Cascadia Rail Conference

Moving Freight and Passengers on the Same Track: A Private Sector Perspective

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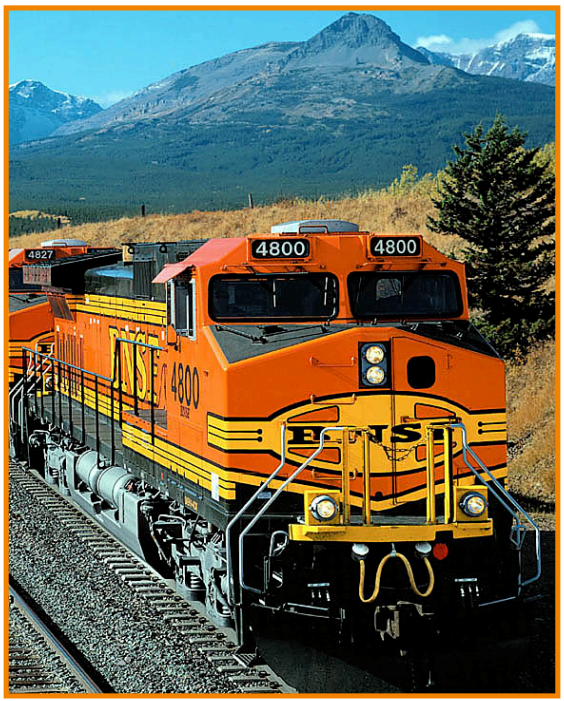
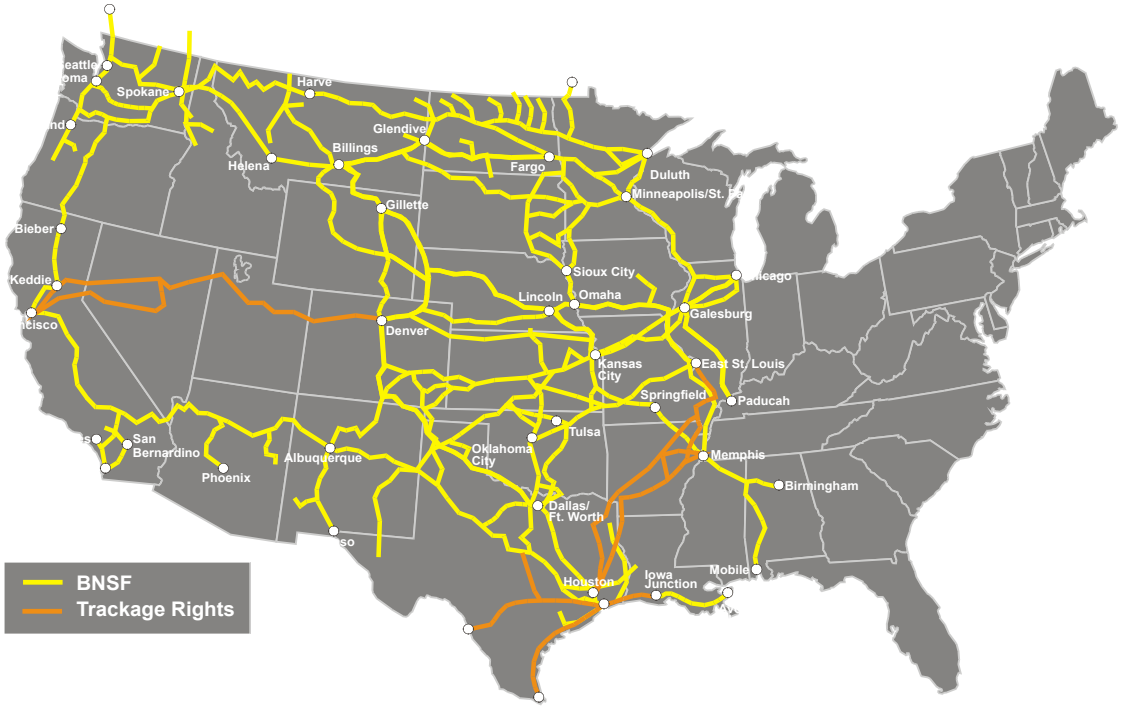
Agenda

- Overview of BNSF
- The Freight and Passenger Partnership
- Speed Makes Passenger and Freight Service Increasingly Dynamic
- Investment to Achieve Shared Priorities
  - Energy efficiencies
  - Environmental enhancements
  - Safety enhancements → *Electronic Train Management System*
- What's on the horizon

Overview of BNSF Railway

- *Operations in 28 states and two Canadian Provinces, 32K route miles*
- *40K employees, 6.4K locomotives, 200K railcars, 1.4K trains per day*
- *$2.5B or more in annual capital investment to maintain, grow capacity*





BNSF Partnership with Passenger Rail

- BNSF currently hosts Amtrak passenger service on more than 7,000 miles of its privately owned and maintained system. Amtrak on-time performance is greater on BNSF than the rest of the rail industry combined.
- BNSF hosts commuter operations in 5 major metro areas, with more in the planning stages. Combined, commuter trains travel over 1.7 million miles across BNSF's freight network each year.
- BNSF's relationships with passenger rail stakeholders underscore an ongoing public-private partnership, with shared responsibilities and opportunities for improvement from all parties, including adequate public funding for critical capacity expansion projects.

BNSF RAILWAY

A New Direction in Policy, Investment

- BNSF supports public investment in rail infrastructure to expand reliable passenger rail service, while preserving current and future freight rail capacity.
- The interdependence of freight and passenger rail is clear. Highway congestion, energy consumption and greenhouse gas emissions all point to expanding rail as a solution.
- Significant and sustained public investment in the nation's rail infrastructure is essential to facilitate superior passenger rail service.
- Adverse regulatory changes will inhibit freight railroads from continuing record level reinvestment of private capital into the rail network. Changes in railroad economic regulation would injure freight railroads and their employees, and impact all who use the network, including passenger services.

Melding Vision and Speed

- **Consistently reliable 79 mph service** can compete with other modes, provide traffic congestion relief, transportation choices, and greener passenger travel.
- This service is provided today along a number of rail corridors.

- **Up to 90 mph** is possible on shared freight rail lines, but major upgrades are essential, including PTC, track, and increased maintenance.
- These upgrades mean more frequent outages to install, maintain.

- **Above 90 mph** will require separate tracks for passenger and freight, otherwise managing traffic flow and maintenance become uneconomical and impractical.
- Separate passenger track may, or may not, be on the same right-of-way. If not, it gets very expensive, very quickly.

Freight Rail Principles for Passenger Service

- Safety must be the paramount priority: For certain service, sealed corridors with grade separations and/or other crossing upgrades may be necessary. Positive Train Control must also be deployed.
- Service to freight customers cannot be compromised.
- To meet passenger service requirements current freight capacity must be maintained and future capacity protected.
- Passenger operations should fund needed capacity, and freight railroads should be fairly compensated for use of assets, property, etc.
- Host railroads must be protected from increased liability risks *that would not have resulted but for the added passenger service.*

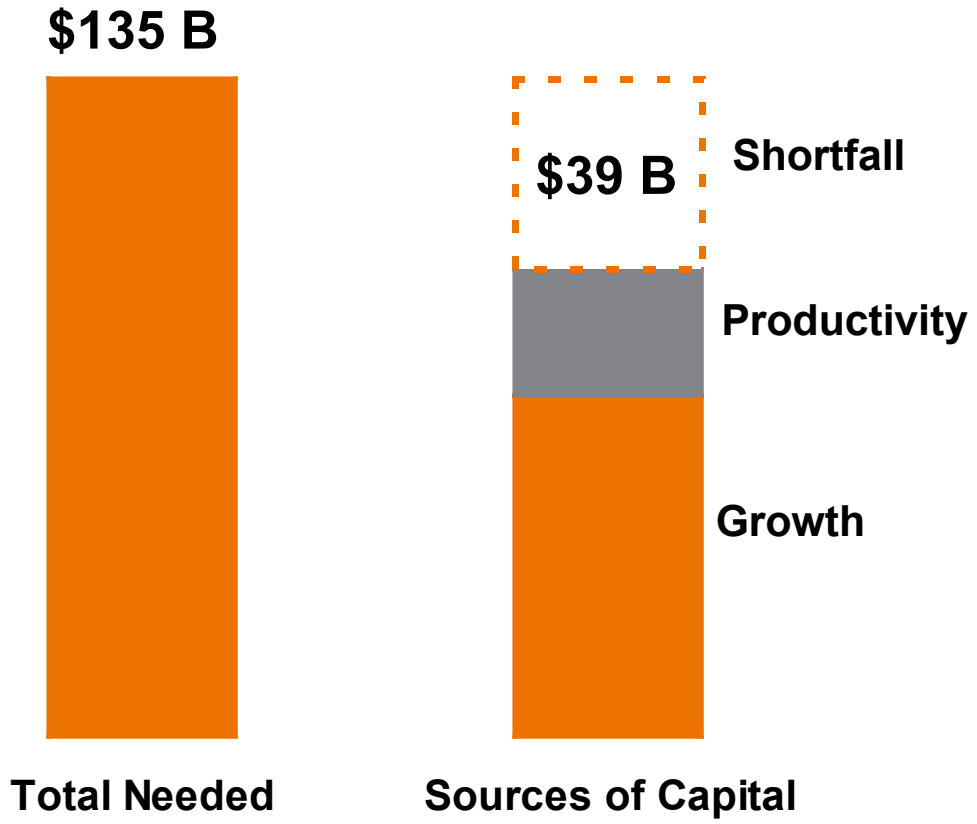
BNSF RAILWAY

Shortfall in Rail Capacity Funding

- Assessed long-term capacity needs of primary rail freight corridors
- Assumed no shift in modal tonnage shares among rail, truck and water beyond those projected by U.S. DOT
- $39 billion shortfall will occur without a stimulus to bring investments up sooner in their cycle

This shortfall does not include the cost of deploying Positive Train Control

Class 1 capital investments needed to meet 2035 volume demand

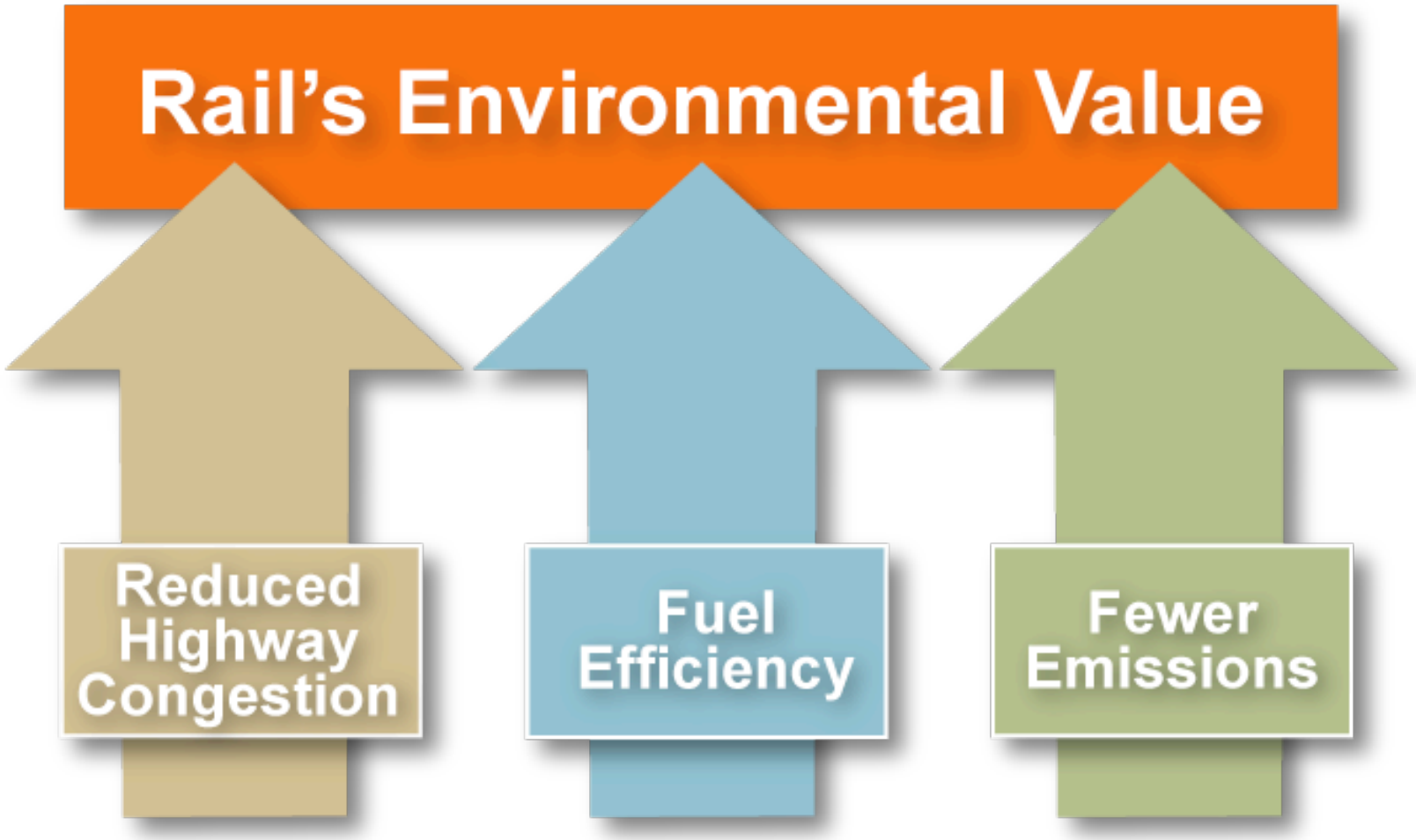


Source: National Rail Freight Infrastructure Capacity and Investment Study September 2007

Shared Priorities

The dynamics that drive people to the rails are driving freight there as well—with freight demand projected to almost double by 2035.

Rail is part of the solution



Fuel Conservation

We haul it, burn it, and manage its conservation

- In 07, we hauled 1 billion gallons of ethanol (47,394 tanker carloads)
- In 2007, BNSF used 1.4B gals of diesel
- 48 fueling depots; 250 DTC contractors
- 3K new locos in past decade, newest fleet
- New locomotives 15% more fuel efficient
- Industry is 80% more efficient in 25 yrs

Technology = Energy Efficiency

- Idle reduction technology, procedures; Speed/throttle limiting process saves 8%
- Low-torque wheel bearings: 60 gals saved for each bearing on 100K p/yr car
- Flange – rail lubrication to further reduce friction
- Fuel conservation efforts alone saved 30M gallons in 2008

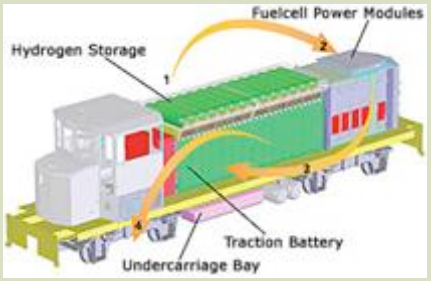
Investing in Green Technology

Facility and Equipment Innovations

Switch Engine with Diesel Particulate Filter

- Joint initiative between UP and BNSF railroads
- 5-year, $5 Million R&D project
- Two 1500 horsepower prototype switch engines equipped with DPF technology
- R&D work being performed by Southwest Research Institute through Association of American Railroads

Hydrogen Fuel Cell Switch Locomotive



- First railroad in the world to develop an experimental hydrogen fuel cell switch locomotive
- Potential to reduce air pollution
- Not dependent on oil for fuel
- Debut test run in mid-2008

Multiple GenSet Locomotive

- Powered by multiple diesel GenSets with truck-like engines
- 700 sustainable horsepower from each GenSet
- 80 to 90% reduction in emissions
- 15% improvement in fuel efficiency

Investing in Green Technology

Facility and Equipment Innovations

Liquefied Natural Gas Locomotive

- BNSF operates the only four environmentally friendly liquid natural gas locomotives that reduce emissions and fuel consumption
- 1200 sustainable horsepower, spark ignited

Rail-Mounted Wide-Span Electric Cranes

- Span multiple loading / unloading tracks
- Powered by electricity vs. diesel hydraulic
- Advanced anti-sway systems
- Reduced switching & vehicle container transfers
- Increased inventory capacity; utilizes footprint more efficiently
- Low energy consumption and noise level thanks to advanced drives and power regeneration

Automated Gate Technology

- Digital cameras record images of container, chassis, tractor, & unit #'s
- Images retained for one year for damage
- Drivers identified by biometric and unique pin ID
- Reduced liability and improved safety
- Reduces truck idling and increases facility throughput

Positive Train Control (PTC) Mandate

Rail Safety Improvement Act of 2008 defines Positive Train Control as:

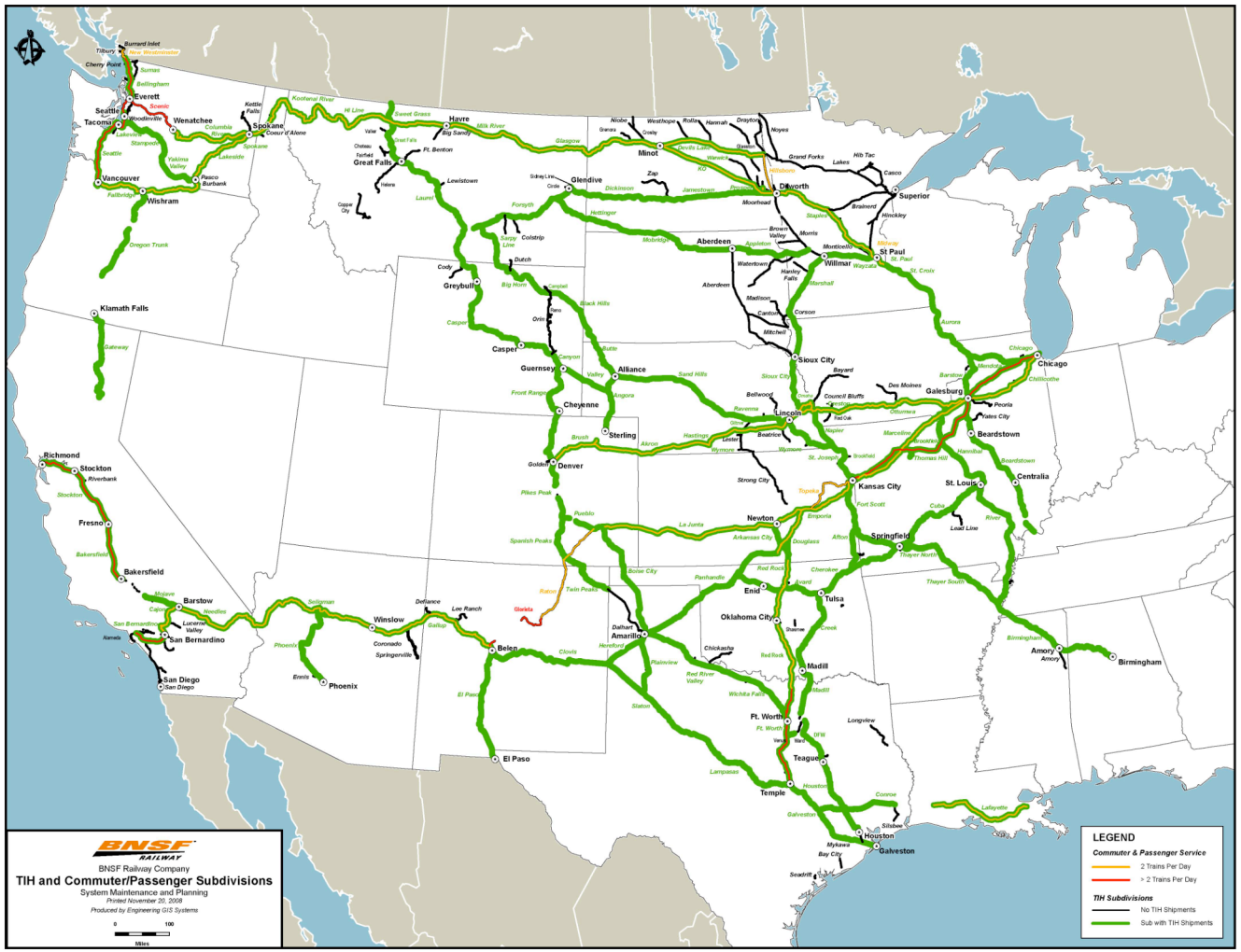
> *"a system designed to prevent train-to-train collisions, over-speed derailments, incursions into established work zone limits, and the movement of a train through a switch left in the wrong position."*

PTC is required by December 31, 2015 for:

- Intercity rail passenger or commuter rail passenger main lines
- Poison- or toxic-by-inhalation hazardous materials main lines (5 million or more gross tons of total rail traffic annually)
- Such other tracks as the Secretary may prescribe

An Implementation Plan is required from Class I Carriers and entities providing commuter/ passenger service not later than 18 months after enactment (April 2010)

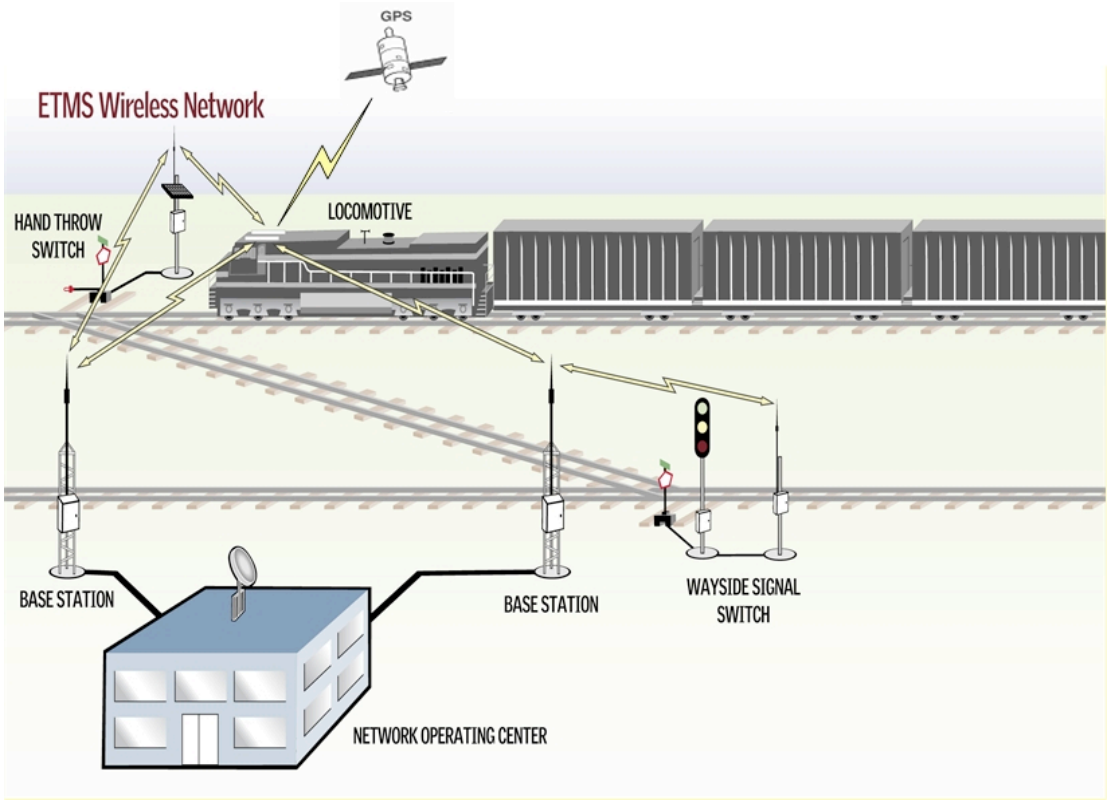
BNSF must implement PTC on the majority of its network by 2015



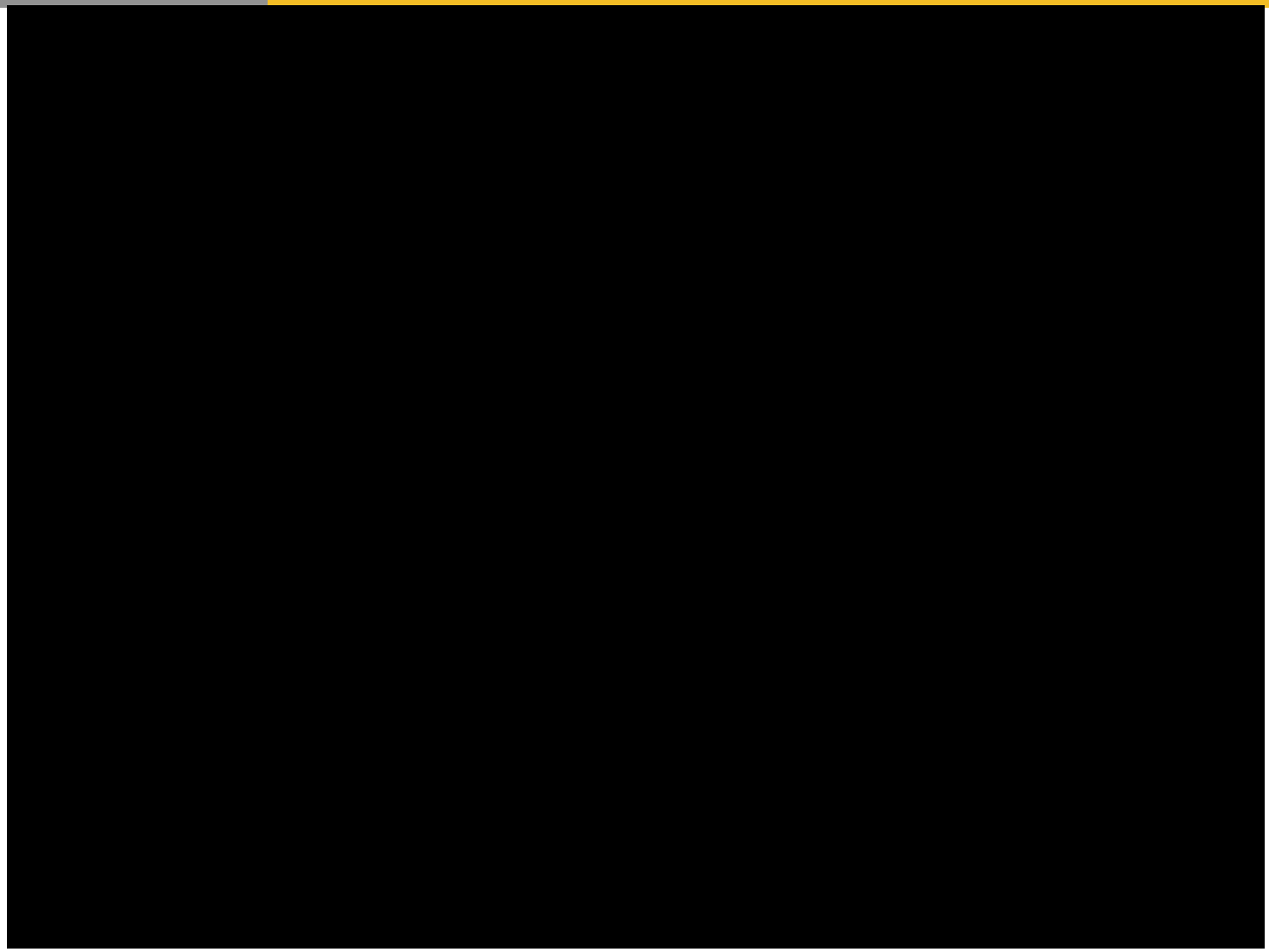
What is ETMS?

ETMS integrates existing technologies overlaid with current methods of train operation

- **ETMS Monitors:**
  - **Authority limit**
  - **Speed limit**
  - **Switch position**
  - **Signal aspect**
- **ETMS enforces compliance with existing methods of operation and rules**



ETMS Video



On the Horizon

- Deployment of PTC is mandated by 2015 across the nation's freight and passenger rail system
- Investment in technology and capacity will help achieve continued service enhancements – *but the industry cannot fund these improvements alone*
- Passenger operations on freight rail lines can work, even at 79-90 mph, but real long-term success requires investment, and separate track—maybe rights-of-way—for 90+ mph
  - *Growth in passenger operations must not come at the expense of freight mobility, otherwise we all lose.*


BNSF
RAILWAY