



Impact of Cochin Pipeline Reversal on Propane Markets and Marketers in the Midwest

Midwest Propane Convention

May 21, 2014

ICF International
9300 Lee Highway
Fairfax Virginia
22031

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This Presentation is About the Numbers

- 1) A focused look at what happened this winter.
- 2) A look ahead at how the trends that shaped propane supply issues this winter will impact propane markets in the future.
- 3) An assessment on the likelihood of a future supply crisis like the one this winter.
- 4) A detailed look at the Cochin Pipeline

WHAT HAPPENED THIS WINTER?

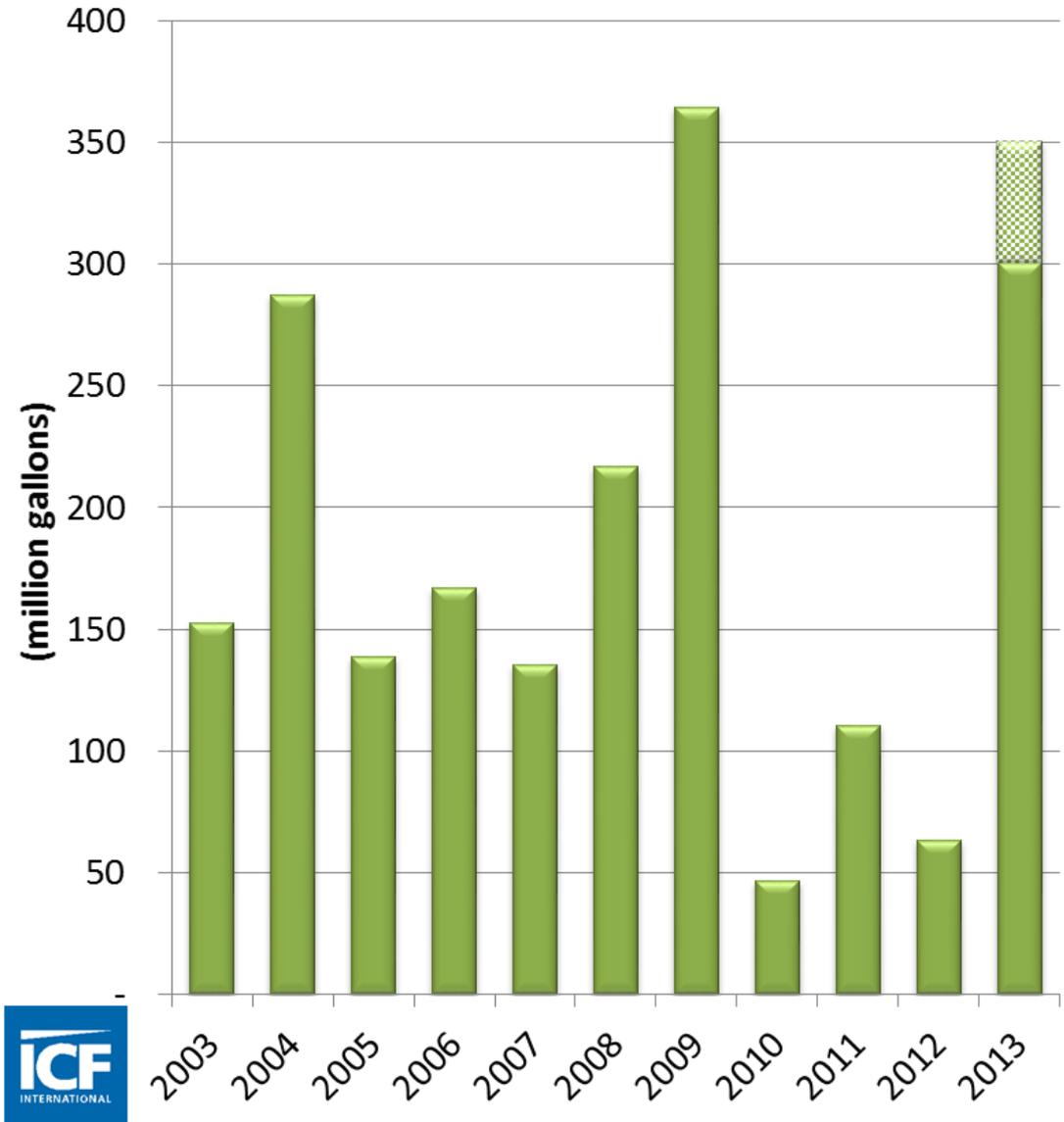
IN 2013, U.S. PROPANE PRODUCTION INCREASED BY 1.4 BILLION GALLONS

SO WHY WERE WE SHORT OF SUPPLY THIS WINTER?

- 1) Crop Drying
- 2) Cold Weather
- 3) Cargo Exports
- 4) Capacity Outages and Constraints
- 5) Canadian Demand and Inventory
- 6) Cochin Pipeline Outage

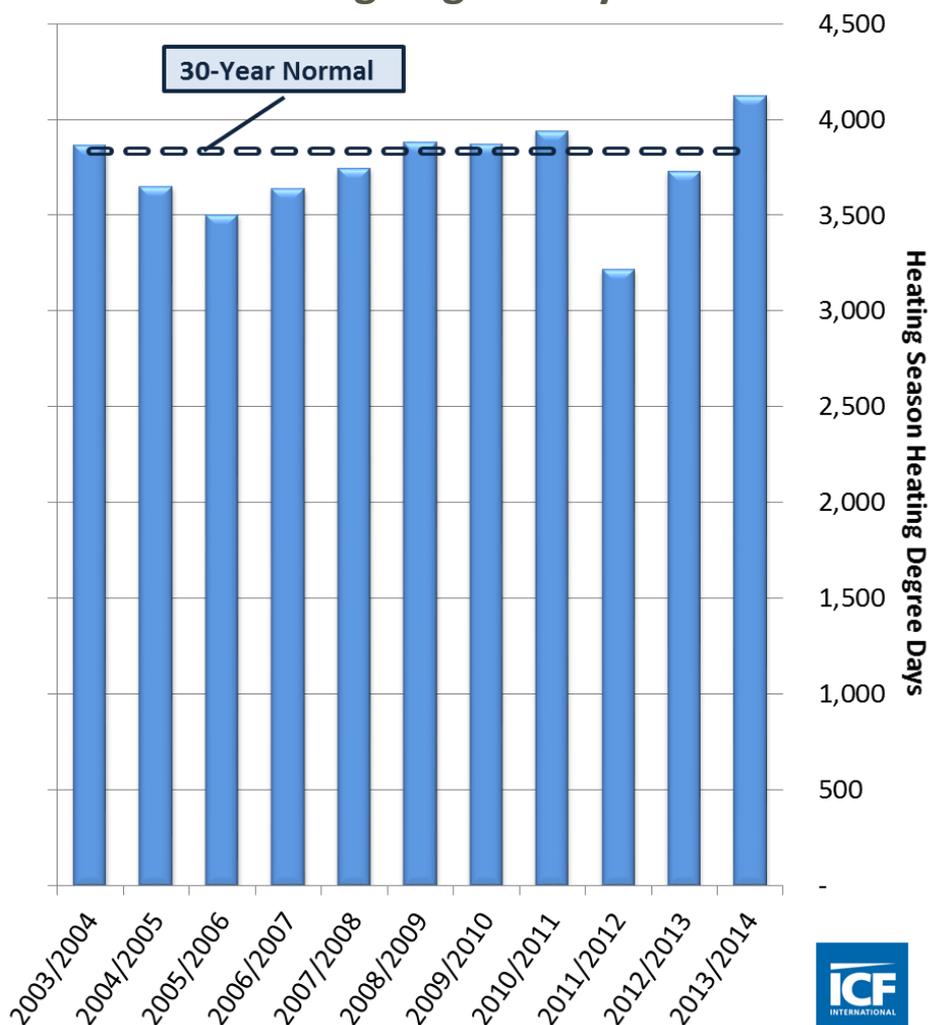
1) Crop Drying Demand Exceeded 300 Million Gallons

- **Record Corn Crop**
 - 13.9 billion bushels
- **Cooler than normal weather in July and August delayed the harvest.**
- **Above-average rainfall in October**
- **Grain drying season started late and finished late**



2) Cold: 2013/14 Winter Weather was Much Colder than Historical Norms

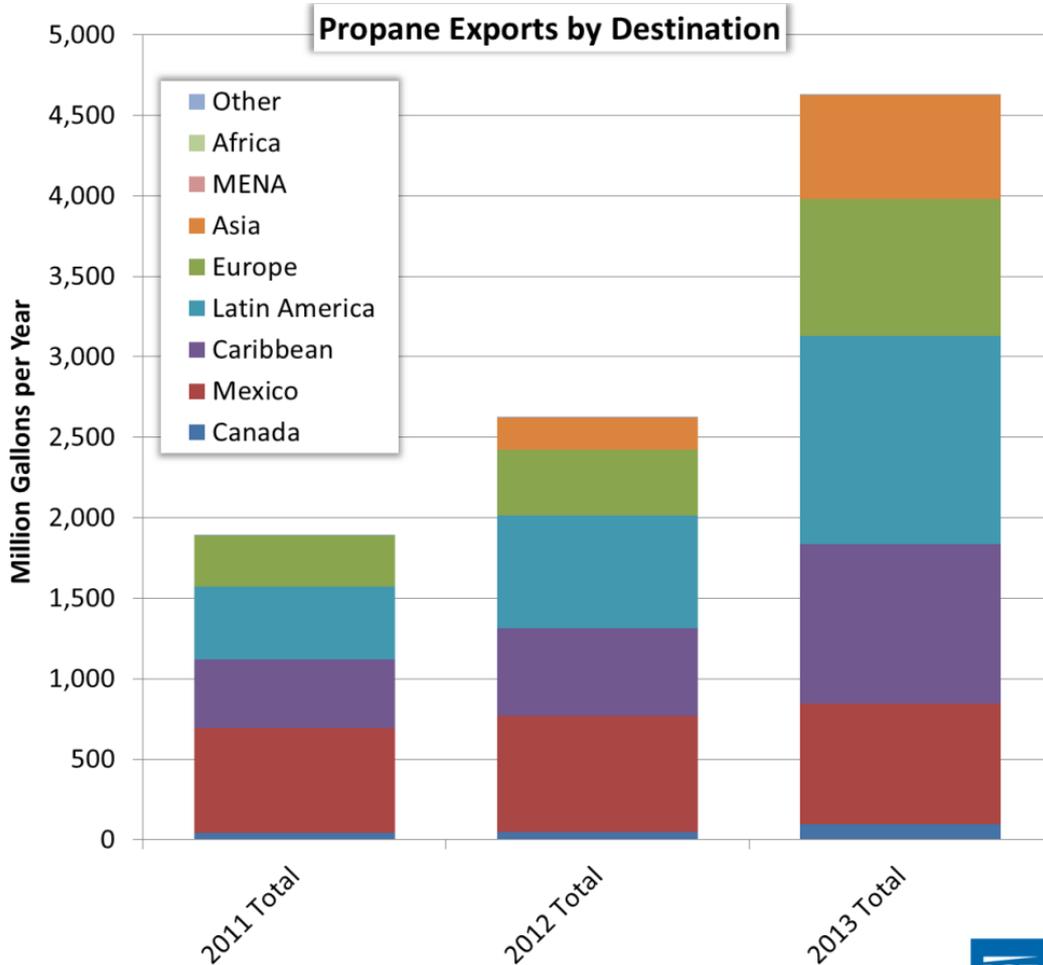
October to March
Heating Degree Days



- The 2013/2014 winter was:
 - 7.5 percent colder than 30-year normal weather
 - 10.5 percent colder than last winter
 - 27.9 percent colder than the winter of 2011/2012



3) Cargo Exports: Propane Exports Doubled after the 2013 Terminal Expansions Came On-Line



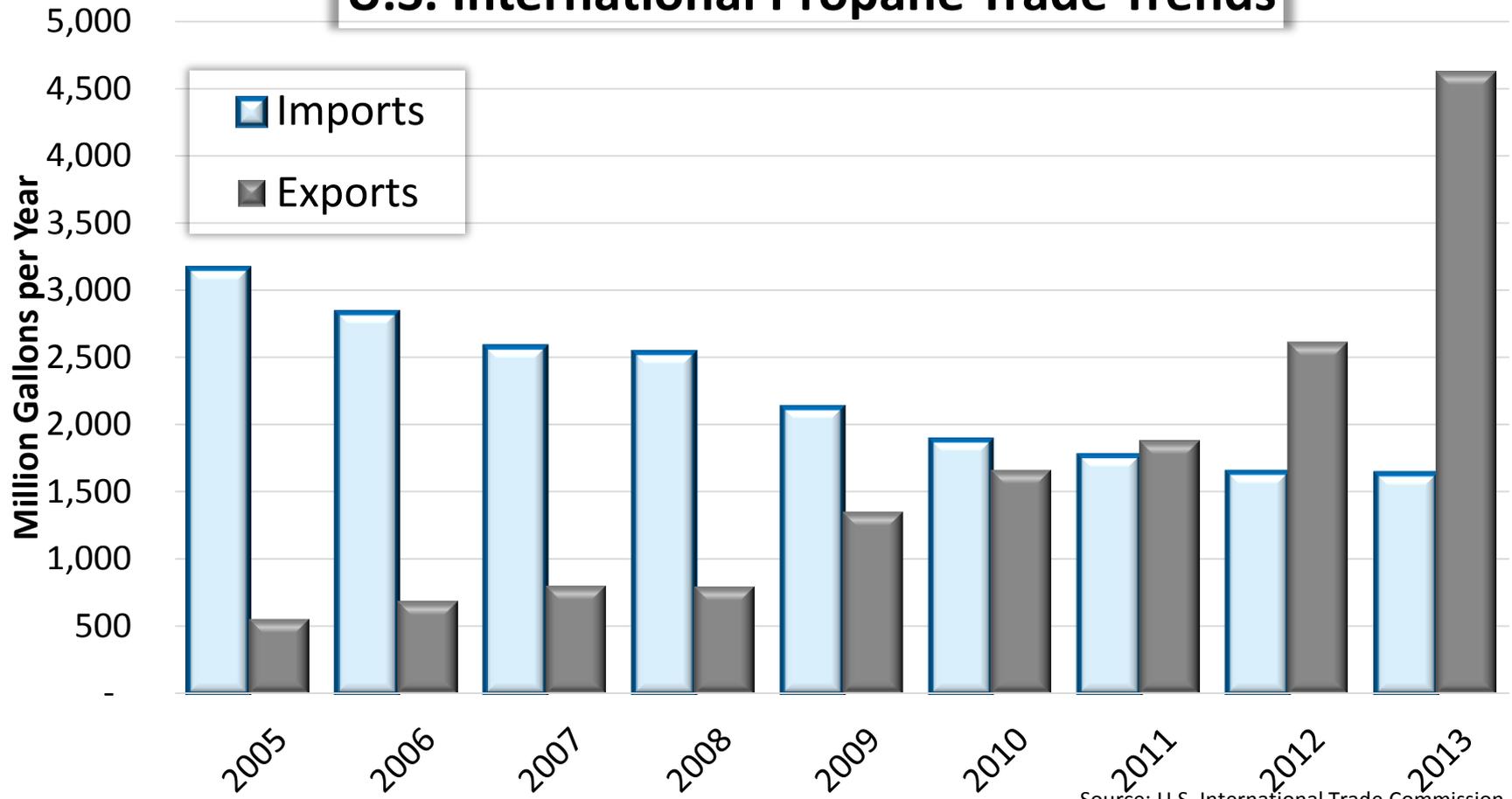
Source: U.S. Department of Commerce, ICF International



- **Total U.S export capacity is now 6.6 billion gallons annually**
- **2014 expansions are expected to add another 2.5 billion gallons a year of sendout capacity**
 - Over 600 million gallons from Marcus Hook, PA

The Increase in Propane Exports in 2013 is the Continuation of a Long Term Trend

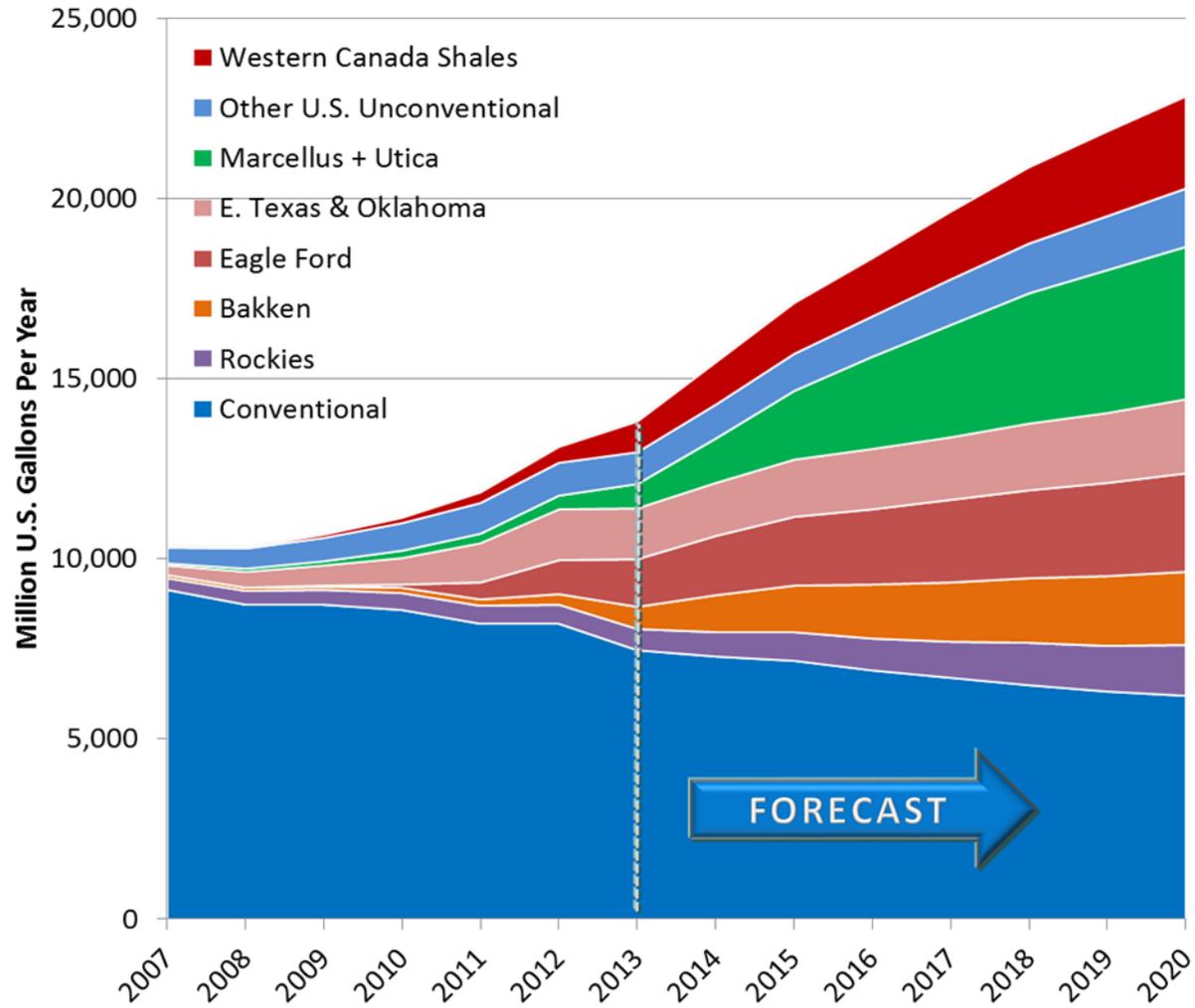
U.S. International Propane Trade Trends



Source: U.S. International Trade Commission

Propane Production Growth

- ICF forecasts total North American production of propane from gas processing plants to grow from 13.8 billion gallons in 2013 to 22.8 billion gallons in 2020
- Production growth is broad-based:
 - Bakken (ND, MT) to produce 2 billion gallons of propane per year by 2020.
 - Marcellus/Utica production expected to increase from 650 million gallons in 2013 to 4.2 billion gallons in



COULD IT HAPPEN AGAIN?

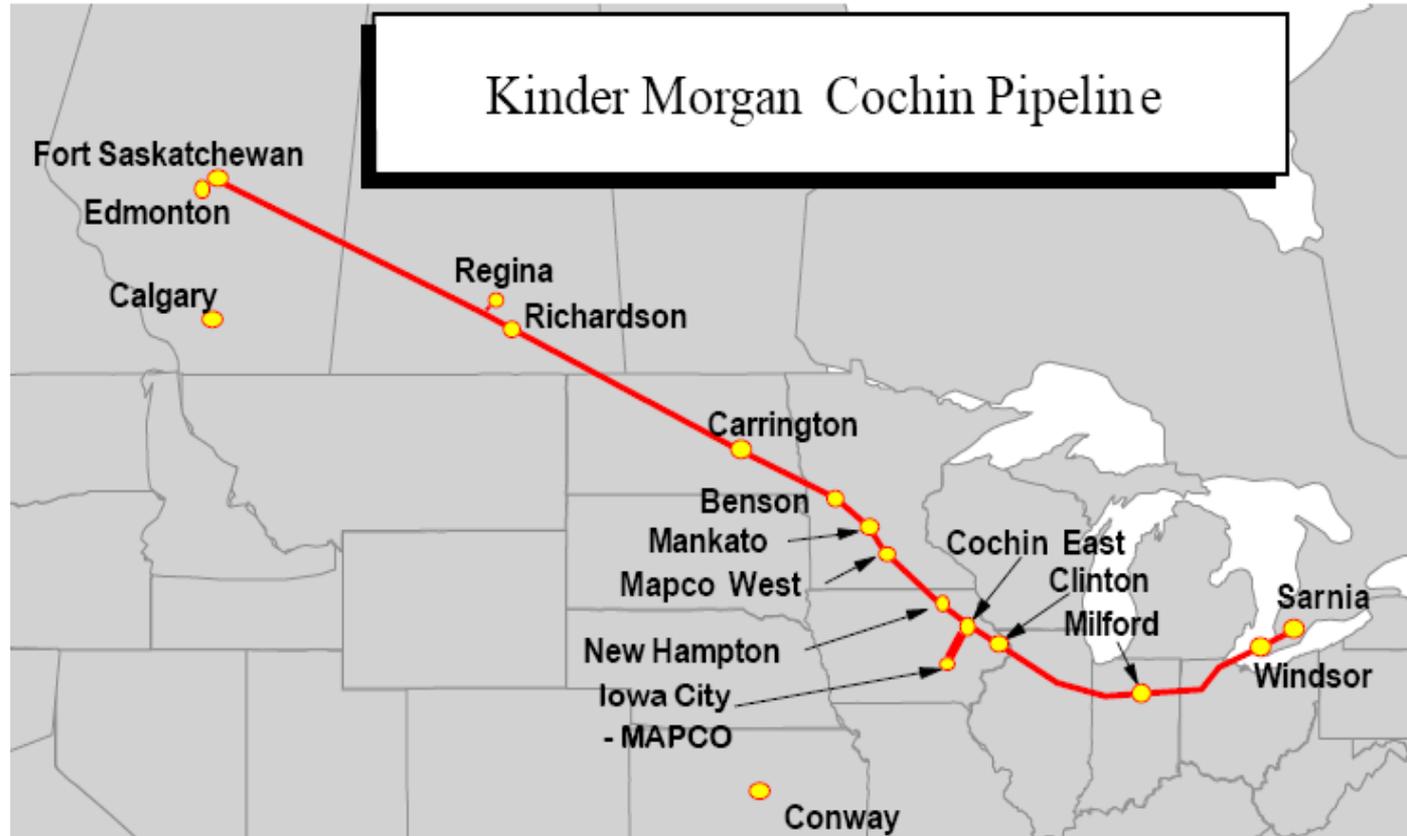
IN 2014, U.S. PROPANE PRODUCTION IS PROJECTED TO INCREASE SIGNIFICANTLY

WILL WE BE SHORT OF SUPPLY AGAIN NEXT WINTER?

- 1) Crop Drying
- 2) Cold Weather
- 3) Cargo Exports
- 4) Capacity Outages and Constraints
- 5) Canadian Demand and Inventory
- 6) Cochin Pipeline Outage
- 7) How cold is Europe?
- 8) What are the propane inventory levels at the start of the winter?

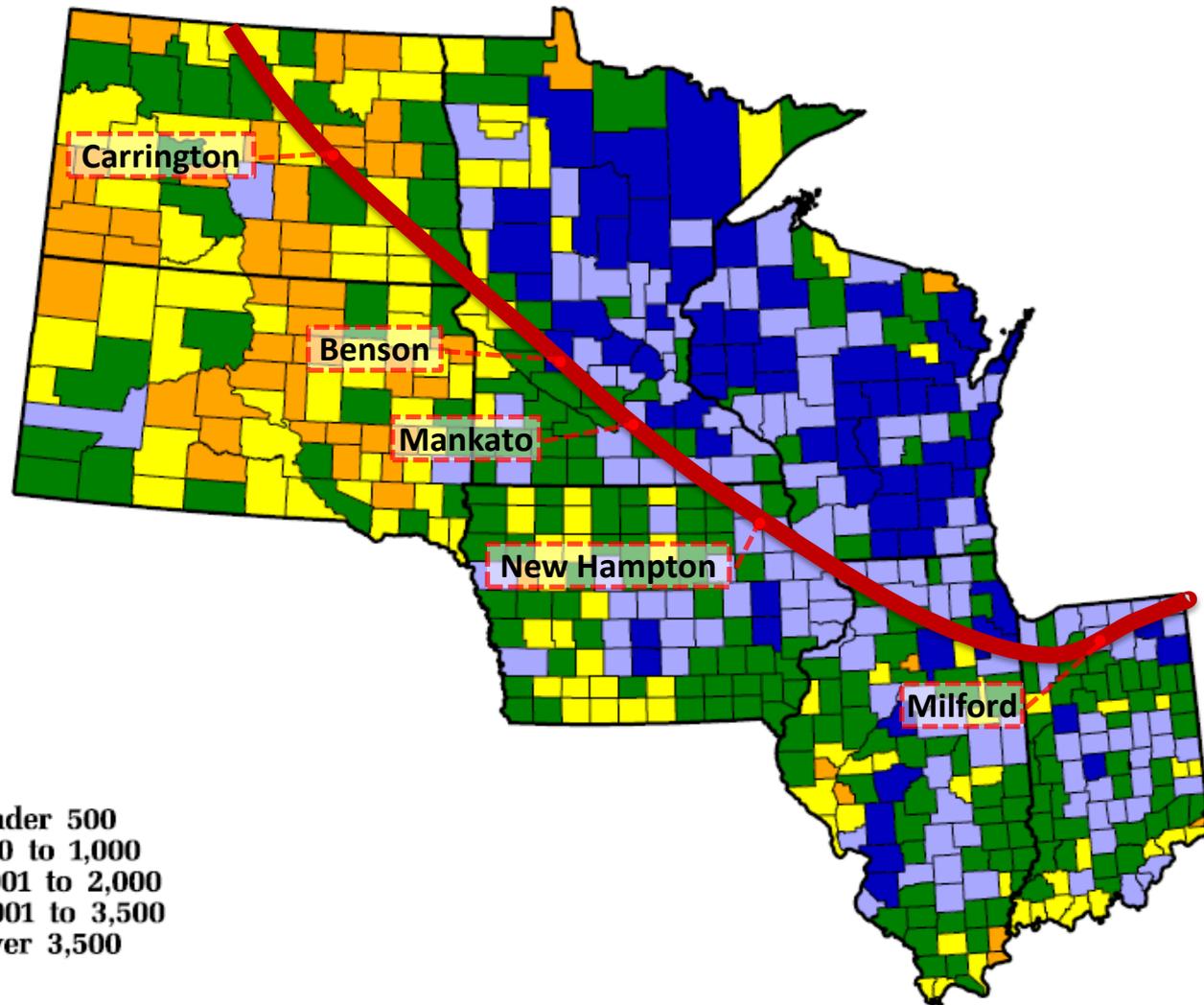
The Cochin Pipeline

- The Cochin Pipeline provides a direct link between
 - Alberta propane production.
 - Propane storage capacity at Fort Saskatchewan, Alberta.And the U.S. Midwest propane market.
- The Cochin delivered about 320 million gallons of propane to the Midwest in 2013.
- The Cochin Pipeline stopped delivering propane in late May 2014.

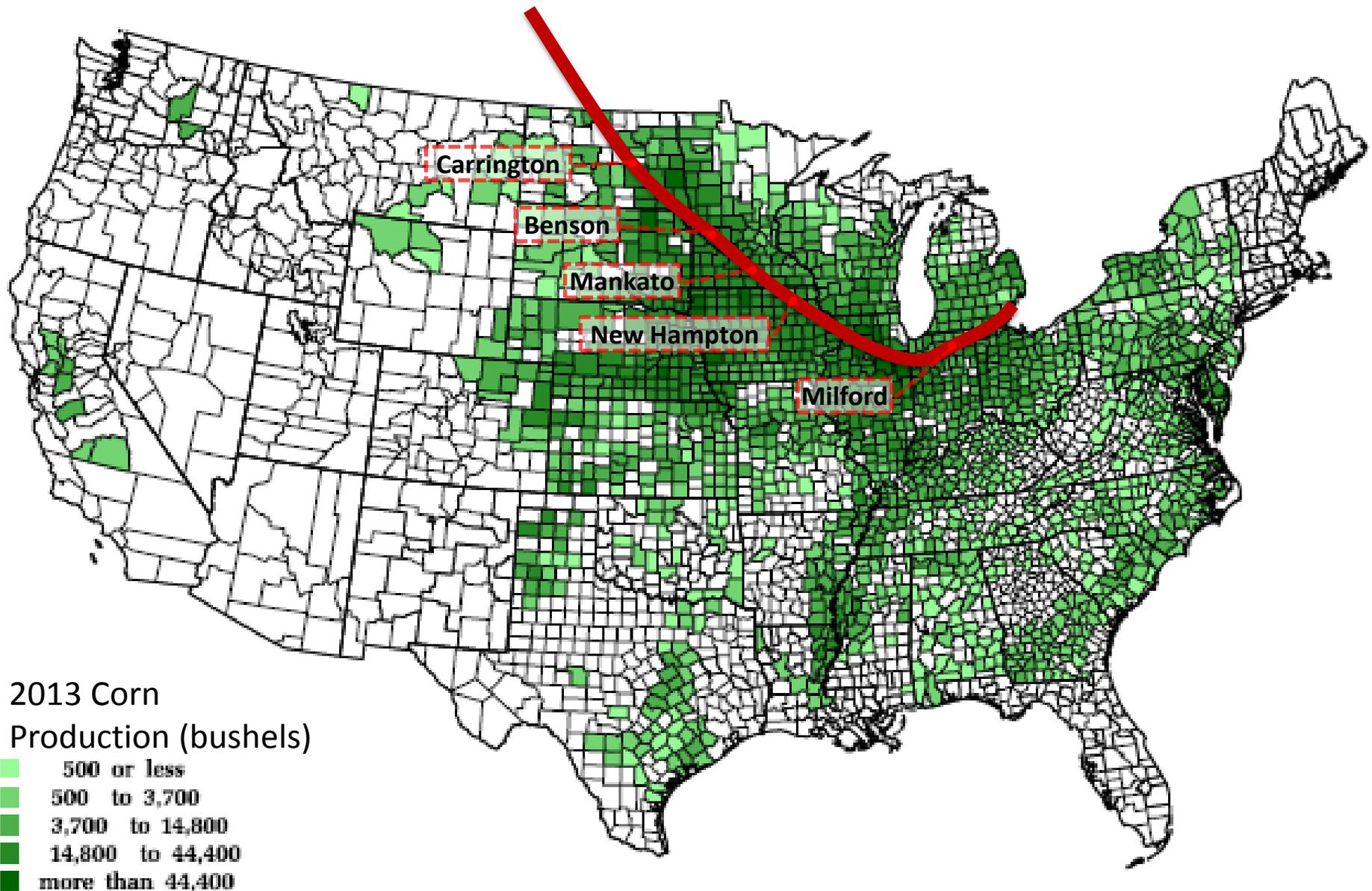


Cochin Supplies the Midwest Propane Country

State	Households	Market Share
IL	189,000	4.0%
IN	176,500	7.1%
IA	162,000	13.2%
MN	213,500	10.1%
ND	38,500	13.3%
SD	54,000	16.7%
WI	245,000	10.7%
Total	1,078,500	8.0%



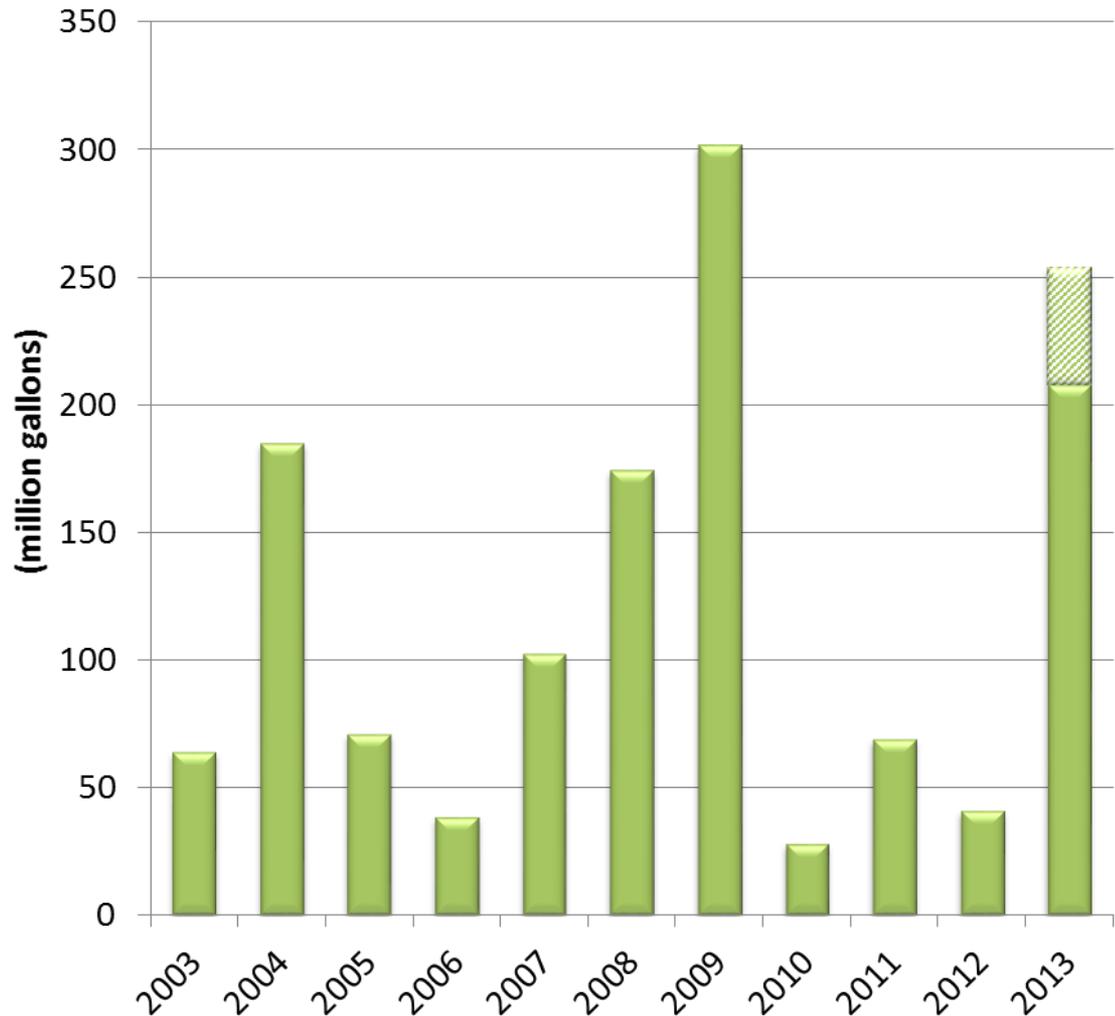
And the Heart of the Corn Producing Region



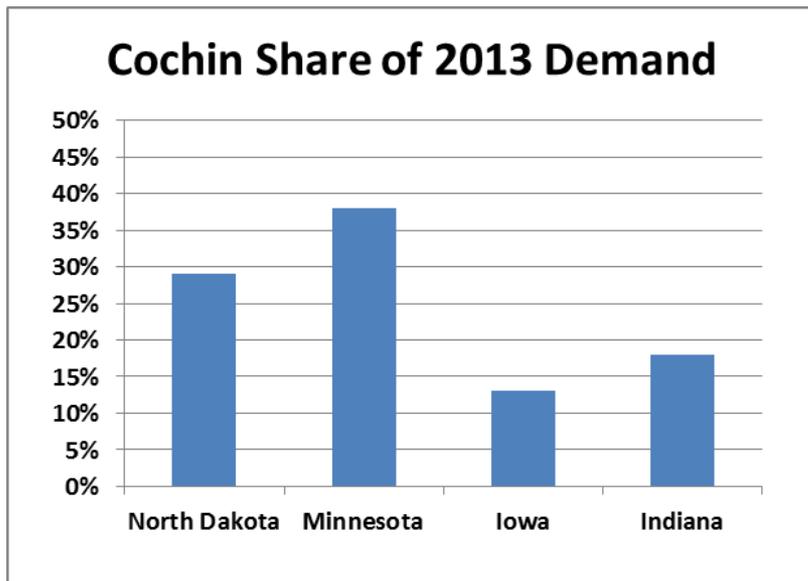
Grain Drying is a Major Propane Demand Driver in the Region served by the Cochin Pipeline



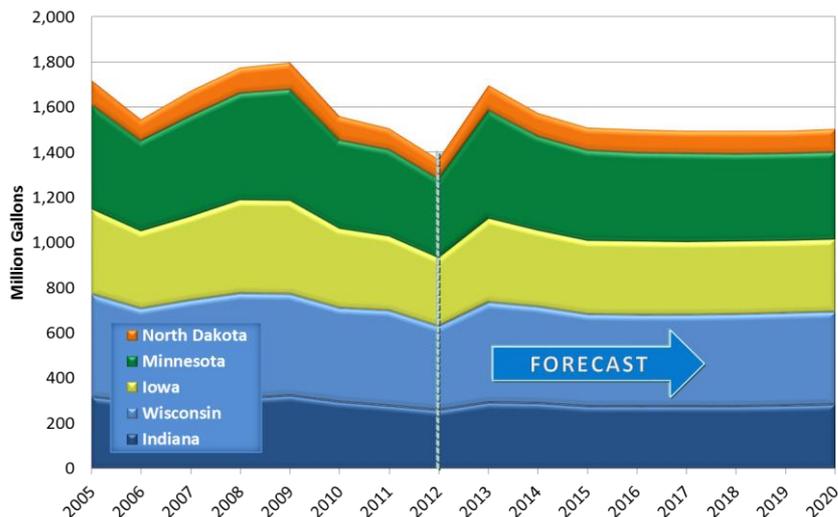
- ICF estimates 2013 grain drying demand in the Cochin market area at between 210 and 255 million gallons
 - Total U.S. grain drying demand 300 – 350 million gallons
- Approximately half of all grain drying propane consumption occurred between the 2nd week of October and the 2nd week of November



2013 Deliveries on the Cochin System



- Cochin is the largest single source of propane supply into North Dakota (29%) and Minnesota (38%).
 - And a major source of supply into Iowa (13%) and Indiana (17%).
- While the Cochin has no terminals in Wisconsin, many of the marketers in the southern half of the state rely on Cochin deliveries into Minnesota



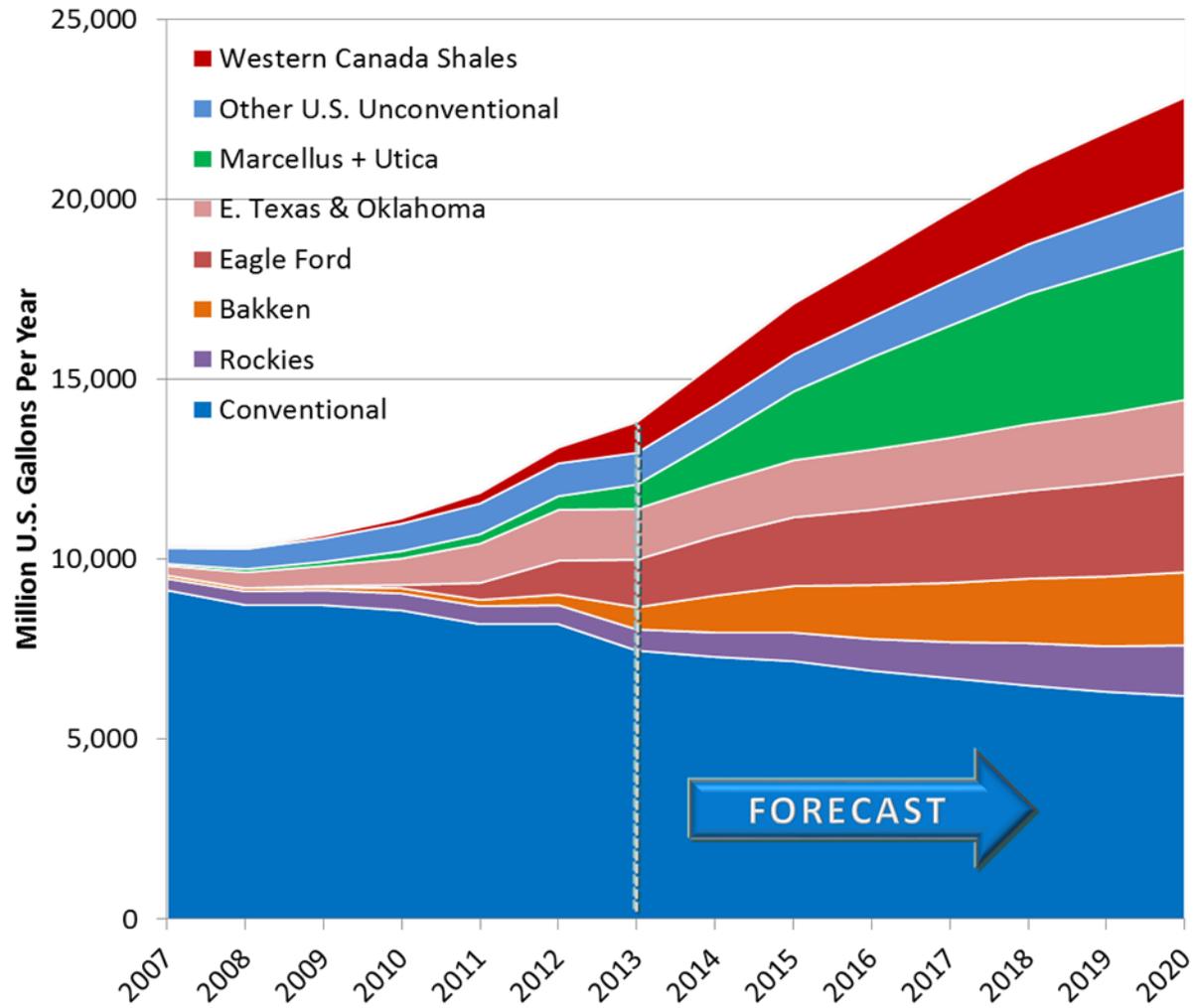
The Alternatives to the Cochin Propane Pipeline: Production, Pipelines, Trains, and Trucks



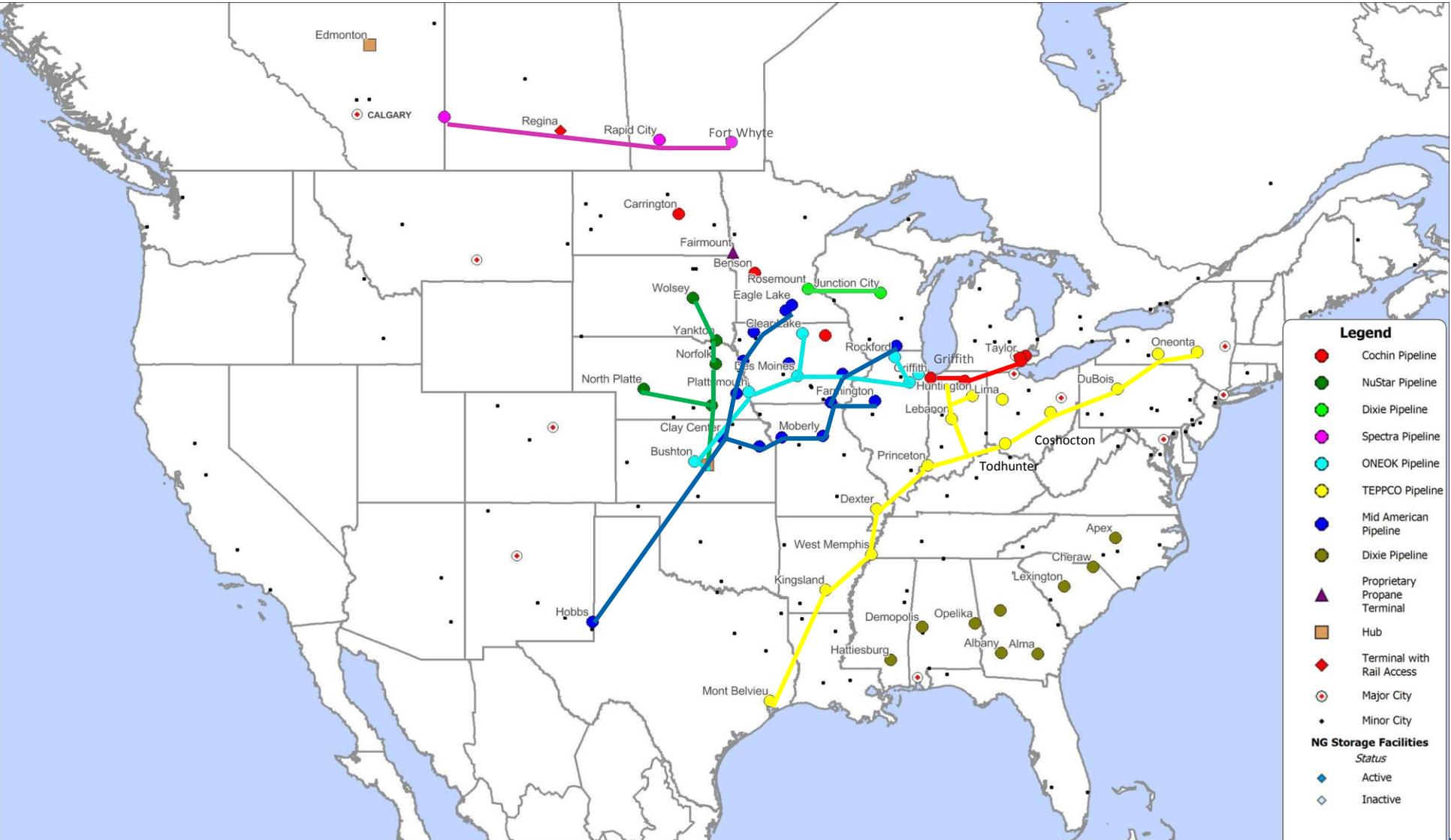
RRPictureArchives.NET Image Contributed by Joe Rogers

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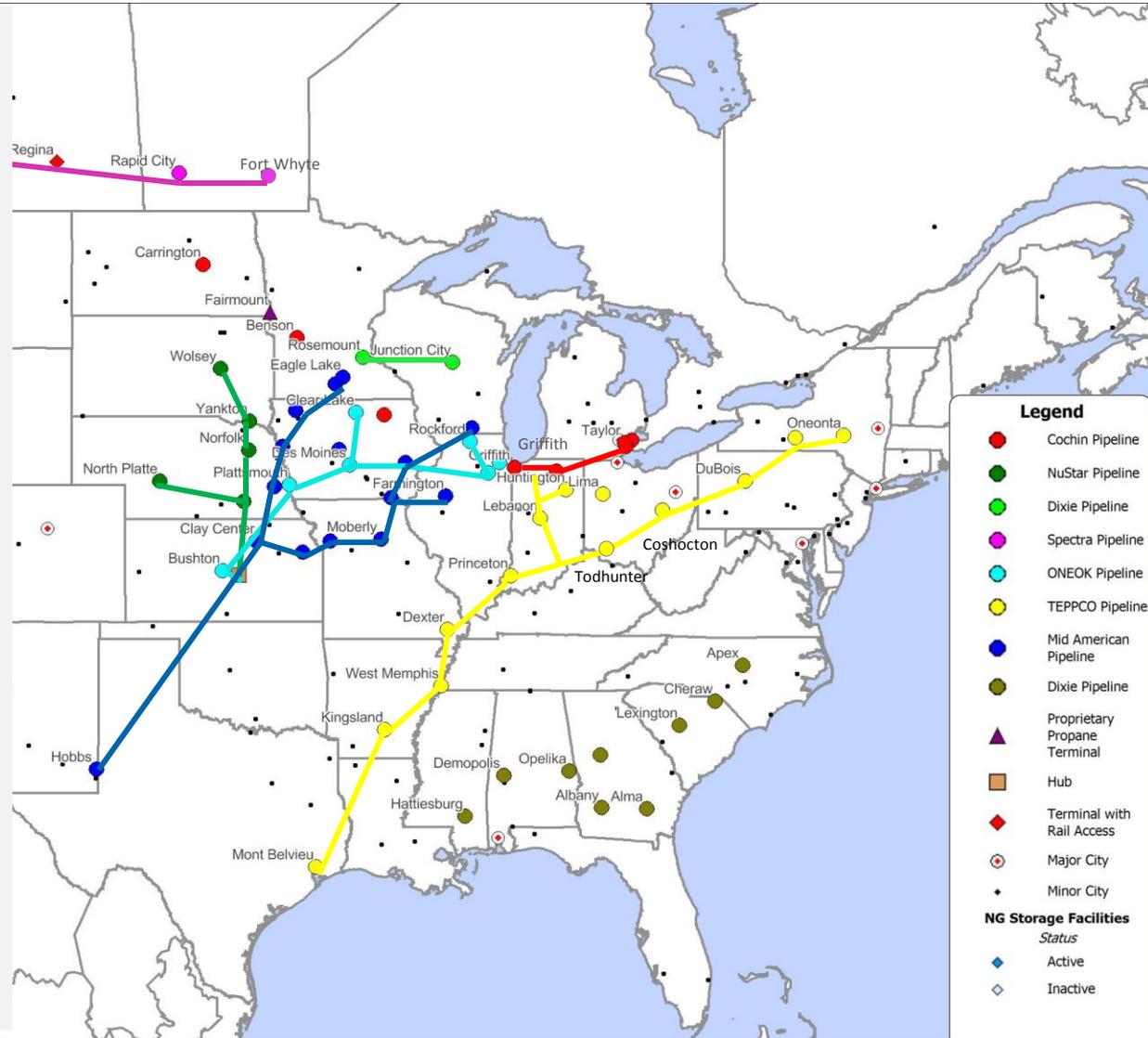


Propane Pipelines and Terminals in the Cochin Market Area



Propane Pipelines and Terminals in the Cochin Market Area

- Lots of additional capacity available during the summer and shoulder months.
- But limited additional capacity for seasonal or peak period demands
- Pipeline (and major supplier) winter allocation ratios are declining.
 - 2 to 1 ratios now common



Rail Reliability Concerns



- Rail delivery scheduling is much less reliable than pipeline delivery.
- Rail scheduling reliability goes down during bad weather and peak demand periods.
 - Cold weather reduces rail equipment efficiency
 - *Slower speeds*
 - *Shorter trains*
 - *Less efficient switching and handling*
- Congested rail capacity and peak rail demand periods decrease the efficiency of manifest rail service.

Planning for the 2014/15 Winter

- Physical system changes will be difficult to implement prior to the 2014/15 winter if arrangements are not already in place
 - 24 month waiting time on new rail cars
 - 15-18 month waiting time on new storage tanks

- Options
 - Build winter allocation on the pipelines and with major suppliers
 - Encourage summer fills
 - Search for additional summer load
 - Fill storage off of the pipeline
 - Diversify rail supplies to minimize rail uncertainty
 - Contract with major suppliers with diversified supplies
 - Hold and fill physical storage capacity at Conway and other locations



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