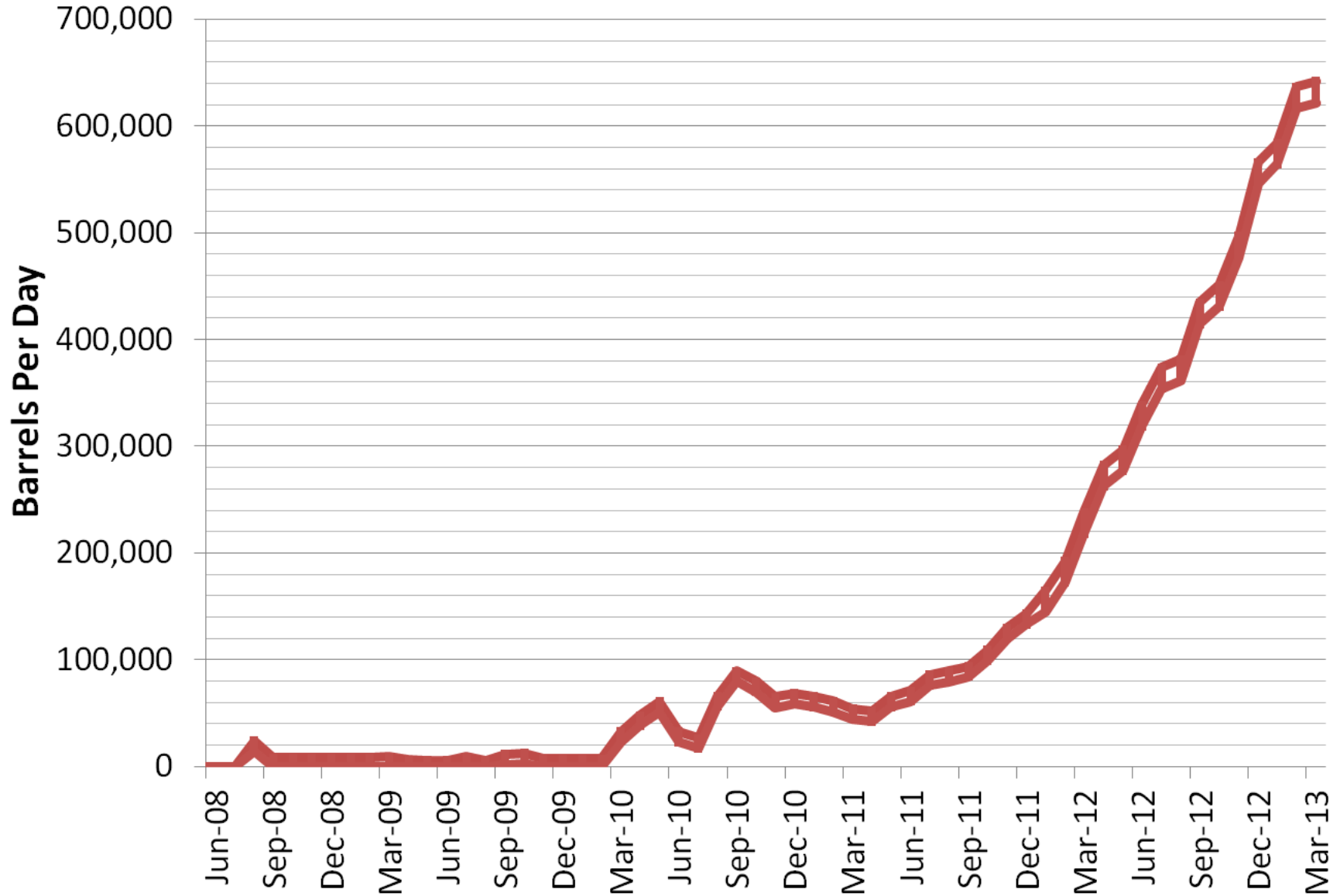
North Dakota Crude Oil Pipelines



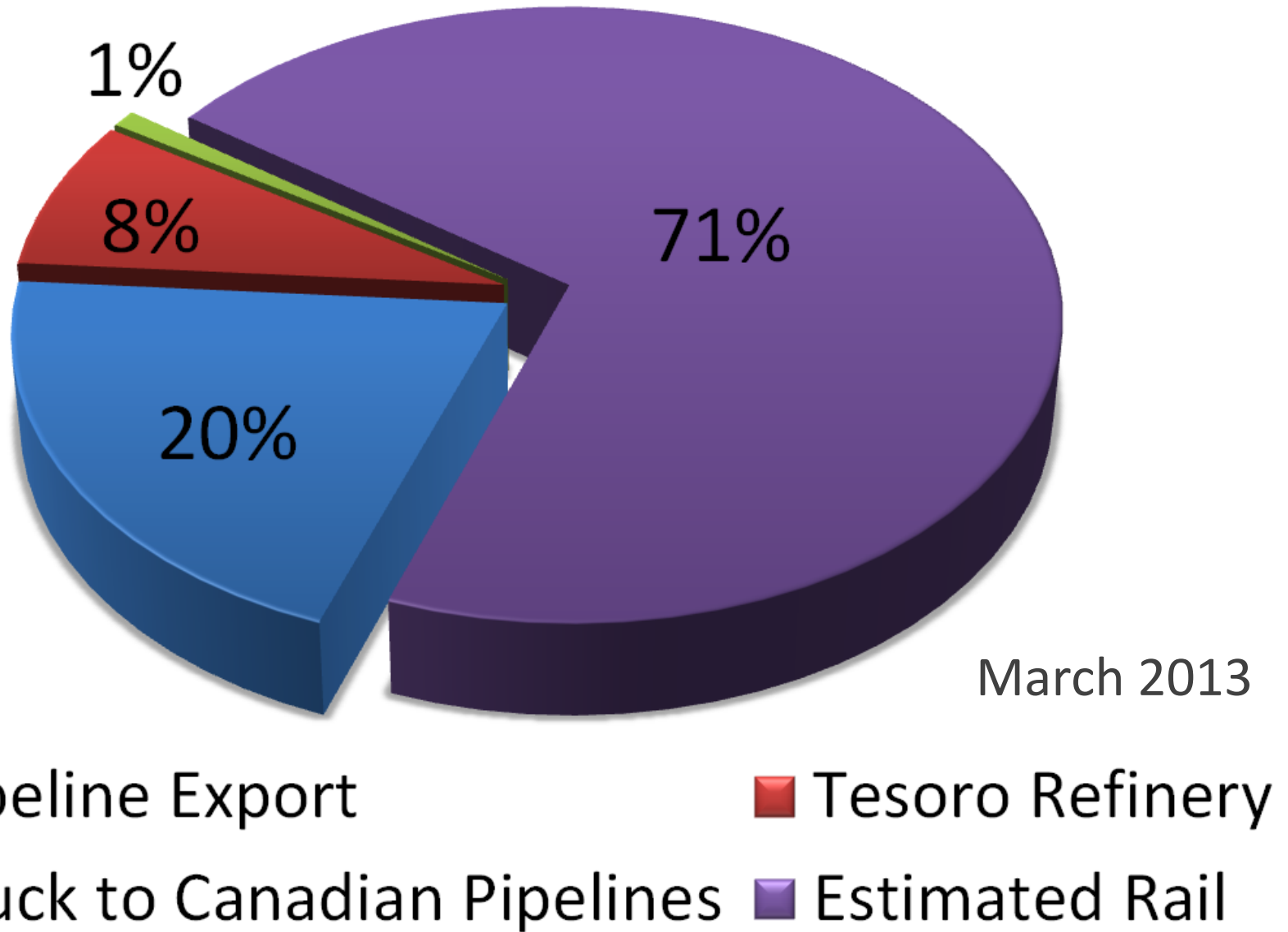
Oil Loading Rail Facilities



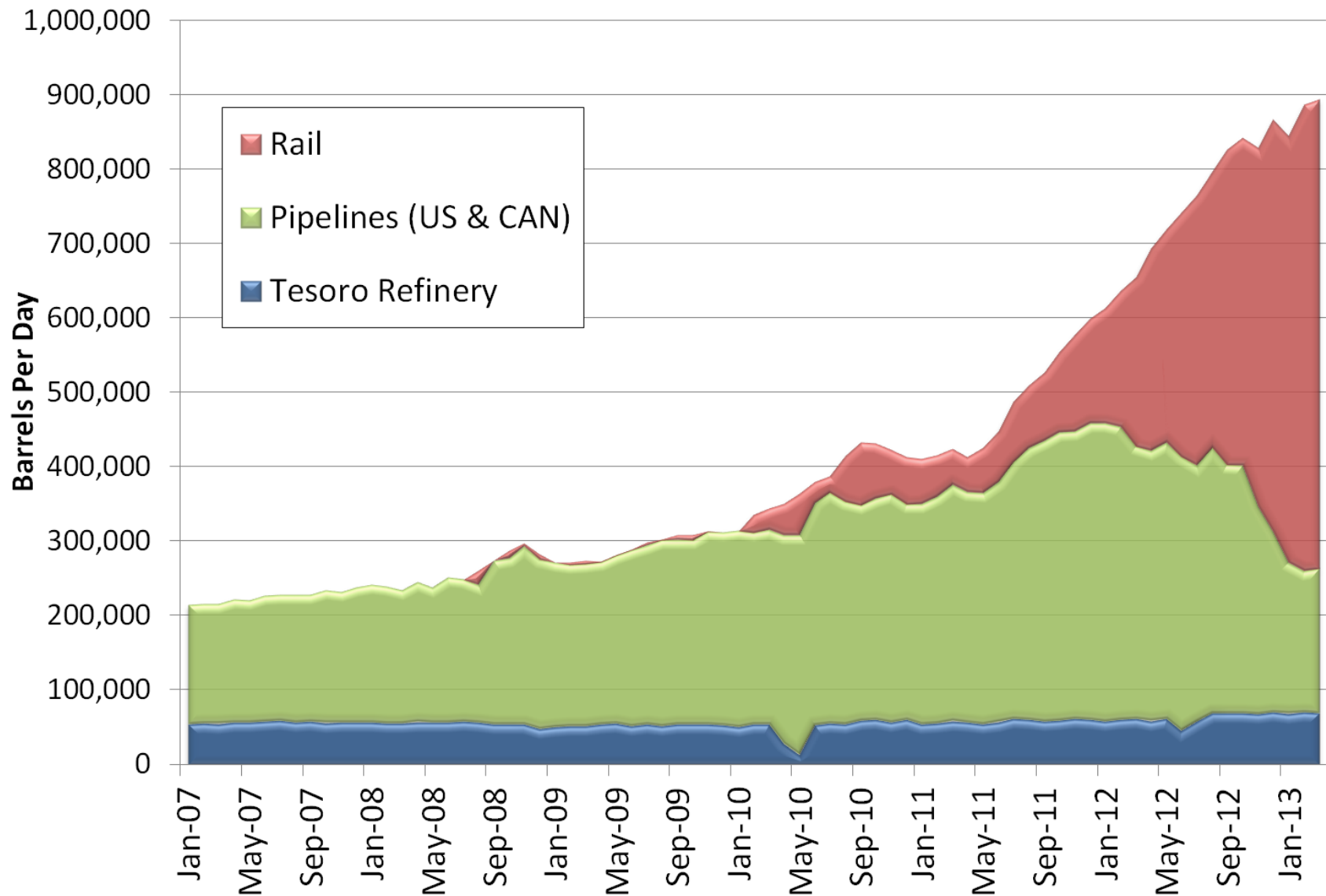
Estimated ND Rail Export Volumes



Estimated Williston Basin Oil Transportation



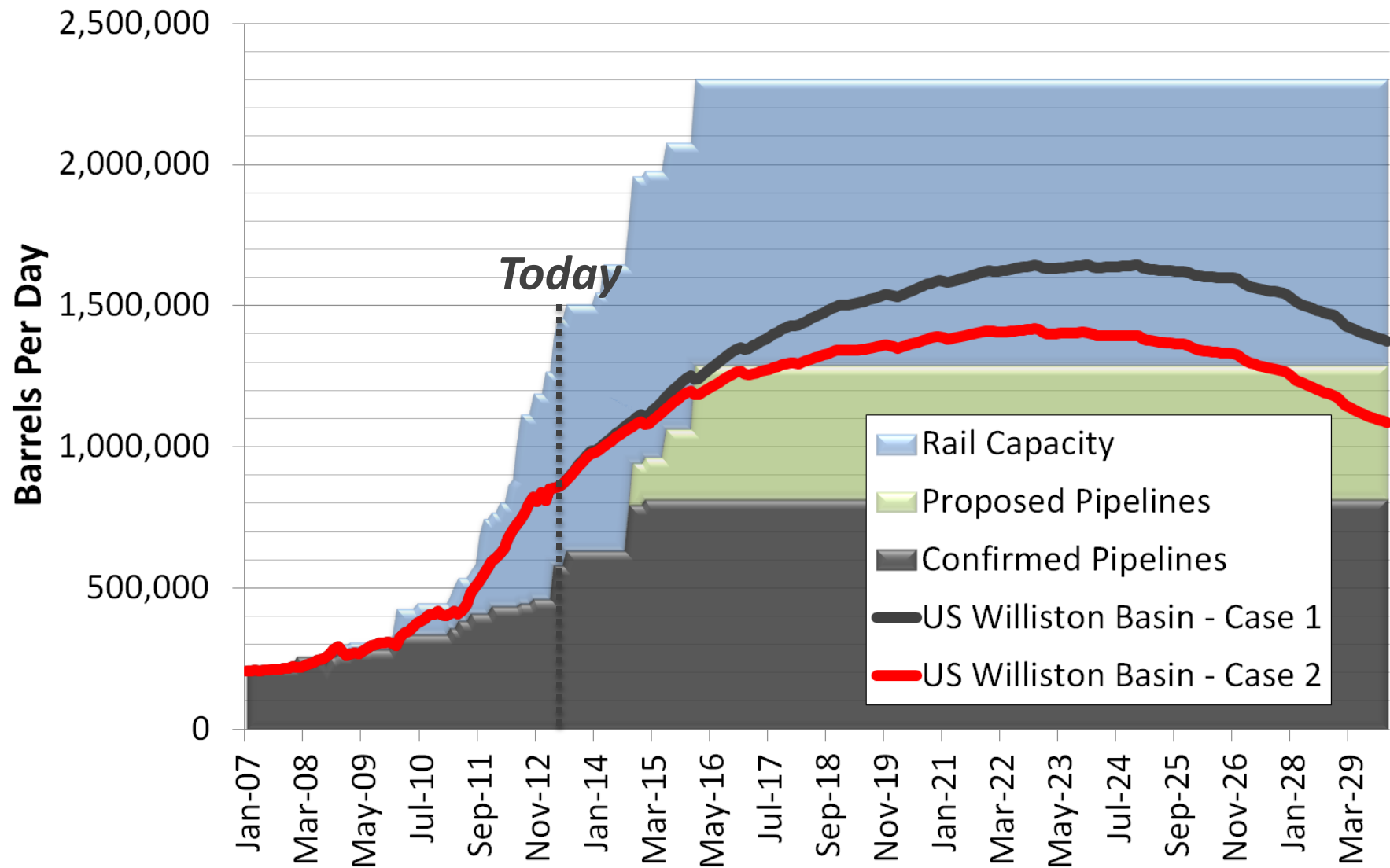
US Williston Basin Oil Transport*



**Some data based on estimates or assumptions*



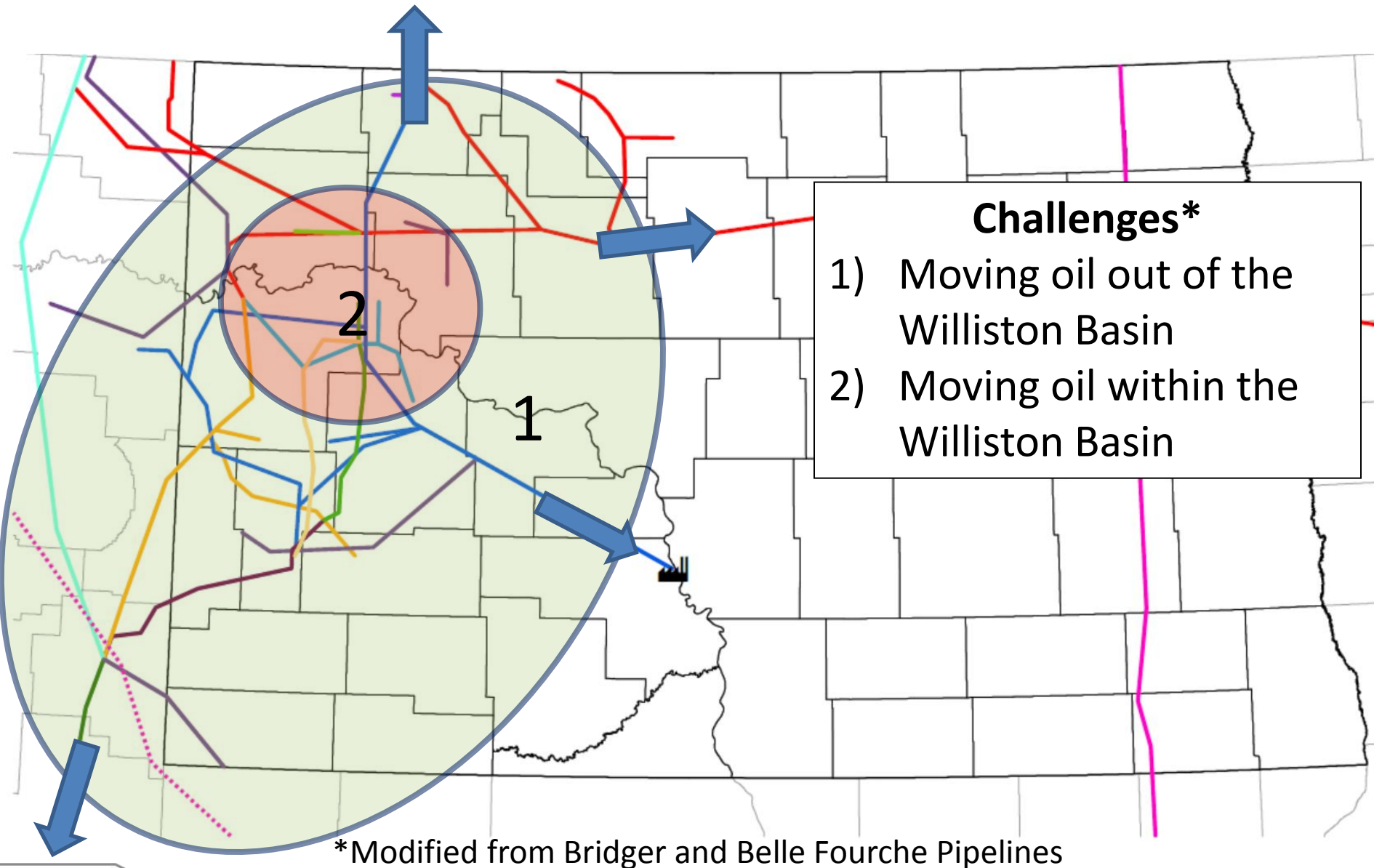
Williston Basin Oil Production & Export Capacity, BOPD



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

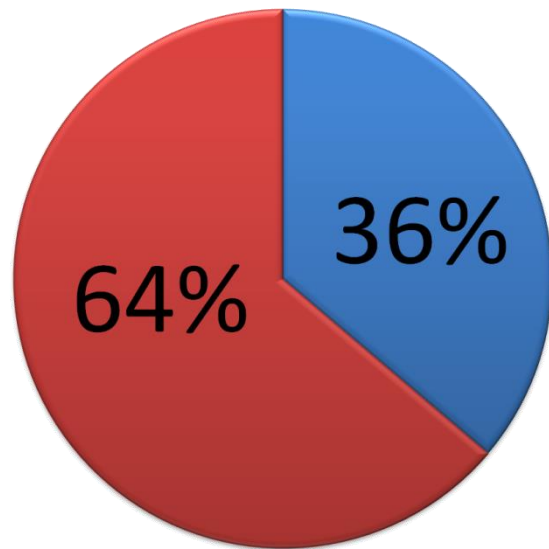


North Dakota Crude Oil Pipelines



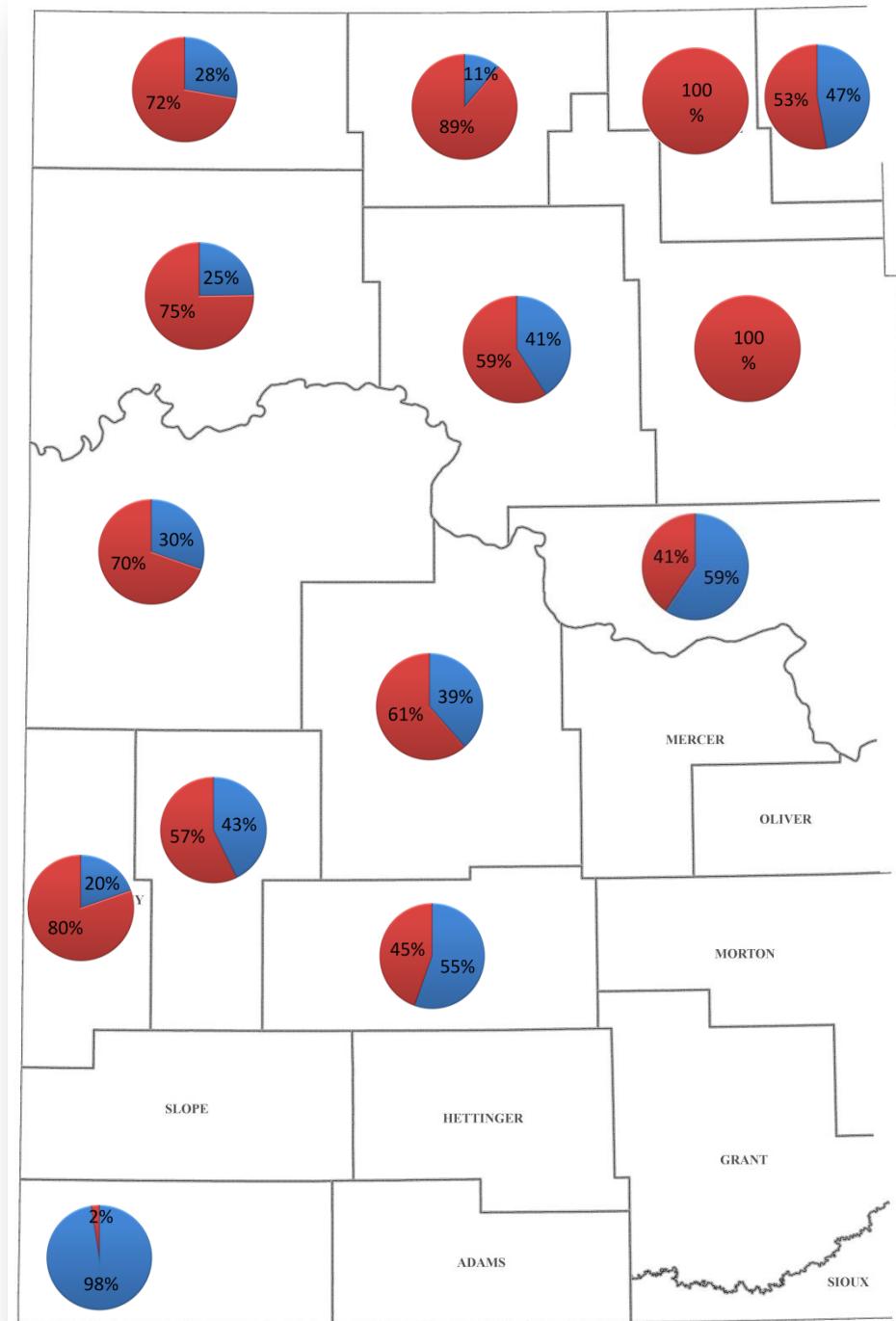
ND Crude Oil Gathering

Red – Trucked
Blue – Pipeline



All ND Production

Sep 2012 Estimates – Some data incomplete or unavailable



Crude Oil

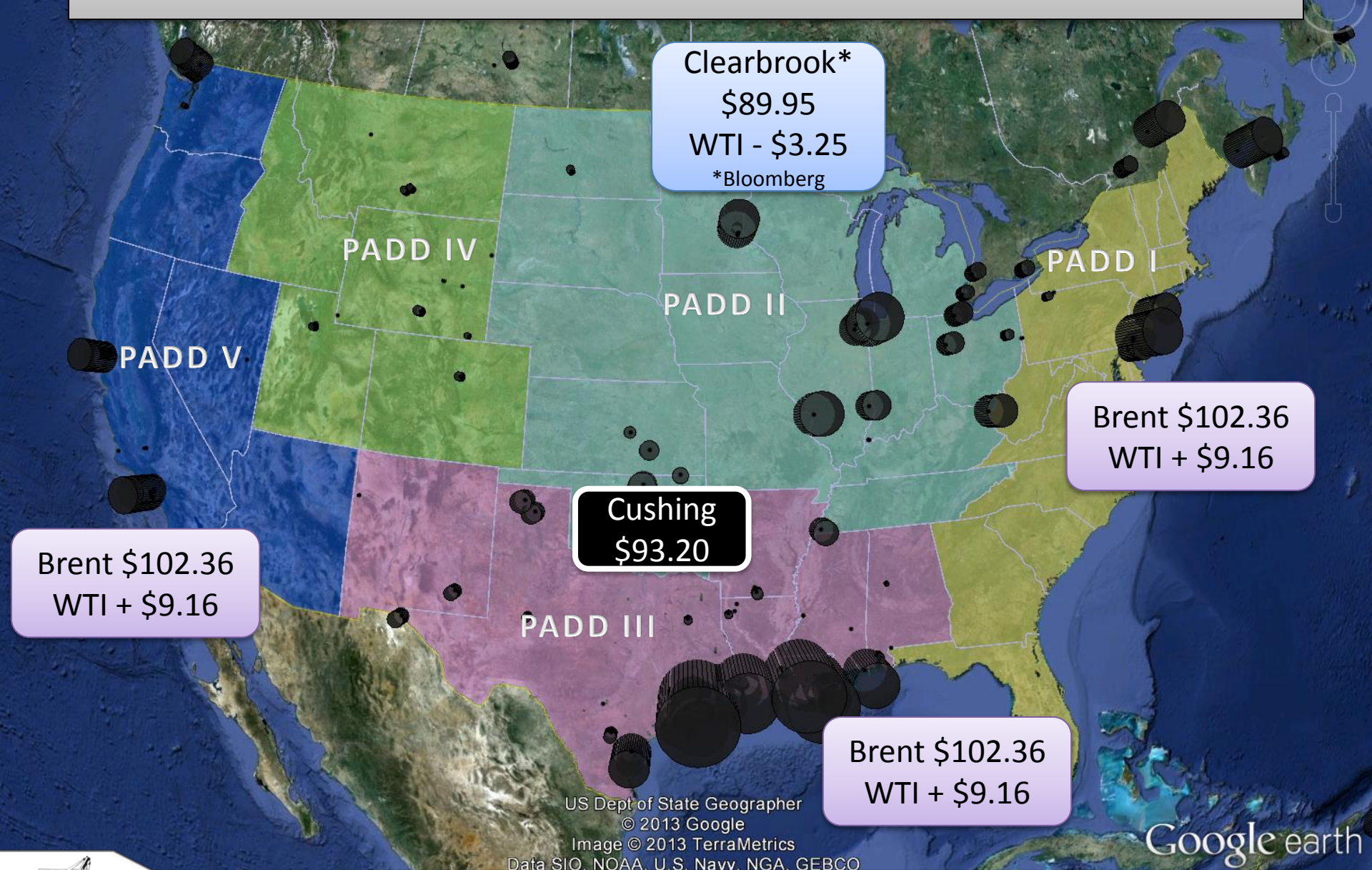
Understanding production potential

Understanding current transportation dynamics and potential transportation constraints

Understanding current and future market conditions

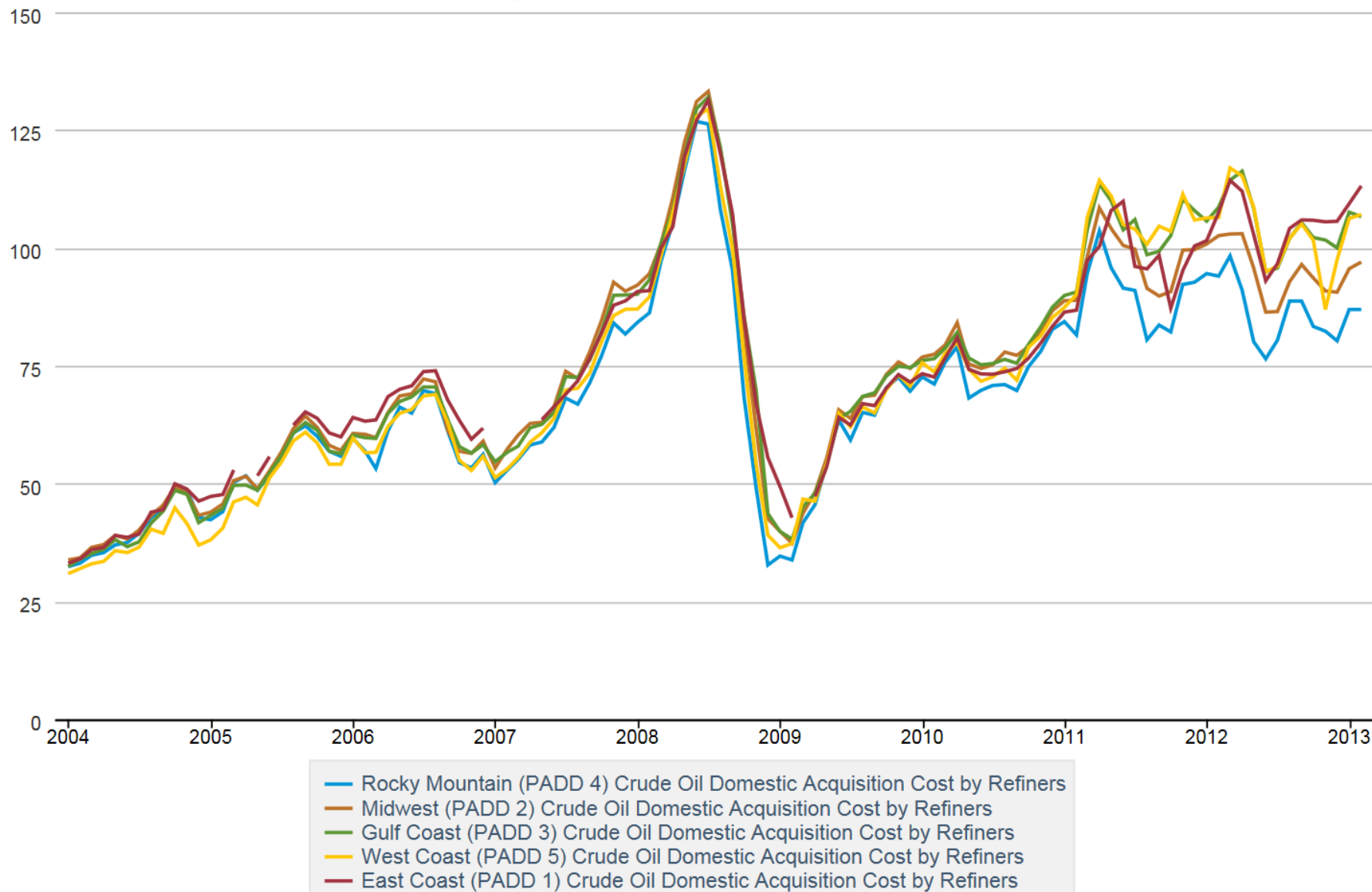


Crude Oil Prices – May 15, 2013



Refiner Acquisition Cost of Crude

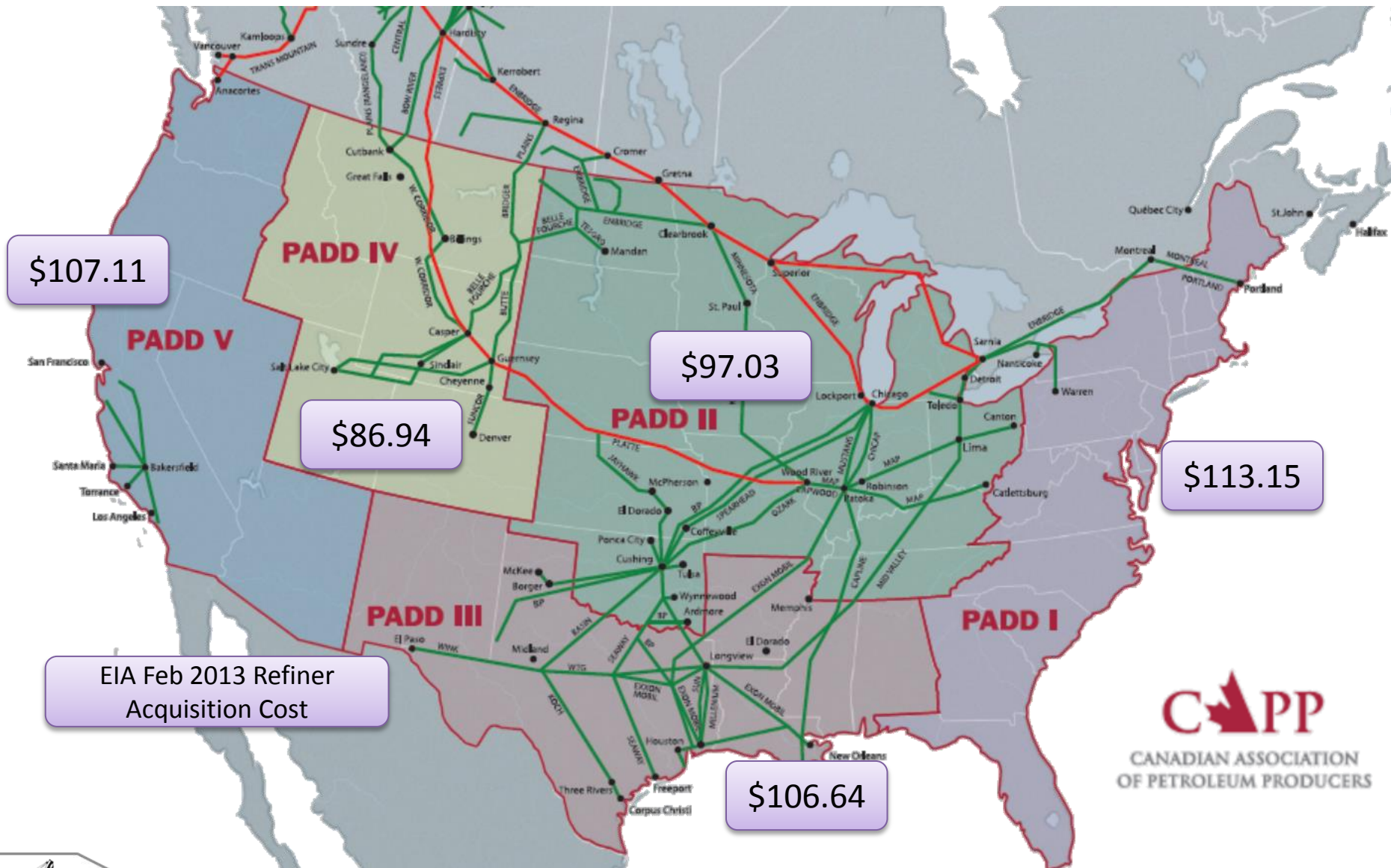
\$/bbl



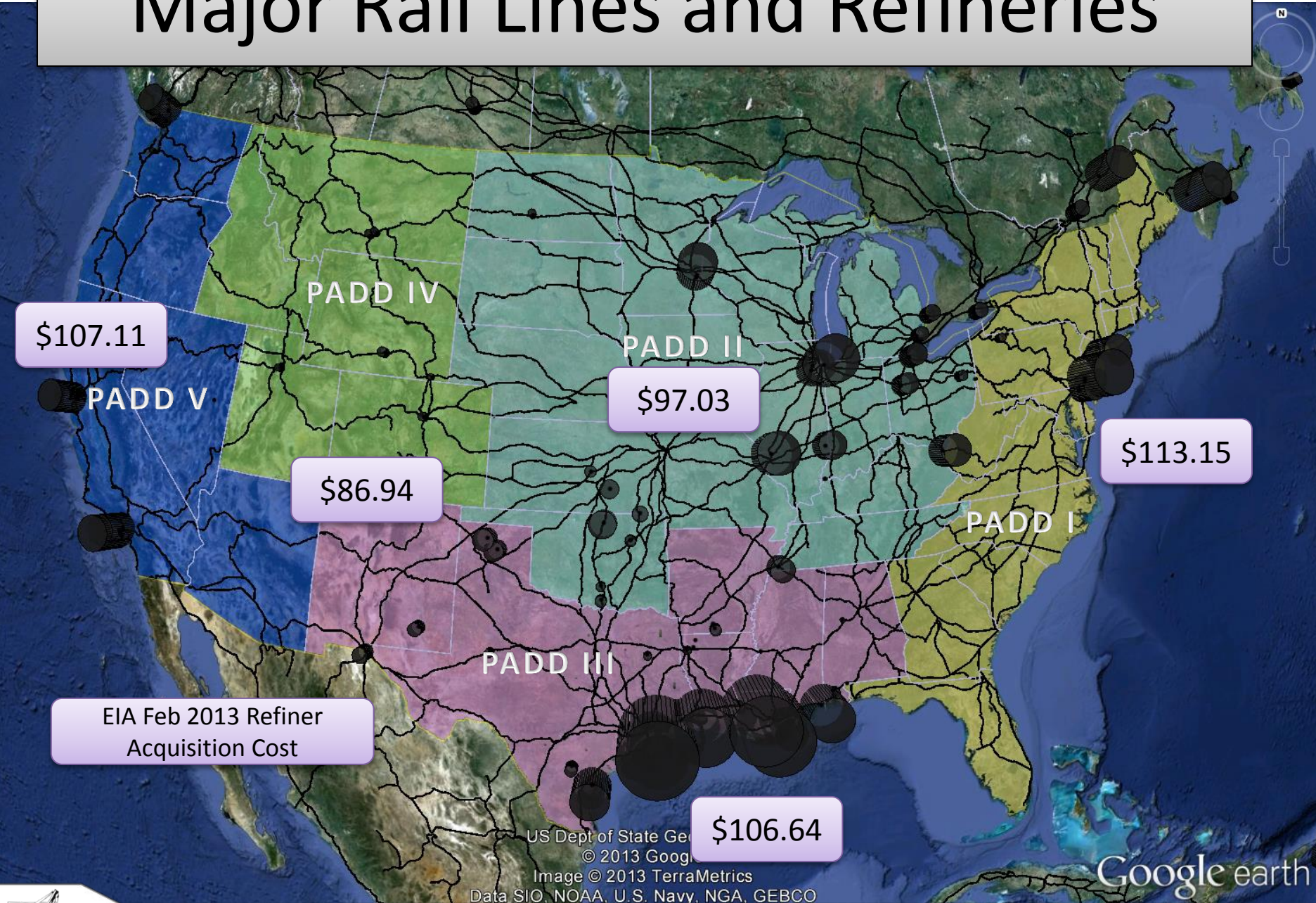
Source: U.S. Energy Information Administration



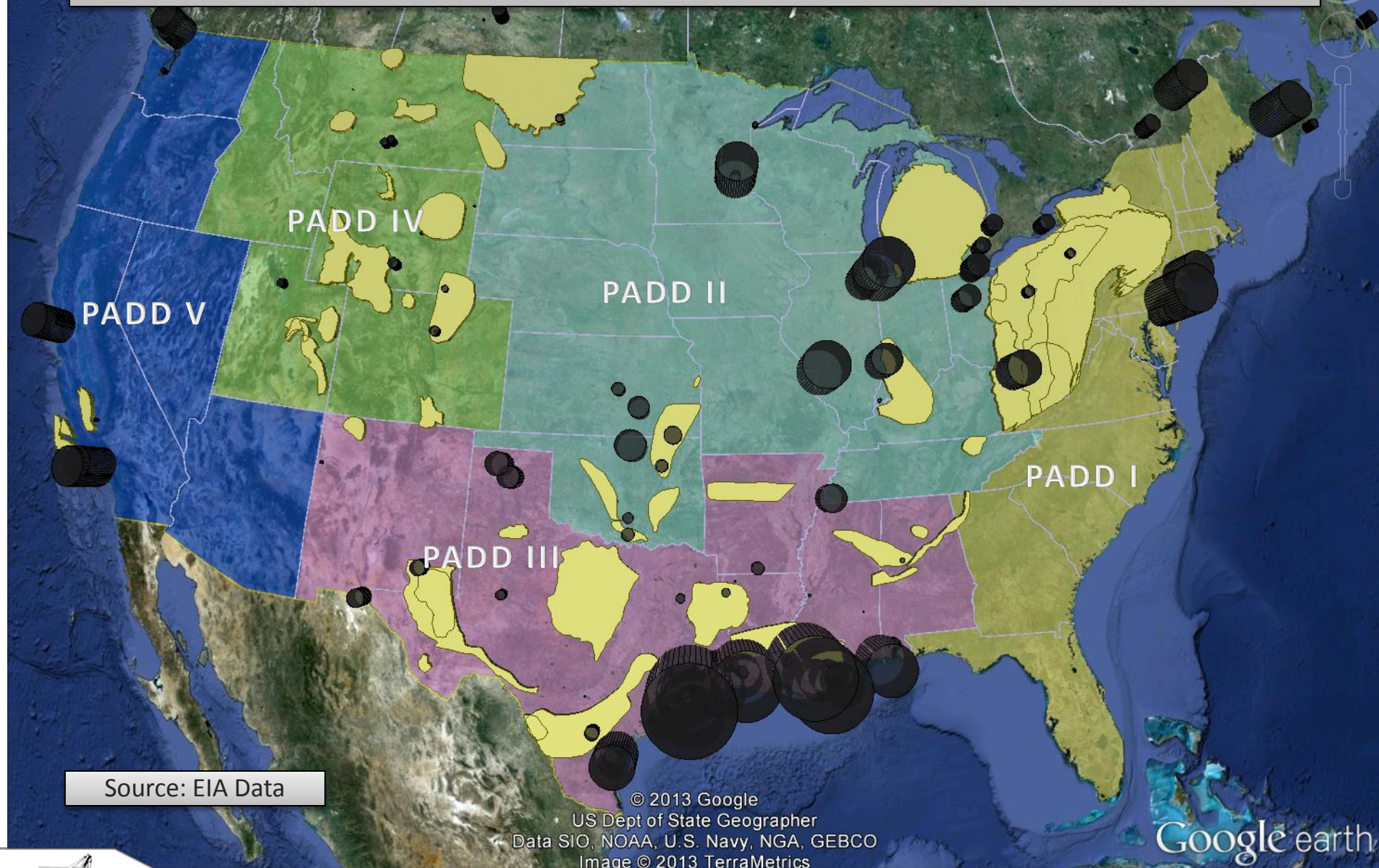
Major Pipelines and Refining Centers



Major Rail Lines and Refineries



US Shale Plays and Refineries



Natural Gas

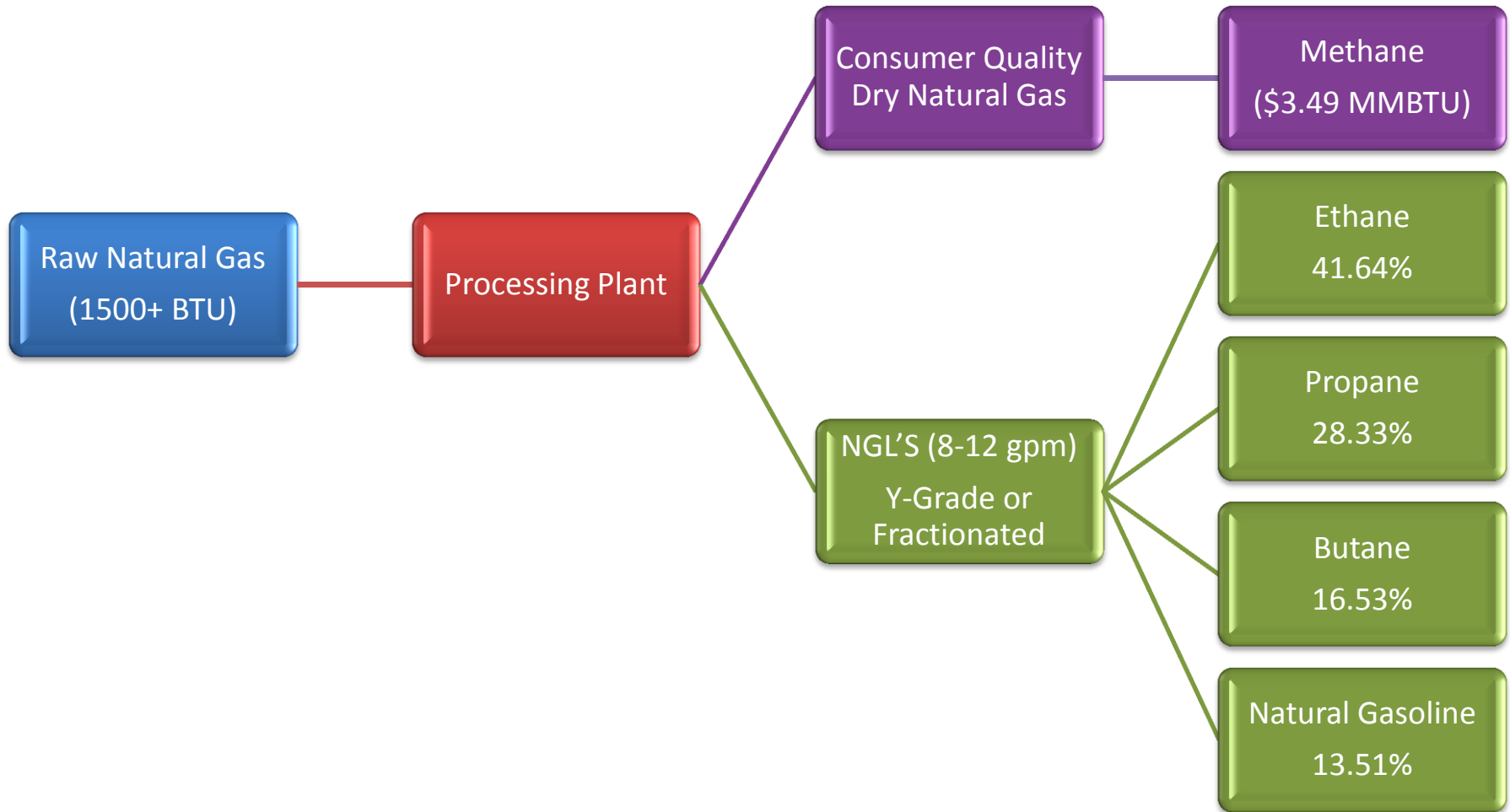


Keys to Reducing Flaring

1. *Economics Must Work*
2. *Understanding Production Potential*
3. *New Gas Gathering Pipelines*
4. *Enhancing Existing Gathering Pipelines*
5. *Adequate Gas Processing Capacity*
6. *Adequate Interstate Pipeline Capacity*
7. *Flaring Alternatives (Short & Long Term)*



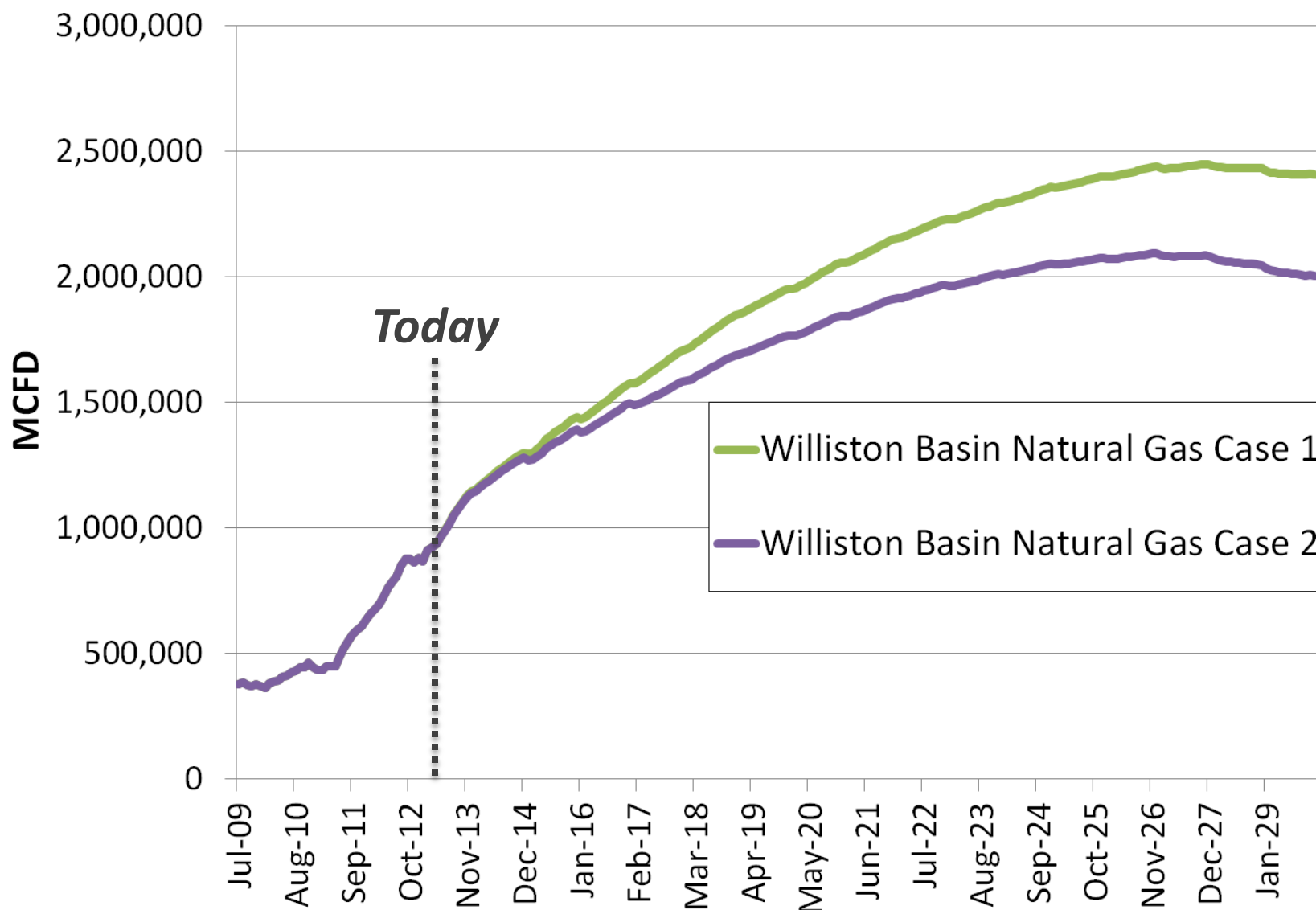
Rich Natural Gas



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



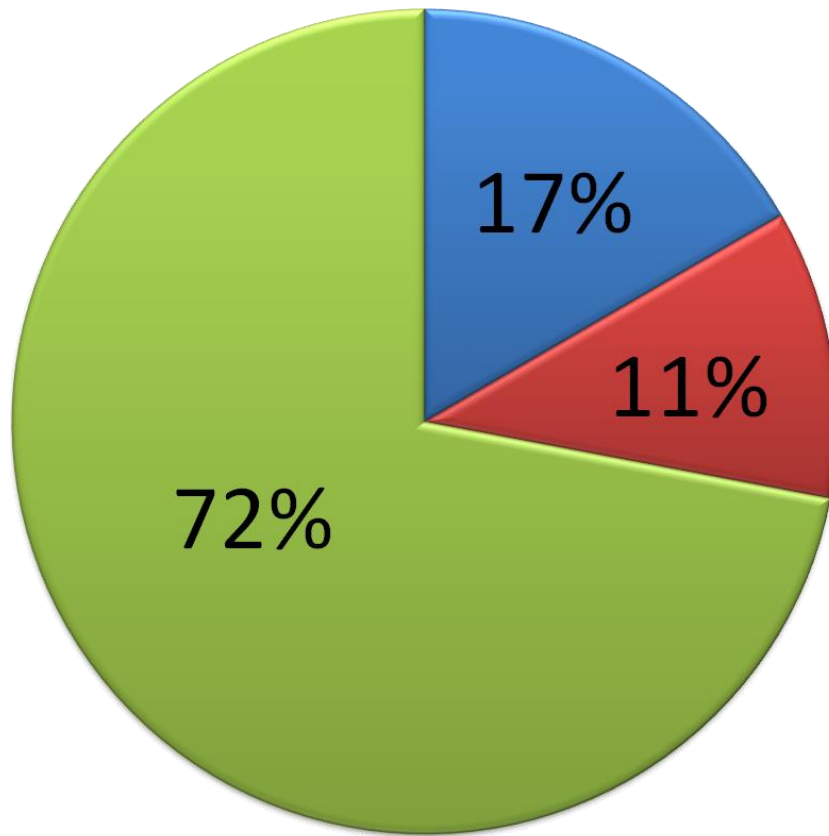
Forecasting Williston Basin Gas Production



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



Solving the Flaring Challenge



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

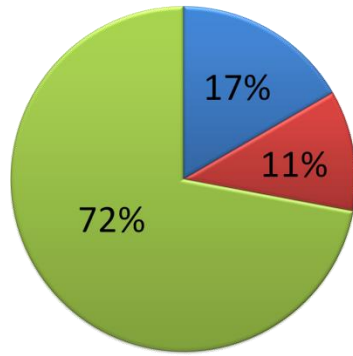
Simple Terms

Red – Challenges on existing infrastructure
Blue – Lack of pipelines

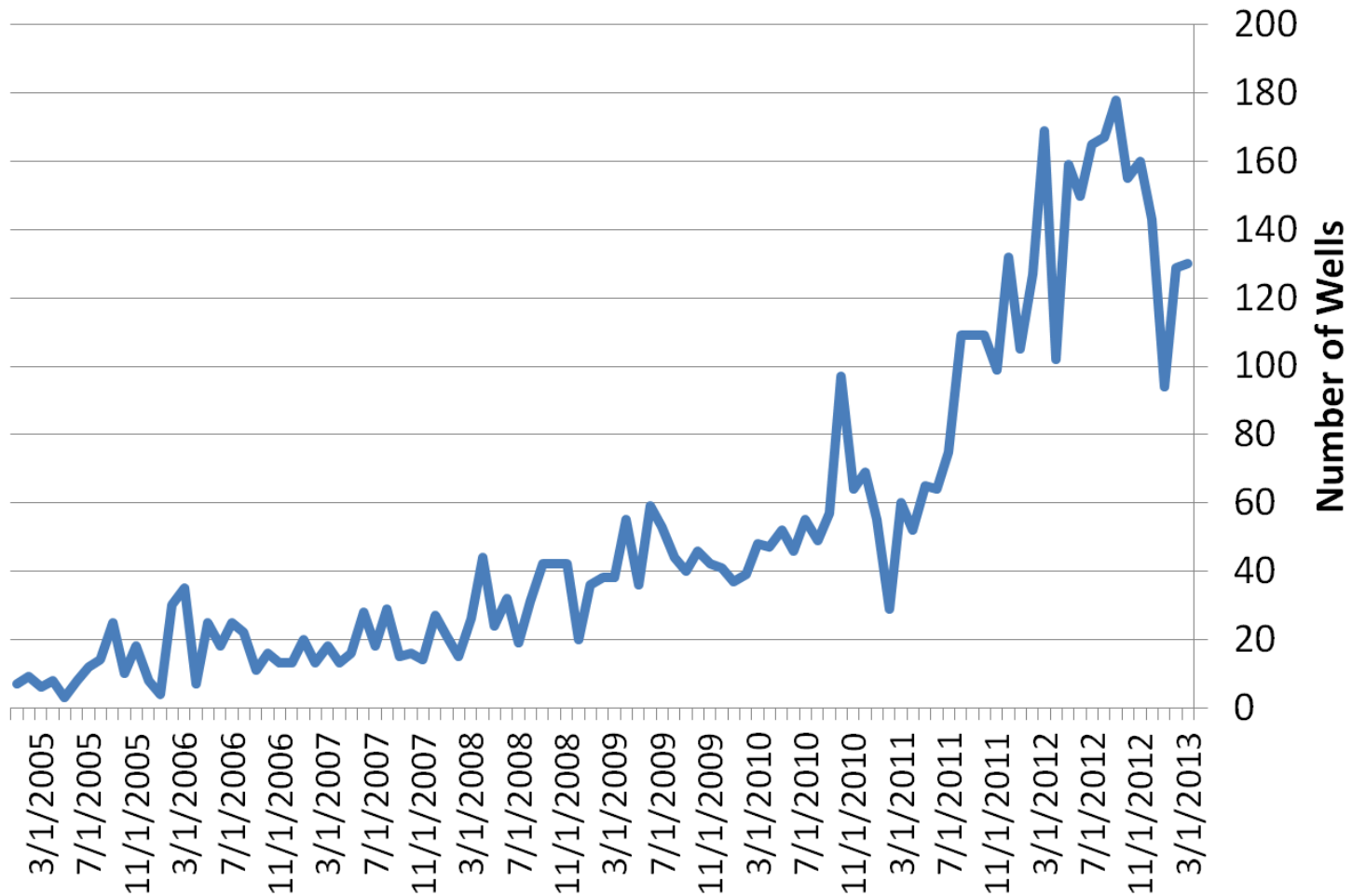
Statewide

March 2013 Data – Non-Confidential Wells

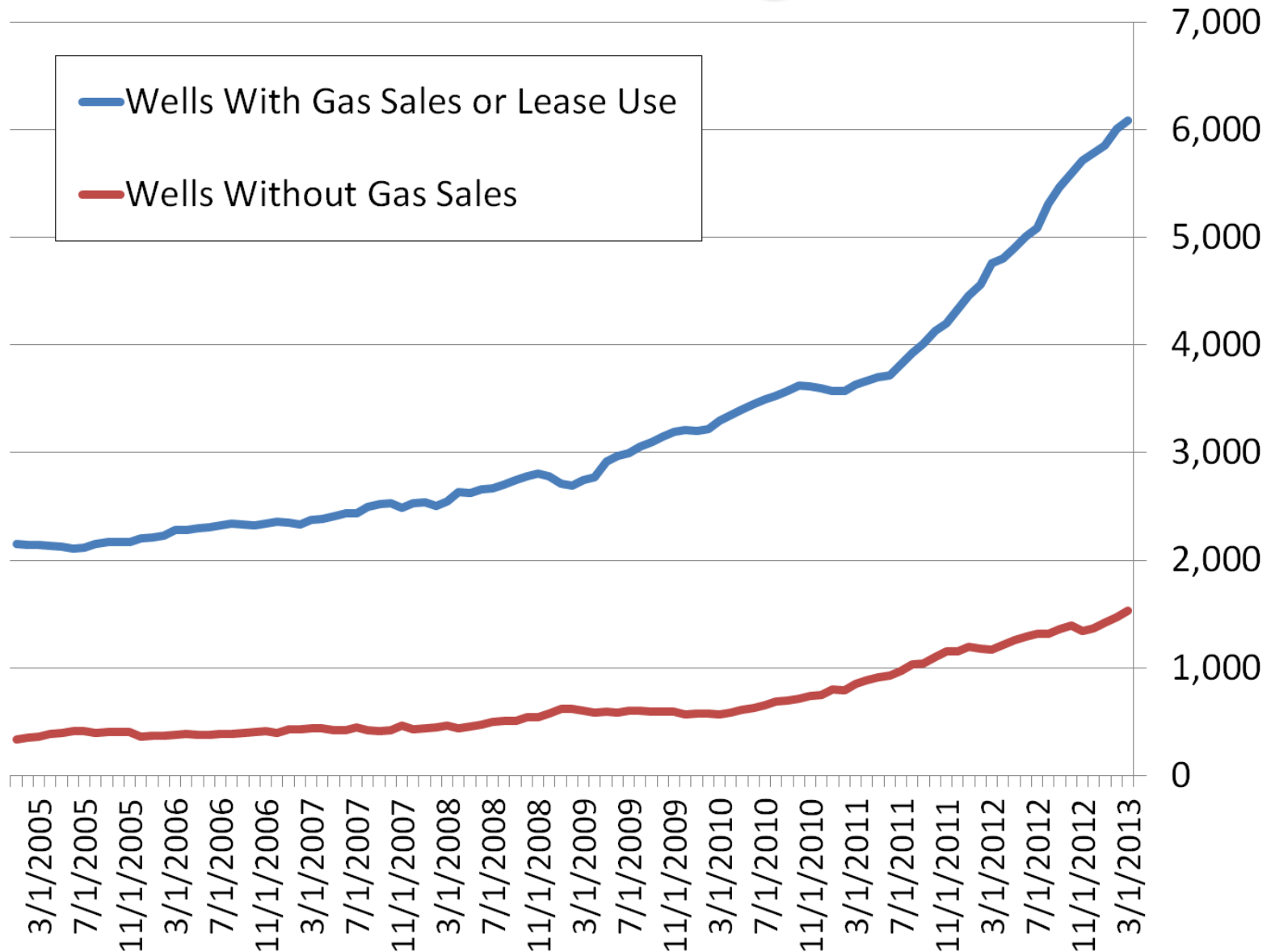


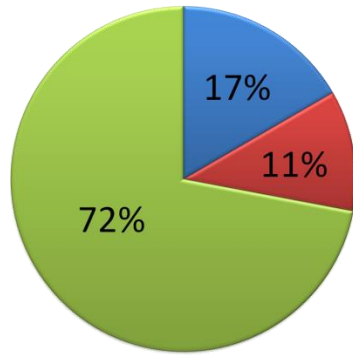


Capturing the 17% Faster Well Connections

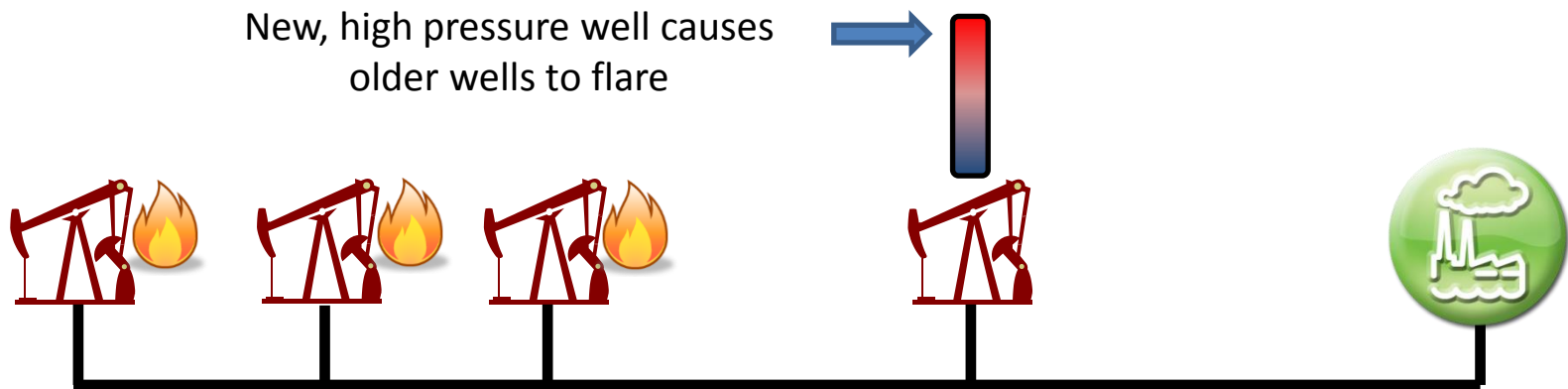
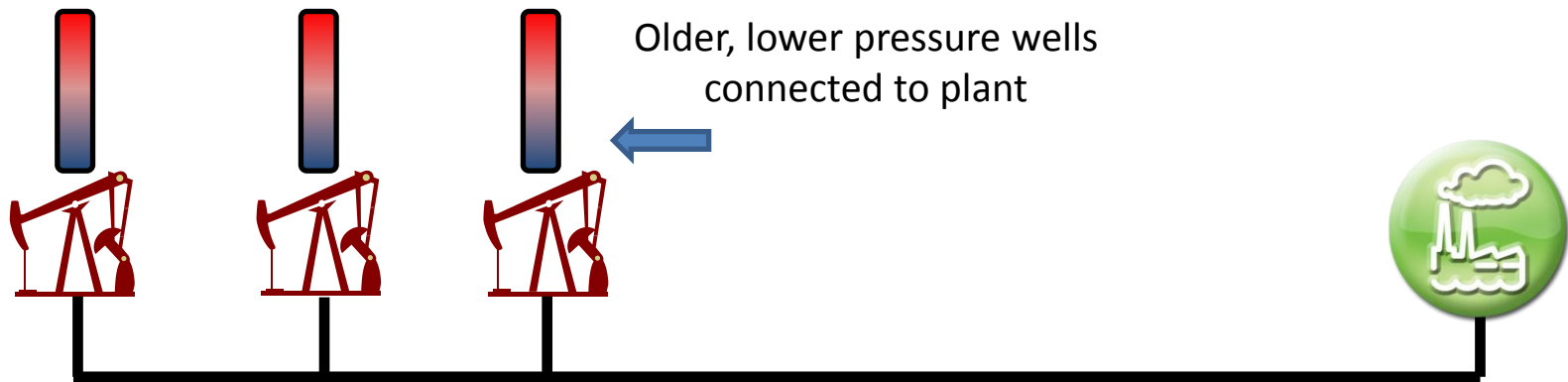


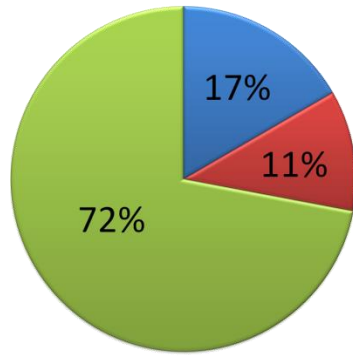
ND Gas Gathering Statistics



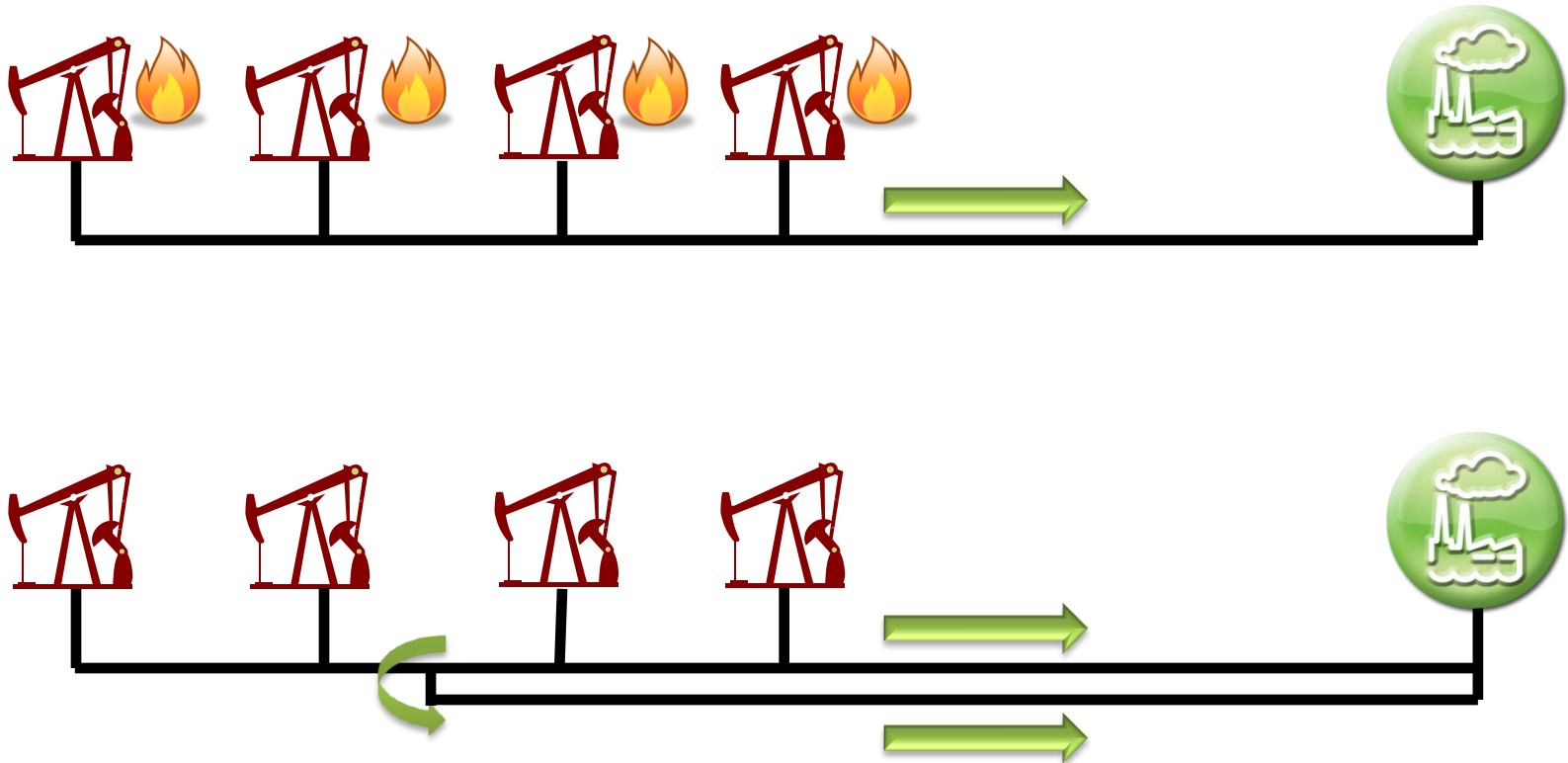


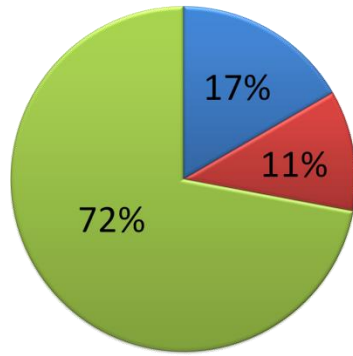
Capturing the 11% Additional Compression





Capturing the 11% Looping Existing Pipelines





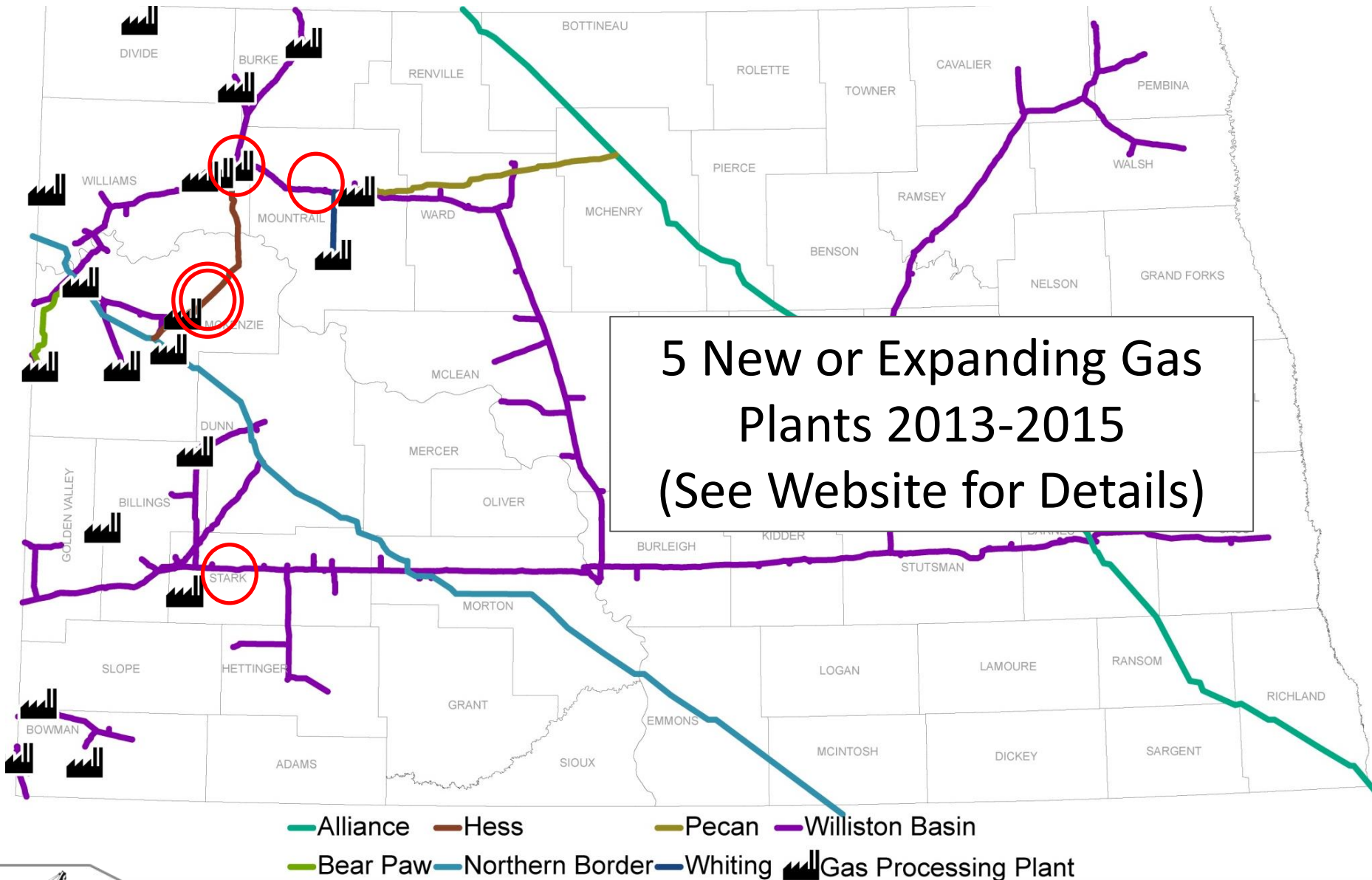
Capturing the 11% Frequent Pigging

NGL buildup in gathering pipelines reduces area for gas to flow

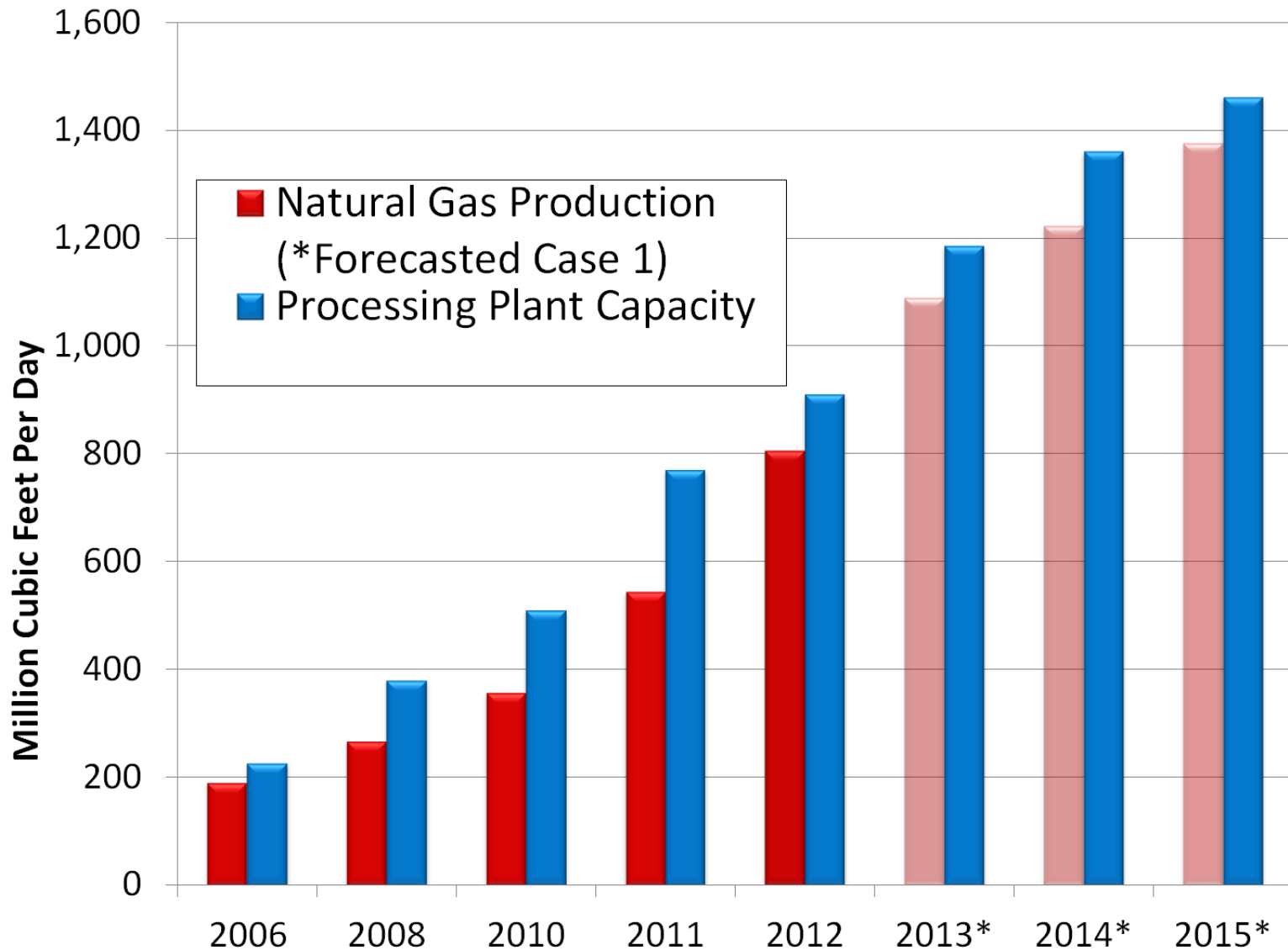


More of an issue in winter months due to lower ground temperature causing more liquids to drop out

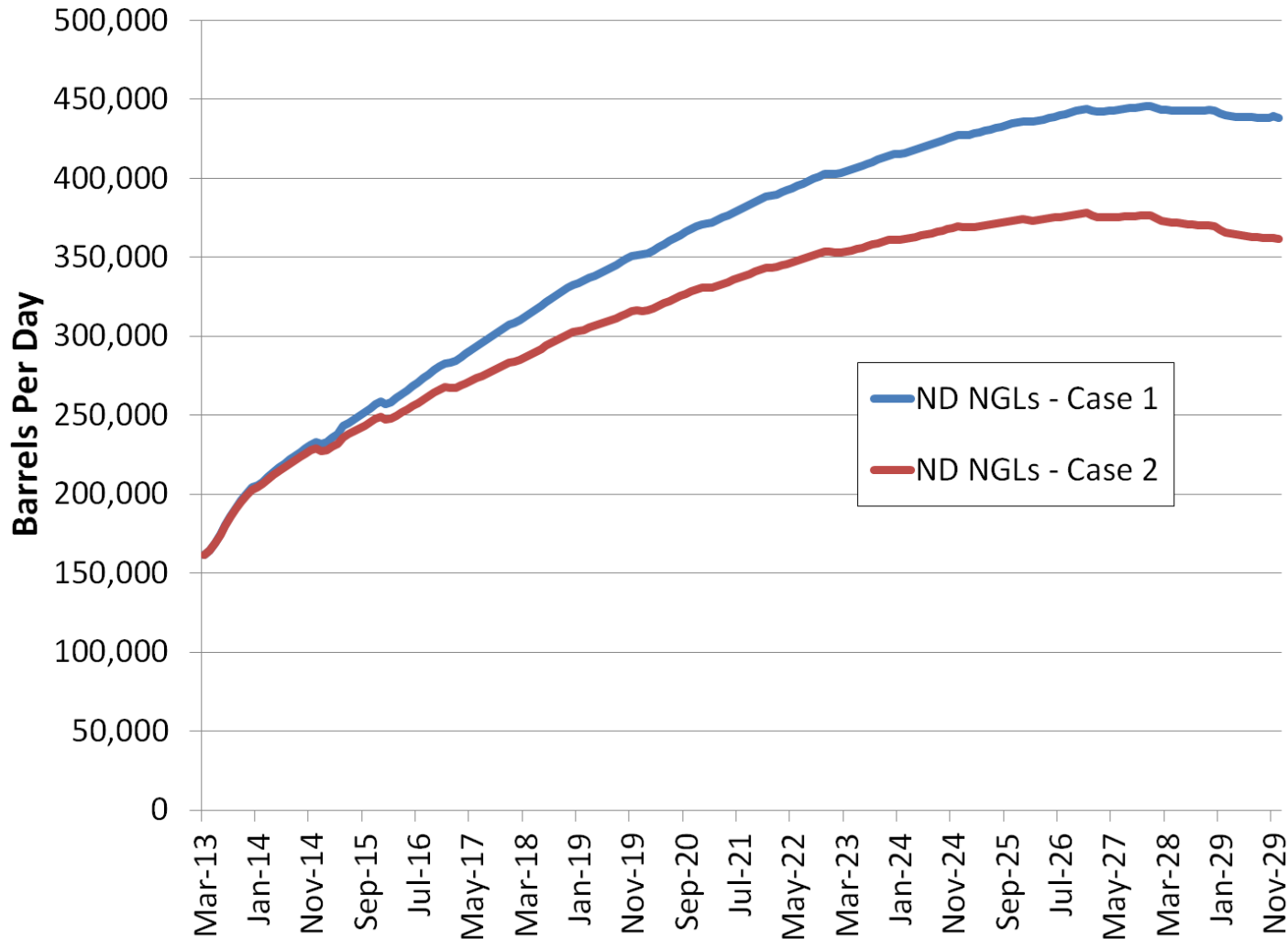
Natural Gas Processing & Transmission



ND Gas Plant Capacity



ND NGL Production Potential

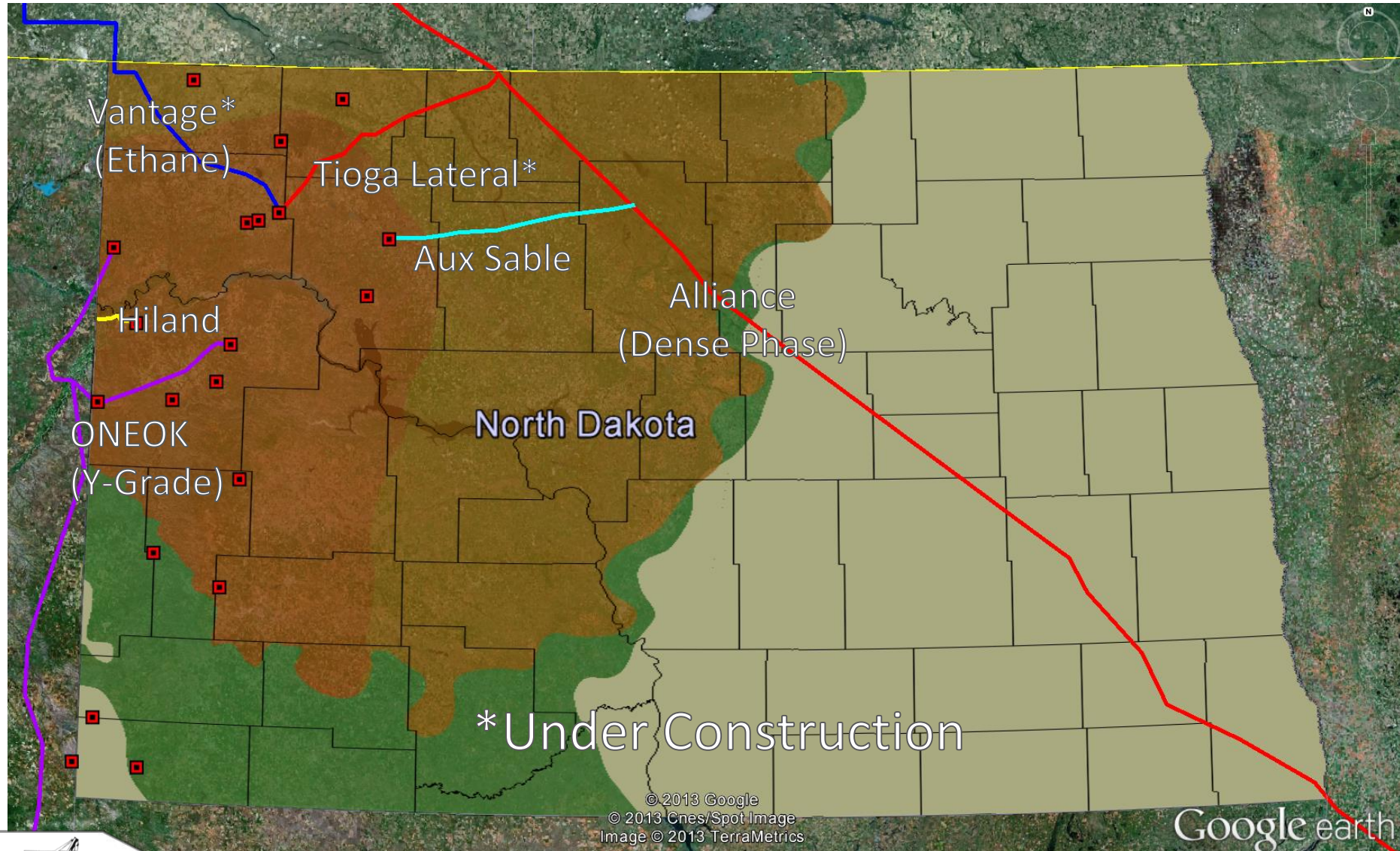


Assumptions

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



NGL Pipeline Transportation



Contact Information

Justin J. Kringstad, Director
North Dakota Pipeline Authority

600 E. Boulevard Ave. Dept. 405
Bismarck, ND 58505-0840

Phone: (701)220-6227

Fax: (701)328-2820

E-mail: jjkringstad@ndpipelines.com

Websites:

www.pipeline.nd.gov

www.northdakotapipelines.com



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

