



informa economics

Overview of U.S. Agriculture Transportation Issues

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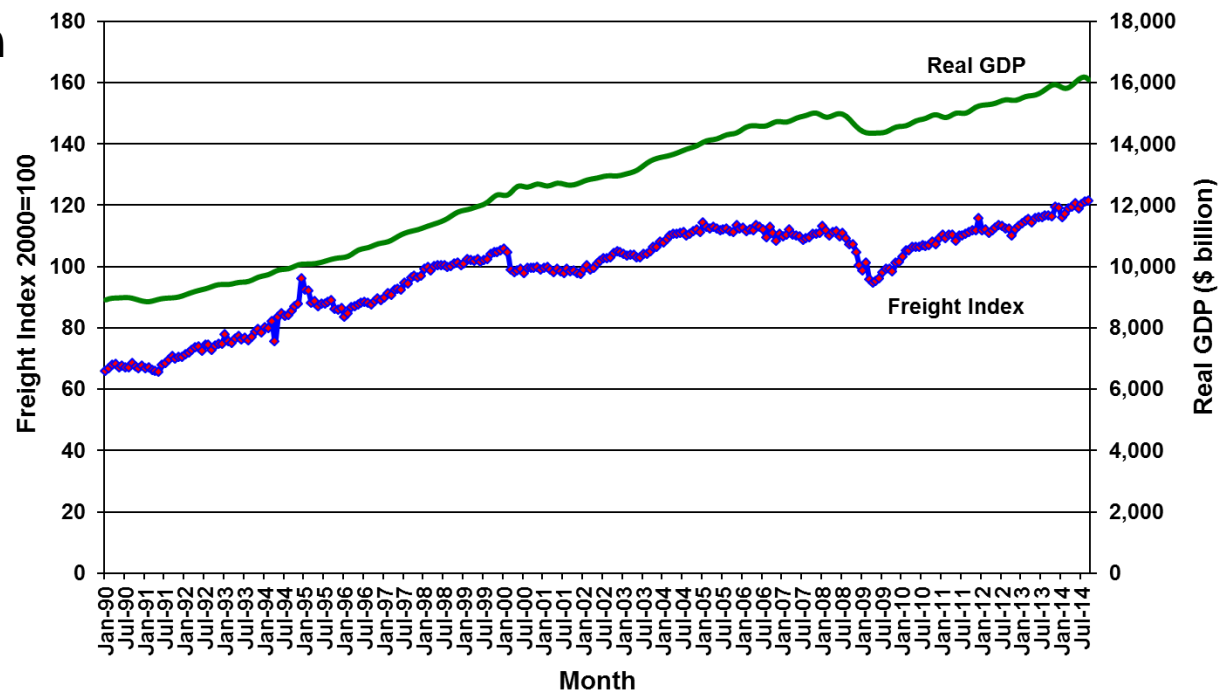
Transportation and Agriculture

- Transportation creates time and place utility
- Creation of markets.....and value that otherwise would not exist
- As farm productivity and technology improves, the need for an efficient transportation system increases

That efficiency depends on all transportation modes

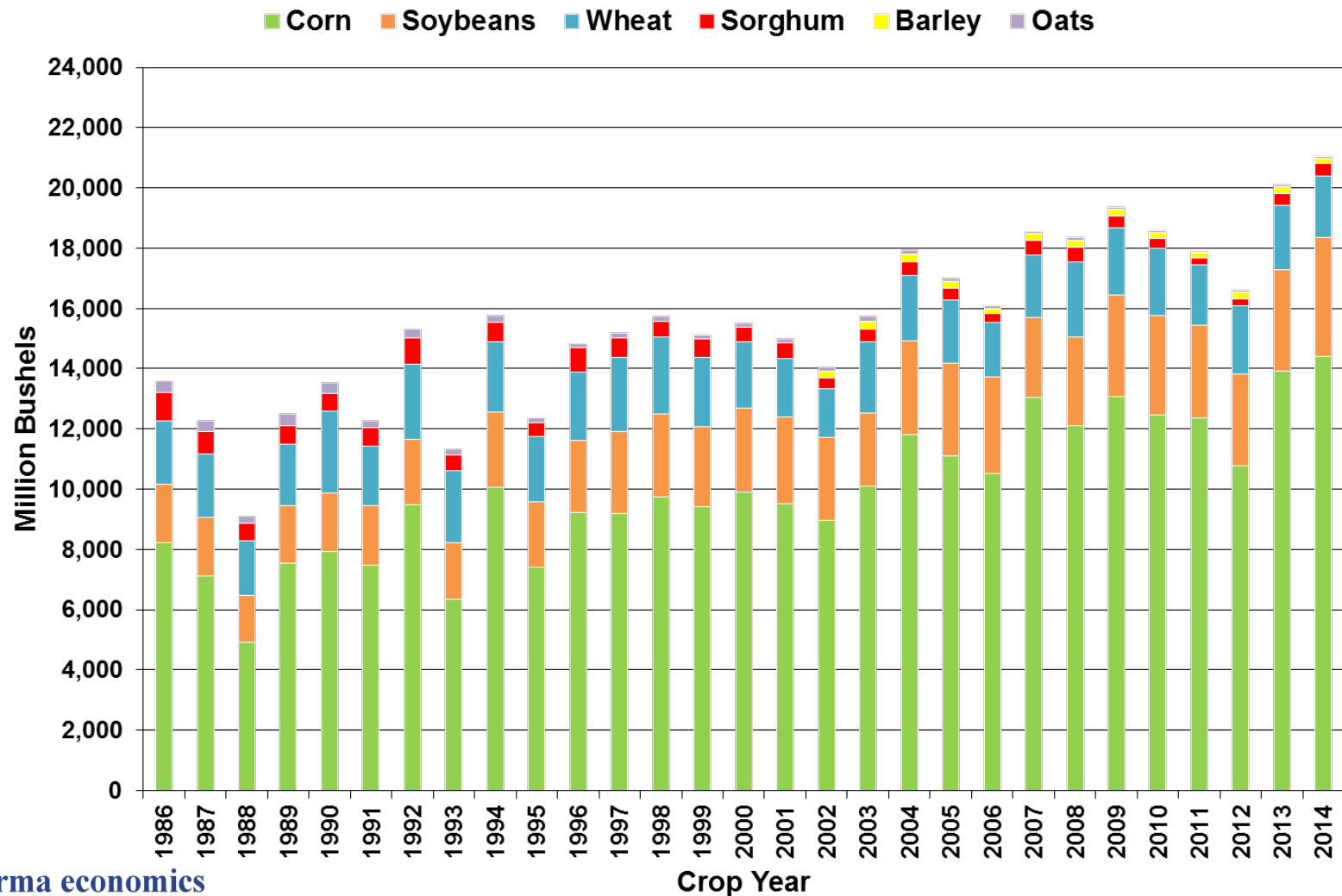
- ◇ Truck
- ◇ Barge
- ◇ Rail
- ◇ Ocean
- ◇ Pipeline

Freight Transportation Services Index
and Real GDP (\$ billion)



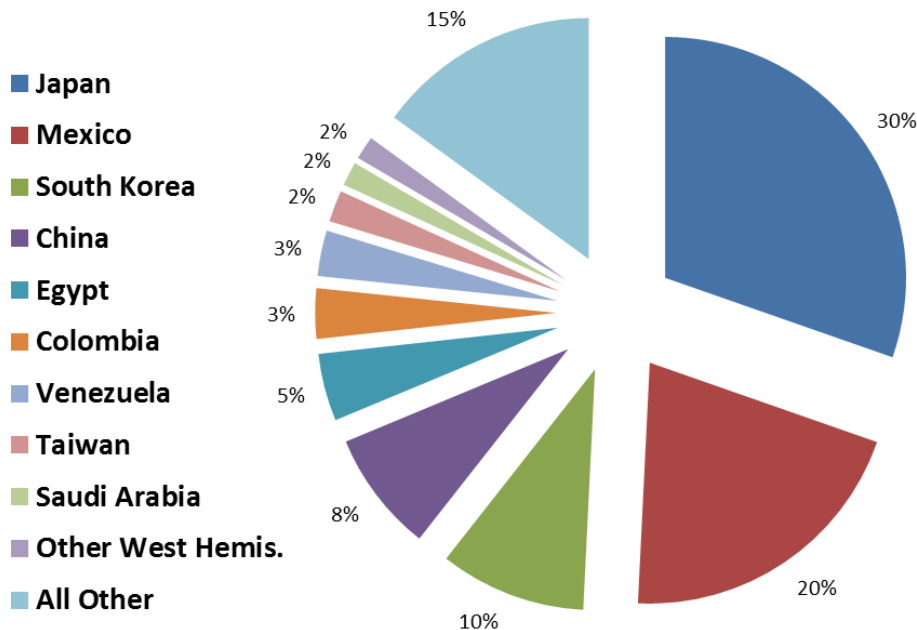
Bigger Crops . . . Something to Move

Composition of Crop Production

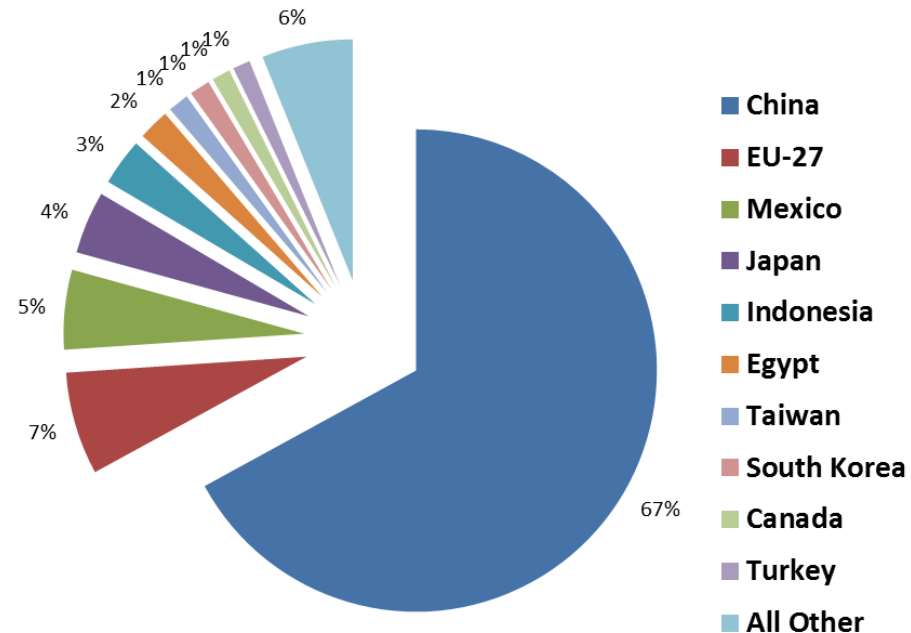


... Someplace to Go: Top Destination Markets for Corn and Soybean Exports

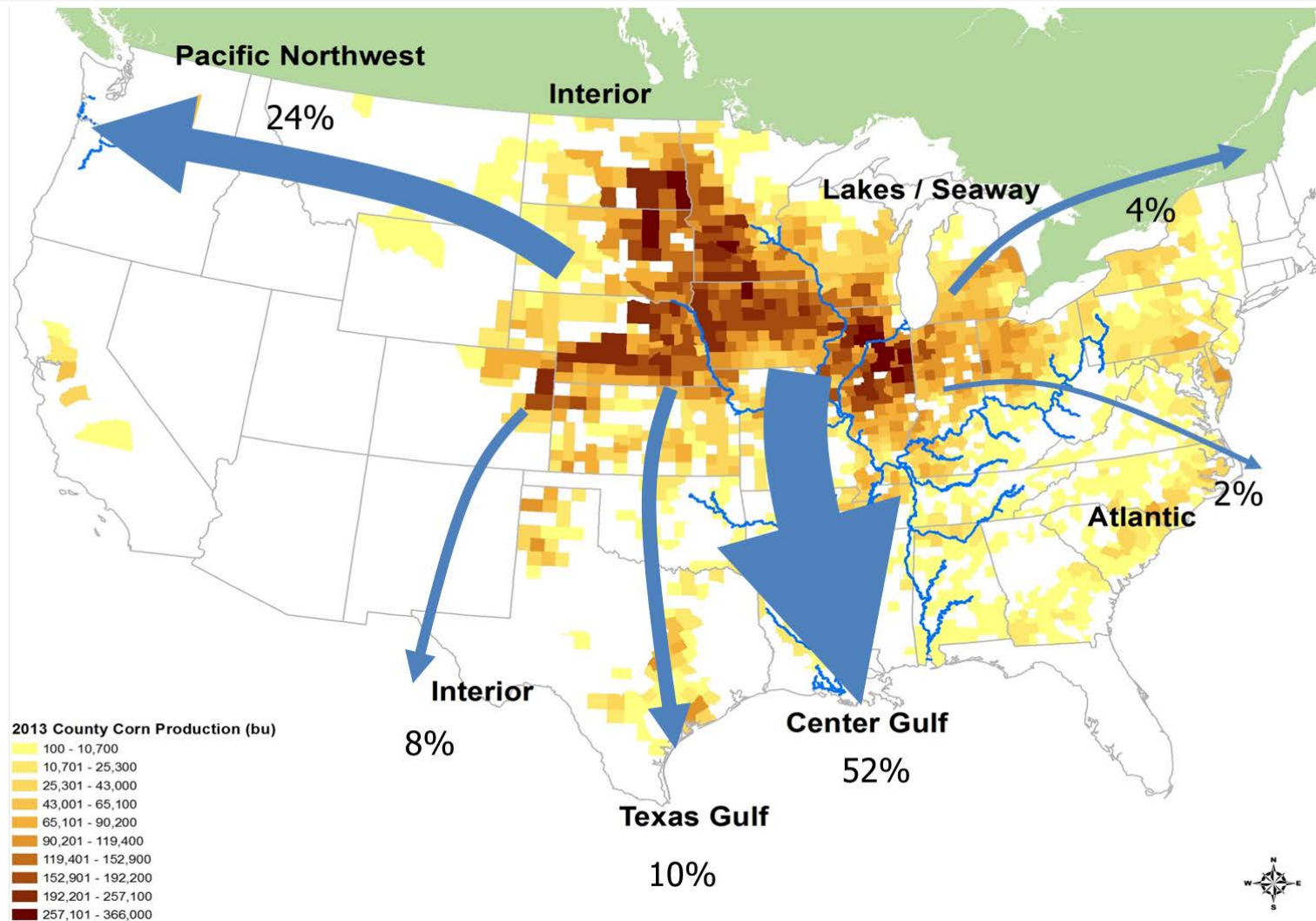
**Corn Exports
(Past 5 Years)**



**Soybean Exports
(Past 5 Years)**



Grain Export Flow Patterns by Port Range



Highways / Bridges

Strong Truck Freight Demand

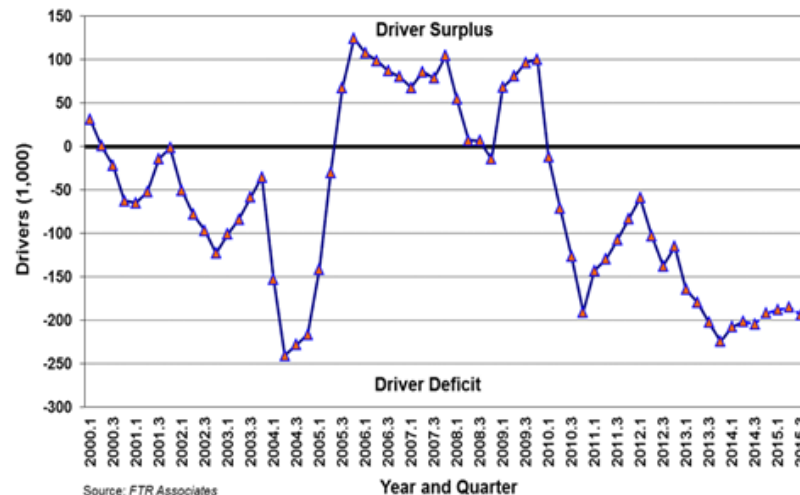
Year over Year % Change in Revenue Per Loaded Mile



Year over Year % Change in Originated Truck Freight



Truck Driver Surplus / Deficit



Funding Highway Needs

Roads / Highways:

- 32% of major roads are in poor or mediocre condition
- 42% of major urban highways are congested
- Estimated cost to maintain at existing condition: \$101 billion capital investment / year
- Estimated cost to improve highway conditions: \$170 billion / year
- Total Federal, State and local spending on highway capital investments: \$91 billion / year

Funding Bridge Needs

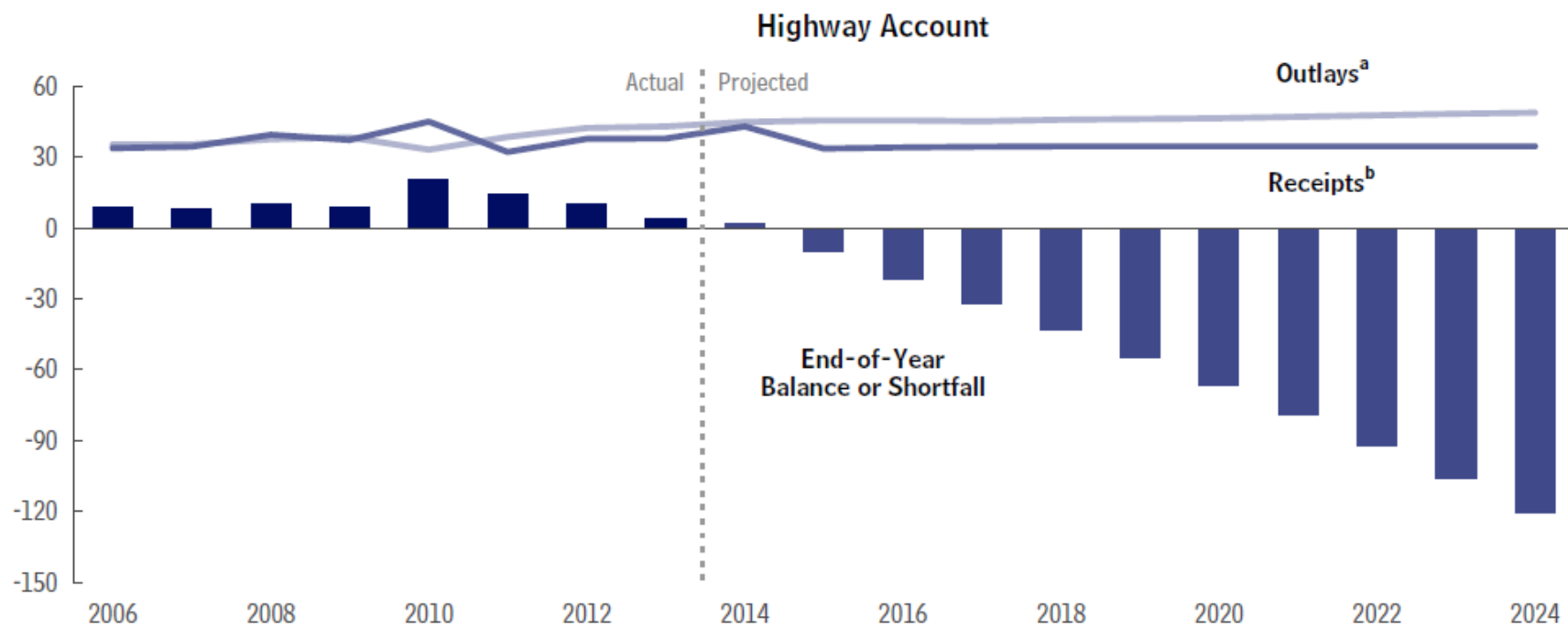
Bridges:

- 11% (one in nine) are structurally deficit
 - 25% are functionally obsolete
 - Average age is 42 years old
 - 30% of bridges have exceeded their 50 year design life
-
- FHWA estimates costs to repair or replace deficient bridges \$76 billion
 - FHWA estimates in order to eliminate bridge backlog by 2028, would require about \$20.5 billion / year, current investment is \$12.8 billion / year

Highway Trust Fund Shortfall

Receipts, Outlays, and Balance or Shortfall for the Highway Trust Fund Under CBO's April 2014 Baseline

(Billions of dollars)



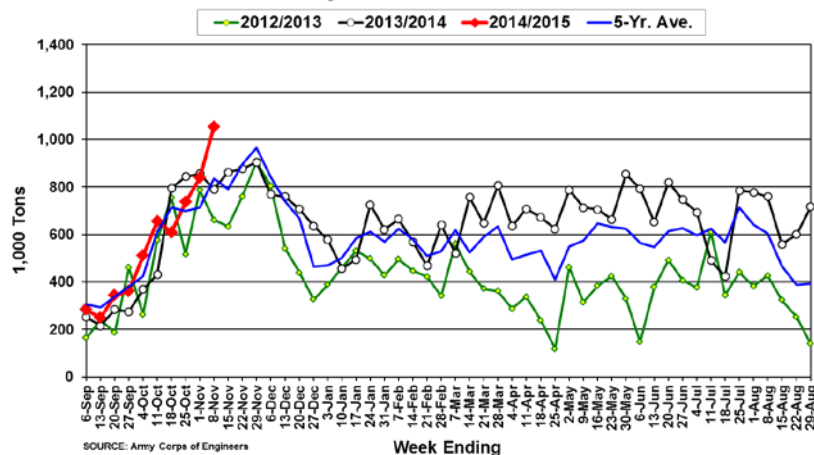
Funding Highway Needs

- Over the past 10 years, Highway Trust Fund outlays have exceeded revenues by \$52 billion dollars (typically from the General Fund)
- That gap is projected to reach \$167 billion dollars over the next 10 years
- State Alternatives:
 - ◇ Raise Taxes
 - Raise state fuel tax at the pump (MD, WY, MA, VY, NH) or wholesale (PA)
 - Dedicated sales taxes (VA, AK)
 - ◇ Issue Public Bonds
 - Repaid on toll revenues (OH, MA)
 - ◇ Long-Term Loans
 - Transportation Infrastructure Finance and Innovation Act (TIFIA)
 - Requirements: Total cost > \$50 million (bundle projects) >25 million in rural areas (rural areas are eligible for interest rates ½ those in urban areas)

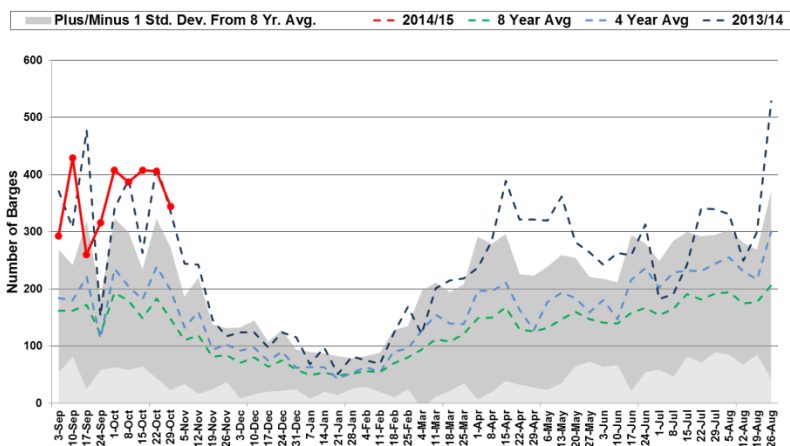
Barge and Inland Navigation

Strong Barge Freight Demand

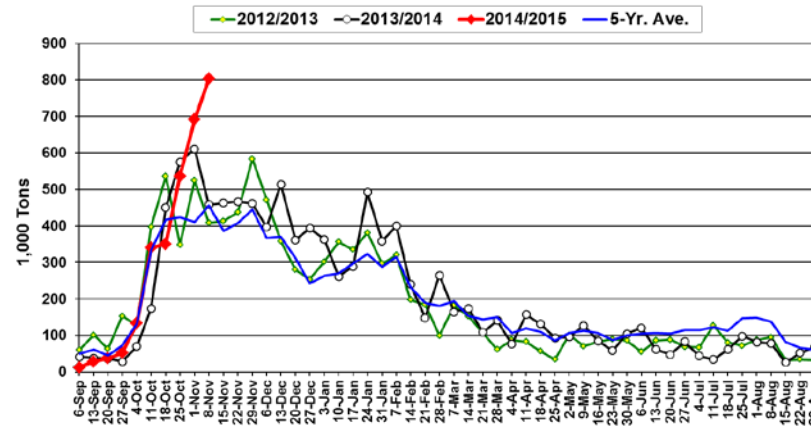
Weekly Grain Barge Movements through Key Locks and Dam



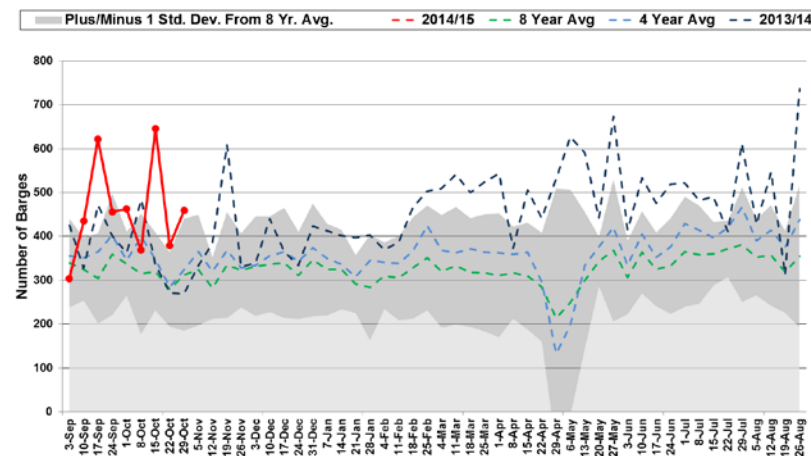
Weekly Upbound Loaded Barges Mississippi River Lock 27



Weekly Soybean Barge Movements through Key Locks and Dam

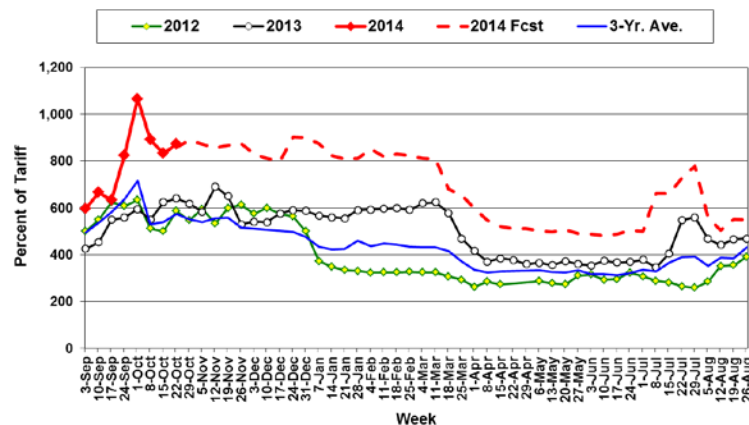


Weekly Upbound Loaded Barges Ohio River Lock 52

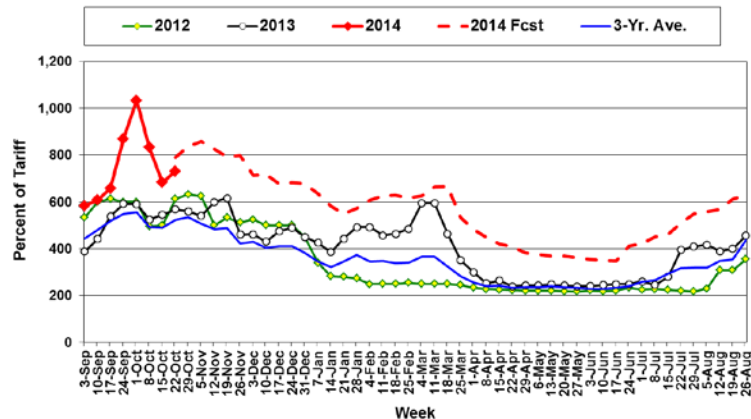


Barge Freight Rates High

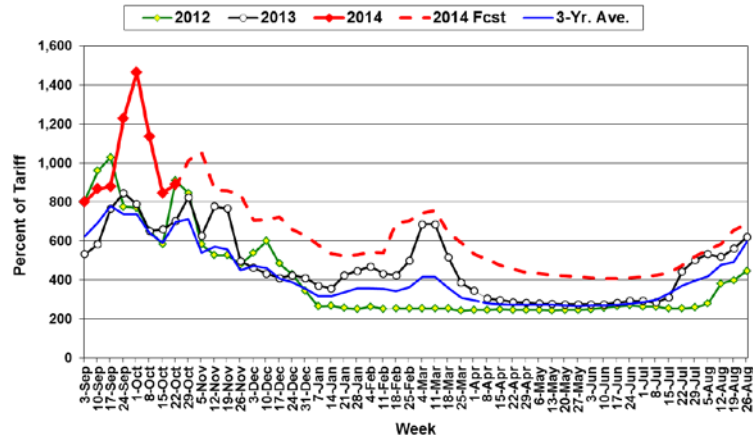
Illinois River Barge Freight Rate (percent of tariff)
by Crop Year (Sep/Aug)



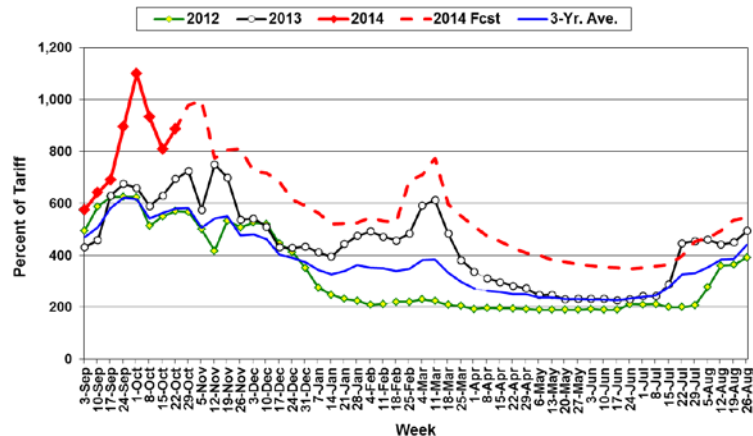
St. Louis Barge Freight Rate (percent of tariff) by
Crop Year (Sep/Aug)



Cairo / Memphis Barge Freight Rate (percent of
tariff) by Crop Year (Sep/Aug)



Lower Ohio Barge Freight Rate (percent of tariff)
by Crop Year (Sep/Aug)



Funding Inland Navigation

Freight Backbone:

- Inland river navigation represents 12,000 miles, 200 locks
- 566 million tons of freight per year, \$152 billion in value

- Inland Waterways Trust Fund:
 - ◇ Generates about \$85 million per year (20 cent fuel tax on barge operators)

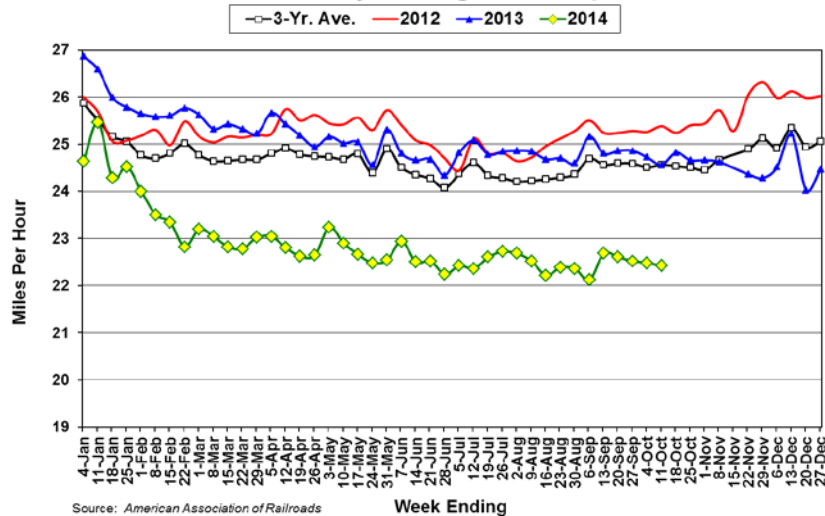
 - ◇ Estimated total capital investment needs over next 20 years: \$18 billion or \$900 million per year

 - ◇ If Federal funding continues at existing levels, the 22 planned major construction and rehab projects won't be completed until 2090

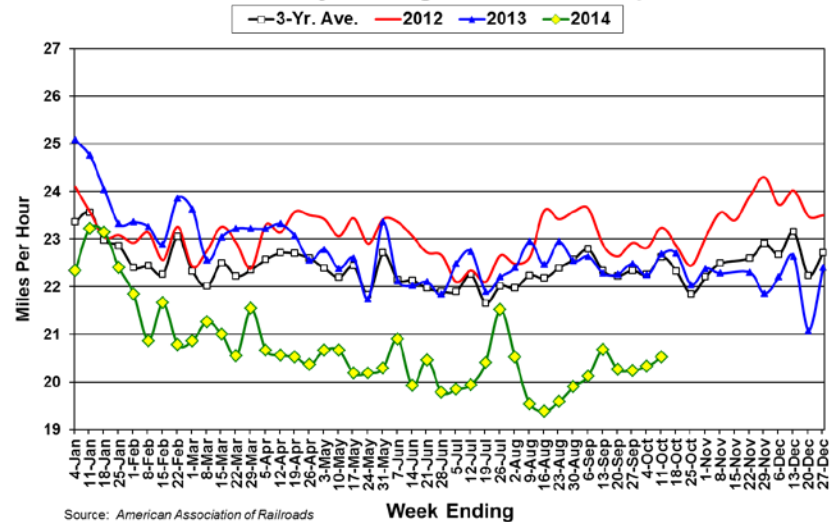
Rail

Rail Capacity Constraints

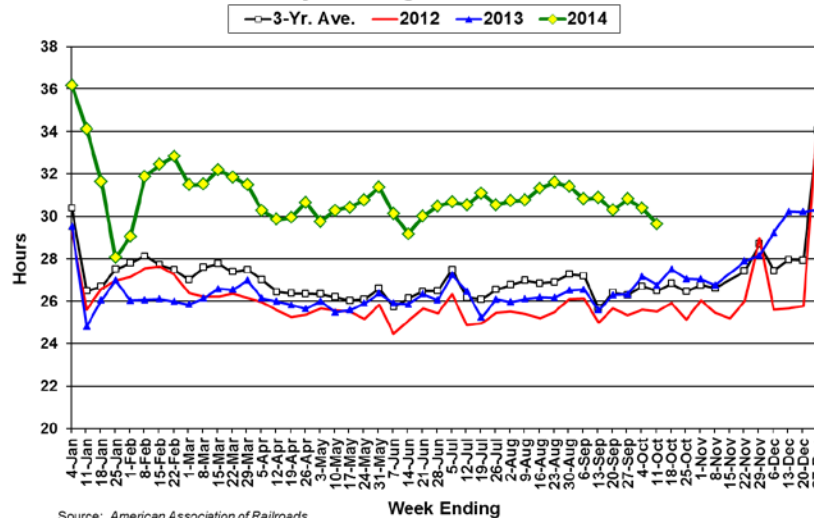
U.S. Weekly Average Train Speed



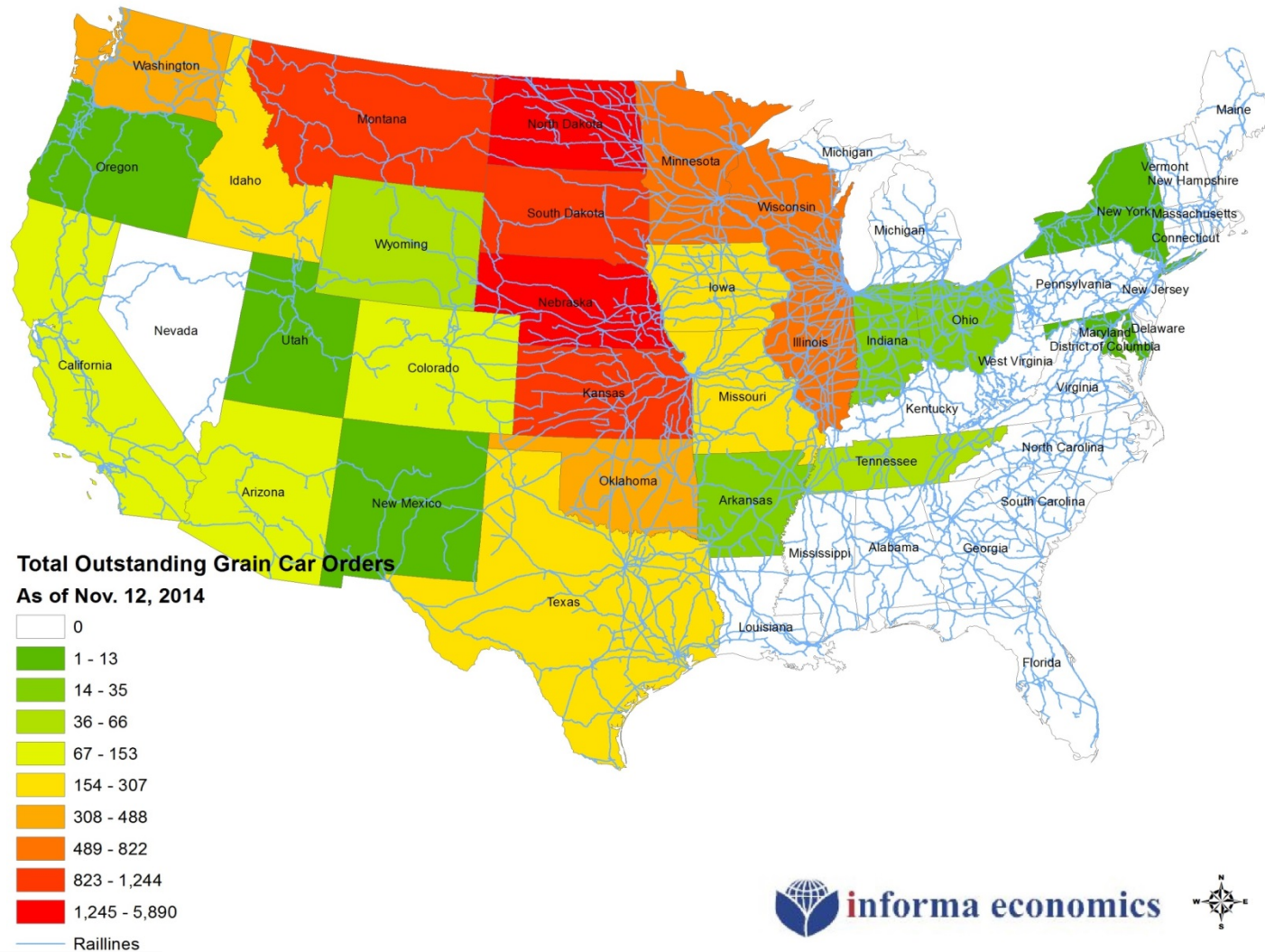
U.S. Weekly Average Grain Train Speed



U.S. Weekly Average Terminal Dwell Time

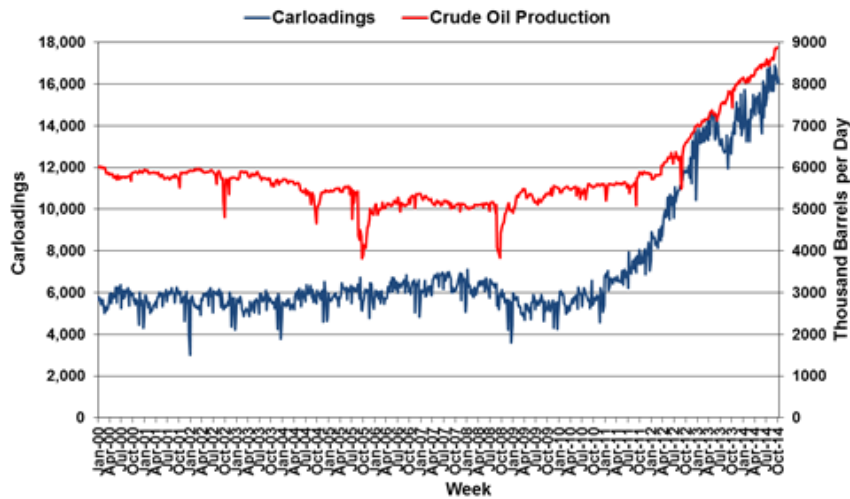


Rail Car Backlog: November 12, 2014

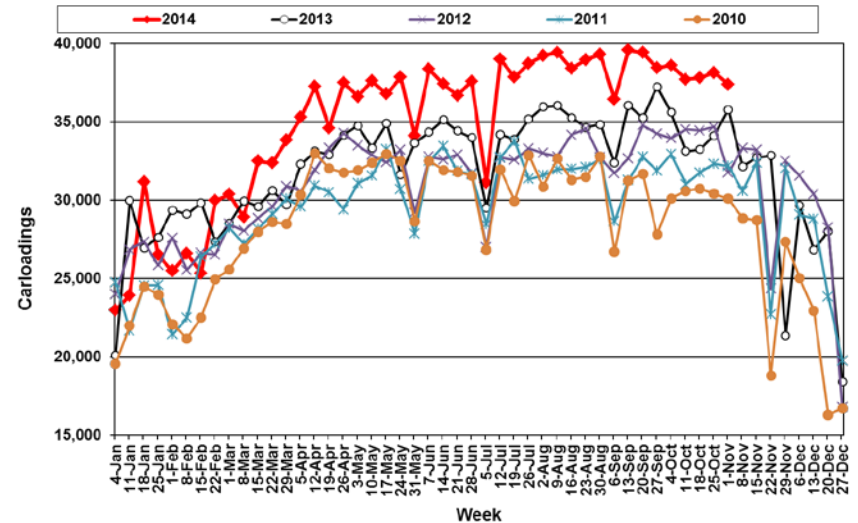


Increased Crude Carloadings

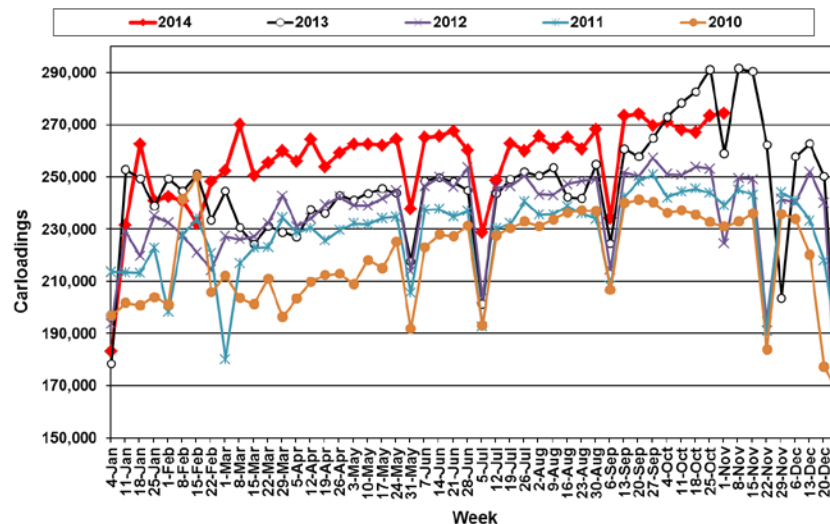
Weekly U.S. Class I Carloadings of Petroleum and Production of Crude Oil



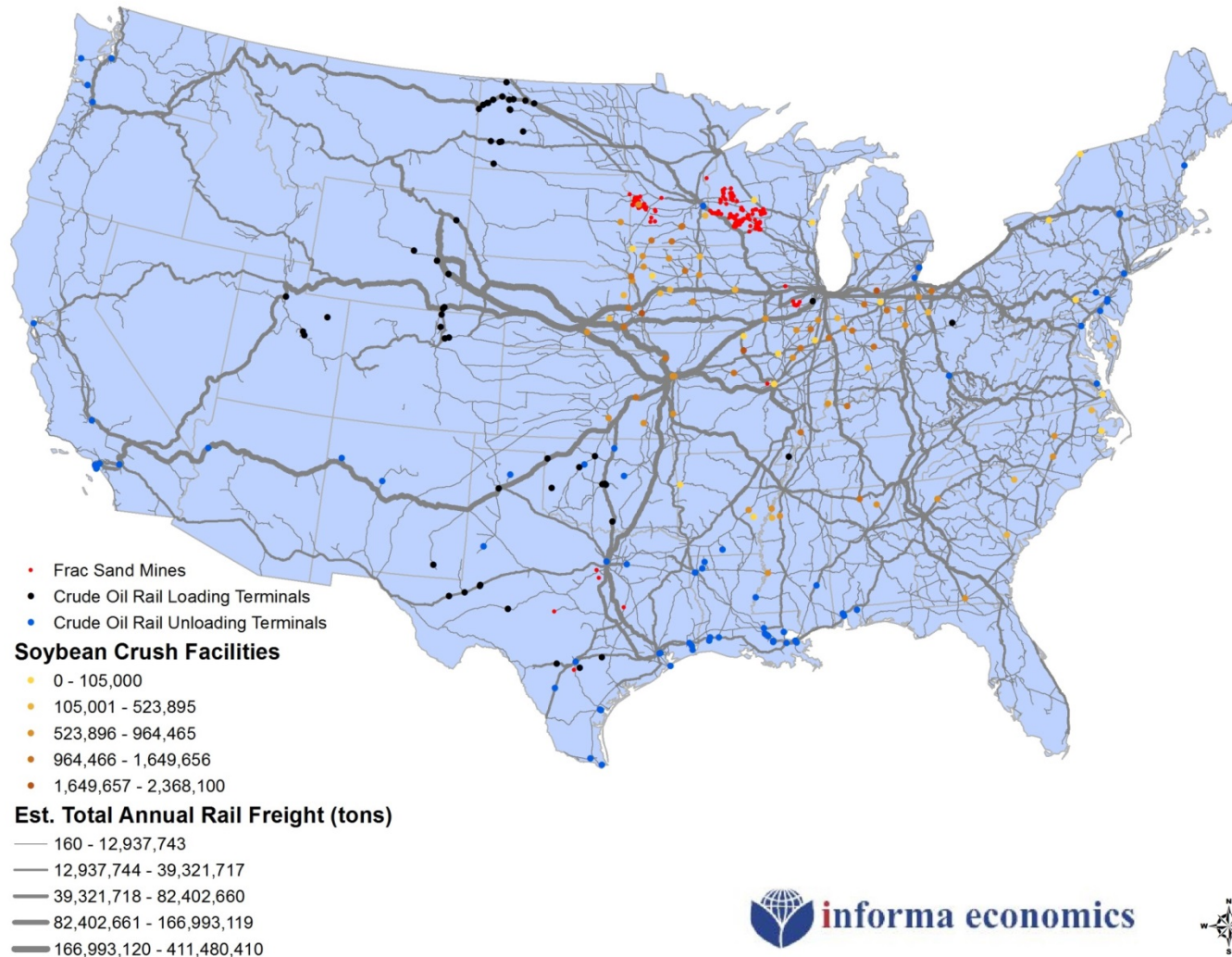
U.S. Class I Non-Metallic Minerals Carloadings



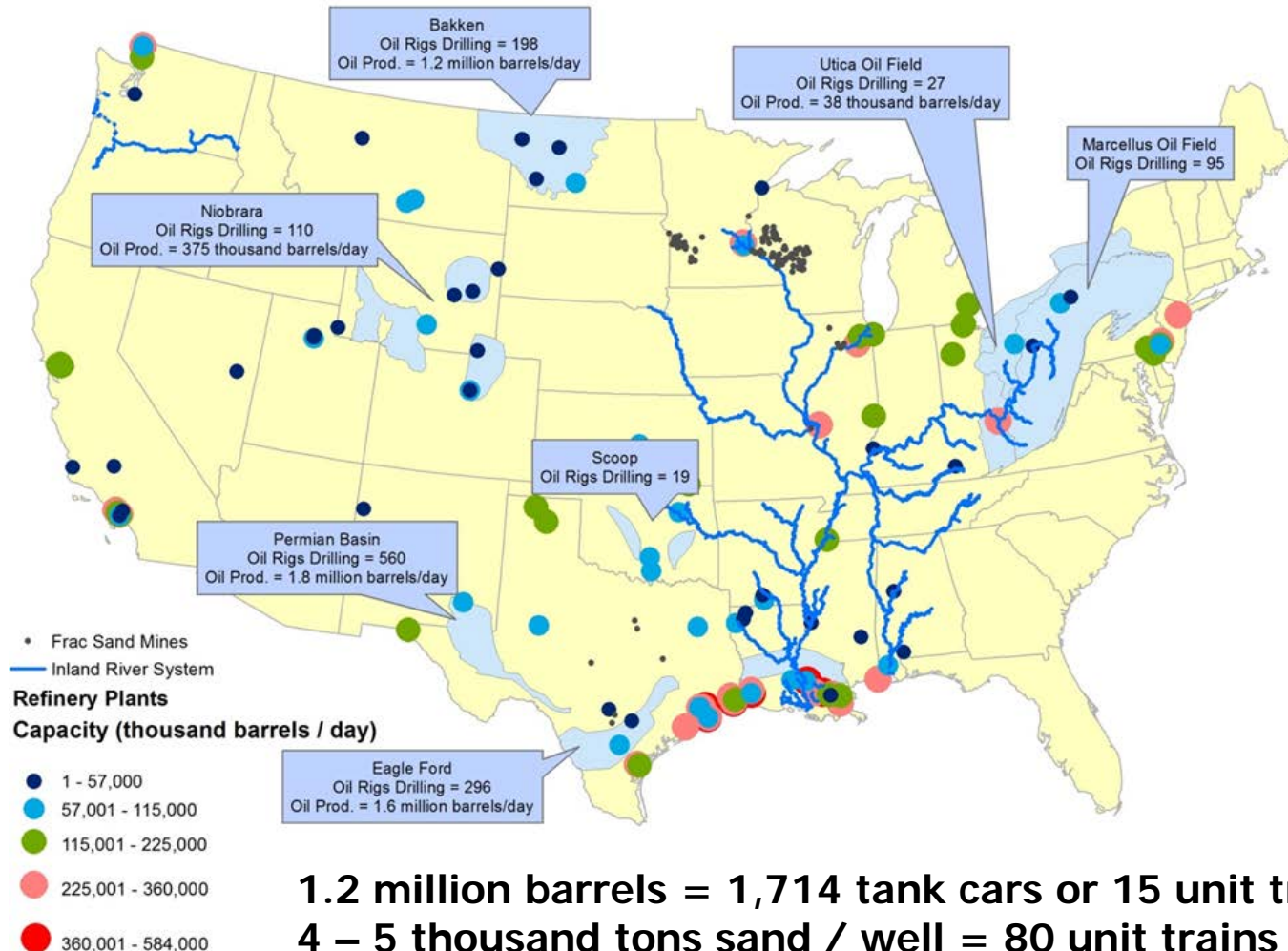
U.S. Class I Intermodal Units Originated



Soybean Crush and Crude Oil Infrastructure



Key U.S. Shale Basin Activity and Refinery Infrastructure



Long Term Outlook

- Class I railroads addressing capacity constraints with investments in labor, equipment and track
- Funding highways / bridges still an issue, particularly for rural America
- Failure to make adequate investments in locks / dams and maintain barge freight system poses significant risks of lock/dam failure

Action Items

- Global U.S. Grain Export Competitiveness Study
- Grain Market Optimization Assessment Tool
 - ◇ Evaluate Issues
 - ☐ Rail rate spikes and service disruptions
 - ☐ Lock and dam closures
 - ☐ Facility expansion/contraction (new export terminals, shuttle facilities, etc.)
 - ☐ Regional production impacts (drought or flood impacts)
 - ☐ Government policy changes (truck weight limits, hours of service, etc.)
- Panama Canal Expansion Impacts
- Long-Term Container Port Changes and Impacts to Agriculture



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