

## **TAB 2 – Corridor Certificate Application Exhibits**

- Appendix 2.A ND Pipeline Authority  
Slides from ND Oil & Gas Research Council Presentation  
May 23, 2013 - pp. 1-24 only
- Appendix 2.B Lynn Helms, NDIC – Director’s Cut Presentation  
September 12, 2014



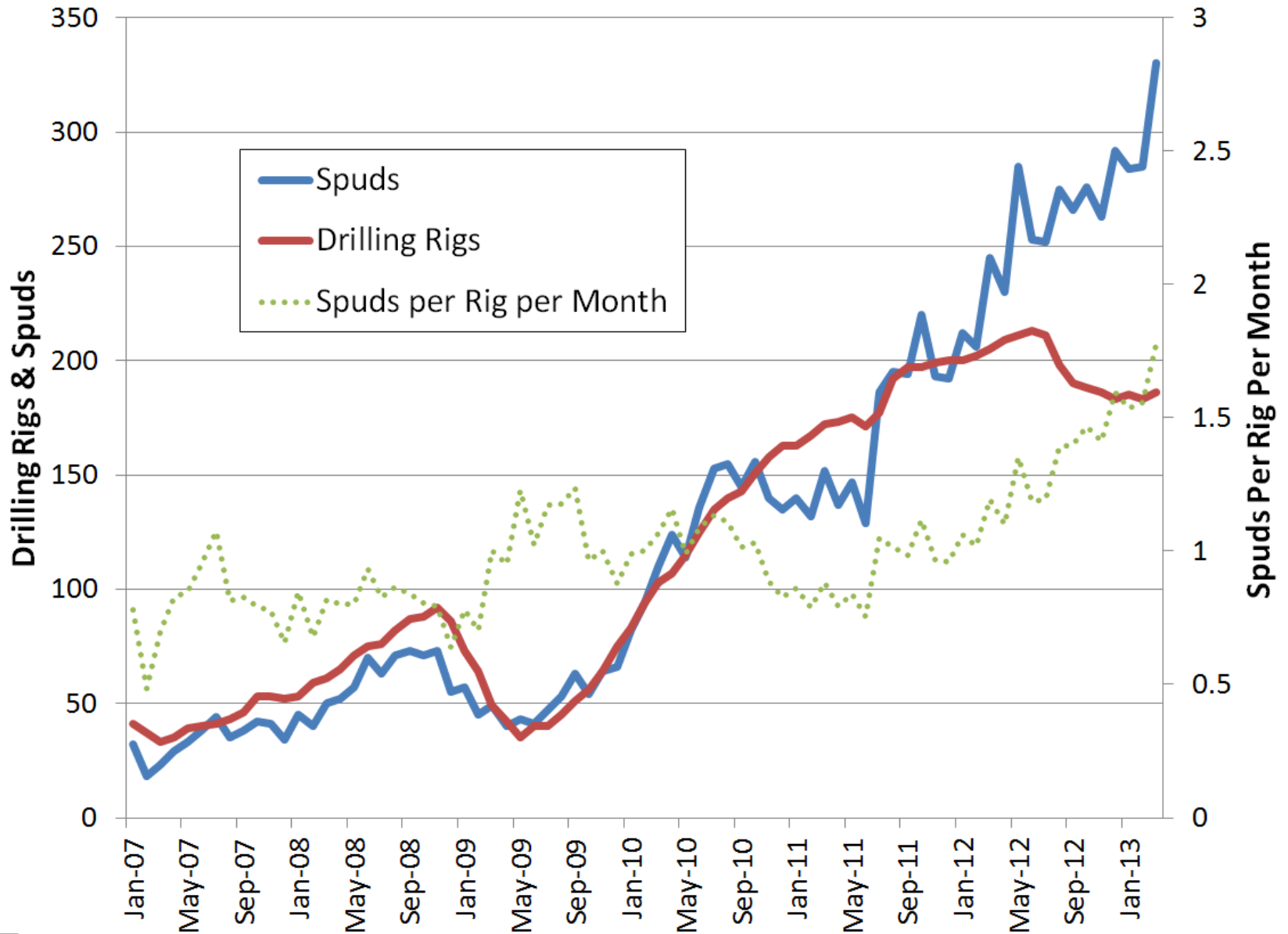
# **North Dakota Oil & Gas Research Council**

**North Dakota Pipeline Authority**

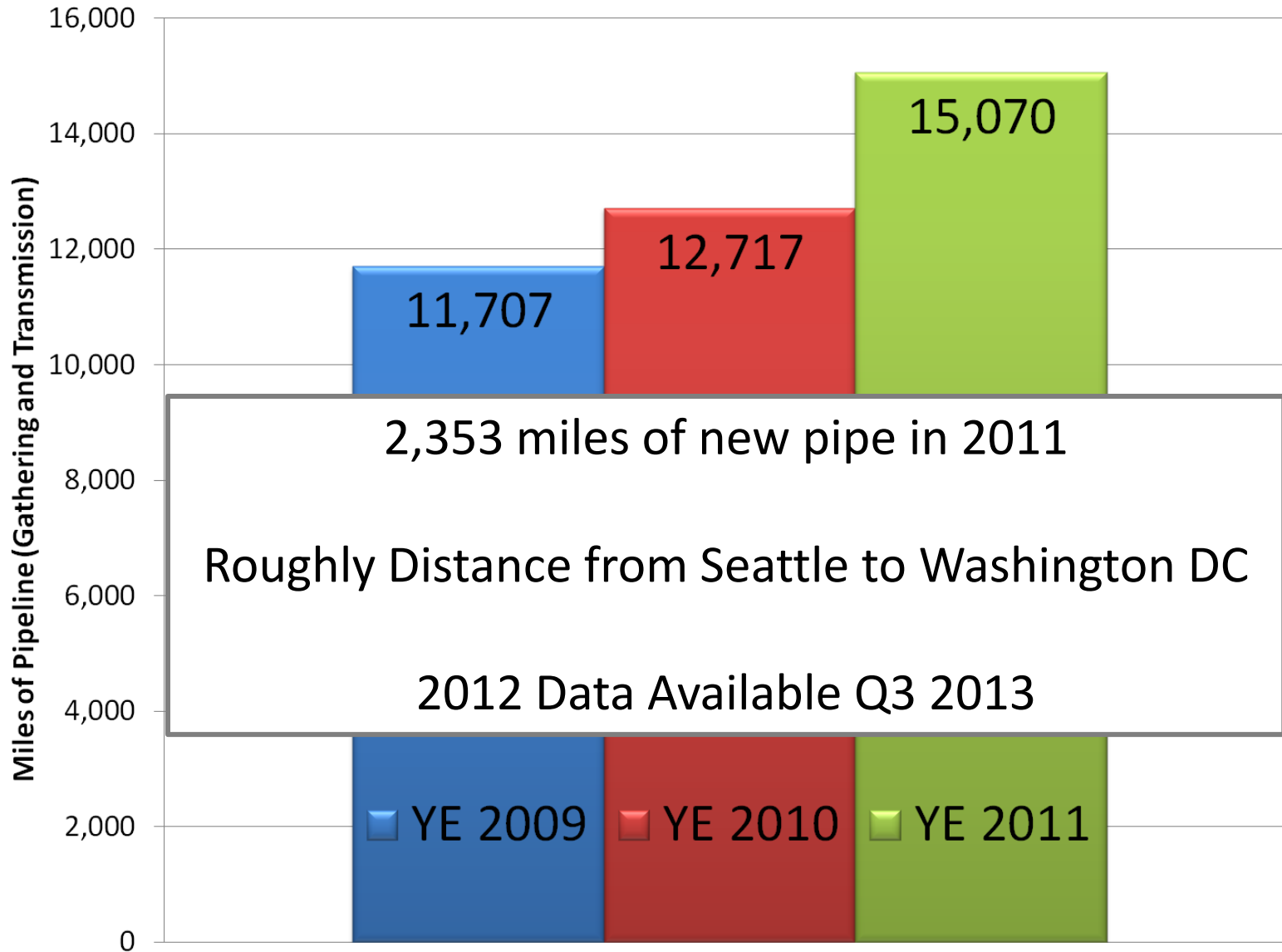
**Justin J. Kringstad**

**May 23, 2013 – Bismarck, ND**

# ND Drilling Stats



# North Dakota Pipeline Miles



# Crude Oil

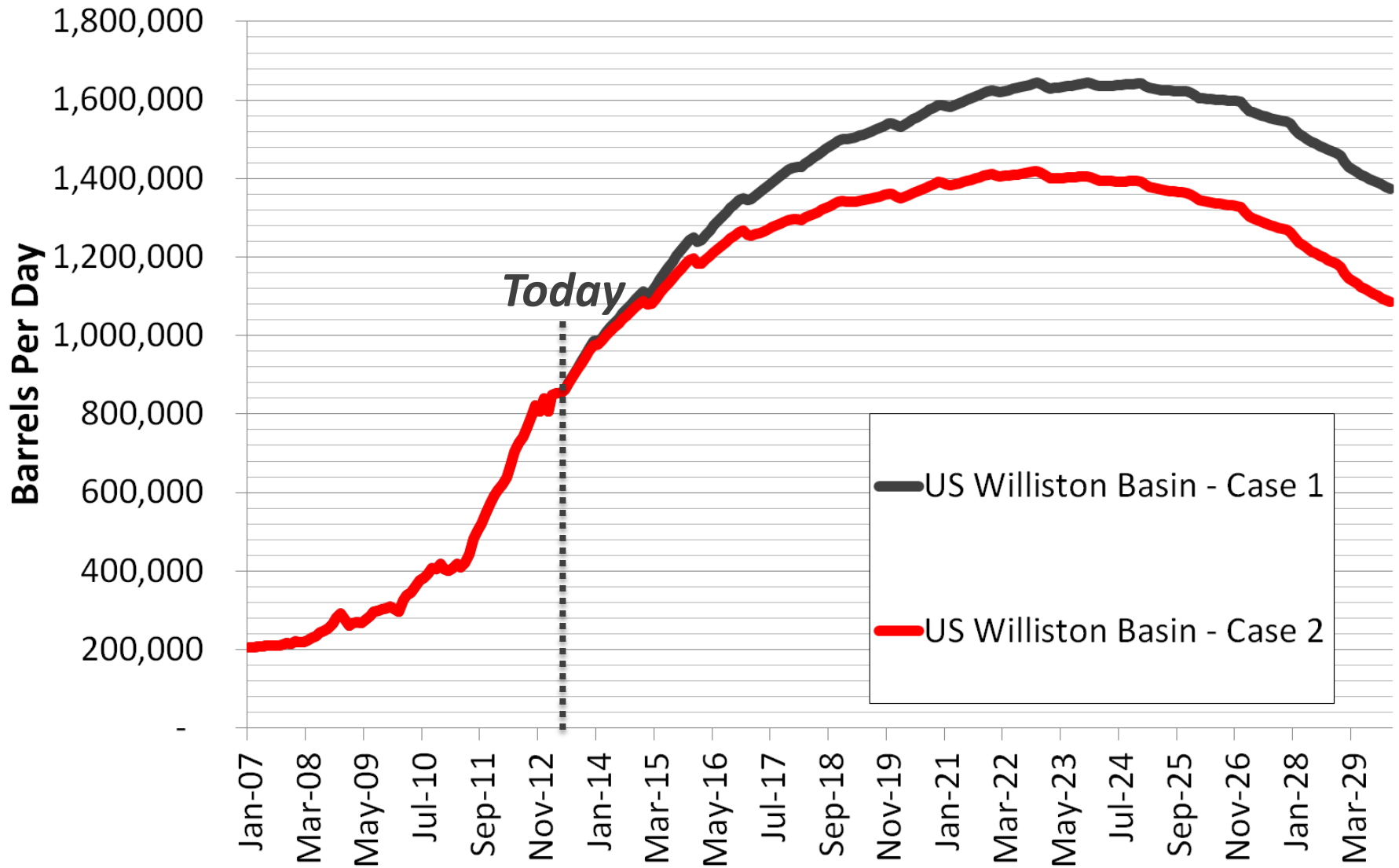
## ***Understanding production potential***

*Understanding current transportation dynamics and potential transportation constraints*

*Understanding current and future market conditions*



# 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

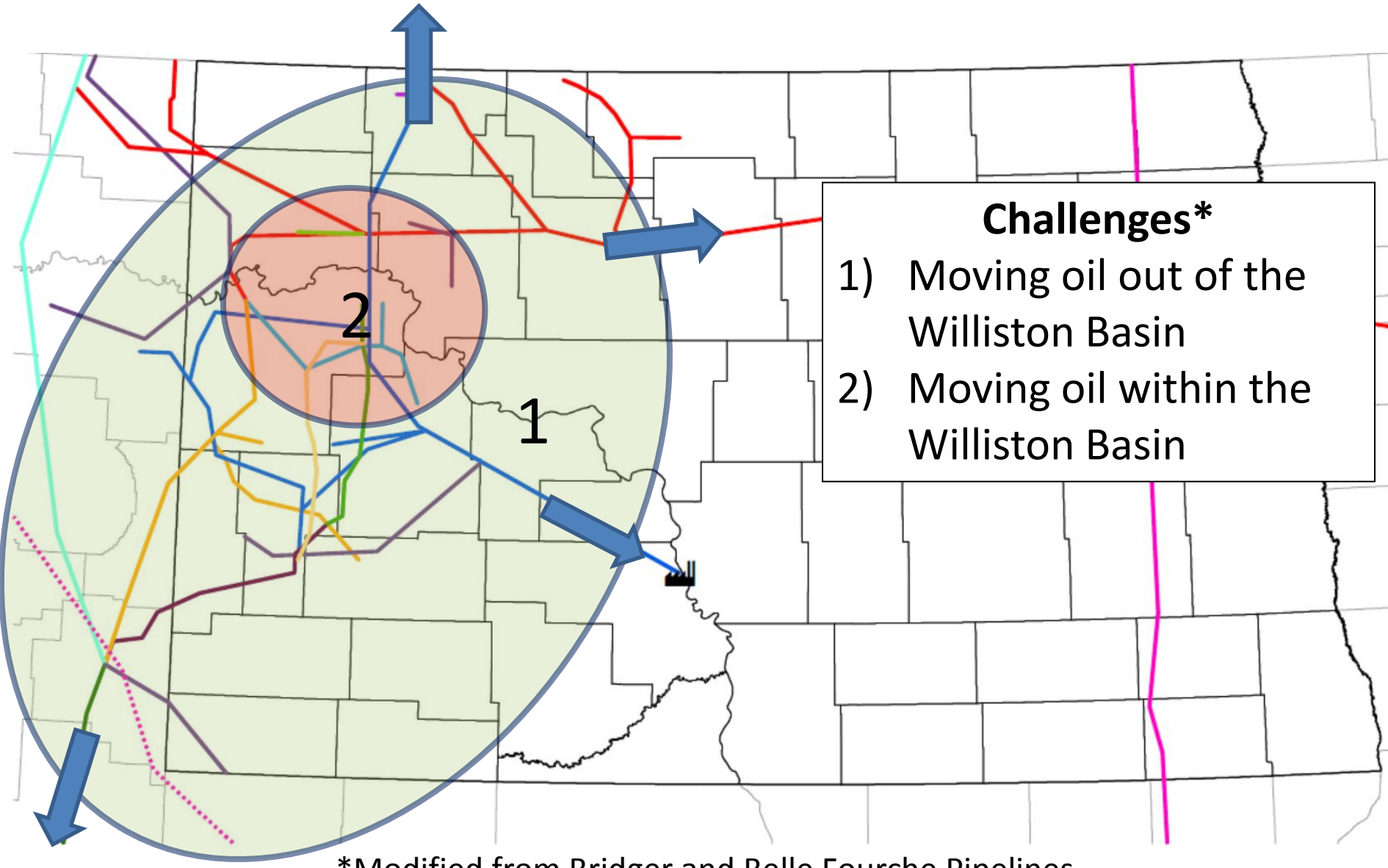
*Understanding production potential*

***Understanding current transportation dynamics and potential transportation constraints***

*Understanding current and future market conditions*



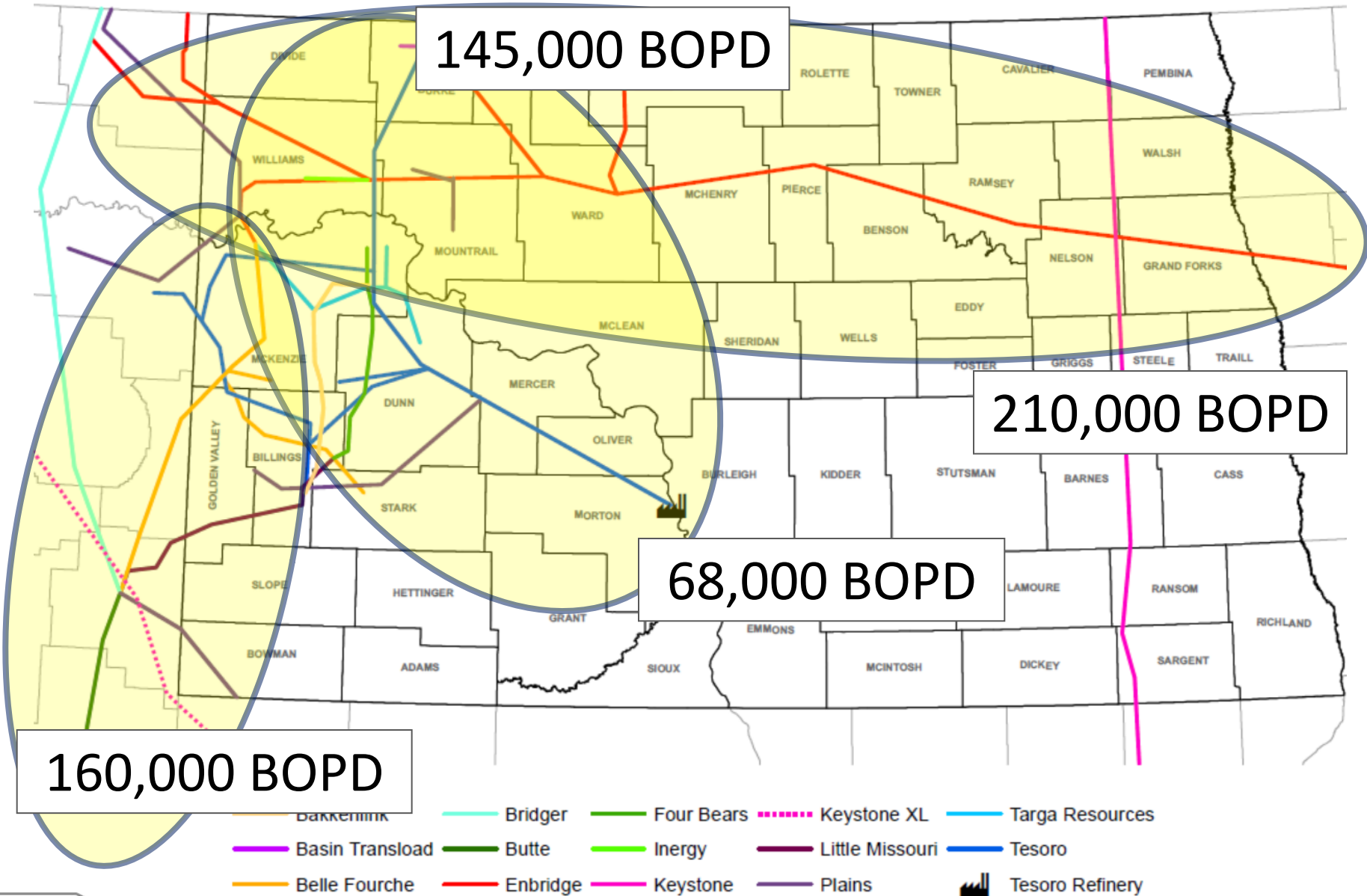
# North Dakota Crude Oil Pipelines



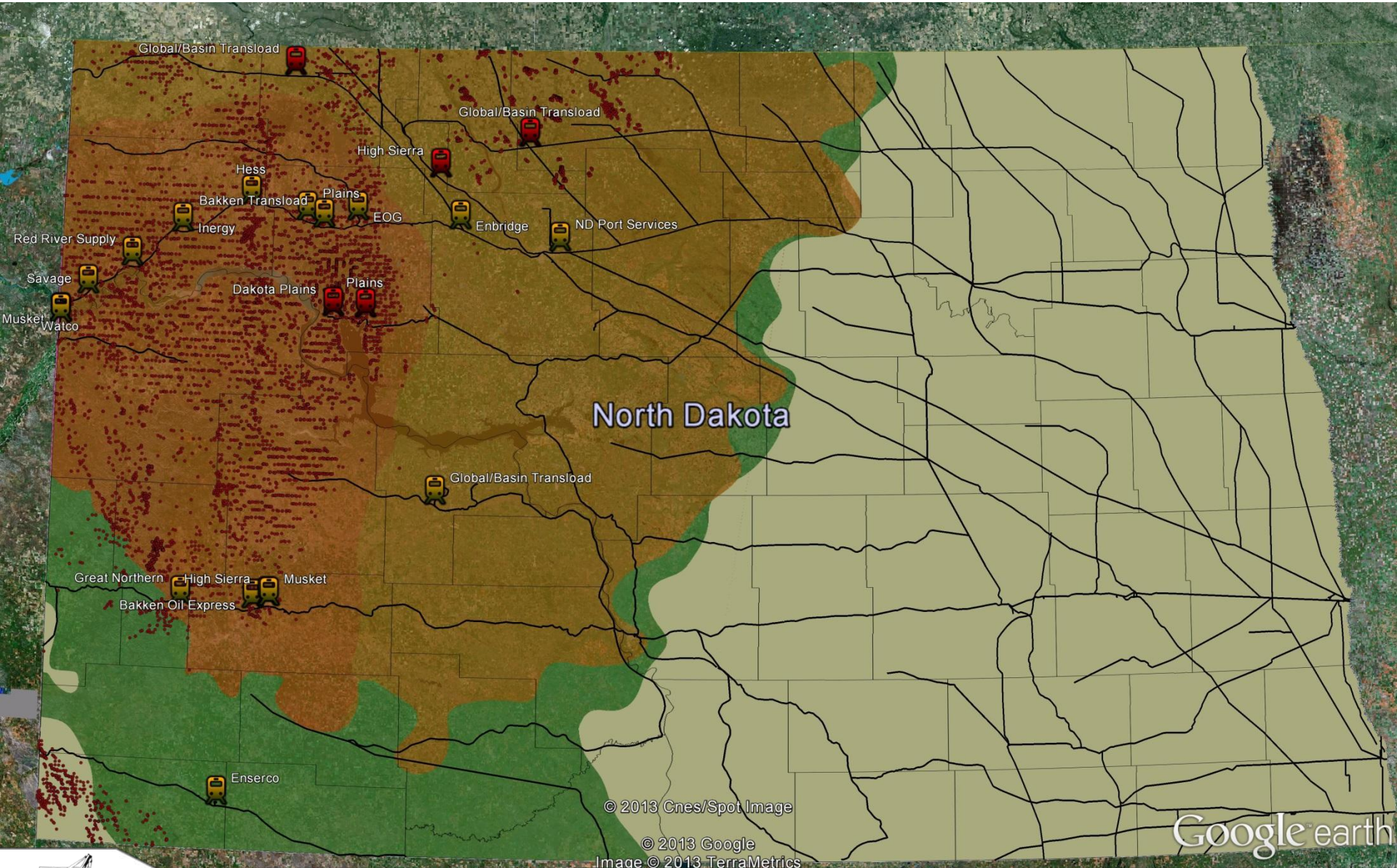
\*Modified from Bridger and Belle Fourche Pipelines



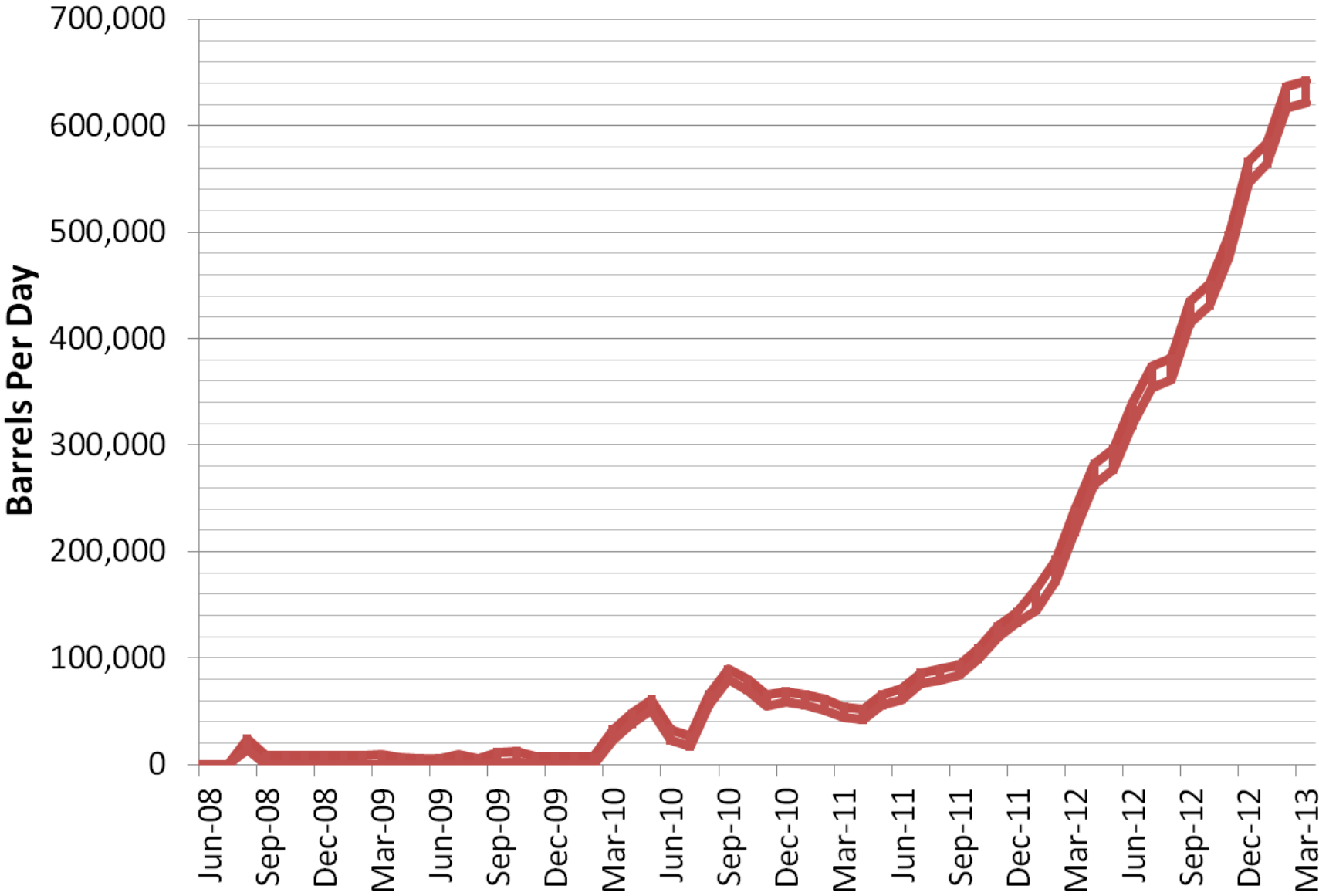
# North Dakota Crude Oil Pipelines



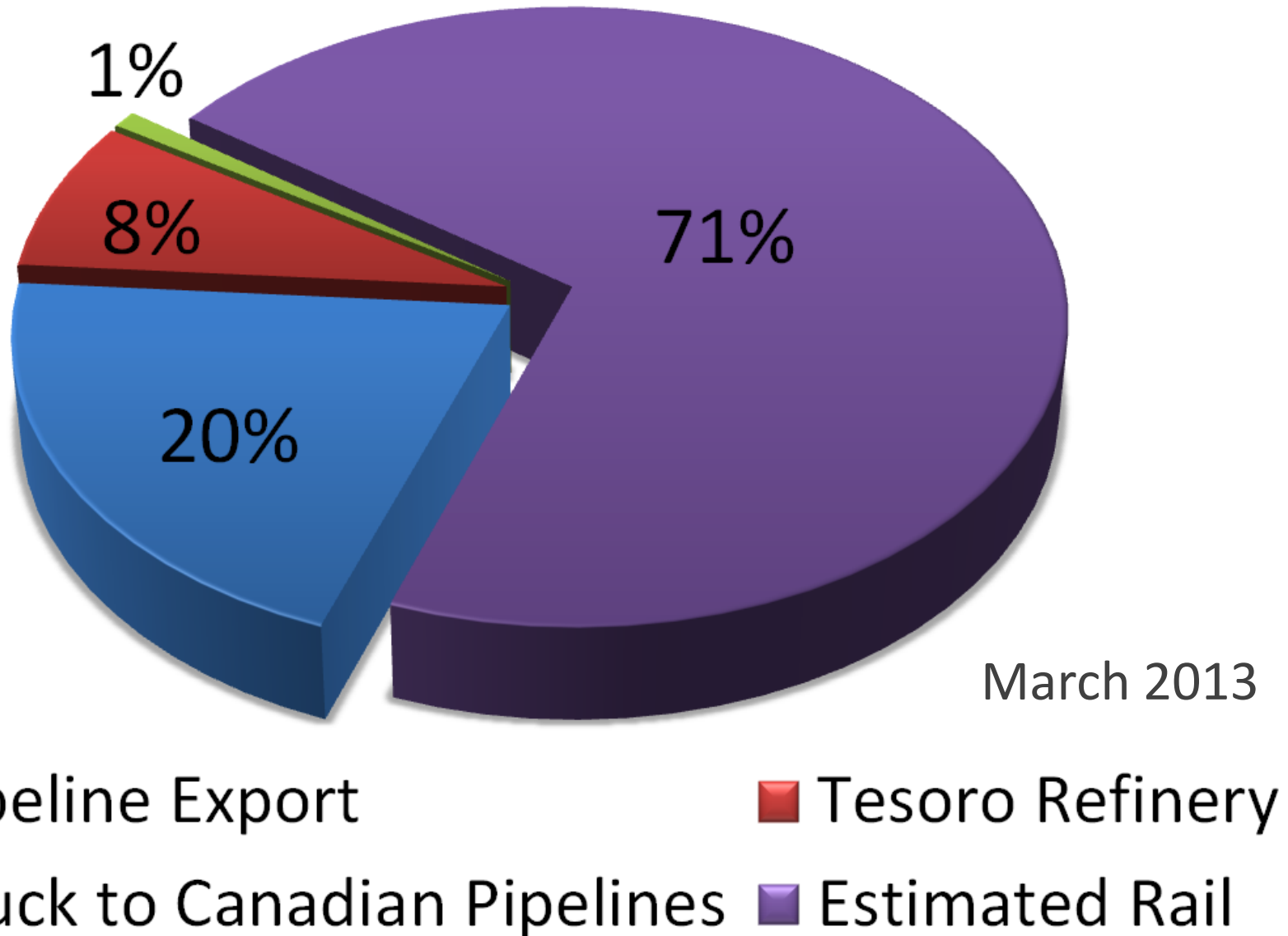
# Oil Loading Rail Facilities



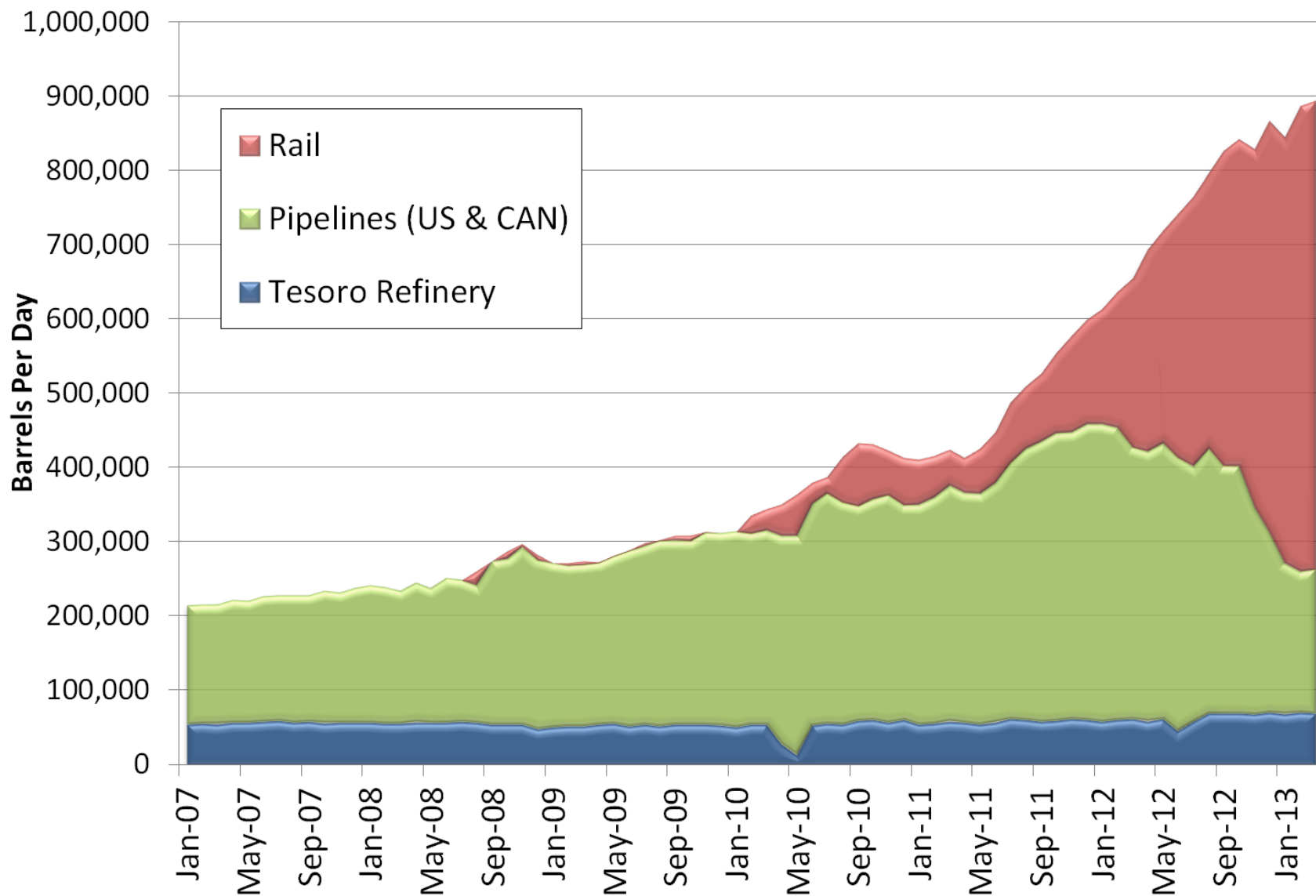
# Estimated ND Rail Export Volumes



# Estimated Williston Basin Oil Transportation



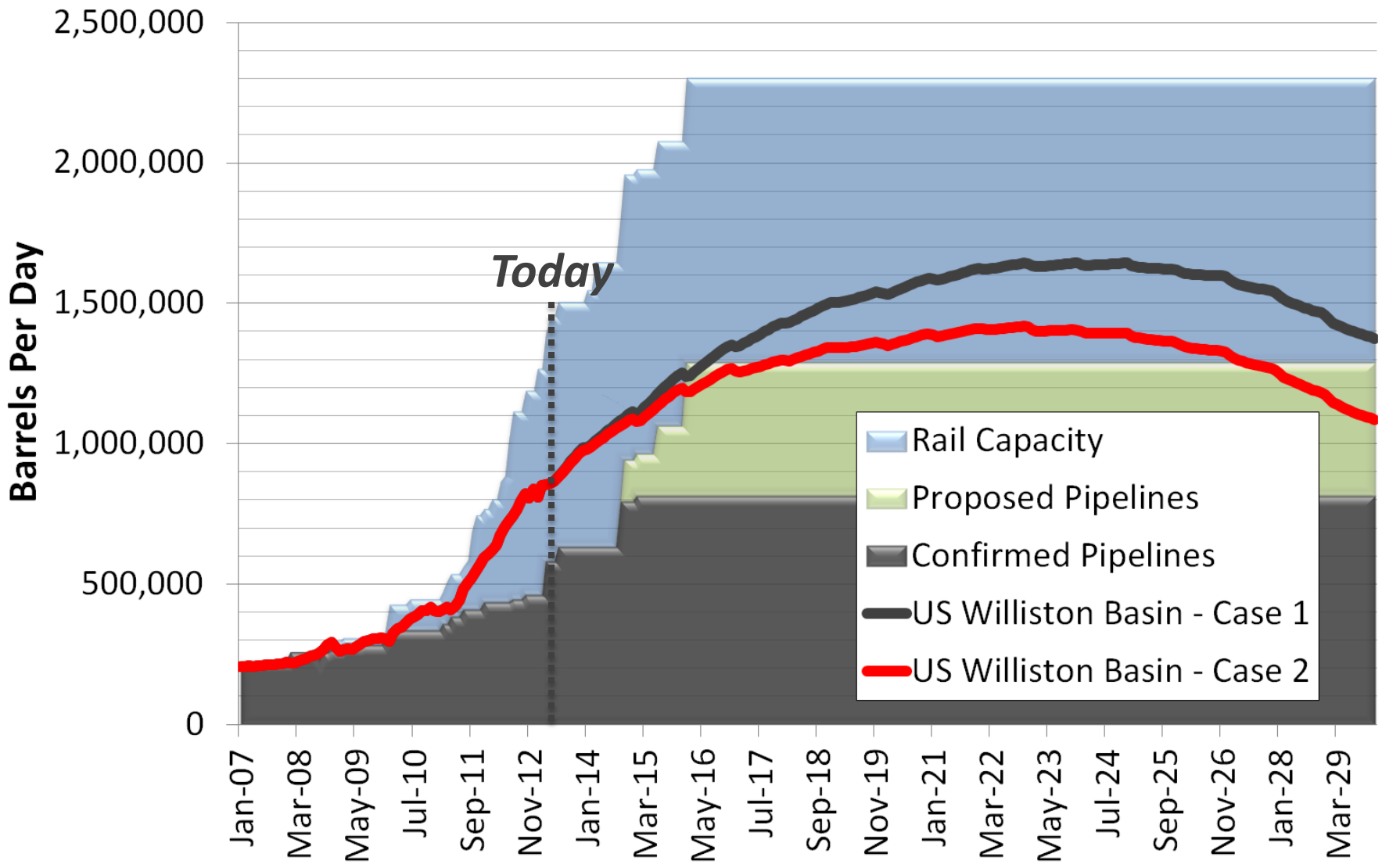
# US Williston Basin Oil Transport\*



*\*Some data based on estimates or assumptions*



# Williston Basin Oil Production & Export Capacity, BOPD



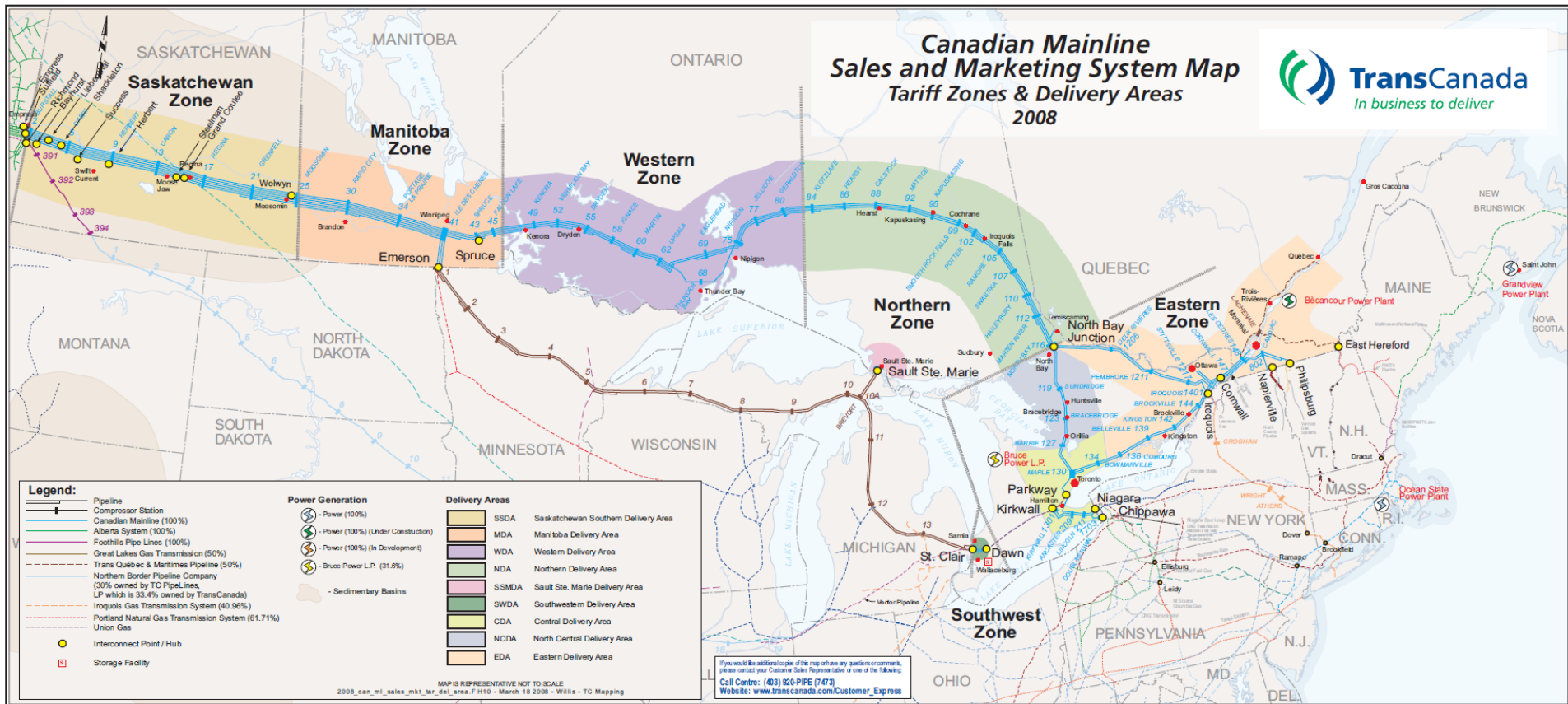
Production forecast is for visual demonstration purposes only and should not be considered accurate for any near or long term planning.



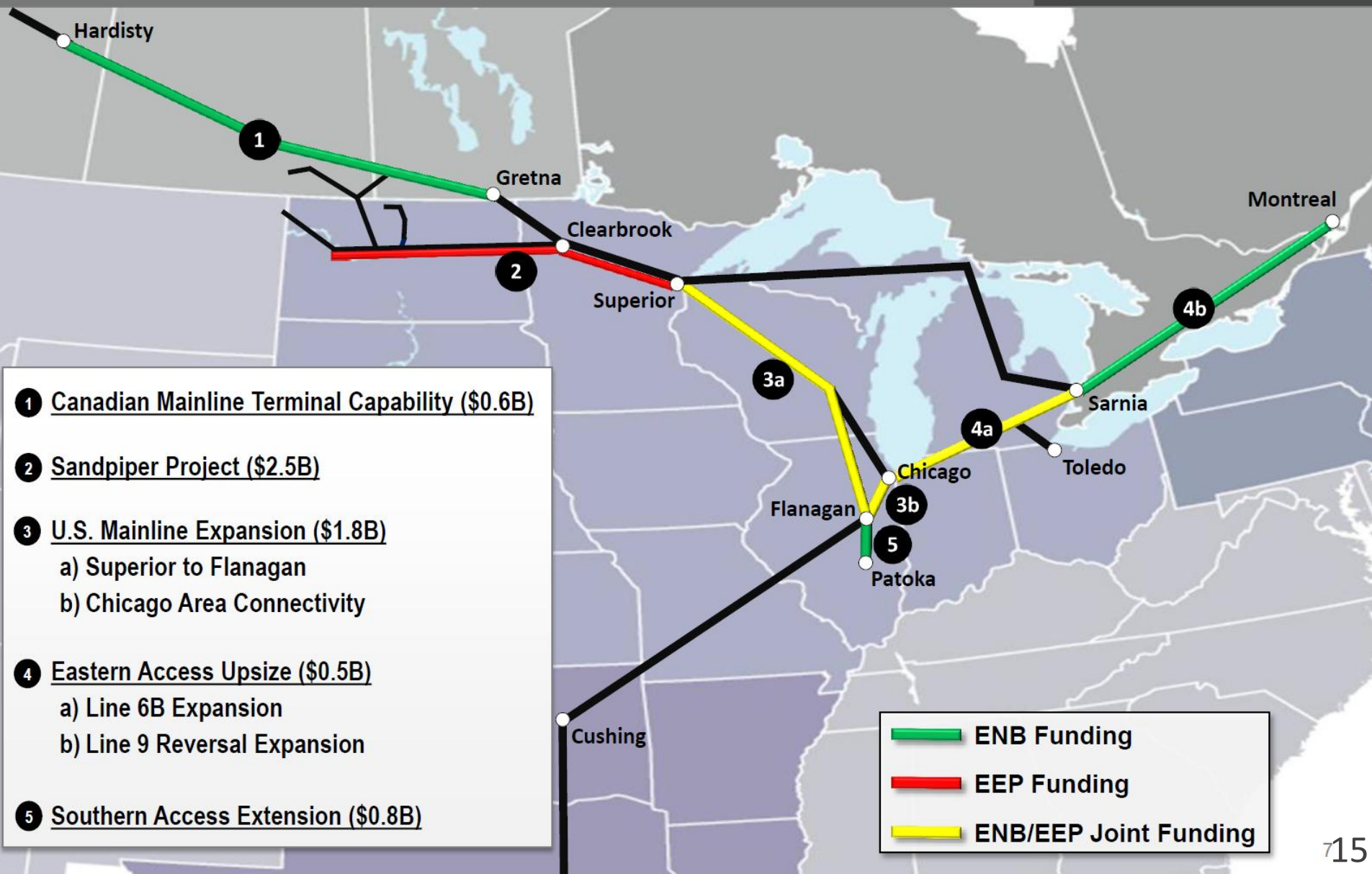
# TransCanada Open Season

April 15-June 17 Up to 850 mbpd

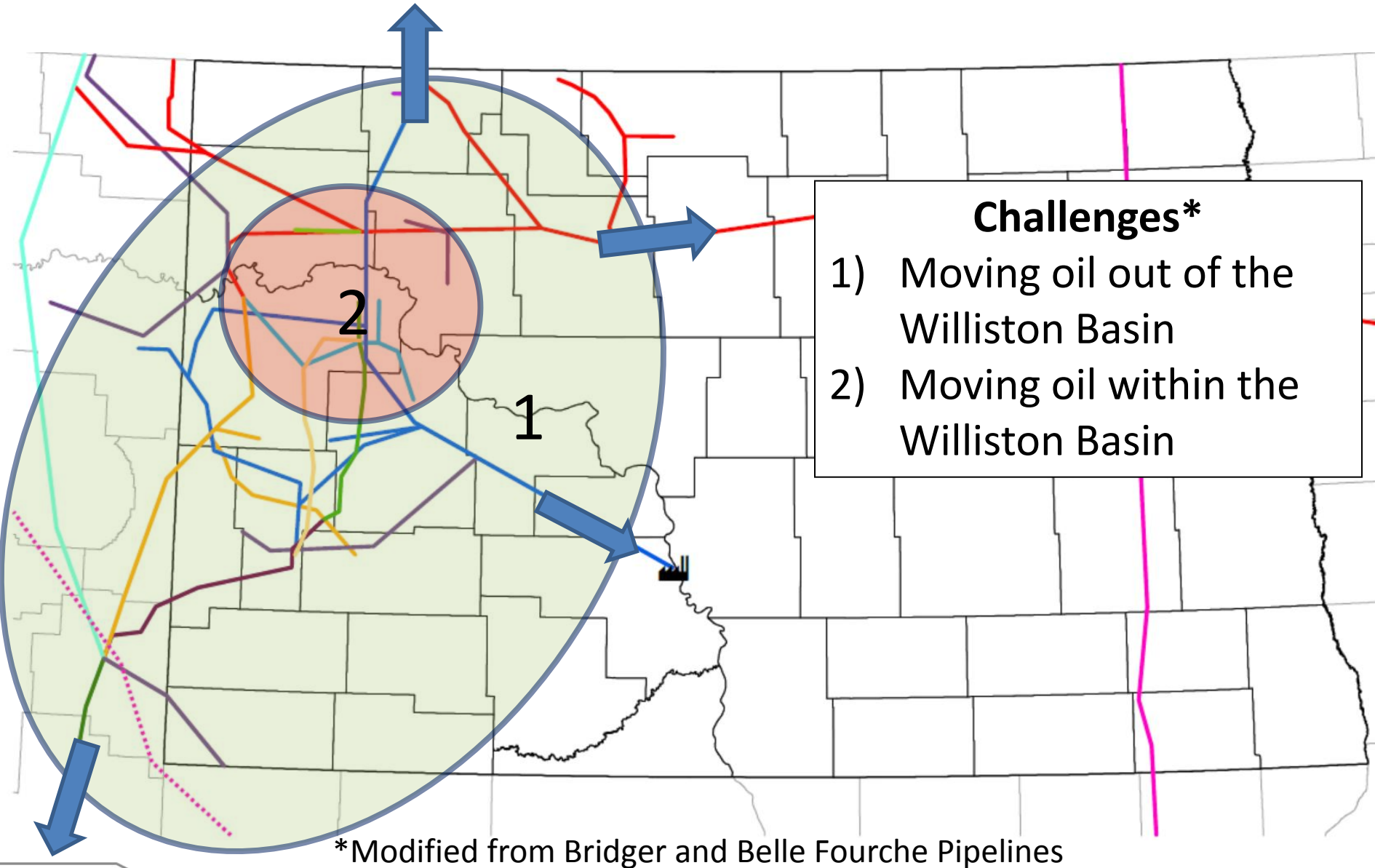
Proposed In-Service 2017/18



# \$6.2 Billion – Light Oil Market Access

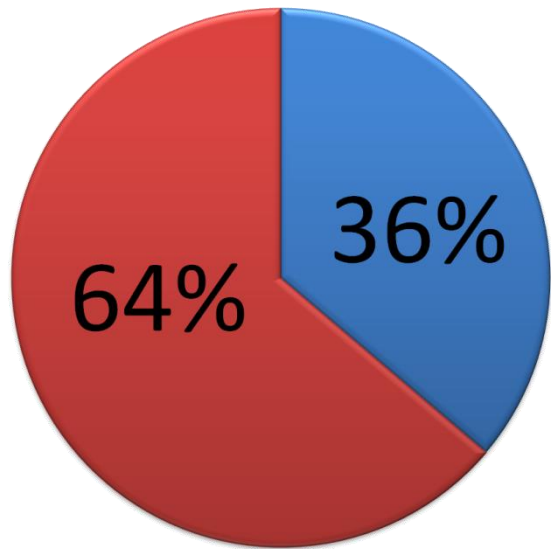


# North Dakota Crude Oil Pipelines



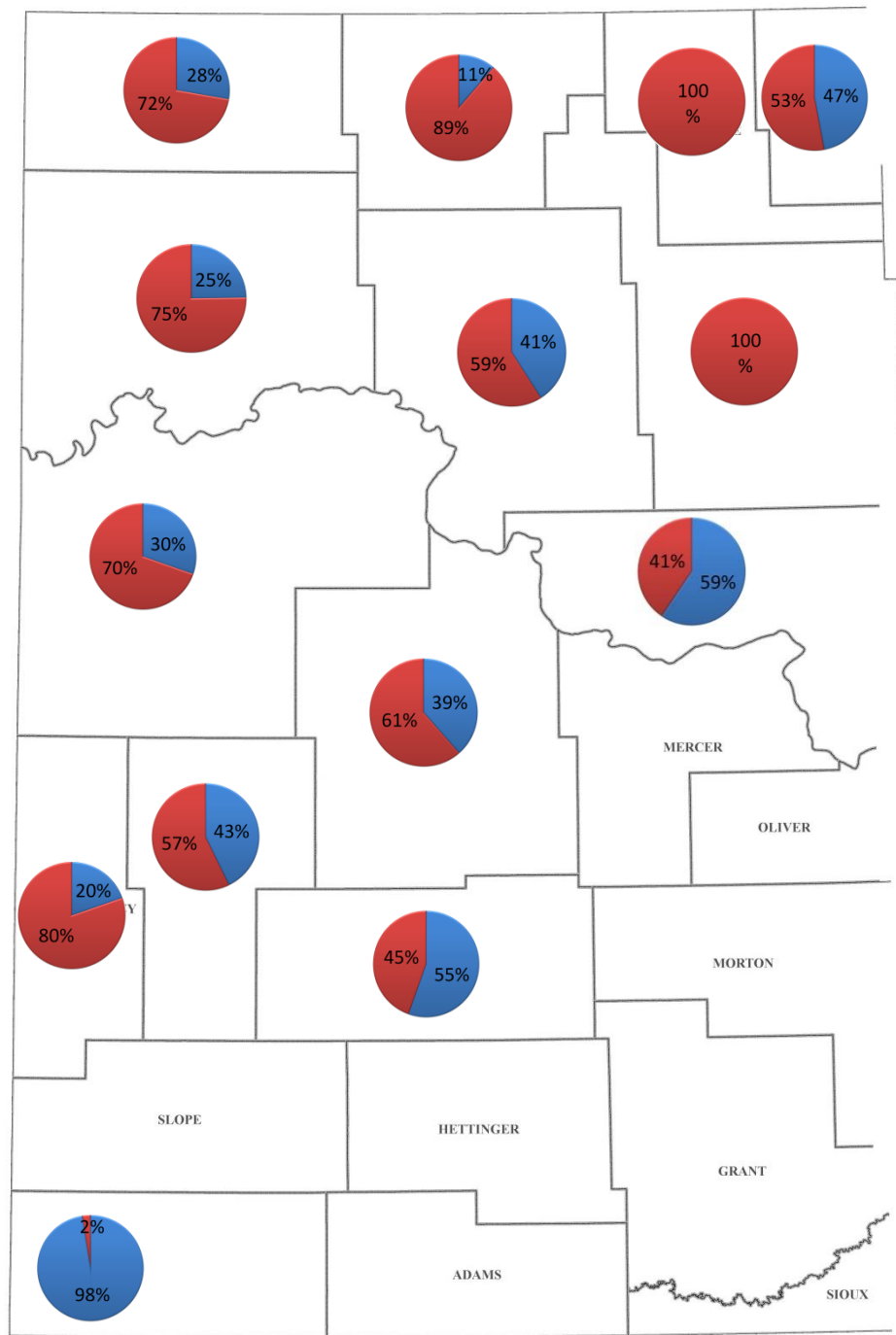
# ND Crude Oil Gathering

**Red** – Trucked  
**Blue** – Pipeline



All ND Production

Sep 2012 Estimates – Some data incomplete or unavailable



# Crude Oil

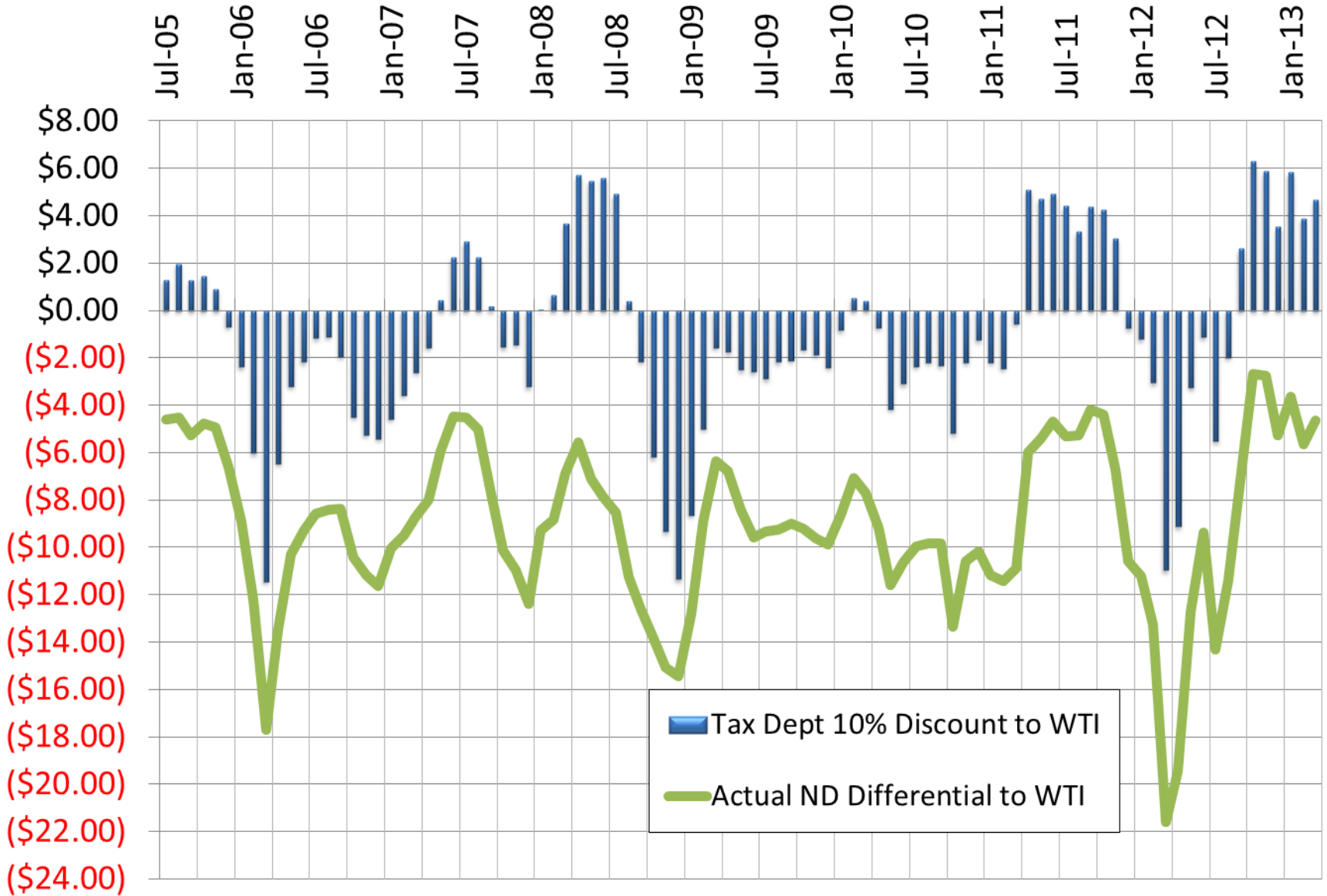
*Understanding production potential*

*Understanding current transportation dynamics and potential transportation constraints*

***Understanding current and future market conditions***



# ND Oil Pricing



# Crude Oil Prices – May 15, 2013

Clearbrook\*

\$89.95

WTI - \$3.25

\*Bloomberg

Brent \$102.36

WTI + \$9.16

Cushing

\$93.20

Brent \$102.36

WTI + \$9.16

Brent \$102.36

WTI + \$9.16

PADD IV

PADD II

PADD I

PADD V

PADD III

US Dept of State Geographer

© 2013 Google

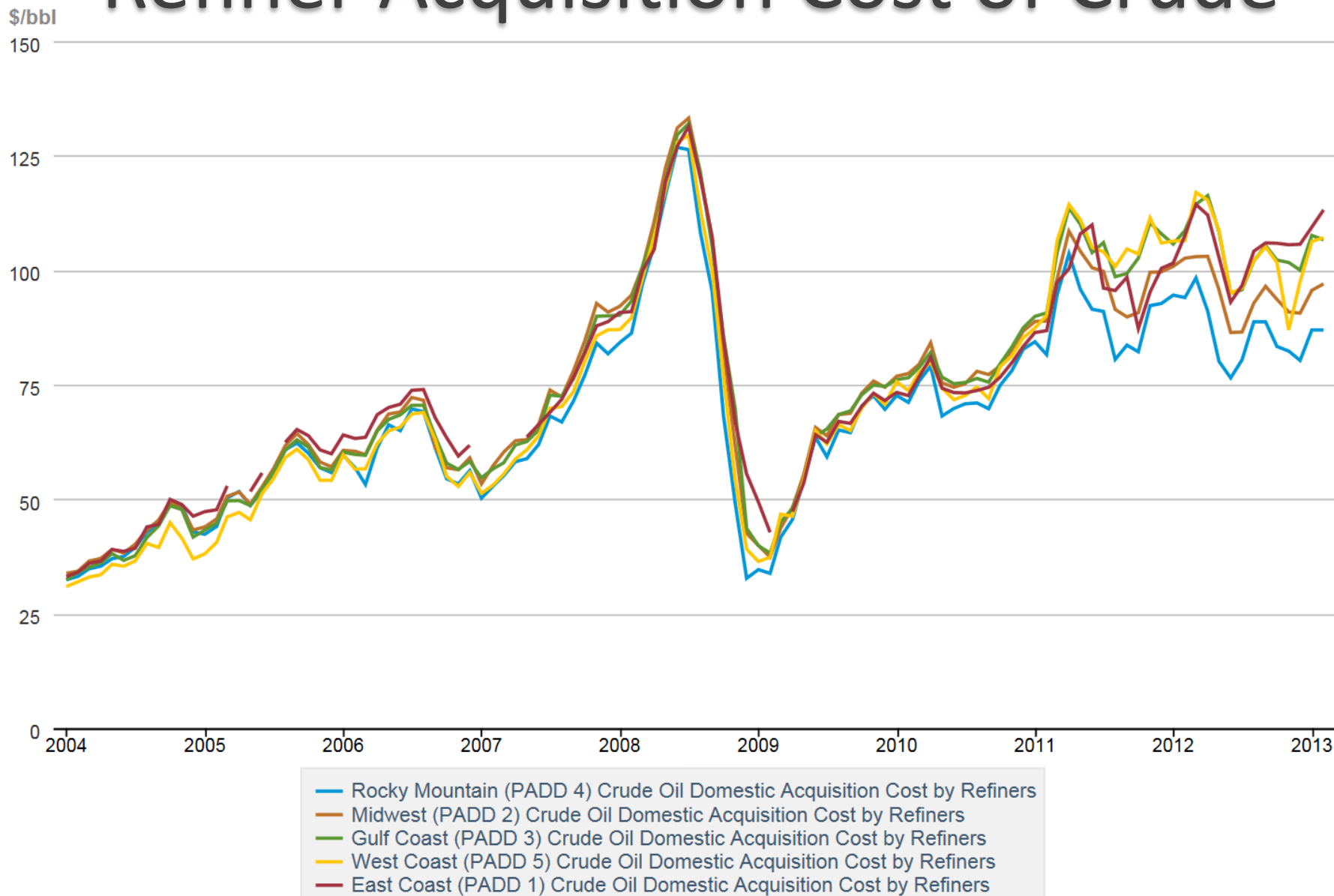
Image © 2013 TerraMetrics

Data SIO, NOAA, U.S. Navy, NGA, GEBCO

Google earth



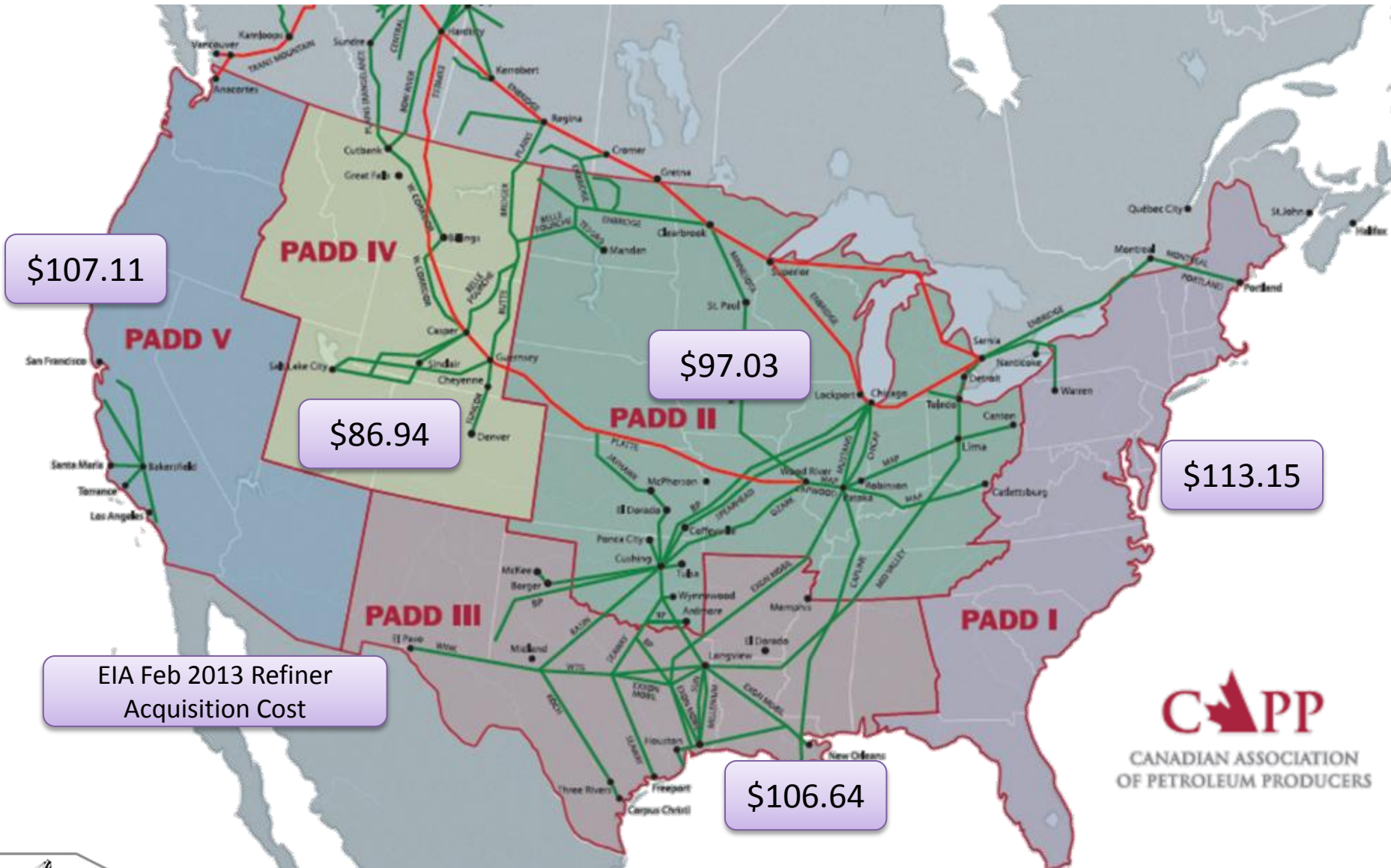
# Refiner Acquisition Cost of Crude



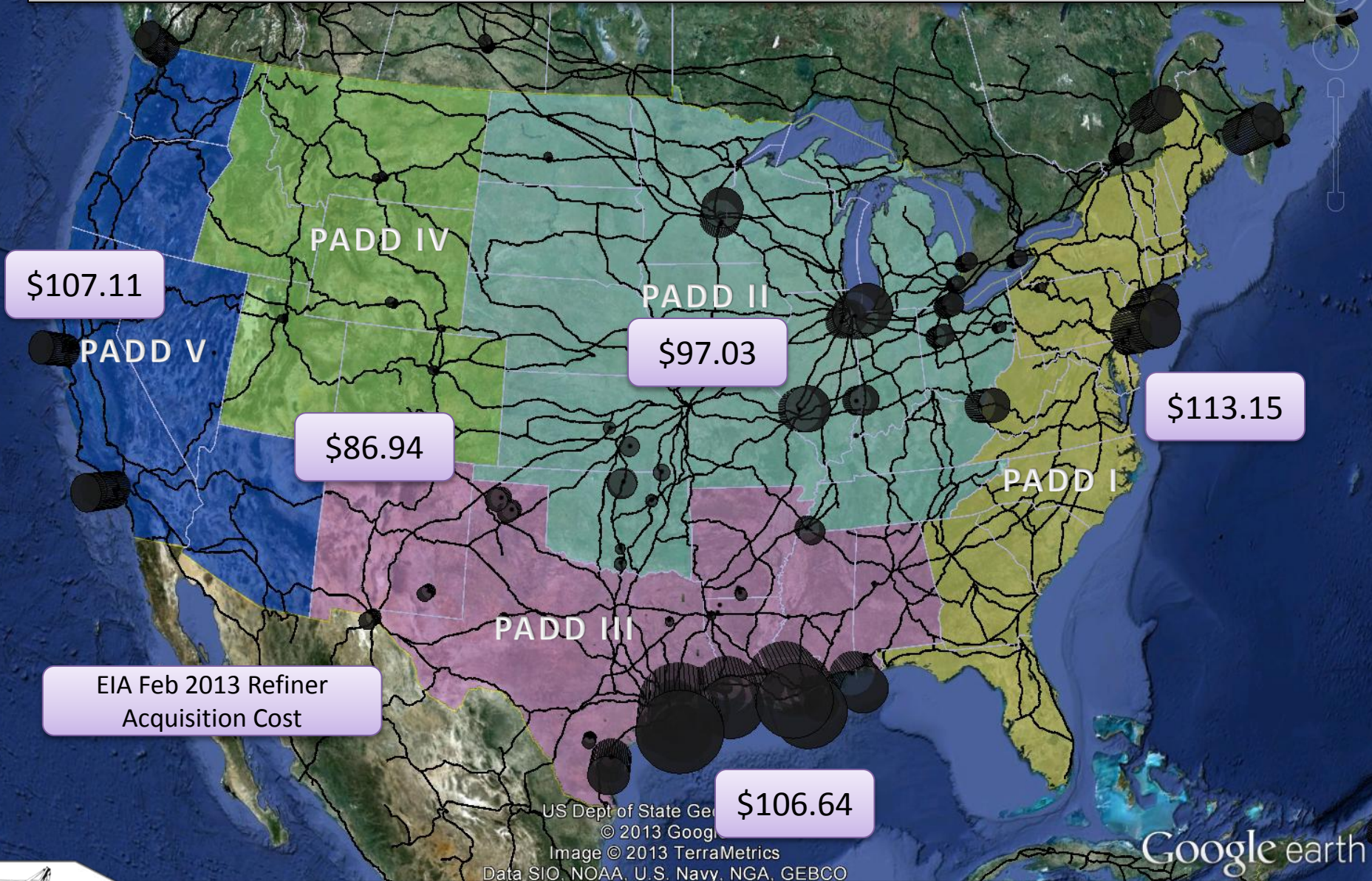
Source: U.S. Energy Information Administration



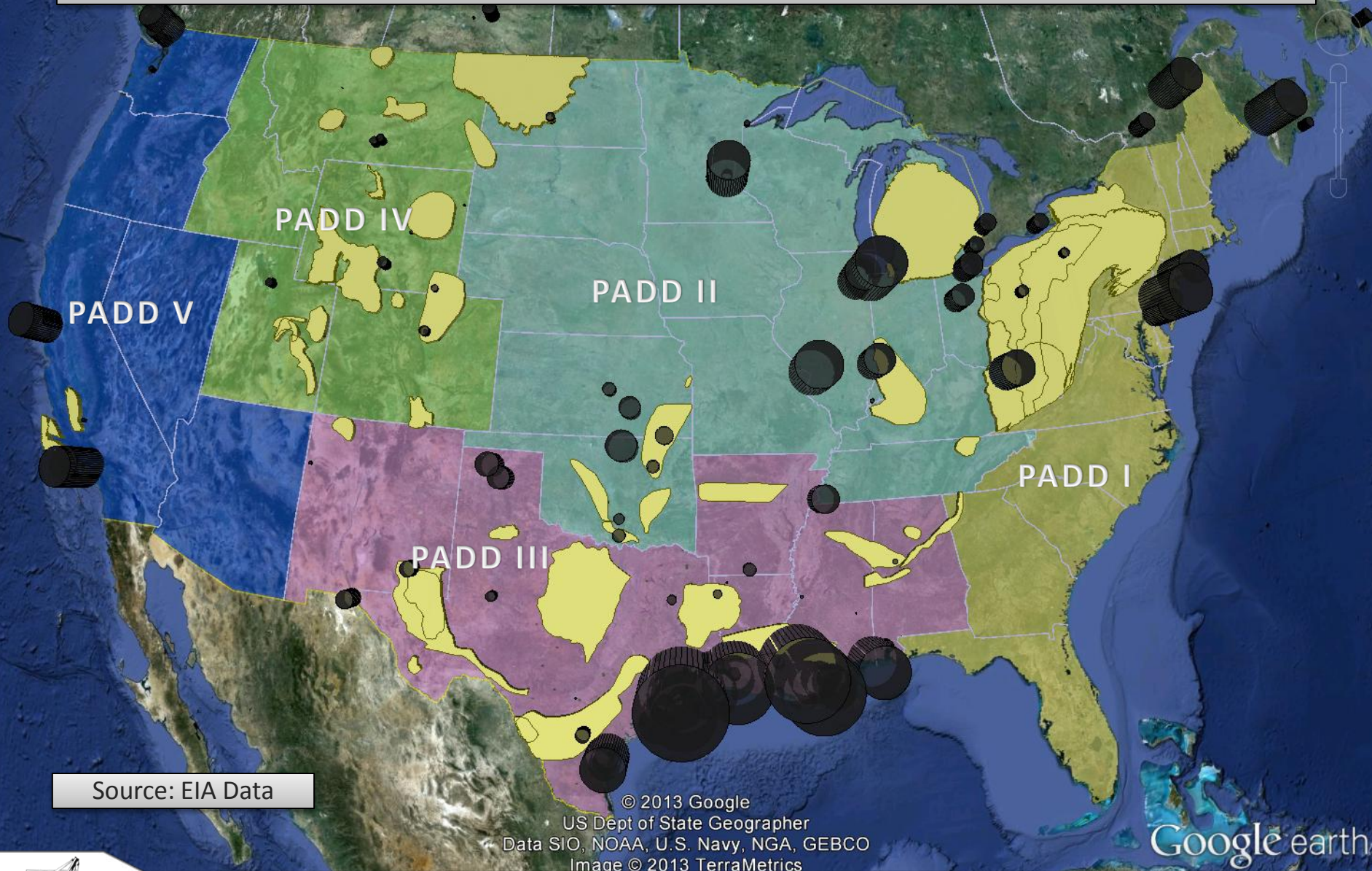
# Major Pipelines and Refining Centers



# Major Rail Lines and Refineries



# US Shale Plays and Refineries



Source: EIA Data

© 2013 Google  
US Dept of State Geographer  
Data SIO, NOAA, U.S. Navy, NGA, GEBCO  
Image © 2013 TerraMetrics



# Director's Cut

Lynn Helms  
NDIC Department of Mineral Resources

June Oil 32,775,559 barrels = 1,092,519 barrels/day  
July Oil 34,429,910 barrels = 1,110,642 barrels/day (preliminary)(NEW all-time high)  
1,047,034 barrels per day or 94% from Bakken and Three Forks  
63,608 barrels per day or 6% from legacy conventional pools

June Gas 37,588,622 MCF = 1,252,954 MCF/day  
July Gas 40,035,470 MCF = 1,291,467 MCF/day (preliminary)(NEW all-time high)

June Producing Wells = 11,090  
July Producing Wells = 11,287 (preliminary)(NEW all-time high)  
7,862 Wells or 70% are now unconventional Bakken – Three forks wells  
3,425 wells or 30% produce from legacy conventional pools

June Permitting: 247 drilling and 0 seismic  
July Permitting: 265 drilling and 1 seismic  
Aug Permitting: 273 drilling and 2 seismic (all time high was 370 in 10/2012)

June Sweet Crude Price = \$90.03/barrel  
July Sweet Crude Price = \$86.20/barrel  
Aug Sweet Crude Price = \$78.46/barrel  
Today Sweet Crude Price = \$74.50/barrel (all-time high was \$136.29 7/3/2008)

June rig count 190  
July rig count 192  
Aug rig count 193  
Today's rig count is 198 (all-time high was 218 on 5/29/2012)  
The statewide rig count is down 9% from the high and in the five most active counties rig count is down as follows:  
Divide -23% (high was 3/2013)  
Dunn -29% (high was 6/2012)  
McKenzie -5% (high was 1/2014)  
Mountrail -22% (high was 6/2011)  
Williams -16% (high was 3/2012)

## Comments:

The drilling rig count was up two from June to July, and up one more from July to August. The number of well completions<sup>1</sup> increased from 188 in June to 197 in July with summer weather and no significant rain events. However, there were still 4 to 5 days with wind speeds in excess of 35 mph (too high for completion work).

Over 95% of drilling still targets the Bakken and Three Forks formations.

The drillers continue to outpace the completion crews. At the end of July there were about 630 wells waiting on completion services, an increase of 45.

Crude oil take away capacity is expected to remain adequate as long as rail deliveries to coastal refineries keep growing.

Rig count in the Williston Basin is gradually increasing. Utilization rate for rigs capable of 20,000+ feet remains above 90%, and for shallow well rigs (7,000 feet or less) about 60%.

Drilling permit activity continued to increase as operators got into their summer programs while planning and constructing locations for next winter.

The number of rigs actively drilling on federal surface in the Dakota Prairie Grasslands is unchanged at 4.

Activity on the Fort Berthold Reservation is as follows

25 drilling rigs (10 on fee lands and 15 on trust lands)

333,119 barrels of oil per day (134,433 from trust lands & 198,687 from fee lands)

1,277 active wells (930 on trust lands & 347 on fee lands)

143 wells waiting on completion

329 approved drilling permits (260 on trust lands & 69 on fee lands)

2,092 additional potential future wells (1,338 on trust lands & 754 on fee lands)

Seismic activity is steady 4 surveys active/recording, 1 remediating, 1 suspended, and 5 permitted. There are now 4 buried arrays in North Dakota for monitoring and optimizing hydraulic fracturing.

North Dakota leasing activity is very low, consisting mostly of renewals and top leases in the Bakken - Three Forks area.

US natural gas storage is now 14% below the five-year average indicating increasing prices in the future. North Dakota shallow gas exploration could be economic at future gas prices and as you are aware exploration is underway in Emmons County. The first well will be on confidential status until 12/23/14.

The price of natural gas delivered to Northern Border at Watford City is down \$0.14 to \$3.42/MCF. This results in a current oil to gas price ratio of 22 to 1. The percentage of gas flared dropped to 26% even though the new Tioga gas plant remained below full capacity due to delayed expansion of gas gathering from south of Lake Sakakawea. The July capture percentage was 74% which reduced the daily volume of gas flared from June to July 18.6 MMCFD. The historical high flared percent was 36% in 09/2011.

BLM revised final regulations for hydraulic fracturing on federal and Indian lands were sent to the White House Office of Management and Budget for interagency review on August 26 and Department of Interior announced a continuing commitment to their goal of issuing a final rule by year end of 2014. After initial publication in 2012, BLM received over 177,000 comments and withdrew the rule. A new proposed rule was published in the federal register on 5/24/2013 and the comment period ended 8/23/2013. This time BLM received over 1.2 million comments. Thanks to all who provided comments in support of a “states first” policy.

BLM has started the process of new venting and flaring regulations with input sessions in Denver, Albuquerque, Dickinson, and Washington, DC.

EPA has published an advanced notice of proposed rule-making to seek comment on the information that should be reported or disclosed for hydraulic fracturing chemical substances and mixtures and the mechanism for obtaining this information. The proposed rule-making is in response to a petition from Earthjustice and 114 other groups who are opposed to the use of the GWPC-IOGCC FracFocus website process of chemical disclosure and any type of trade secret protection for hydraulic fracturing fluid mixtures. These groups are requesting EPA regulation of chemical disclosure under the federal Toxic Substances Control Act. Comments were due by 5pm EDT 8/18/14. Thanks to all who provided comments in support of a “states first” policy.

---

<sup>i</sup> Disclaimer: The number of completions is an estimate on the part of the director based on idle well count and a typical five year average. Neither the State of North Dakota, nor any agency officer, or employee of the State of North Dakota warrants the accuracy or reliability of this product and shall not be held responsible for any losses caused by this product. Portions of the information may be incorrect or out of date. Any person or entity that relies on any information obtained from this product does so at his or her own risk.