North Dakota Pipeline Authority
Williston Basin Petroleum Conference
May 23, 2012 – Bismarck, ND
Pipeline Authority

- Industry
- Policy Makers
- Regulators
- Public
North Dakota Crude Oil
Production forecast is for visual demonstration purposes only and should not be considered accurate for any near or long term planning.
Production forecast is for visual demonstration purposes only and should not be considered accurate for any near or long term planning.
Challenges*

1) Moving oil out of the Williston Basin
2) Moving oil within the Williston Basin

*Modified from Bridger and Belle Fourche Pipelines
Williston Basin Oil Transportation

March 2009: 75% Pipeline Export, 2% Tesoro Refinery, 4% Truck to Canadian Pipelines, 19% Estimated Rail

March 2010: 74% Pipeline Export, 8% Tesoro Refinery, 2% Truck to Canadian Pipelines, 16% Estimated Rail

March 2011: 68% Pipeline Export, 12% Tesoro Refinery, 6% Truck to Canadian Pipelines, 14% Estimated Rail

March 2012: 56% Pipeline Export, 10% Tesoro Refinery, 6% Truck to Canadian Pipelines, 28% Estimated Rail
BNSF Crude Rail Locations

🌟 Existing
1) Dore – Musket - Unit
2) Trenton – Savage – Manifest/Unit
3) Williston – Red River Supply - Manifest
4) Tioga – Hess - Unit
5) Manitou – Plains - Unit
6) Ross – Bakken Transload - Manifest
7) Stanley – EOG - Unit
8) Minot – ND Port Services- Manifest
9) Zap/Republic – Basin Transload - Unit
10) Eland – BOE - Unit
11) Dickinson – Centennial - Manifest
12) Gascoyne – Enserco – Manifest/Unit

🌟 Planned
1) Epping – Rangeland – Unit (June 2012)
2) Berthold – Enbridge - Unit
3) Fryburg – Great Northern - Unit
CP Crude Rail Locations

Existing
1) Stampede – US Development
2) Donnybrook - Centennial
3) New Town – Dakota Plains
4) Van Hook– US Development
Williston Basin Truck Imports/Exports

Information collected through the United States International Trade Commission’s *Interactive Tariff and Trade Data Web*
Production forecast is for visual demonstration purposes only and should not be considered accurate for any near or long term planning.

*Projects still in the proposed or internal review process
Today

Rail

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

*Projects still in the proposed or internal review process
The “Need” for Rail*

Assumptions*
1) Case 1 Production Forecast
2) All pipelines, *including proposed* are running at full capacity
3) Ignores the “want” to rail volumes
4) Ignores trucking to/from Canada
Utilizing Rail Long Term

Unknowns
1) Fate of Proposed Pipeline Projects
2) Brent-Bakken Pricing
3) Pipeline Access to Premium Markets
4) Rail Prices Relative to Pipelines
5) Contractual Commitments
Challenges*
1) Moving oil out of the Williston Basin
2) Moving oil within the Williston Basin

*Modified from Bridger and Belle Fourche Pipelines
Crude Oil Gathering
North Dakota Crude Gathering

74% of the crude is transported by truck, while 26% is transported by pipeline.

February 2012 Data
North Dakota Crude Gathering

Williams

Mountrail

McKenzie

Dunn

Grey = Truck
Color = Pipe
North Dakota Crude Gathering

Pie Charts
Truck = Red
Pipeline = Blue

Williams
- 95%
- 5%

Mountrail
- 55%
- 45%

McKenzie
- 89%
- 11%

Dunn
- 78%
- 22%
Reducing Truck Traffic

Four Bears Pipeline

77 miles – 12”
105,000 BOPD Capacity

Impact: 50,000-75,000 Truck Miles Per Day
Pipeline Challenge #3
Crude Pricing – May 18, 2012

- Clearbrook: $89.48
- Cushing: $91.33
- Brent: $106.94
PADD II Decrease In Light Demand

- BP
  Whiting, IN
  -260 MBOPD
  2013

- ConocoPhillips
  Wood River, IL
  -130 MBOPD
  2011

- Marathon
  Detroit, MI
  -65 MBOPD
  2013

Source: Enbridge
# Domestic Crude Oil First Purchase Prices by API Gravity

(Dollars per Barrel)

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<td>62.00</td>
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Challenge #4???
Natural Gas Projects
ND Gas Facility/System Intake
ND Gas Facility/System Intake

Four New/Expanded Plants in Next 12-18 months

ONEOK Stateline I & II
Hess Tioga
Plains Ross
ND NGL Production

Barrels Per Day

Feb-03 Aug-03 Feb-04 Aug-04 Feb-05 Aug-05 Feb-06 Aug-06 Feb-07 Aug-07 Feb-08 Aug-08 Feb-09 Aug-09 Feb-10 Aug-10 Feb-11 Aug-11 Feb-12

- 5,000 10,000 15,000 20,000 25,000 30,000 35,000 40,000 45,000

Ethane
Y-Grade
Natural Gasoline
Butane
Propane
First Time Gas Sales Per Month
Homes Heated By ND Natural Gas

Based on Average US Home Natural Gas Consumption

2003 2004 2005 2006 2007 2008 2009 2010 2011
92.0% Energy Captured

8.0% Energy Flared

March 2012 Data
ND Oil & Gas Development Efficiency

96.6%

- Economic Value Captured
- Economic Value Flared

March 2012 Production Data, Oil Price of $84.73/bbl, Natural Gas/NGL Wellhead Price of $8.00/MCF
Natural Gas Study
Montana Bakken Production

Source: EPRINC – Left Axis Oil, BOPD – Right Axis Gas, MCFD
Elm Coulee Montanta
Production forecast is for visual demonstration purposes only and should not be considered accurate for any near or long term planning.
Gas Transmission Pipelines

2.37 BCFD

1.51 BCFD

Legend:
- Alliance
- Hess
- Pecan
- Williston Basin
- Bear Paw
- Northern Border
- Whiting
- Gas Processing Plant
Governor’s Pipeline Summit

June 14, 2012
9:00am-11:30am

Bismarck State College’s
National Energy Center of Excellence

More details to come...
Contact Information

North Dakota Pipeline Authority

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Phone: (701)220-6227
Fax: (701)328-2820
E-mail: jjkringstad@ndpipelines.com

Websites:
www.pipeline.nd.gov
www.ndpipelines.wordpress.com
Supporting Material
## US Williston Basin Crude Oil Export Options - April 2012

Year End System Capacity, Barrels Per Day

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<th></th>
<th>2007</th>
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<td>Various Sites in Minot, Dore, Donnybrook, Gascoyne, and Stampede (est)</td>
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*Project Still in the Review or Proposed Phase*
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