

RAIL RENAISSANCE

The Changing Dynamics of Freight Transportation

John Miller

Group Vice President,
Agricultural Products
BNSF Railway



Railroads are the Backbone of America's Freight Transportation

- Nearly **140,000 MILES**
- Over **180,000 EMPLOYEES**
- Aggregate freight **REVENUE** of over **\$70 billion**
- In the U.S., railroads account for approximately **40%*** of all **FREIGHT** (more than any other transportation mode)
- **60%** of all **AUTOS** produced in America move by rail
- **30%** of all **U.S. GRAIN** moves by rail
- **70%** of all **COAL** is moved by rail which in turn produces nearly 40% of American electricity



Key Benefits of Rail Transportation

FUEL EFFICIENCY

4X

On average, trains are **more fuel efficient** than trucks

HIGHWAY GRIDLOCK REDUCTION

A typical freight train takes the equivalent of **SEVERAL HUNDRED TRUCKS OFF OUR HIGHWAYS**

ENVIRONMENTAL FRIENDLINESS

Freight railroads account for approximately 40% of the nation's intercity freight volume but **reduce greenhouse gas emissions**

by **75%**

compared to trucks

COST EFFECTIVE

In general, shippers **PAY LESS FOR SHIPPING VIA RAIL**

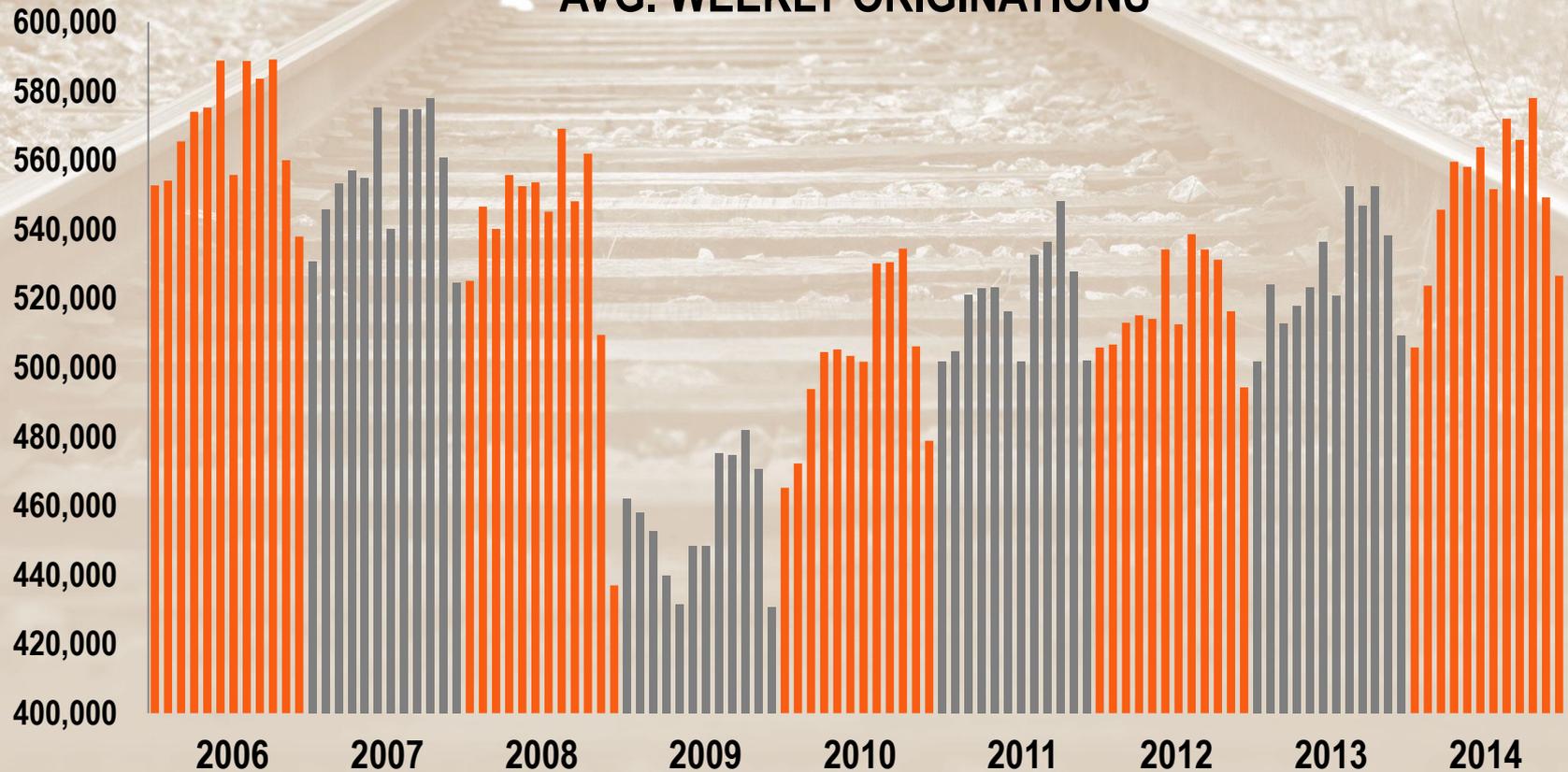
than for other forms of surface transportation



Here We Grow Again

Freight Levels Today Highest Since Before Recession

U.S. CARLOAD + INTERMODAL UNITS AVG. WEEKLY ORIGINATIONS



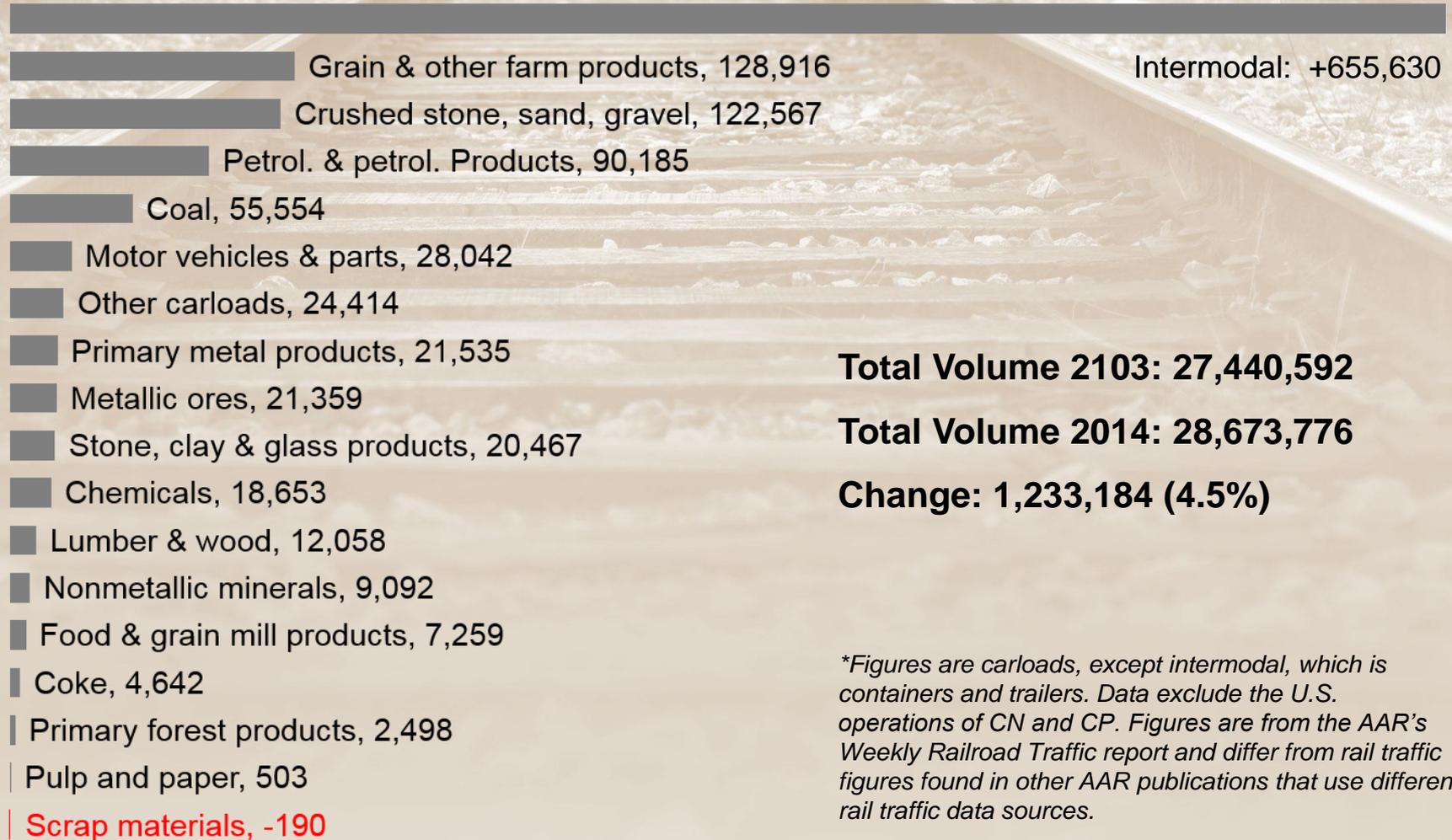
Data are average weekly originations for each month, not seasonally adjusted, do not include intermodal, and do not include the U.S. operations of CN and CP.



With Growth Comes Challenges

Significant Growth Over Multiple Businesses

U.S. RAIL TRAFFIC: 2013 VS. 2014*



**Figures are carloads, except intermodal, which is containers and trailers. Data exclude the U.S. operations of CN and CP. Figures are from the AAR's Weekly Railroad Traffic report and differ from rail traffic figures found in other AAR publications that use different rail traffic data sources.*

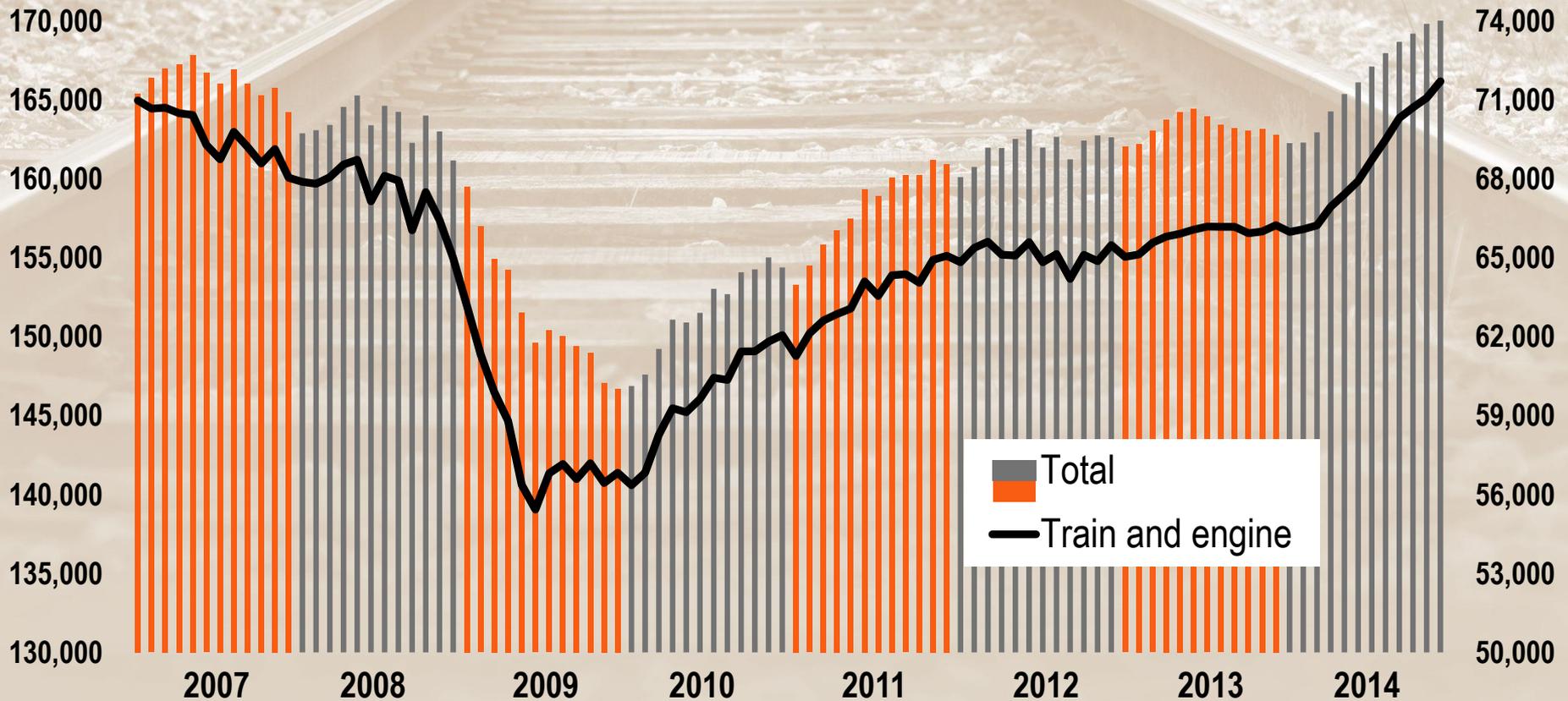
What Are Railroads Doing to Solve the Problems?

- Process changes
- Improved information technology
- More people
- More locomotives and freight cars
- More physical plant



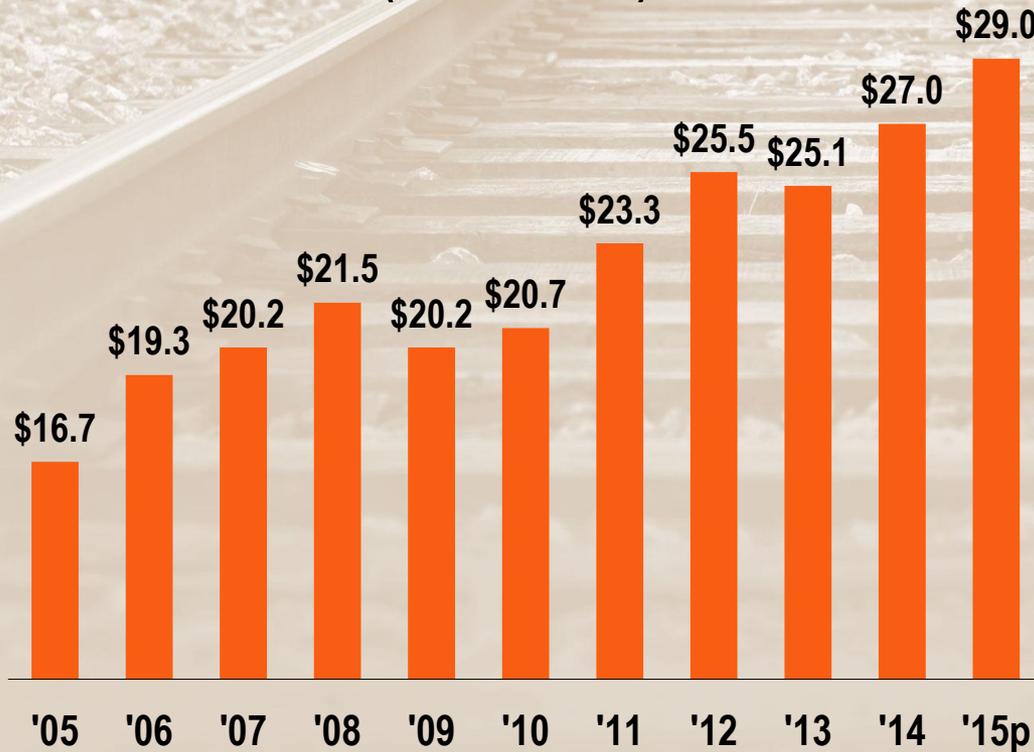
More People

TOTAL CLASS I RAILROAD EMPLOYMENT



Higher Spending in Recent Years than Ever Before

RAILROAD SPENDING ON INFRASTRUCTURE AND EQUIPMENT* (\$ BILLIONS)



p – AAR projection *Capital spending + maintenance expenses.
Data are for Class I RRs.

Types of key projects:

- Main line, terminal and terminal through route upgrades
- Signal and control infrastructure
- Locomotive/freight car maintenance/servicing facilities
- Terminals and sidings
- Unit train servicing capabilities

Big Effort to Improve Chicago for Winter

- Developed and test winter response plans earlier
- Triggered Chicago alerts automatically
- Improved routing protocols to use alternative gateways
- Deployed more weather resistant technology
- Invested in physical plant both through CREATE and individually
- Added more people



Adding More Trains Not Always the Best Thing to Do

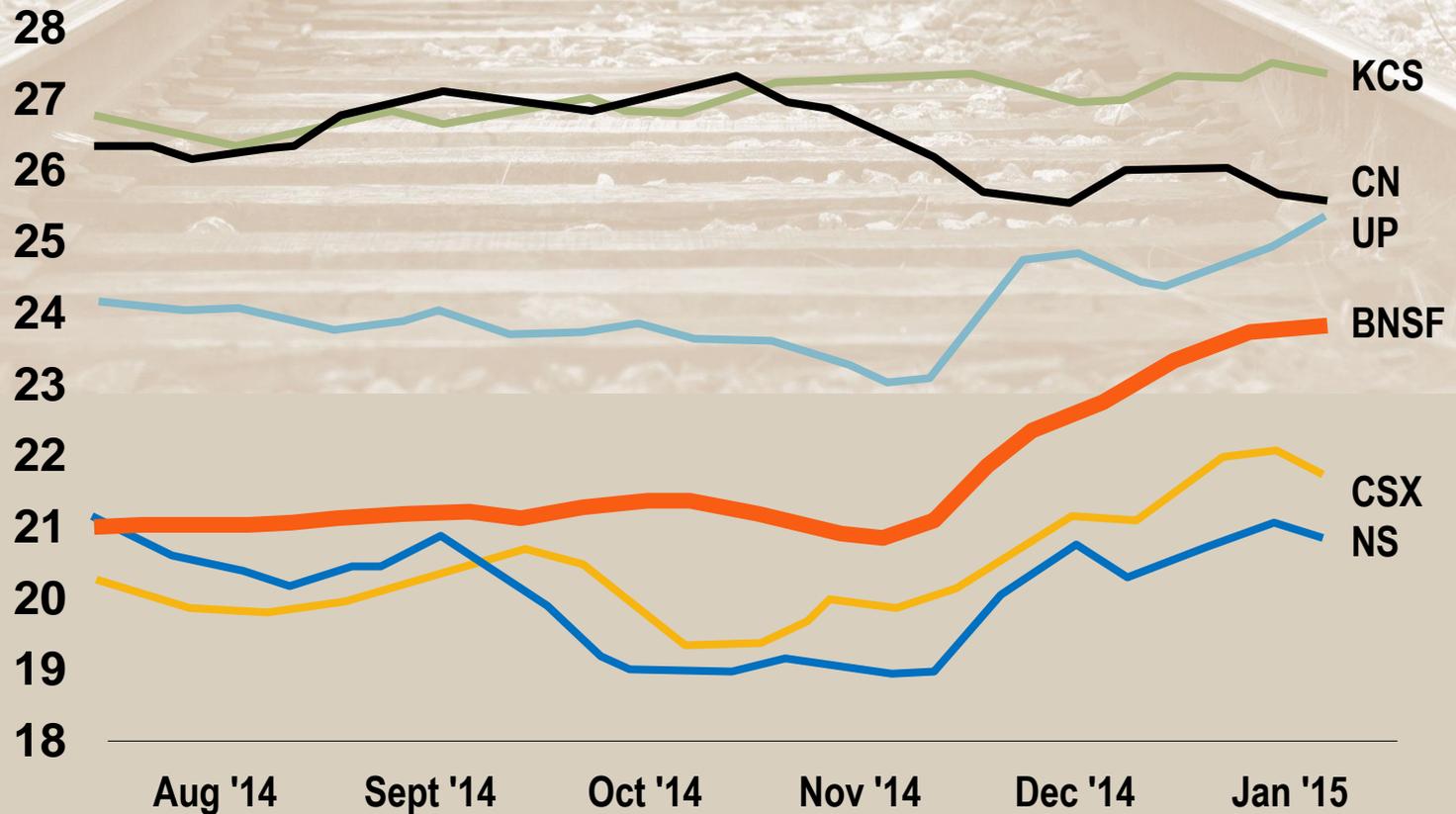
Adding more cars to this highway won't help existing cars move faster. Same with railroads.

KEY GOAL:
**RESTORE
VELOCITY**

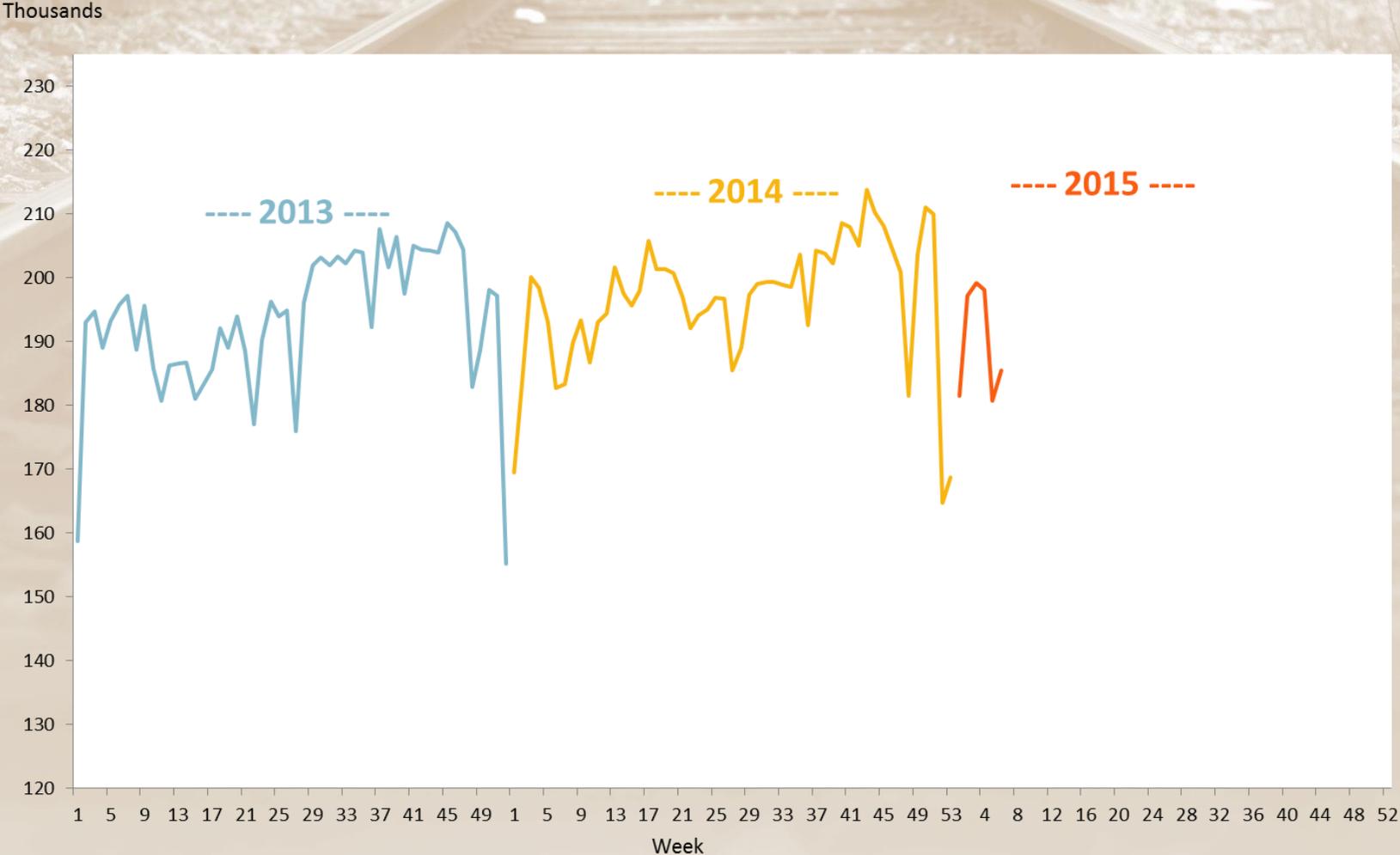


Improving Velocity

AVERAGE TRAIN SPEED: AUG 2014 - JAN 2015
(Miles per hour, 3-week moving average)

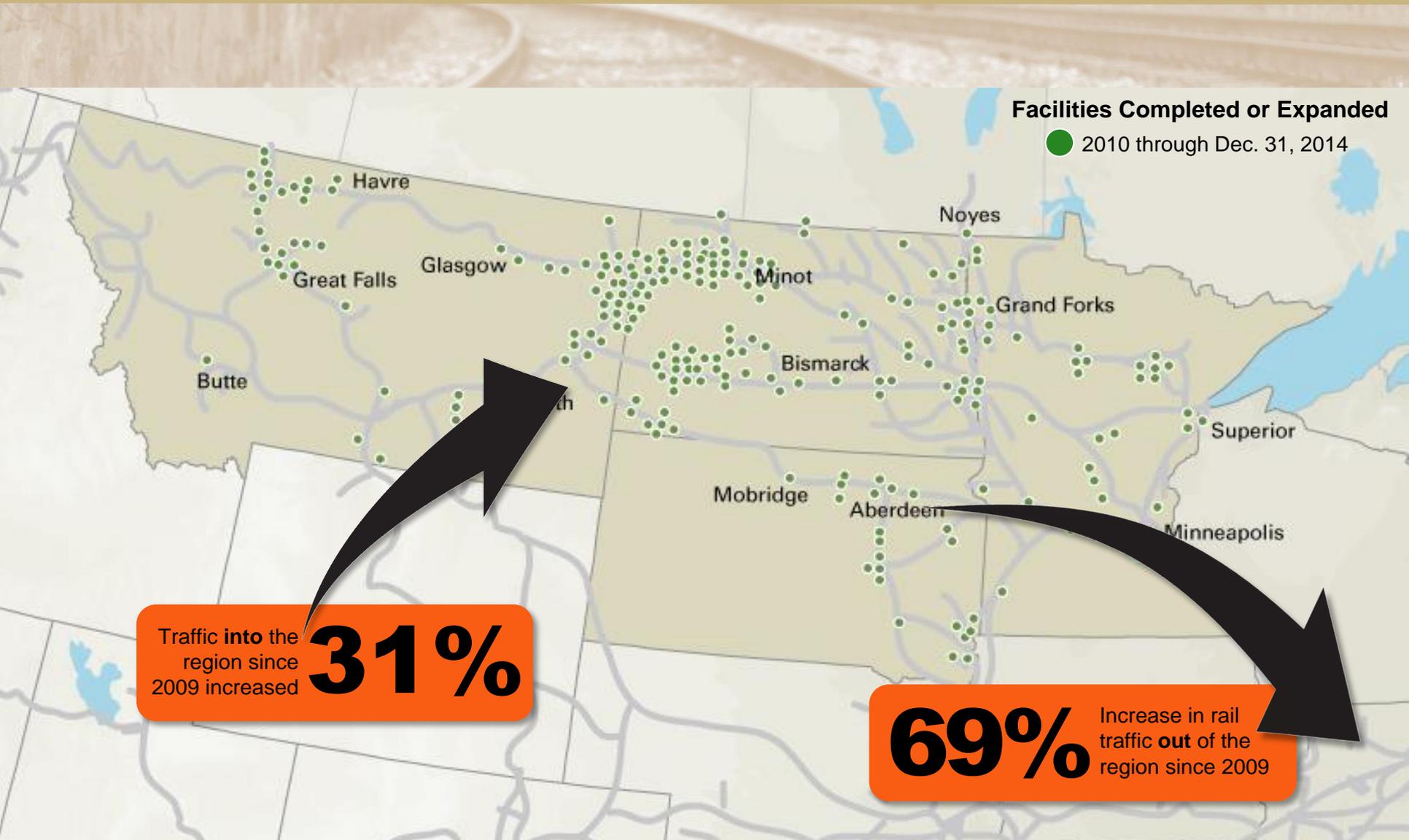


BNSF Weekly Volumes Continue to Grow



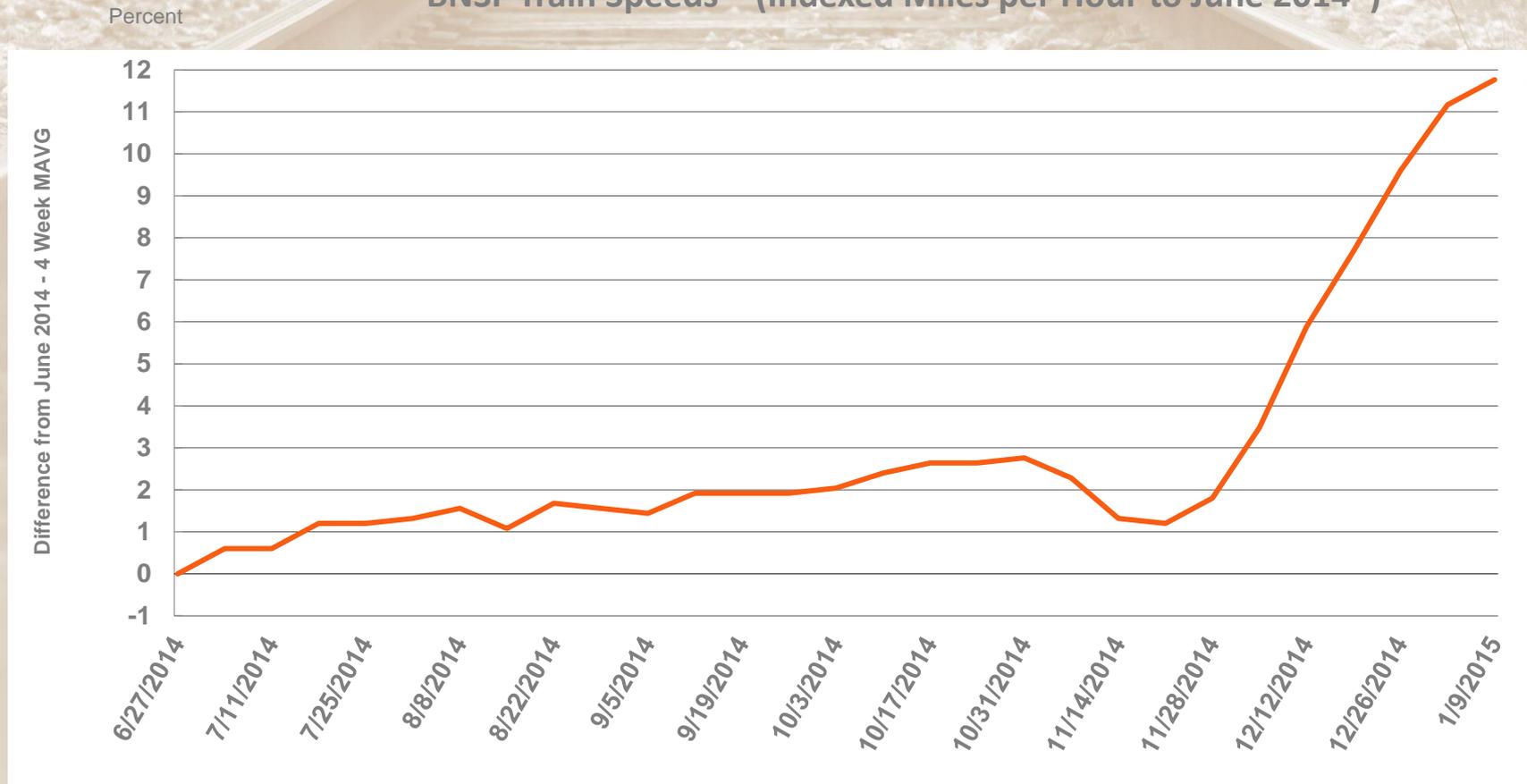
Source: AAR data through week 6 (Feb. 14, 2015).

Serving Unprecedented Growth in the Northern Region



With Added Capacity Comes Improved Performance

BNSF Train Speeds – (Indexed Miles per Hour to June 2014*)

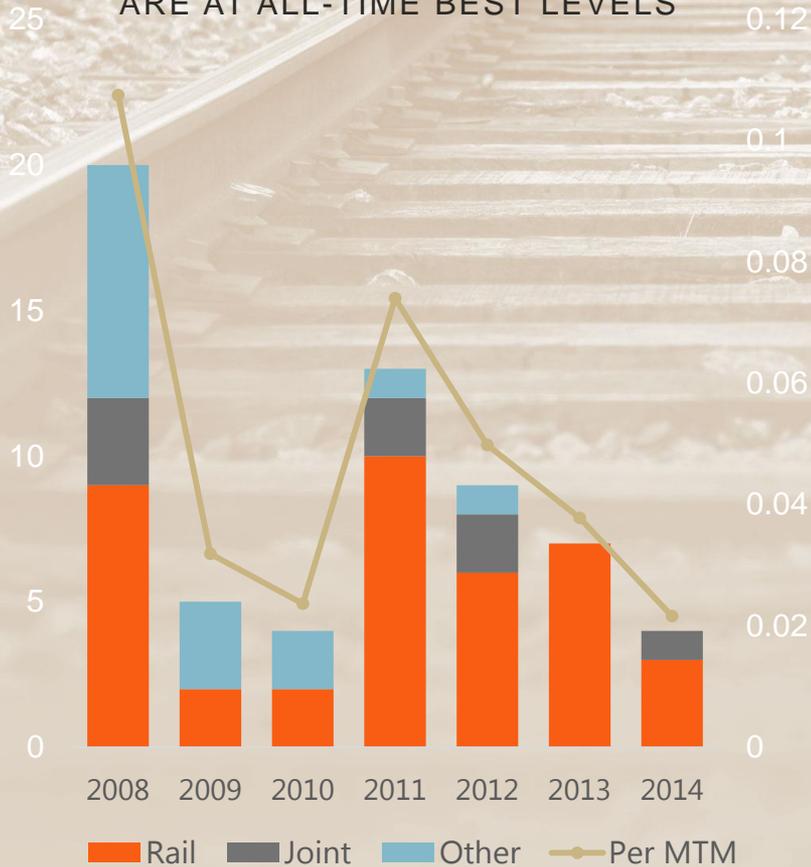


* - 4-week average of 5/31/14 through 6/27/14

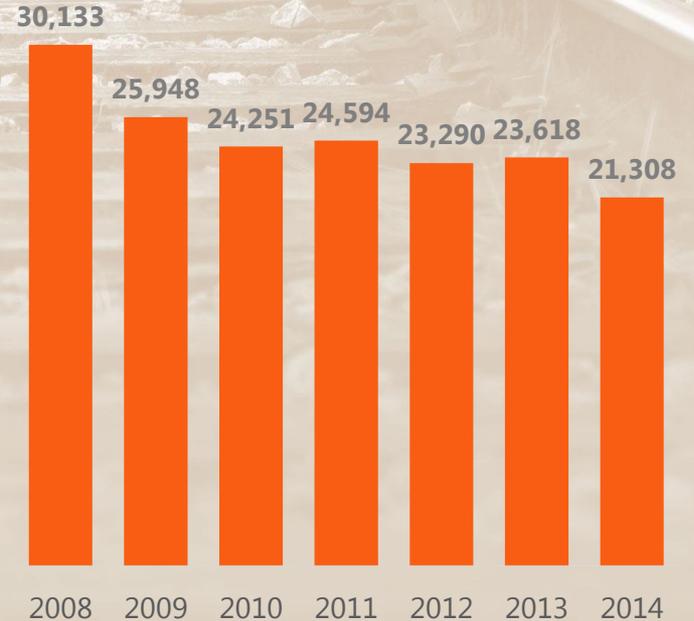
Source: AAR through January 9th, 2015

Continuous Improvement in Safety and Reliability Through Maintenance

BNSF'S RAIL-RELATED DERAILMENTS ARE AT ALL-TIME BEST LEVELS



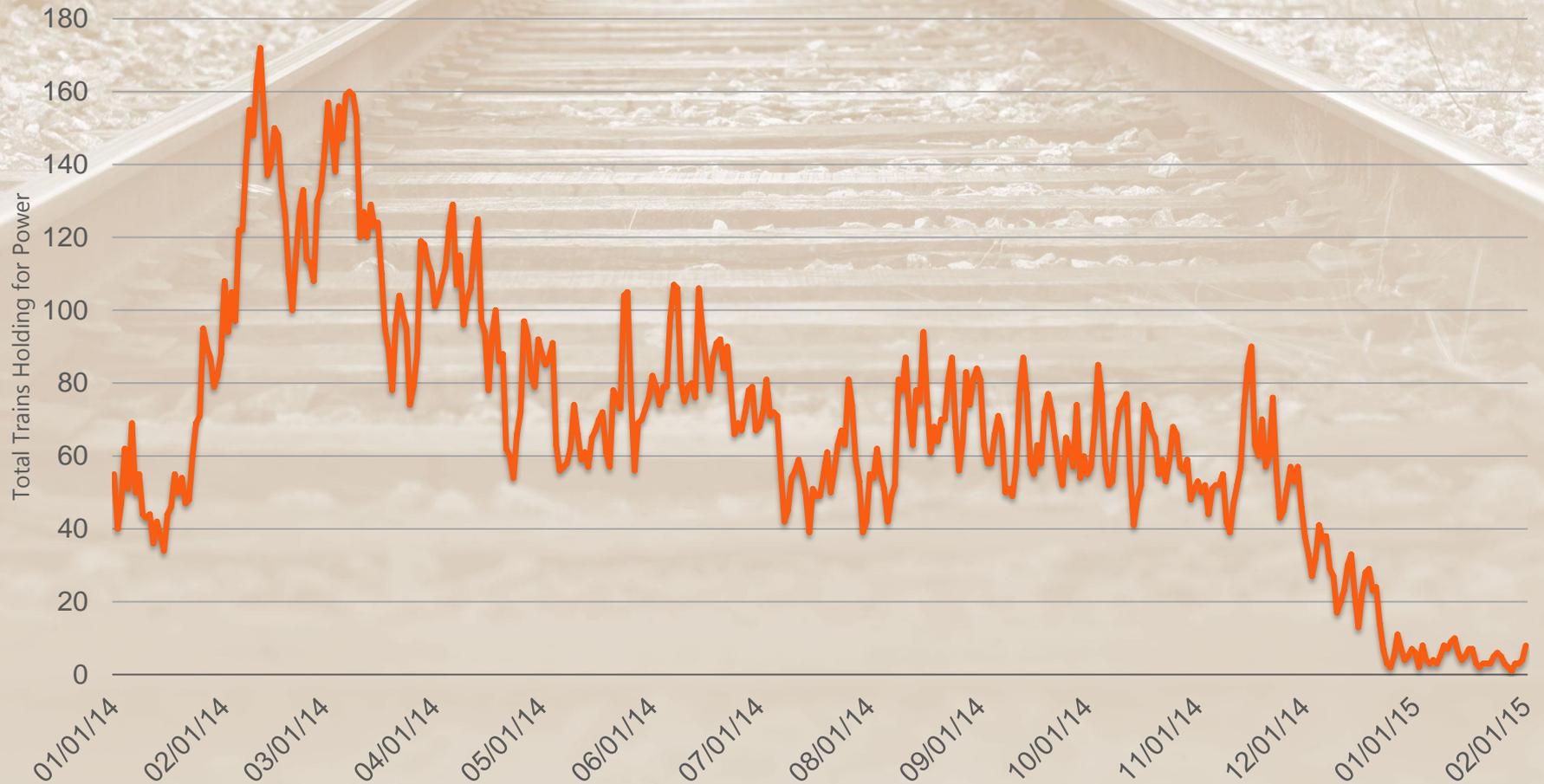
DETECTION* OF RAIL AND WELD DEFECTS CONTINUE TO DECLINE



*Includes Detected and Service Failed:

Detail Fracture, Engine Burn Fracture, Transverse Fissure, Compound Fissure, Horizontal Split Head, Vertical Split Head, Crushed Head, Shelled/Spalled/Corrugated, Worn Rail, Piped Rail, Split Web, Broken Base, Welded Engine Burn Fracture, Boutet Weld, Orgotherm Weld, Boutet Wide-Gap, Orgotherm Wide-Gap, Thermite Weld, Pressure Gas Weld, Pressure Electric Weld & Ordinary Break.

More Locomotives Reduces Trains Held for Power



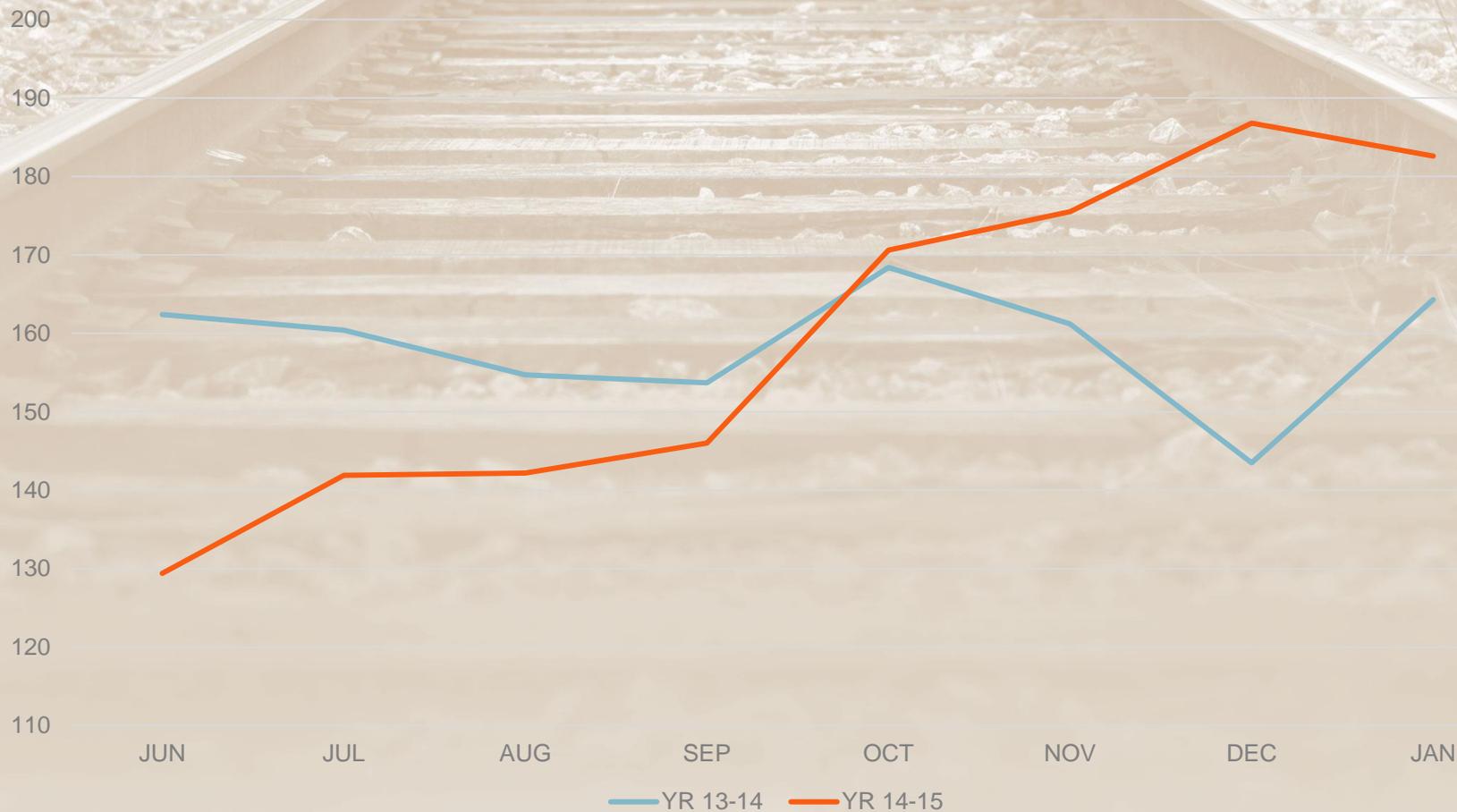
Summary by Business Unit

Improved service across the entire network.



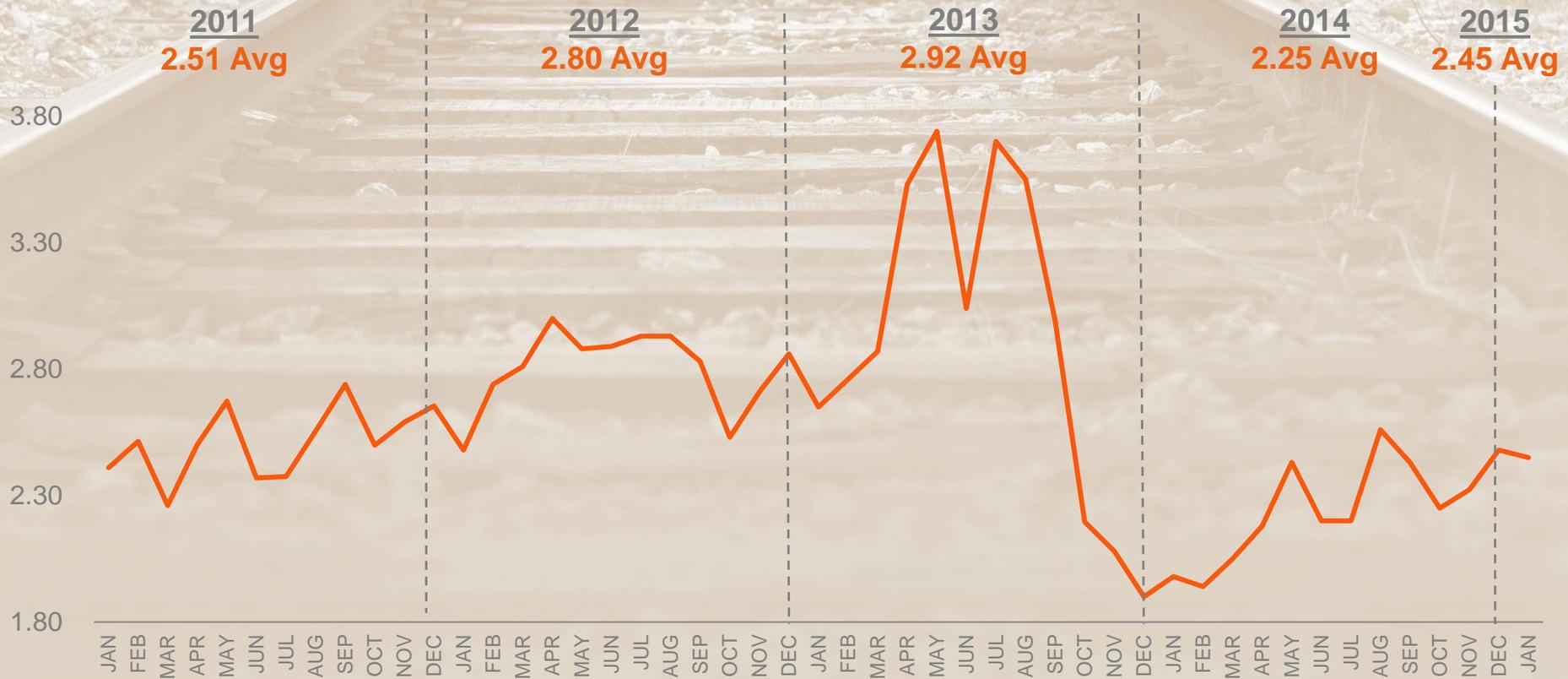
Ag Velocity Improving

AG FLEET MILES PER DAY INCREASED 41% FROM JUNE 2014 TO JANUARY 2015



Shuttle Turns Per Month – PNW Export

PNW SHUTTLE TPMs RECOVERED FROM A LOW OF 1.9 IN DEC 2013 TO A HIGH OF 2.5 IN DEC 2014

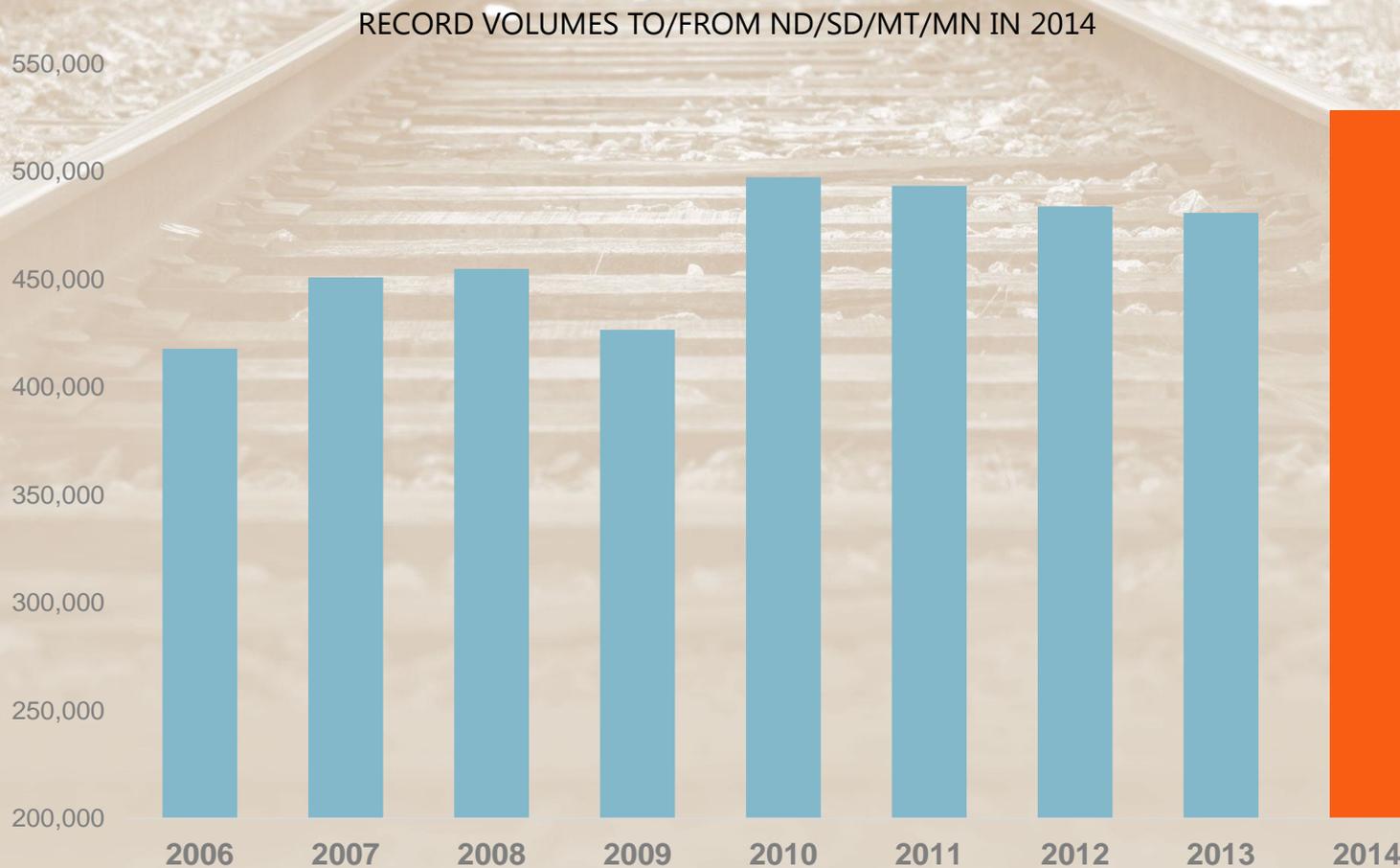


PNW Harvest Record Set in Crop Year 2014-2015

SOYBEAN VOLUME TO THE PNW AND OVERALL PNW EXPORTS SET ALL-TIME UNIT RECORDS FOR THE PERIOD OCT. THROUGH JAN. 2015

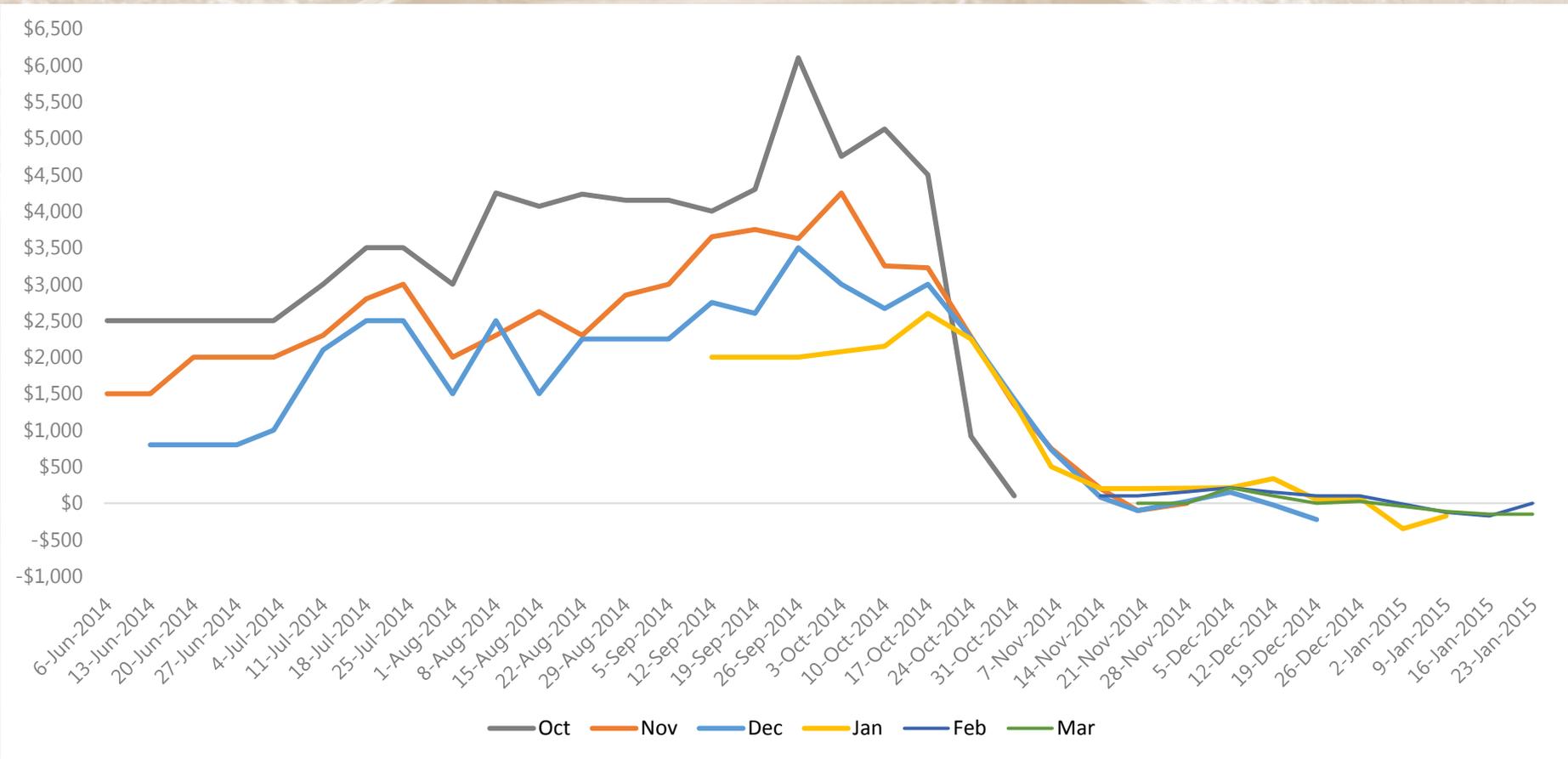


Ag Volume to/from North Dakota, South Dakota, Montana and Minnesota



Source: BNSF internal data for full-year 2014 for origins/destinations to/from North Dakota, South Dakota, Montana and Minnesota, excluding intrastate and interstate volume within above mentioned states.

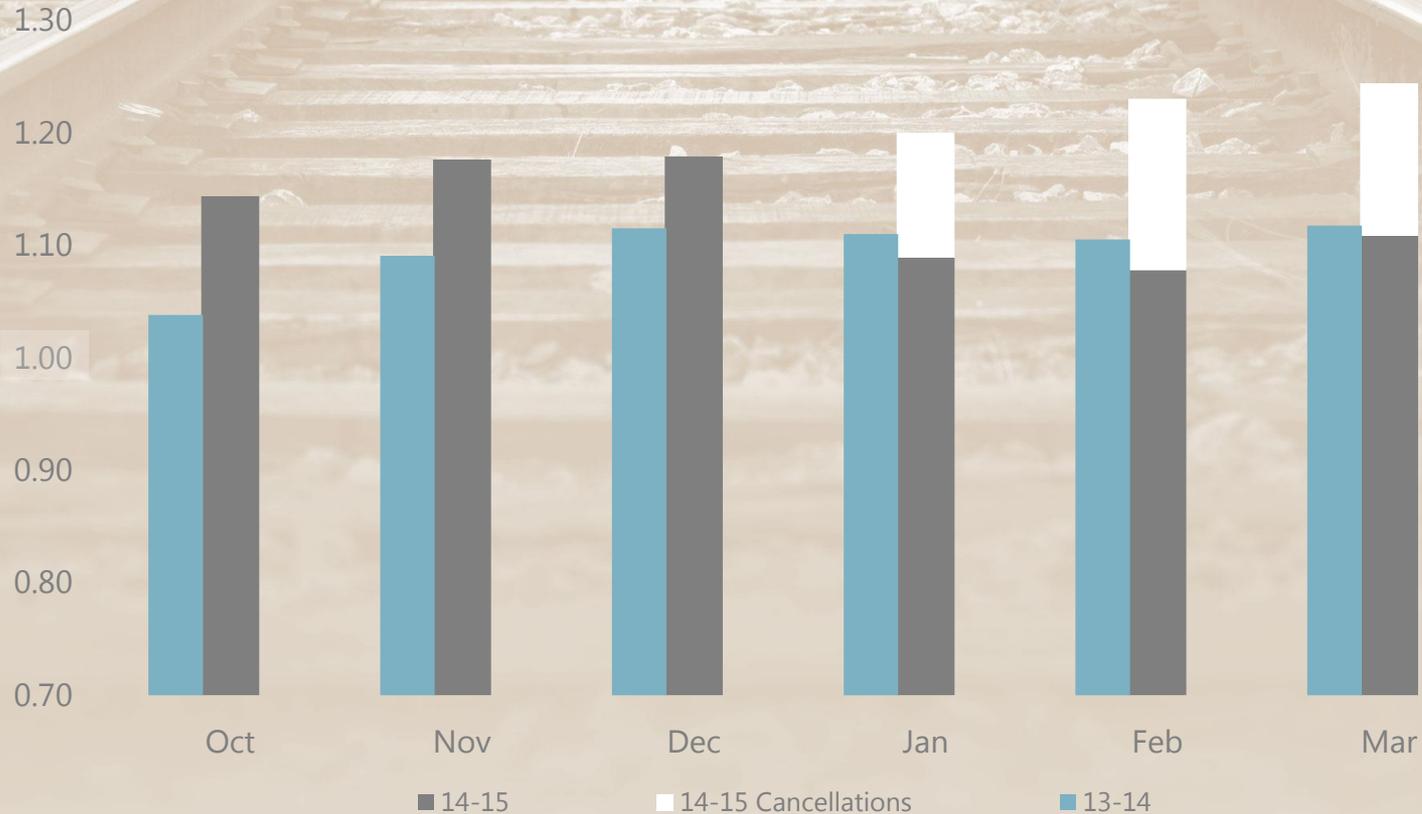
Secondary Market Shuttle Freight Value



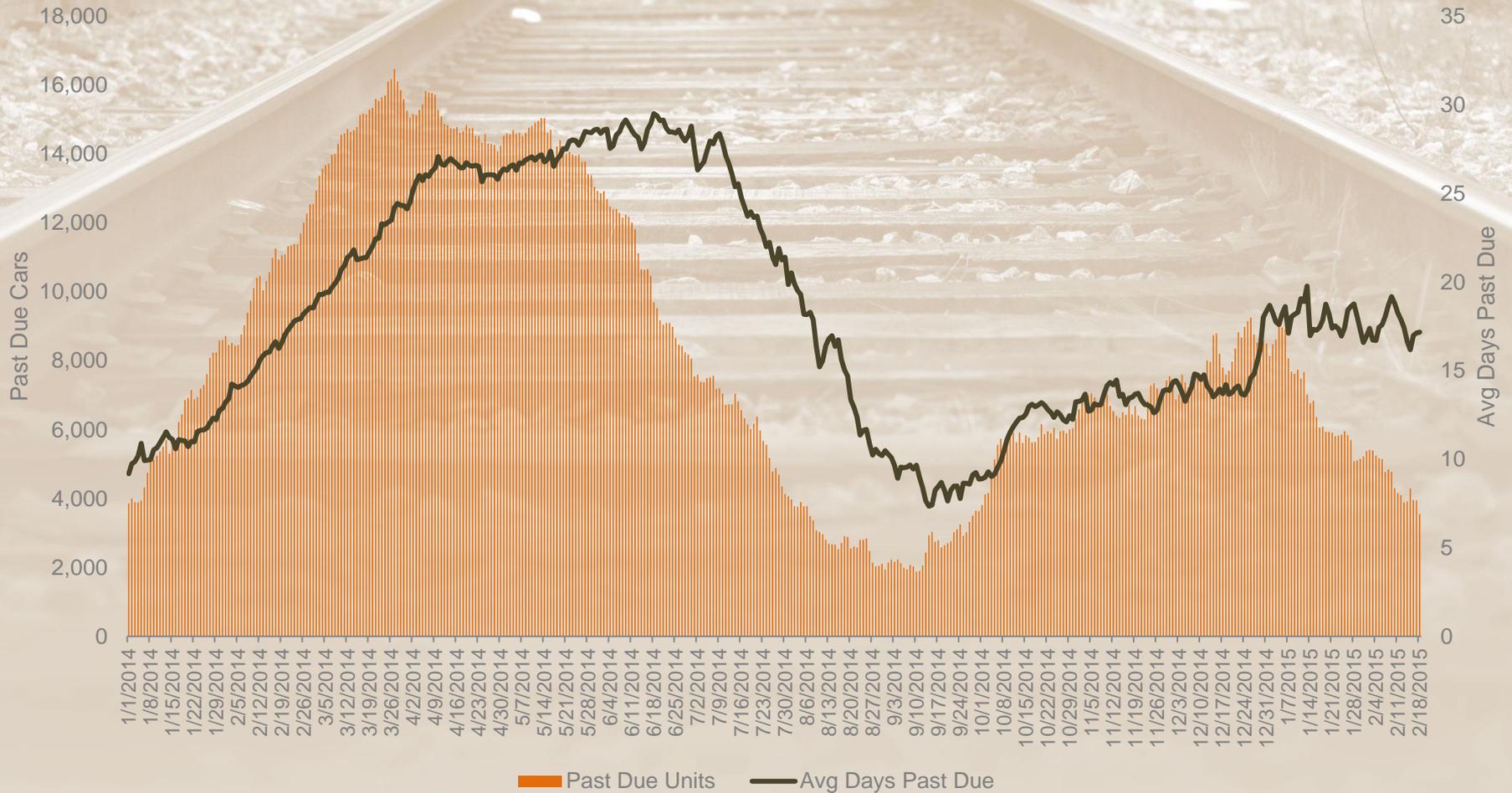
2014-15 BNSF Ag Shuttles

AFTER RECORD SHUTTLES WERE SOLD FOR JAN - MAR, CUSTOMER CANCELLATIONS HAVE DROPPED COUNTS BELOW LAST YEAR'S LEVELS

5-Yr Average Index = 1.0

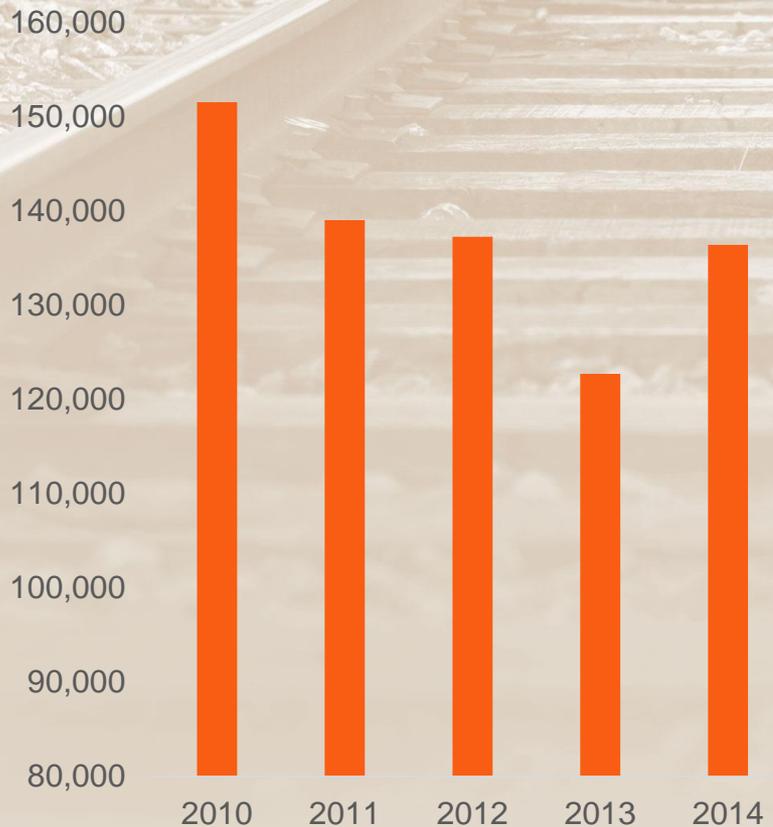


U.S. Total Ag Past Dues

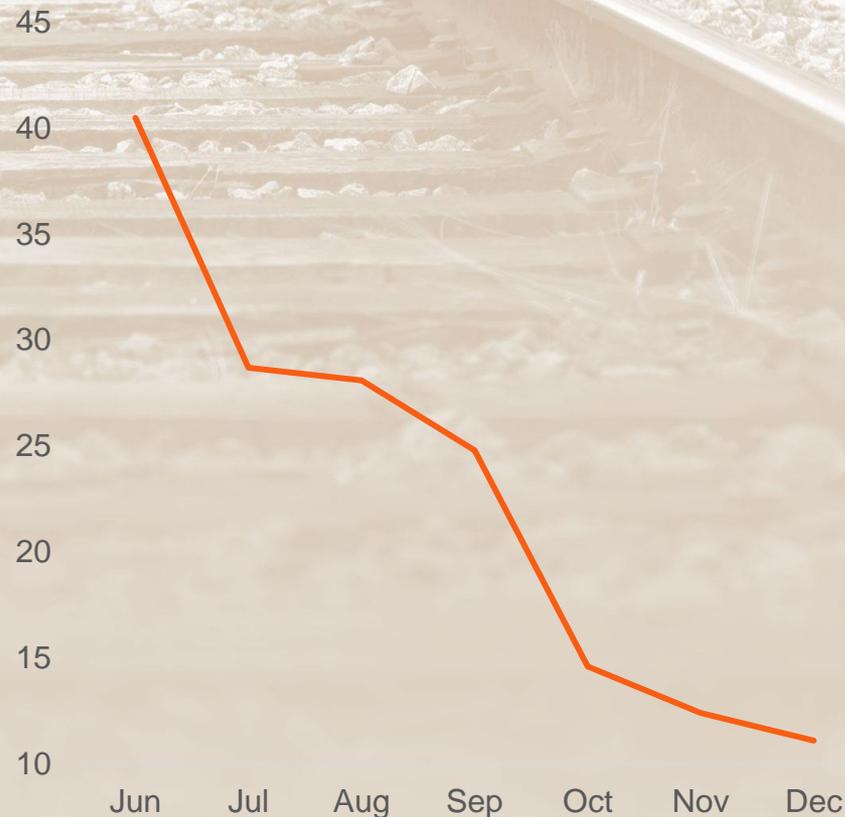


Grain Performance

4TH QUARTER 2014 OVERALL GRAIN VOLUME WAS 11% HIGHER THAN 2013



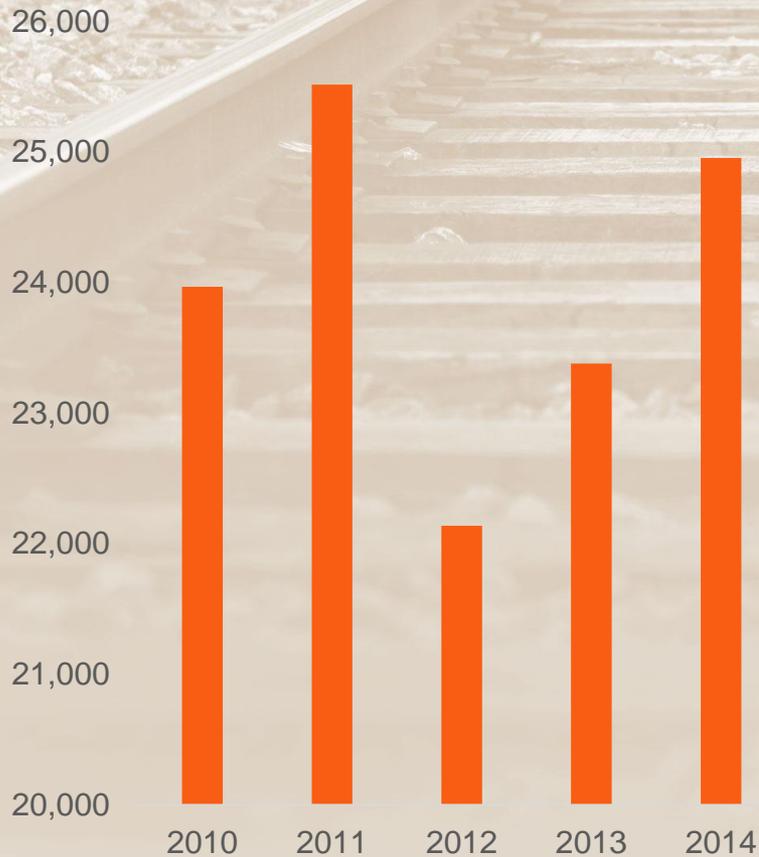
2014 AVG RI-TD HOURS IMPROVED DURING THE BACK HALF OF THE YEAR FOR OUR GRAIN SHUTTLE BUSINESS



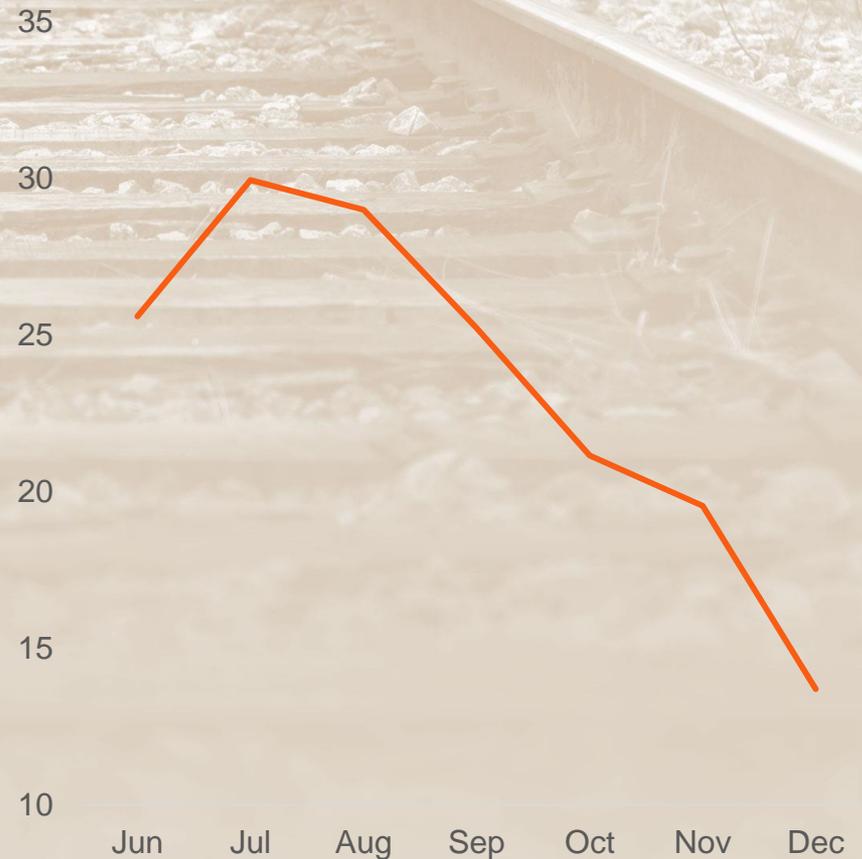
Source: AAR Data, 4th quarter defined as weeks 40 – 52. RI-TD (release-to-depart) internal BNSF data.

Ethanol Performance

SECOND HIGHEST VOLUMES IN
4TH QUARTER 2014

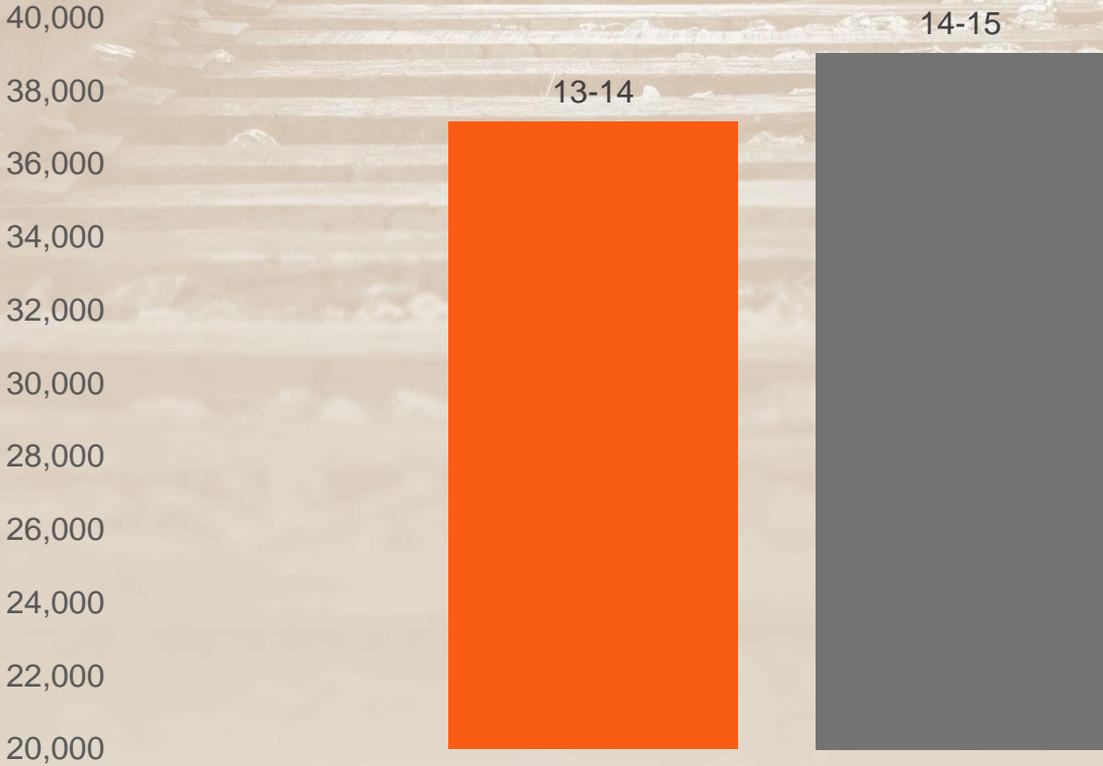


2014 AVG RI-TD HOURS CONTINUES TO DECLINE
FOR OUR ETHANOL UNIT TRAIN BUSINESS



BNSF Fertilizer Volume Crop Year-to-Date

BNSF HAS SHIPPED APPROXIMATELY 5% MORE FERTILIZER VOLUME DURING THE CURRENT CROP YEAR-TO-DATE THAN THE PRIOR YEAR

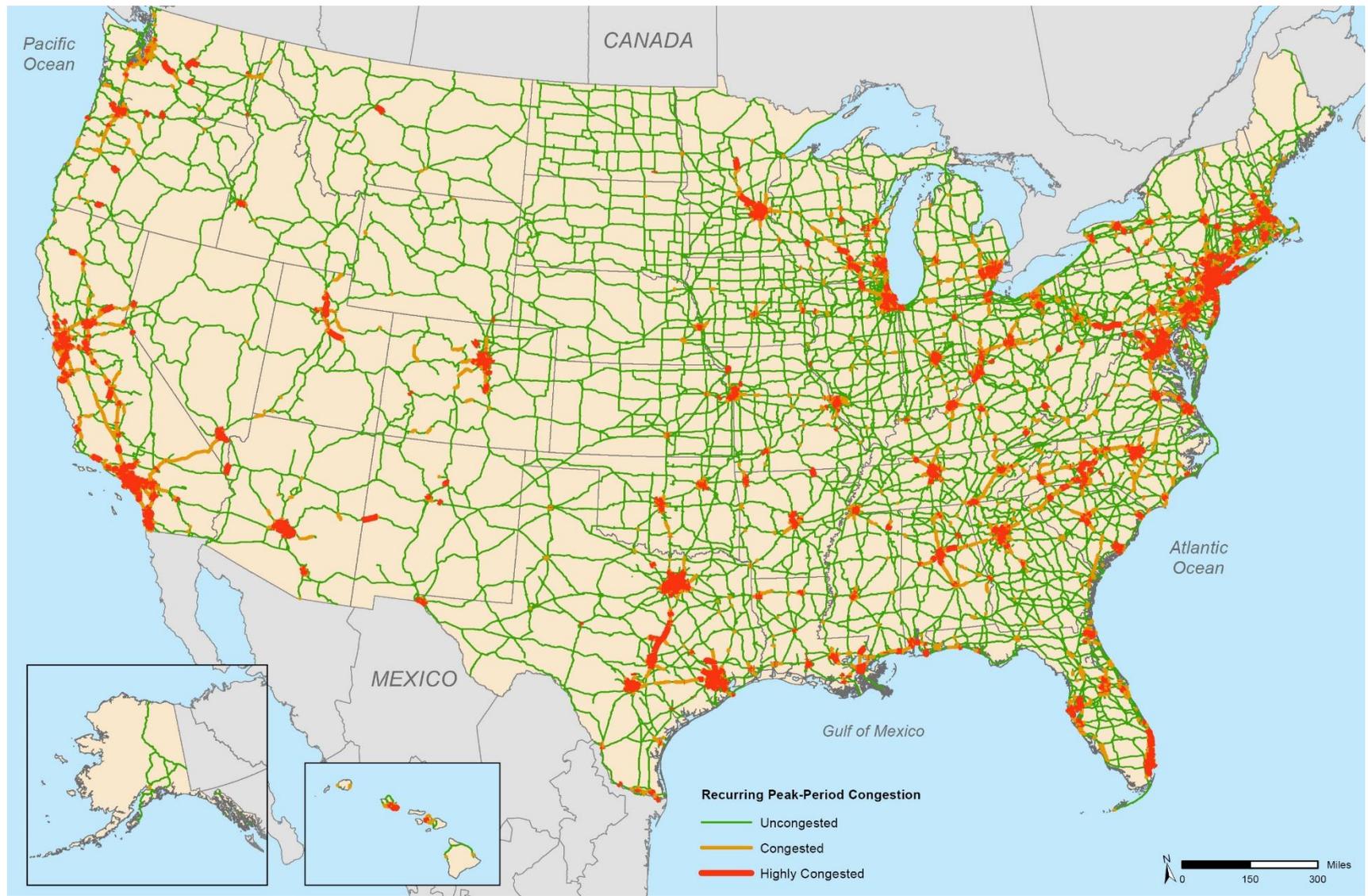


BNSF internal data for the months of October through February 16th, 2015



Changing Dynamics of Our Supply Chain

Peak-Period Congestion on the National Highway System: 2011



Notes: Highly congested segments are stop-and-go conditions with volume/service flow ratios greater than 0.95. Congested segments have reduced traffic speeds with volume/service flow ratios between 0.75 and 0.95. The volume/service flow ratio is estimated using the procedures outlined in the Highway Performance Monitoring System Field Manual, Appendix N. NHS mileage as of 2011, prior to MAP-21 system expansion.

Source: U.S. Department of Transportation, Federal Highway Administration, Office of Freight Management and Operations, *Freight Analysis Framework*, version 3.4, 2013.

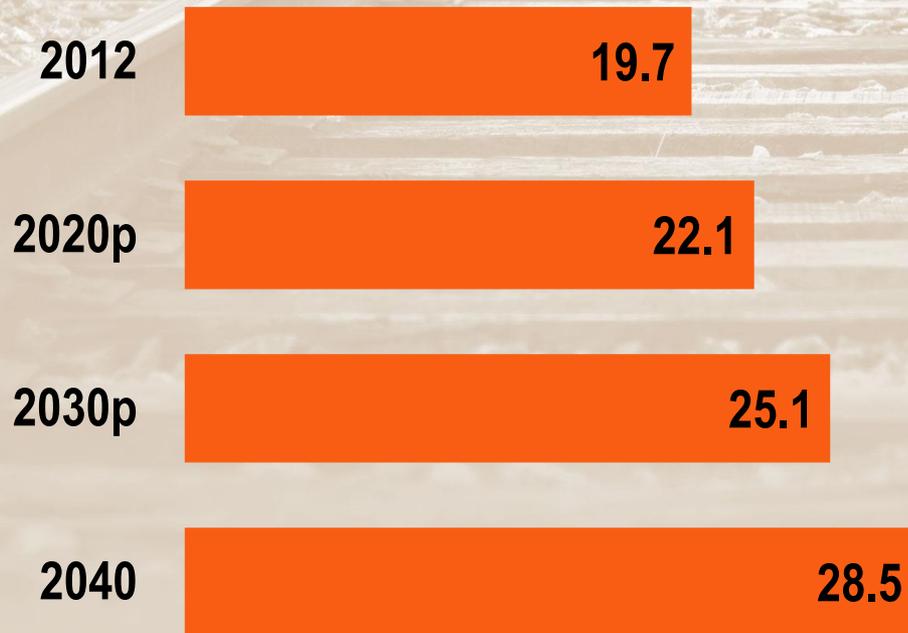
Peak-Period Congestion on the National Highway System: 2040



Notes: AADTT is average annual daily truck traffic and includes all freight-hauling and other trucks with six or more tires. AADT is average annual daily traffic and includes all motor vehicles. NHS mileage as of 2011, prior to MAP-21 system expansion.
Source: U.S. Department of Transportation, Federal Highway Administration, Office of Freight Management and Operations, *Freight Analysis Framework*, version 3.4, 2013.

Long-Term Demand for Freight Transportation Will Surge

BILLIONS OF TONS OF FREIGHT TRANSPORTED IN THE U.S.



The U.S. DOT expects total U.S. freight movements to rise from around 19.7 billion tons in 2012 to 28.5 billion tons in 2040 .

+45%

P – projected Source: FHWA - *Freight Analysis Framework*, version 3.4



An Investment in Our Future

Industrywide Investment

Since **1980**, railroads have invested more than

\$575
BILLION

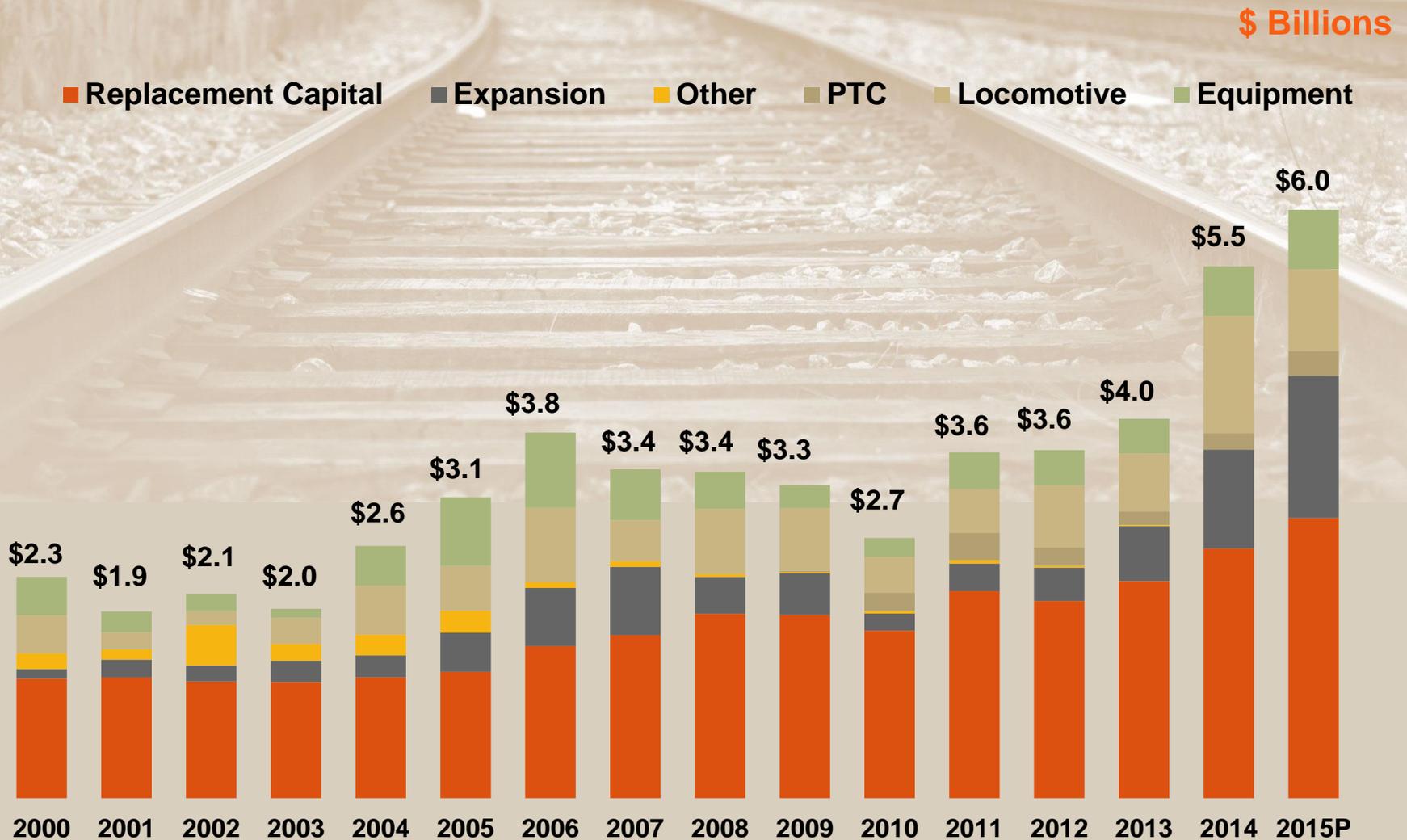
that's more than ...



out of every **REVENUE**

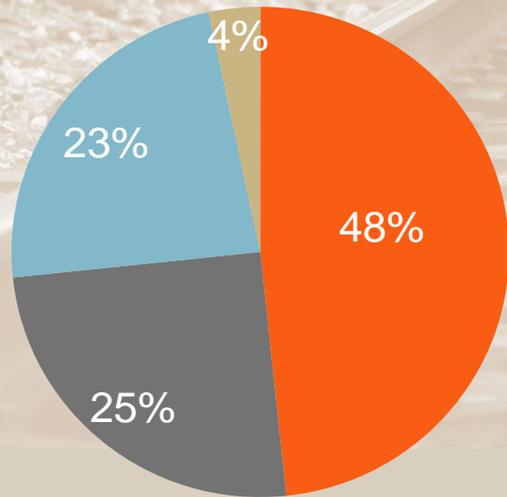


BNSF's Capital Investments Through the Years



Record Capital Investment Ensures Capability and Reliability

BNSF's 2015 Capital Commitment \$6B



■ Core Network and Related Assets

■ Expansion and Efficiency

■ Locomotive, Freight Car, and Other Equip

■ PTC



\$2.9 billion
Core Network &
Related Assets



\$1.4 billion
Loco, Freight Car,
& Other Equip

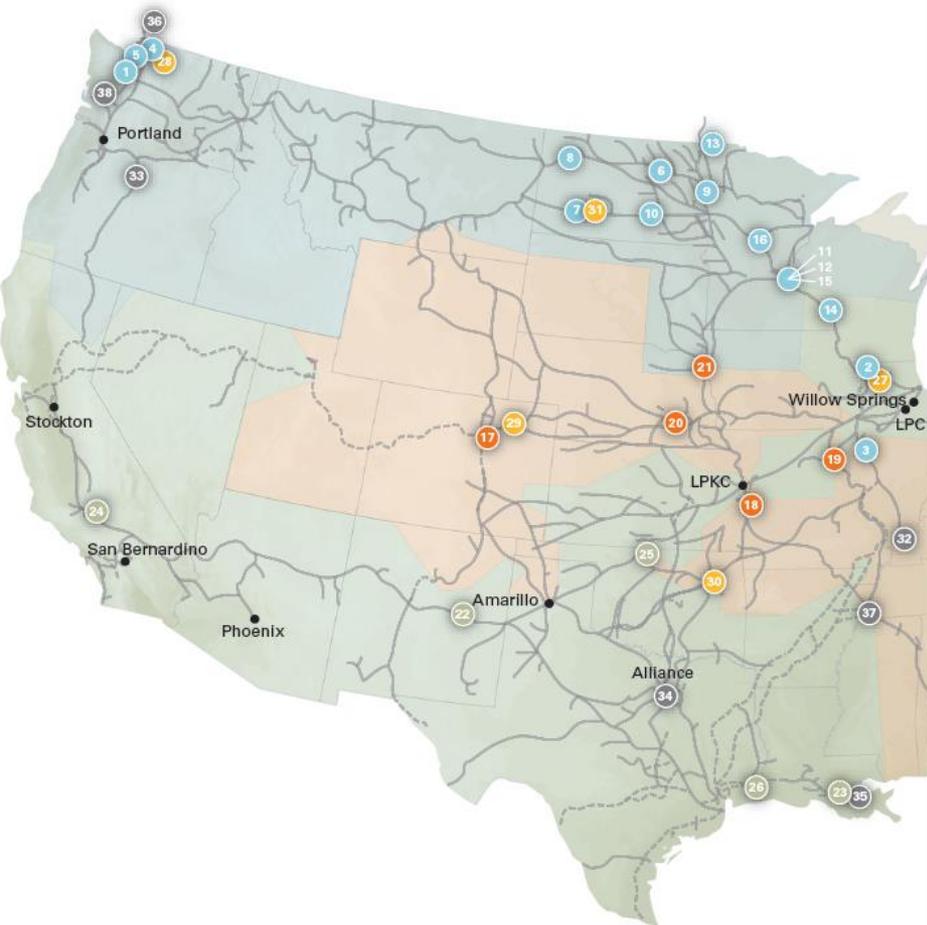


\$1.5 billion
Expansion &
Efficiency



\$200 million
PTC

BNSF's 2015 \$6 Billion Capital Plan



Terminal & Line Capacity Expansion Projects

Major line and terminal projects by region, route and subdivision (sub)

North Region

- 1 **Anacortes spur:** new siding
- 2 **Aurora sub:** CTC signaling project with crossover plants, plus begin construction on two more double-track segments
- 3 **Beardstown sub:** five siding extensions plus CTC signaling on the north end of the subdivision
- 4 **Bellingham sub:** one double-track and one siding extension project
- 5 **Cherry Point sub:** one new siding
- 6 **Devils Lake sub:** CTC signaling on subdivision
- 7 **Dickinson sub:** one siding extension
- 8 **Glasgow sub:** complete three double-track projects started in 2014, and begin one additional double-track project
- 9 **Hillsboro sub:** CTC signaling on subdivision and connection upgrade
- 10 **Jamestown sub:** completing CTC signaling project started in 2014
- 11 **Midway sub:** one double-track project
- 12 **Monticello sub:** subdivision connection and track upgrades
- 13 **Noyes sub:** one new siding
- 14 **St. Croix sub:** CTC signaling project with crossover plants
- 15 **St. Paul sub:** one triple-track project
- 16 **Staples sub:** one CTC signaling project and three double-track projects

Central Region

- 17 **Brush sub:** six siding extensions
- 18 **Ft. Scott sub:** one double-track project
- 19 **Hannibal sub:** complete two siding projects started in 2014, and construct two more new sidings
- 20 **Ravenna sub:** two new double-track projects
- 21 **Sioux City sub:** new bypass track at Sioux City

South Region

- 22 **Clovis sub:** one double-track project
- 23 **Lafayette sub:** one siding extension
- 24 **Mojave sub:** one double-track and one siding extension project
- 25 **Panhandle sub:** two new double-track projects
- 26 **Silsbee sub:** one new siding

Terminals

- 27 **Aurora sub:** complete double-tracking project through LaCrosse, WI terminal (project started in 2013)
- 28 **Bellingham sub:** Everett, WA yard expansion
- 29 **Brush sub:** extend tracks at Sterling, CO and Denver, CO terminals
- 30 **Cherokee sub:** add new receiving / departure tracks at Tulsa, OK terminal
- 31 **Dickinson sub:** Dickinson, ND yard expansion

Bridges

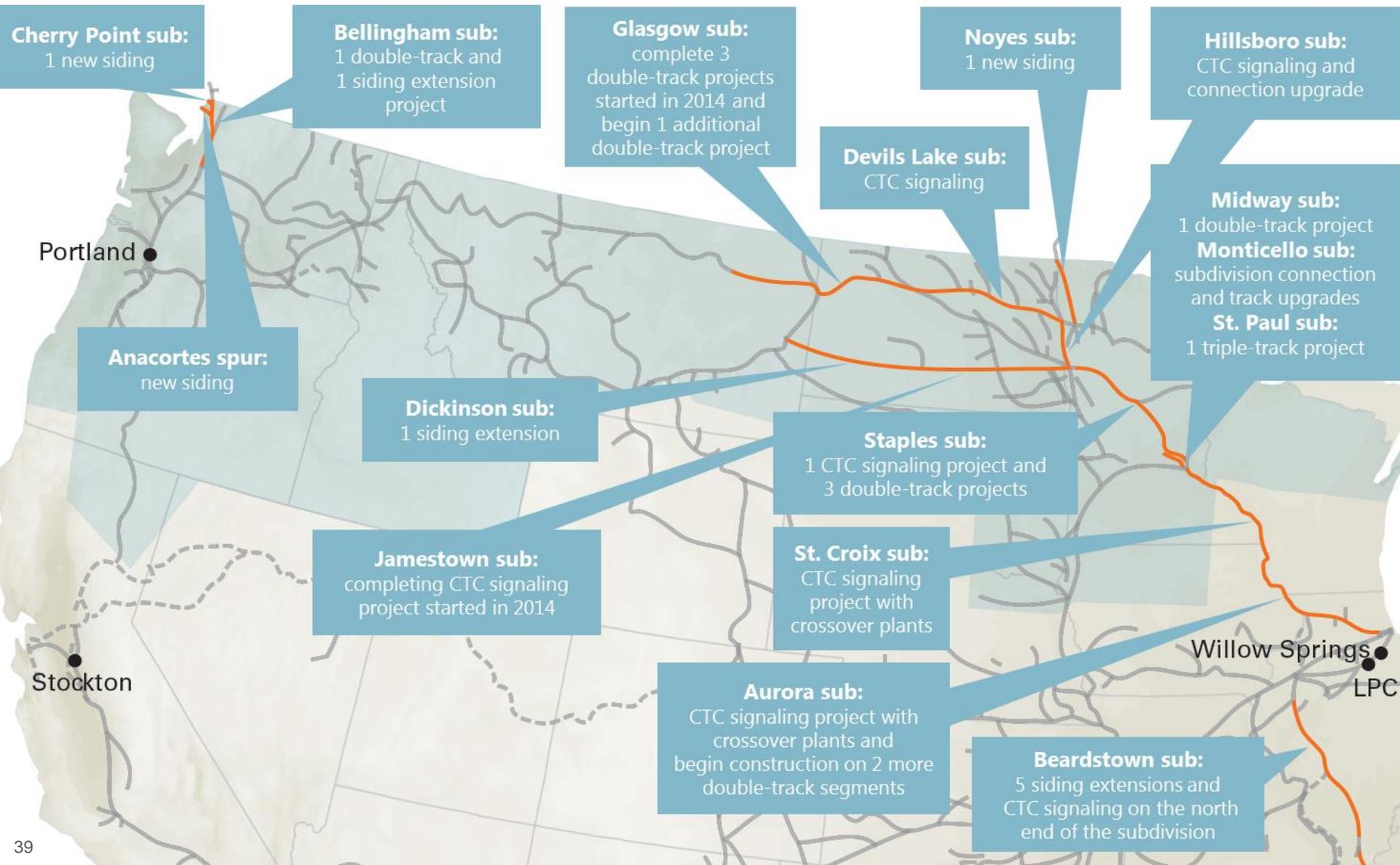
- 32 **Beardstown sub:** Bridge 212.07 in Metropolis, IL; design, permitting and land access ongoing with construction starting this year
- 33 **Fallbridge sub:** Bridge 24.8 over Washougal River in Camas, WA; permitting and right-of-way constraints continue with this project. Once project begins the replacement of the river bridge will take more than two years to complete.
- 34 **Fort Worth sub:** Bridge 348.5 in Fort Worth, TX; reconstruction of the bridge over the Trinity River
- 35 **Lafayette sub:** Bridge 32.06 in Des Allmends, LA; major work to the moveable bridge that crosses Bayou Des Allmends continues
- 36 **New Westminster sub:** Bridge 129.3 near Vancouver, BC; completing final phase of 3-phase project on bridge over Serpentine River
- 37 **Thayer South sub:** Bridge 482.1 in Memphis, TN; construction of the Memphis Bridge over the Mississippi River will be done in several phases. The first phase of the project will start this year. Other phases of the project are under design.
- 38 **Seattle sub:** Bridge 81.4 in Vader, WA; design, access and permitting ongoing with construction starting at the end of 2015

Additional Projects

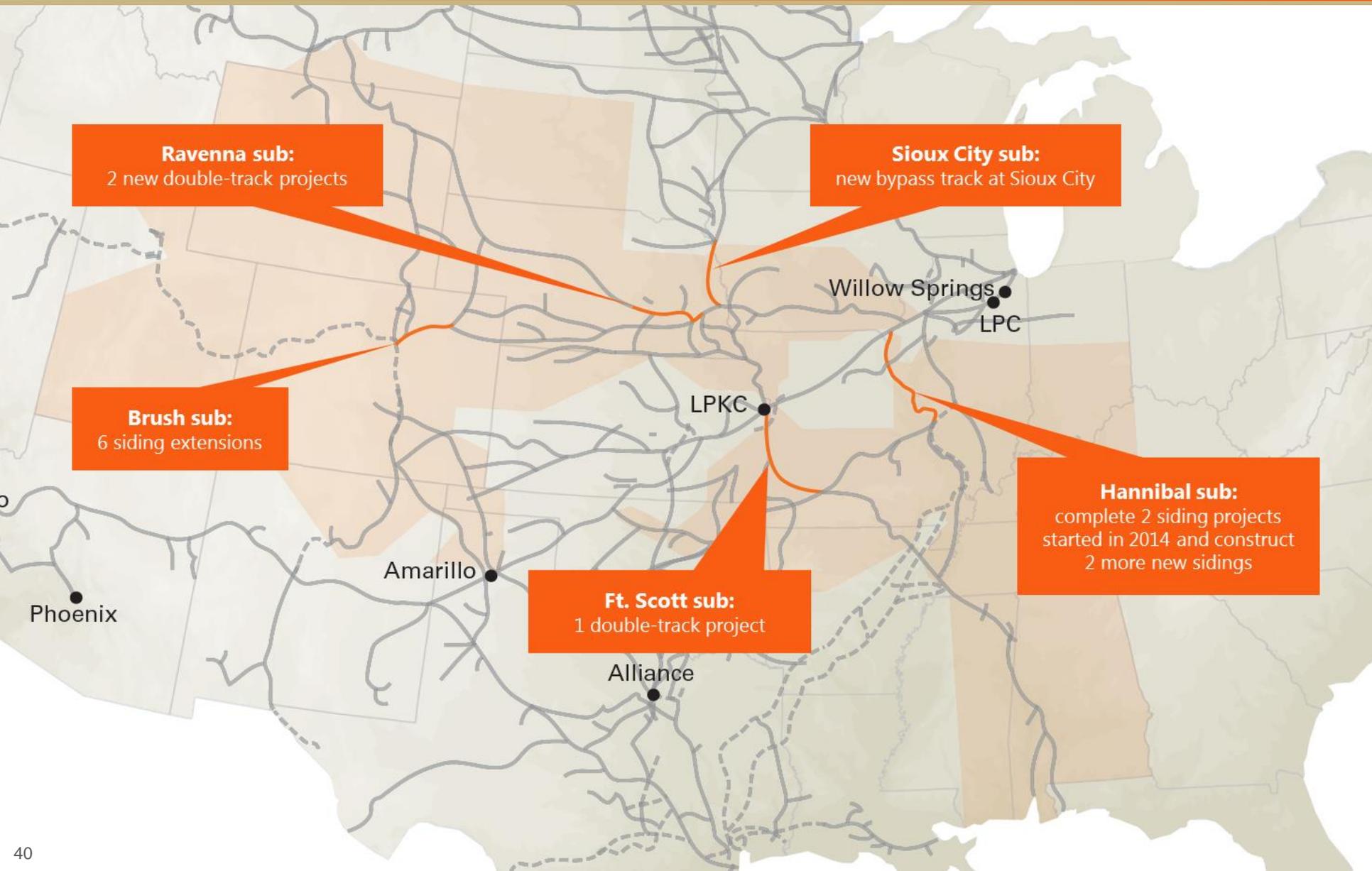
Intermodal facility expansion: Railcar loading/unloading track, support track and/or parking expansions at the following locations: Alliance (Haslet, TX); LPC (Elwood, IL); LPKC (Edgerton, KS); Lorenzo Rd (IL); Phoenix, AZ; Stockton, CA; Willow Springs, IL

Automotive facility expansion: Railcar loading/unloading track and/or parking expansions at the following locations: Alliance (Haslet, TX); Amarillo, TX; Portland, OR; San Bernardino, CA; LPC (Elwood, IL)

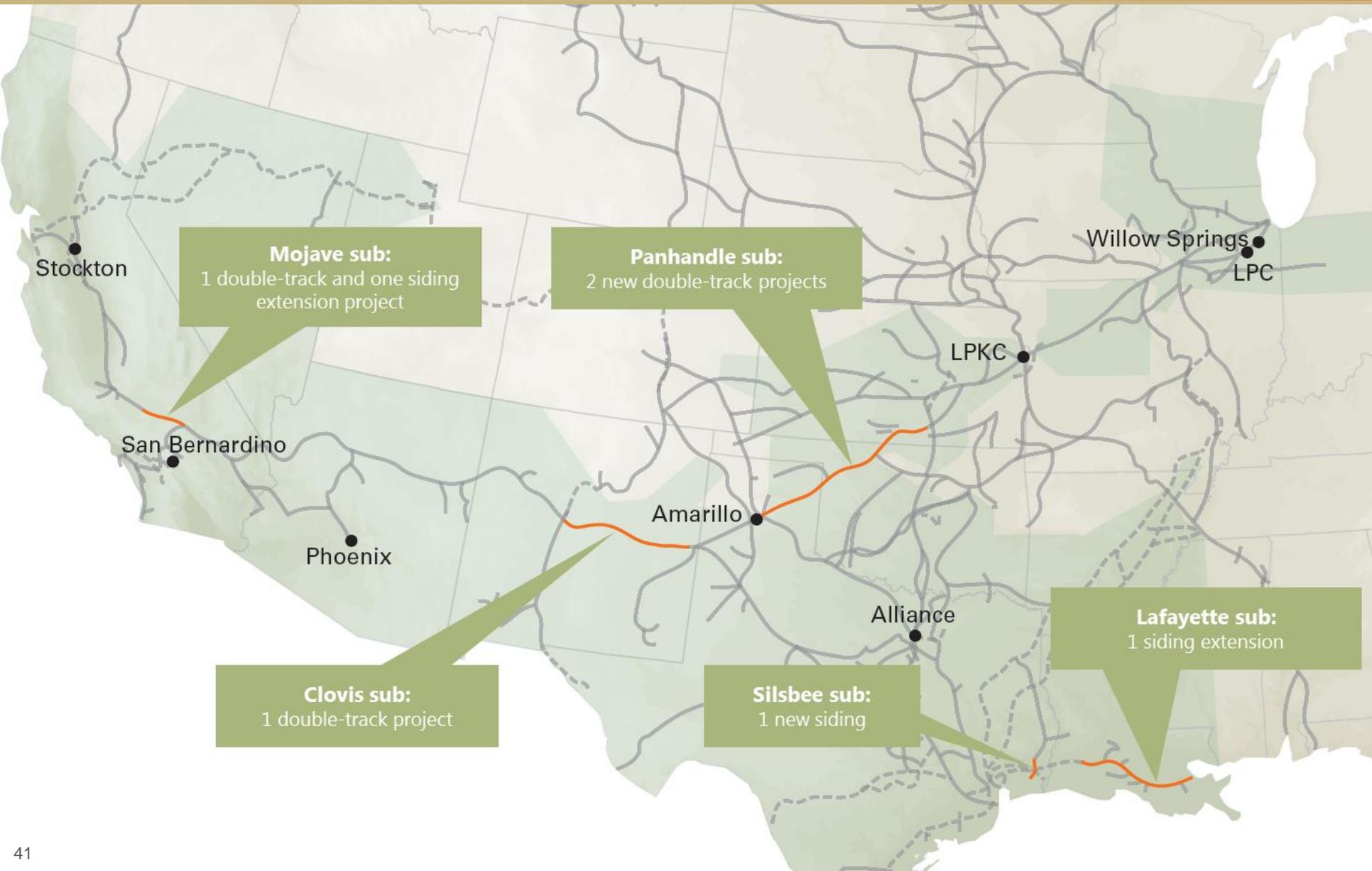
North Region – 2015 BNSF Projects



Central Region – 2015 BNSF Projects



South Region – 2015 BNSF Projects



Infrastructure Investment

What we need:

- Freight mobility planning
- User-pays policy
- More private investment



National Freight Mobility Strategy



Regulatory reform is a competitiveness issue

What we need:

- Regulatory innovation
- Improved rulemaking
- Project permitting reform

We are in the midst of a **RAIL RENAISSANCE**

- The U.S. supply chain needs an efficient freight rail system
- Growth is putting a strain on the U.S. highway system
- Rail is preparing to accommodate that growth through continued investment

BNSF[®]
RAILWAY

