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AVP Government Relations
The Future of Freight Panel
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Railroads - Safe & Getting Safer

RR Safety Trends: 2000-2013*

Train accident rate	↓ 43%
Employee injury rate	↓ 47%
Grade crossing collision rate	↓ 42%
Hazmat accident rate**	↓ 38%
*preliminary **through 2010 Source: FRA, AAR	



The Norfolk Southern Network

- NS operates approximately 21,000 route miles throughout 22 states and the District of Columbia
- Engaged in the rail transportation of raw materials, intermediate products, and finished goods
- Operates the most extensive intermodal network in the East
- NYSE: NSC
- Active P³ Partner



Norfolk Southern and Our Freight Rail Friends

Carrying the Things America Depends On



NS Intermodal: 3.4 million trailers and containers in 2013



NS Coal: 150 million tons in 2013



Farm products: 147 million tons (industry)



Plastics, fertilizers, and other chemicals: 169 million tons (industry)



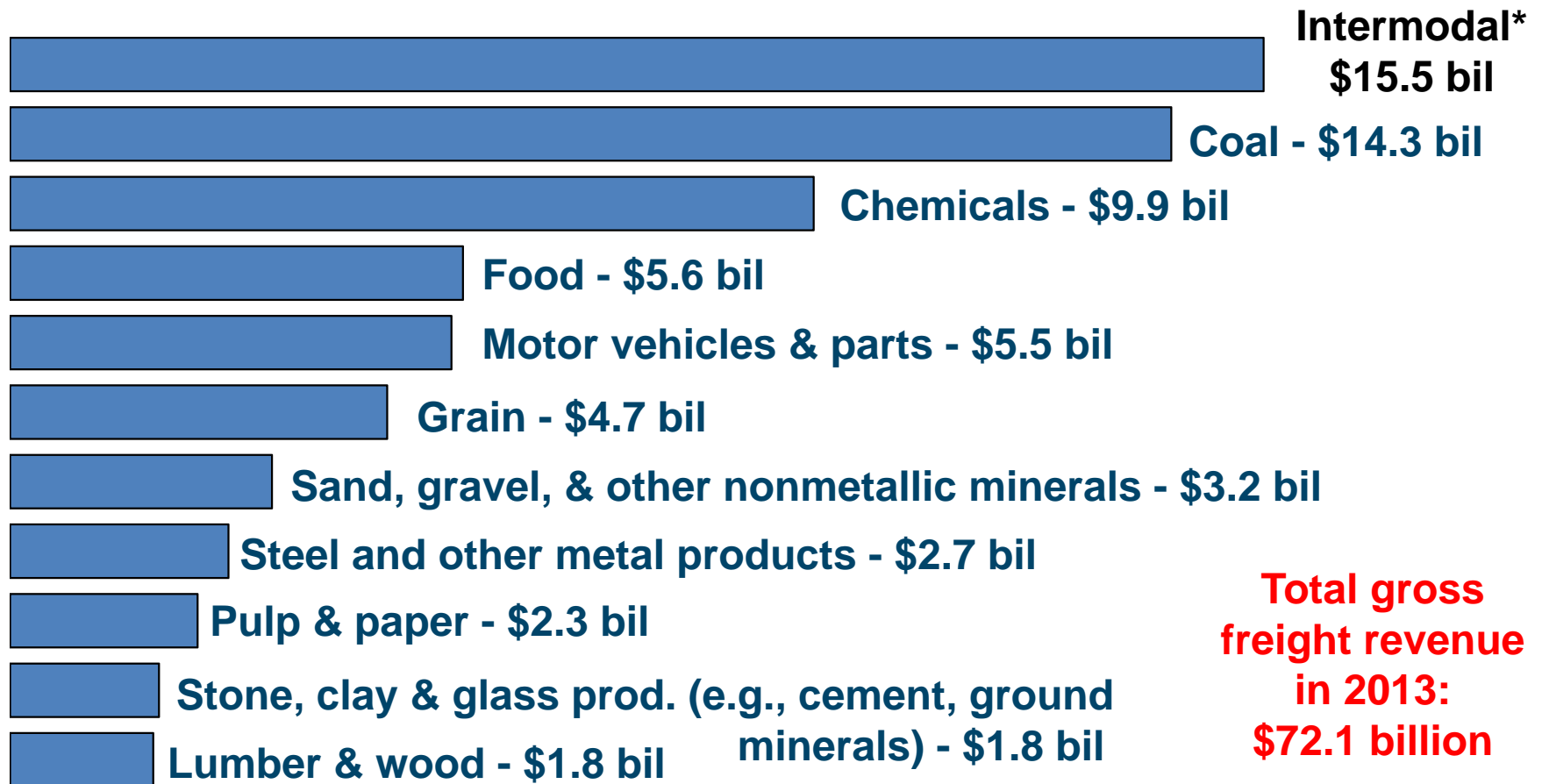
Stone, sand, gravel: 132 million tons (industry)



Crude oil 408,000 carloads (2013 - industry)

And much more!

America's Railroads Carry Just About Everything



*Intermodal is estimated; some intermodal revenue is included in individual commodities

Source: AAR (FCS report)

Return on Investment is Crucial

If ROI > cost of capital:

- Capital spending expands
- Stronger physical plant; more and better equipment.
- Faster, more reliable service
- Sustainability

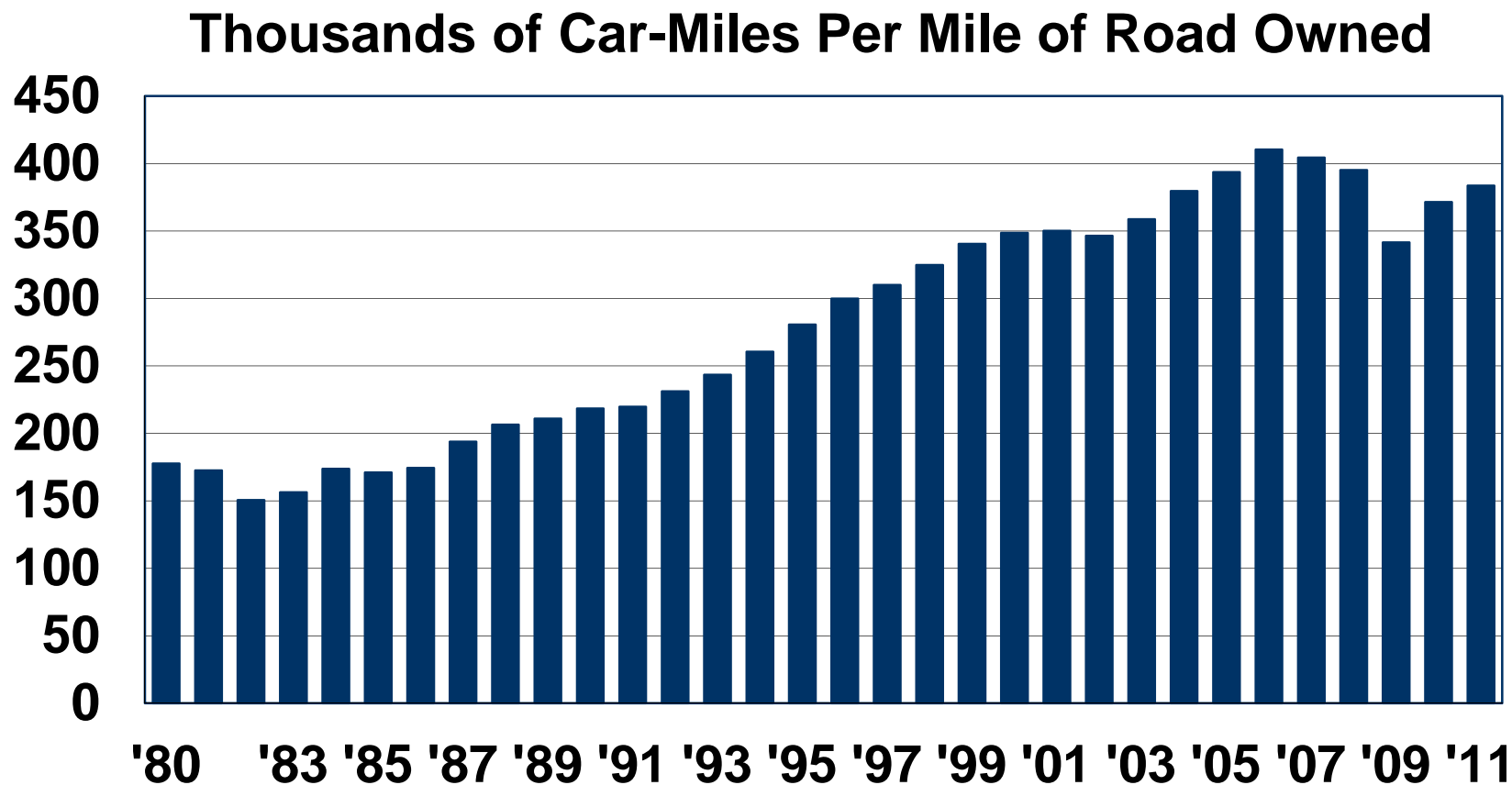


If ROI < cost of capital:

- Lower capital spending
- Weaker physical plant, equipment
- Slower, less reliable service
- Disinvestment



Sharp Increase in Rail Traffic Density



Data are for Class I railroads. Source: AAR

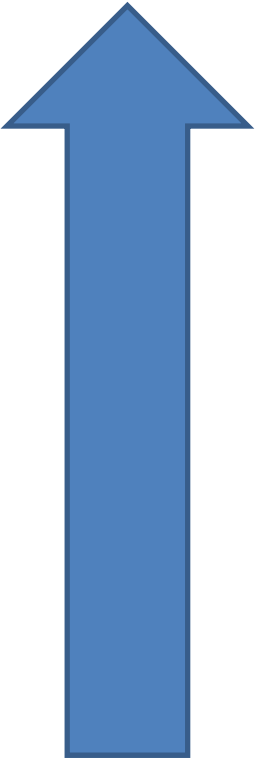


What is an Intermodal Facility?

Intermodal Facility – A rail terminal for transferring freight from one transportation mode to another, either from truck-to-rail or rail-to-truck for the Crescent Corridor, without the handling of the freight itself when changing modes.

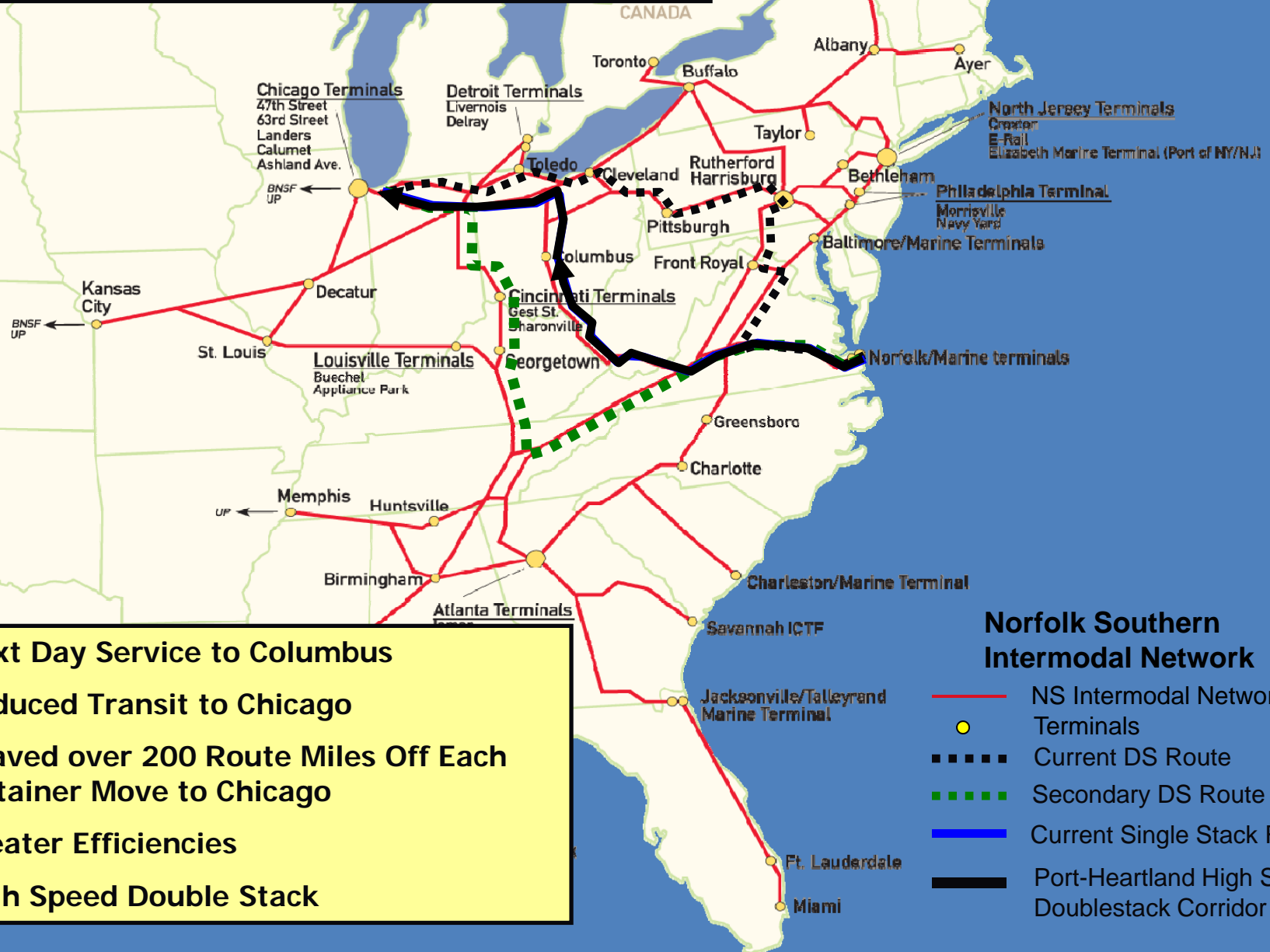


Drivers: The Growth in Rail Intermodal

- 
- International trade bounce back from recession
 - Congestion and population growth
 - Truck driver shortages
 - Fuel efficiency of railroad vs trucking
 - Terminal Investments = more options for shippers: O/D Pairs or Lanes
 - Some Conversion of boxcar traffic
 - TL Carriers getting invested in the service
 - Moving from TOFL to COFC

Heartland Corridor Route

America's first multi-state public-private rail corridor partnership



Norfolk Southern Intermodal Network

- NS Intermodal Network
- Terminals
- Current DS Route
- Secondary DS Route
- Current Single Stack Route
- Port-Heartland High Speed Doublestack Corridor

- Next Day Service to Columbus
- Reduced Transit to Chicago
- Shaved over 200 Route Miles Off Each Container Move to Chicago
- Greater Efficiencies
- High Speed Double Stack

CRESCENT CORRIDOR INTERMODAL FACILITIES

2012 AND BEYOND - FUNDING REQUIREMENTS



Open 2012




- Birmingham, AL; Memphis, TN; Greencastle, PA; and Harrisburg, PA

Open 2013

- Charlotte, NC

Open 2014 and Beyond

- Atlanta, Knoxville, E-Rail, Roanoke, Philadelphia, and Bethlehem

	Open 2012
	Open 2013
	Open 2014 and Beyond

A Solution: Intermodal Rail Transportation

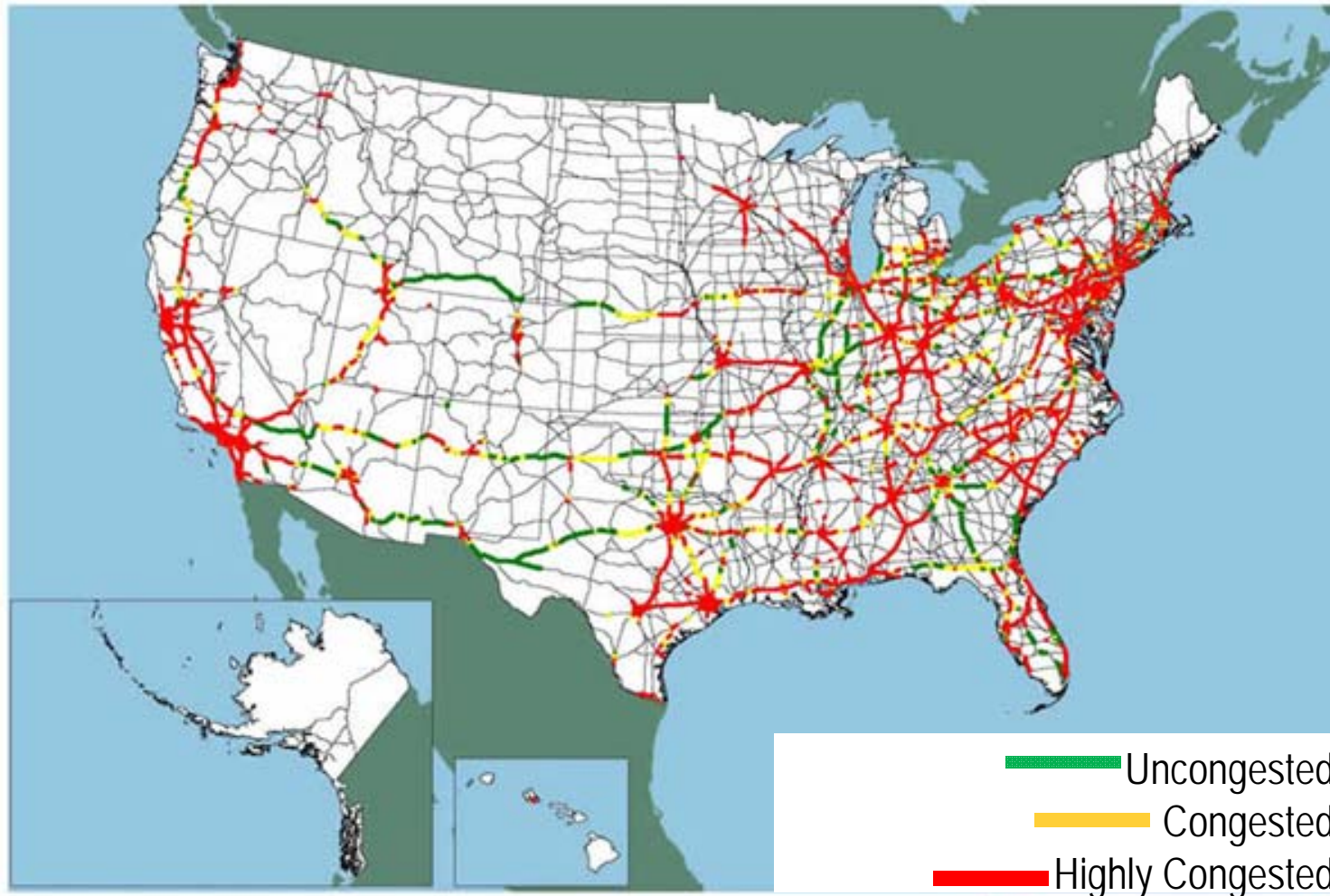
Introducing Norfolk Southern's Six Corridor Strategy

- Norfolk Southern has employed a "Six Corridor Strategy" focusing on four key principles:
 - Market access
 - Length of haul
 - Asset utilization
 - Productivity



Looming Need for Surface Infrastructure Investment

Peak-Period Congestion (2035)

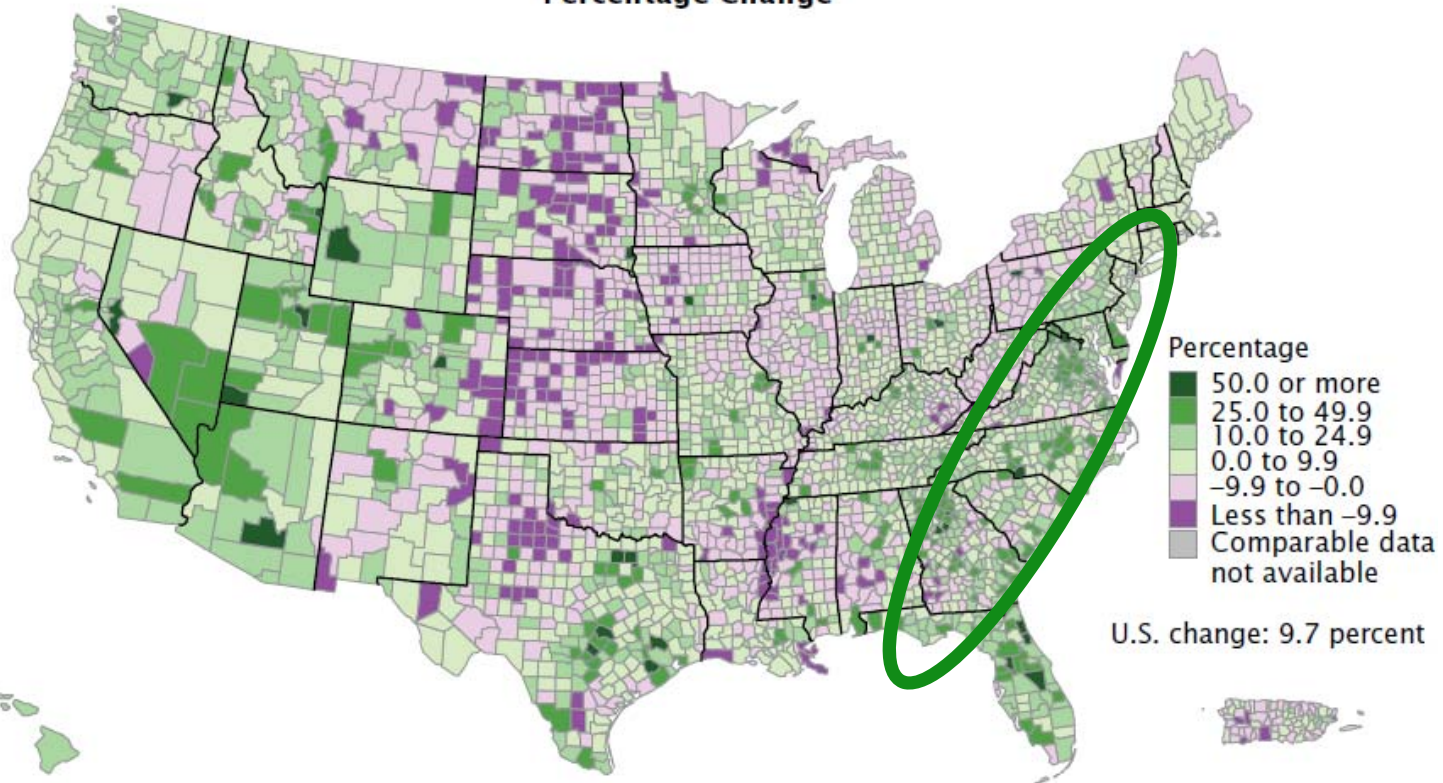


Market Analysis: Population Migration



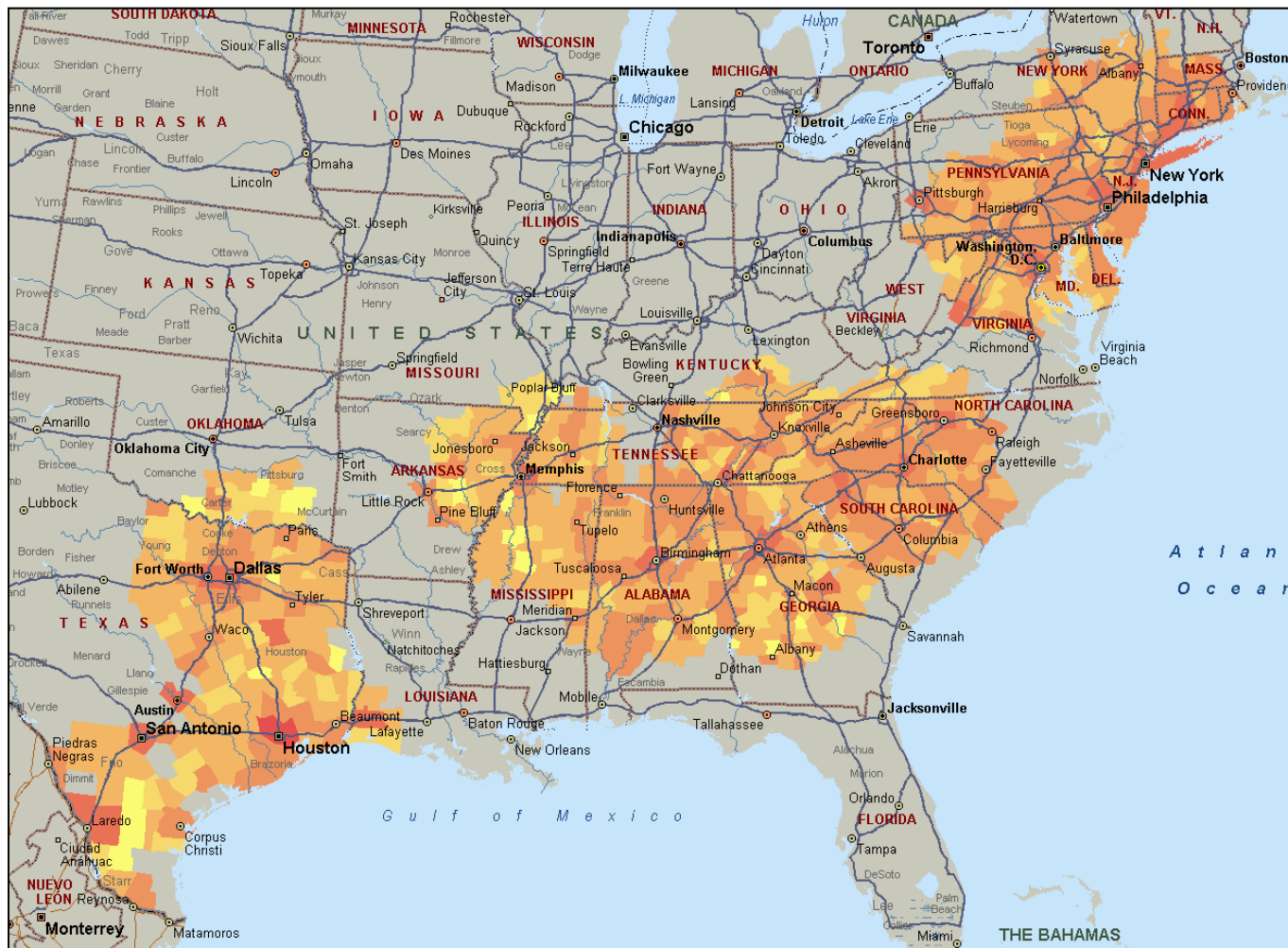
Population shift from 2000 to 2010, shown as percentage
*Green indicates growth, Pink indicates loss

Percentage Change



Source: U.S. Census Bureau, 2010 Census and Census 2000.

Market Analysis: Surface Freight Volumes

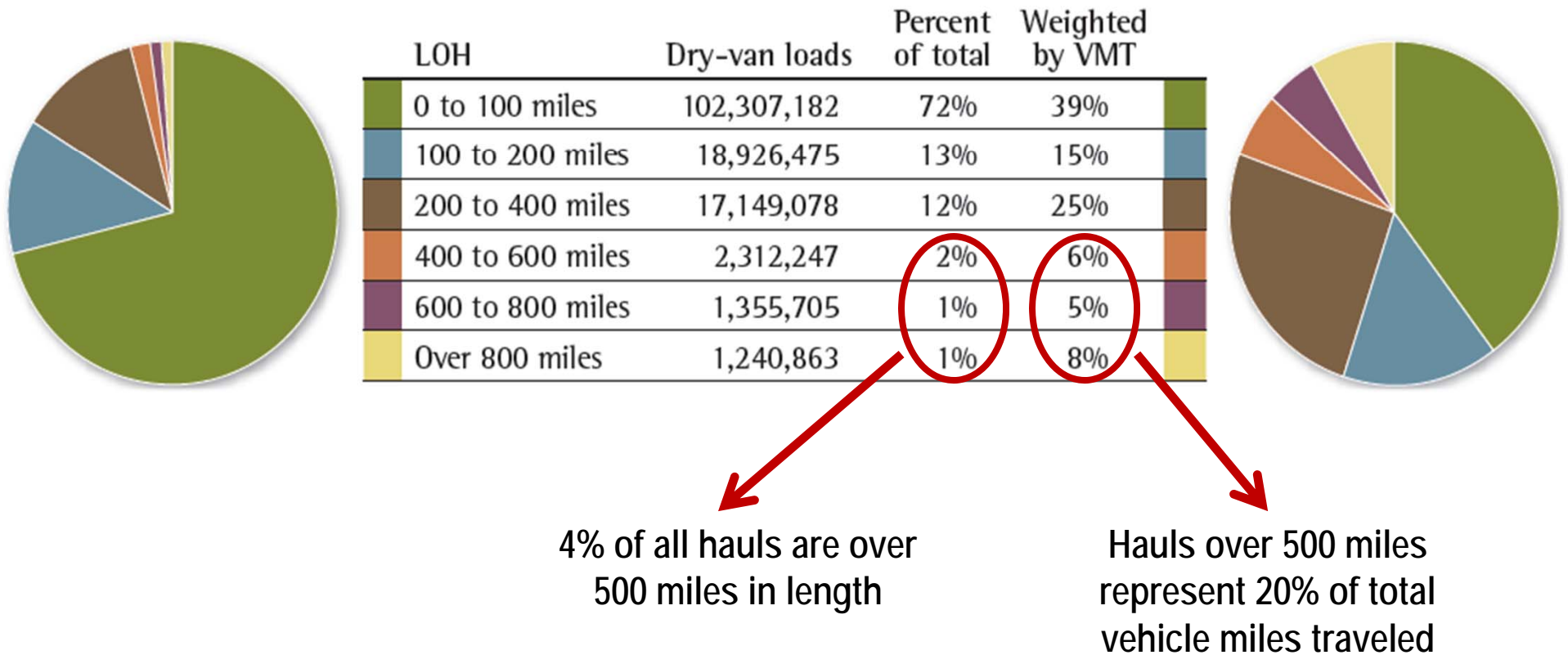


- Dry vanloads of domestic freight only
- Filtered by zip code of origin or destination of shipment in NS footprint
- Single driver transports only
- Domestic freight
- Average trip approximately 1,100 miles

External Variable: Market Analysis and Potential Public Benefit

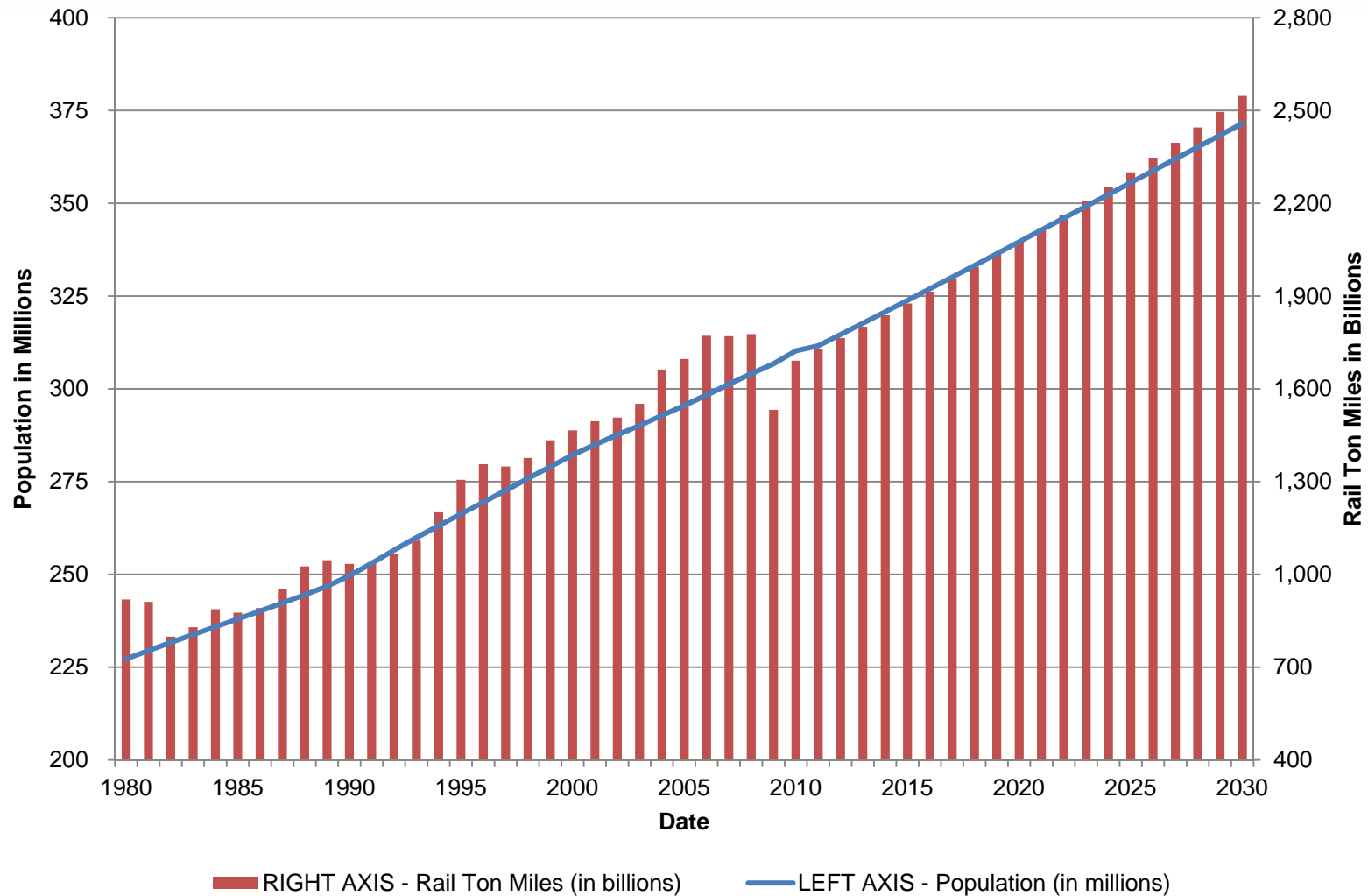
Current Lengths of Haul on Long-Distance Trucks

2008 Transearch Dry-Vans in AL, GA, MD, NC, NJ, PA, TN, and TX



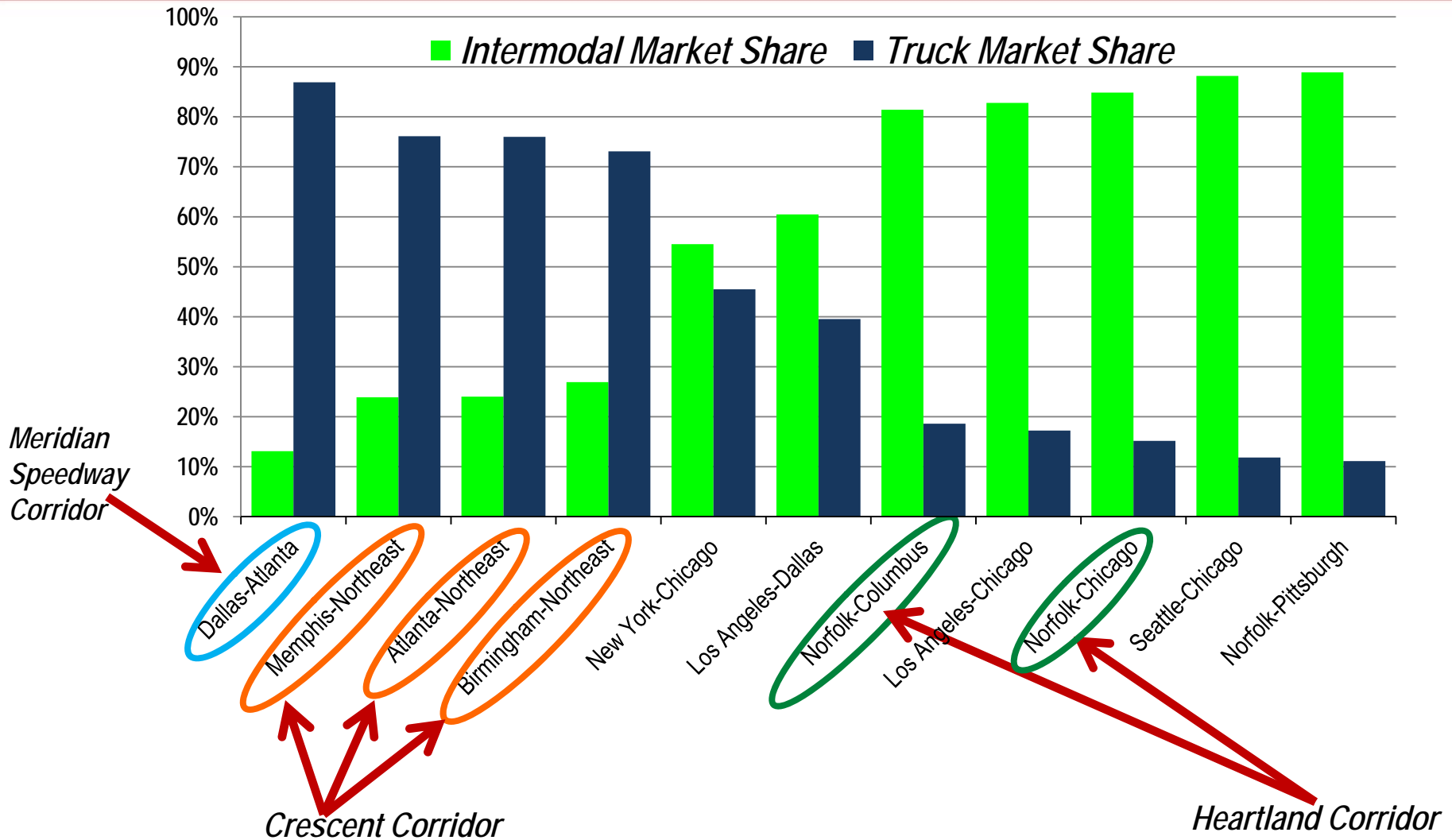
U.S. Population v. Class 1 Railroad Revenue Ton-Miles

Actuals 1980-2011; Projections 2012-2030



External Variable – Market Analysis

Opportunity for Rail Entrance in the Freight Transportation Market



Crescent Corridor Public Benefits

Long-Term Public Benefits

- Cambridge Systematics (CS) performed a thorough benefit-cost analysis of the Crescent Corridor for the TIGER II grant application.
- Based on benefit categories and factors specified by TIGER II guidance, CS concludes at full operation Crescent will ANNUALLY deliver:
 - **\$543 million** in Shipping Savings
 - **\$566 million** in Congestion Savings (*22.5 million hours of travel time savings*)
 - **\$146 million** in Safety Savings (*1,256 fewer heavy truck crashes*)
 - **\$147 million in Sustainability Savings**
(*162 million gallons of fuel saved & 1.8 million tons of CO₂ eliminated*)
 - **\$261 million** in Highway Maintenance Savings (*1.263 billion truck VMTs reduced*)

Crescent Corridor Financial Investment Hierarchy

INTERMODAL TERMINALS



SPEED ENHANCEMENTS



ADDED CAPACITY



ROLLING STOCK



2010

2011

2012

2013

2014

2015

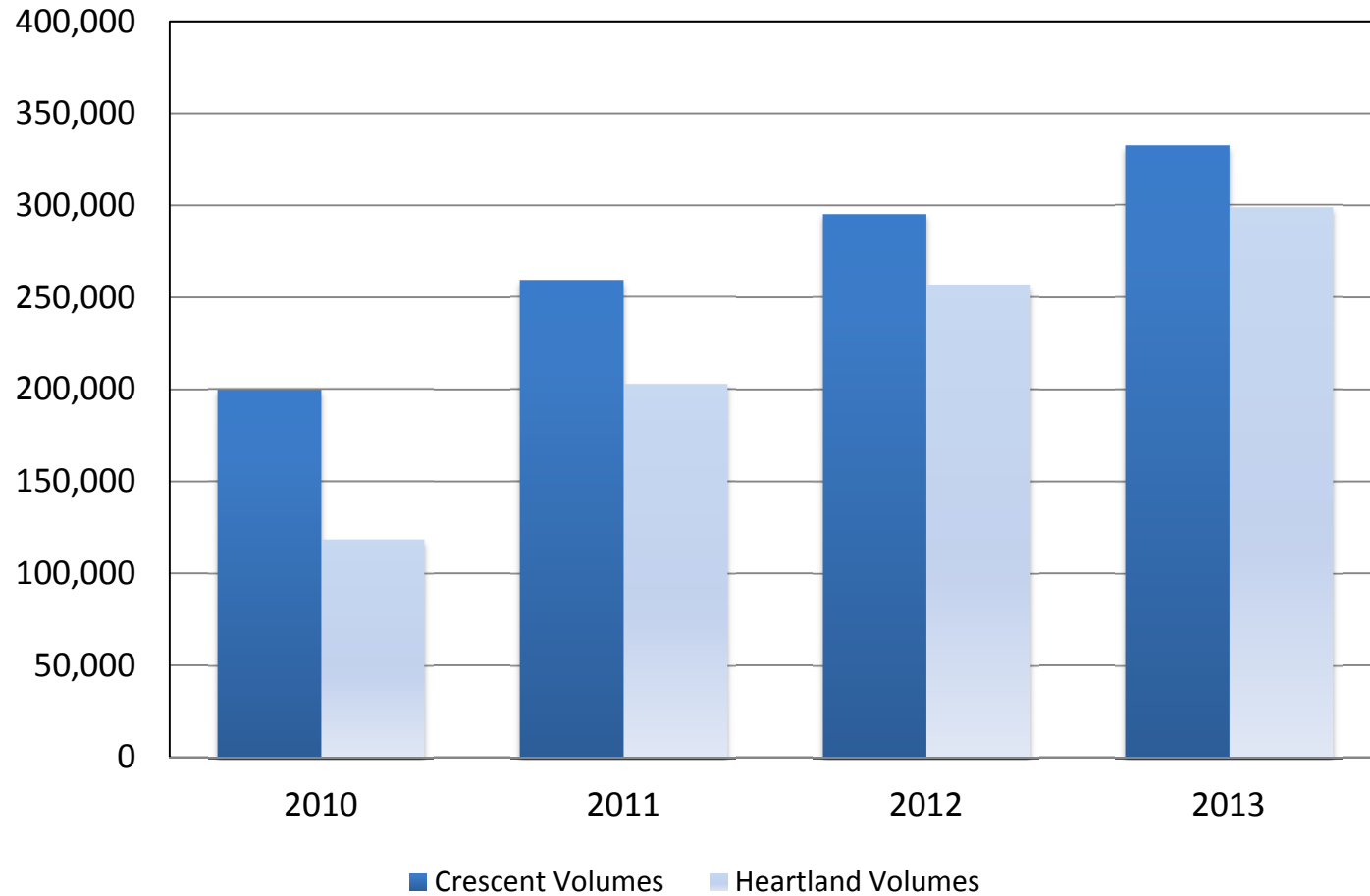
2016

The Future



NS NORFOLK SOUTHERN
One line, infinite possibilities.

Crescent and Heartland Corridor Growth 2010-2013



Transit Times Must be Truck Competitive

Targeted Schedules

Memphis

Harrisburg – 30 hours

Memphis

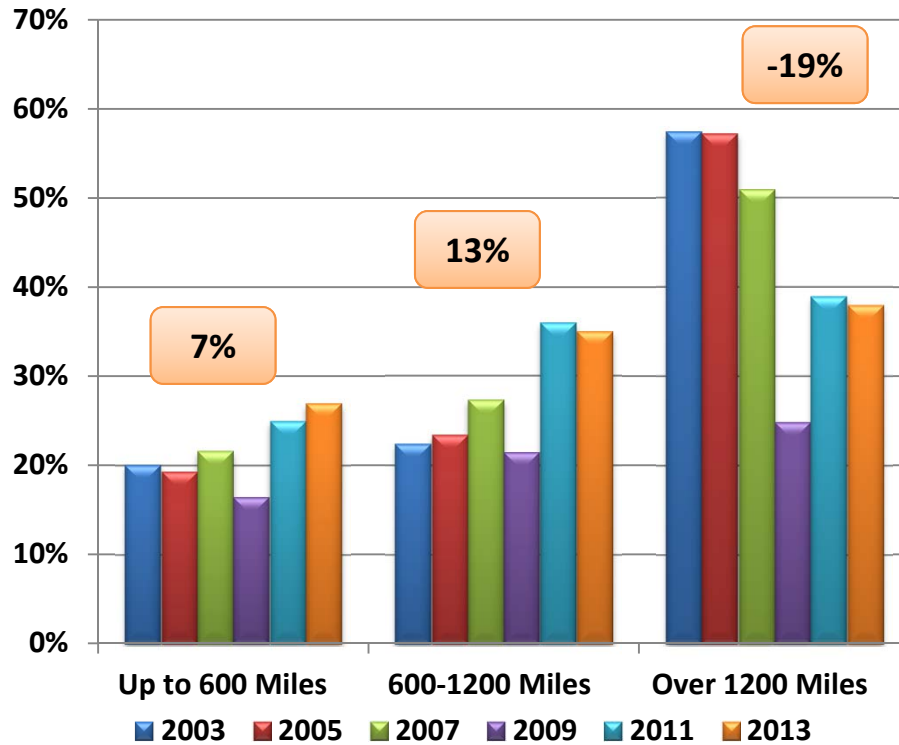
Philadelphia – 43.3 hours

Birmingham

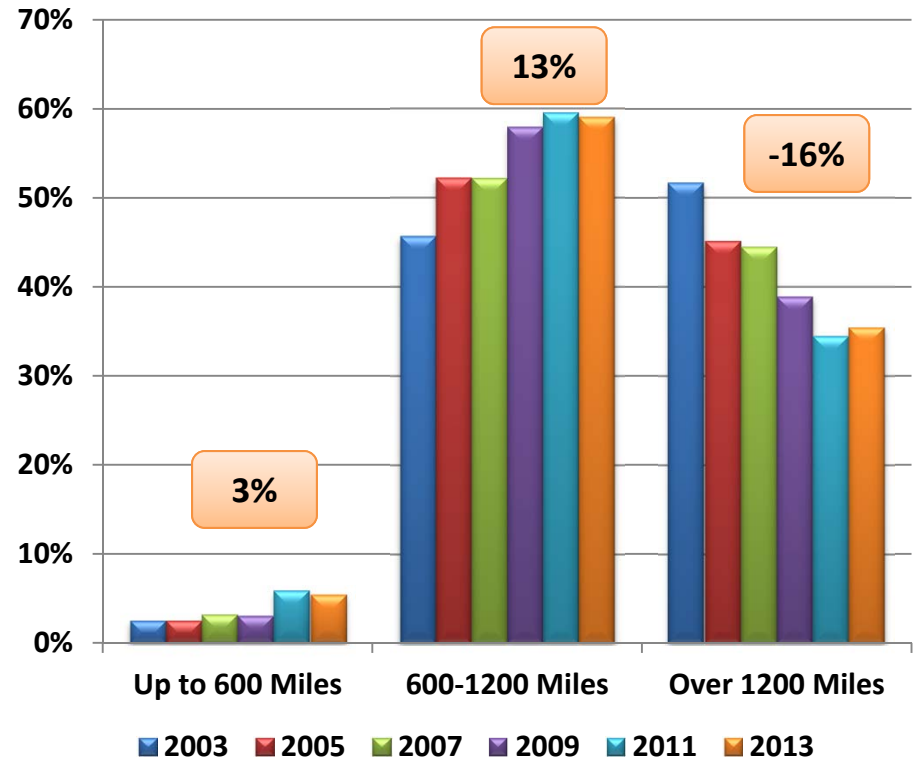
Harrisburg – 30 hours

Shifts In The Market Require A Very Flexible Network

NS International Length of Haul



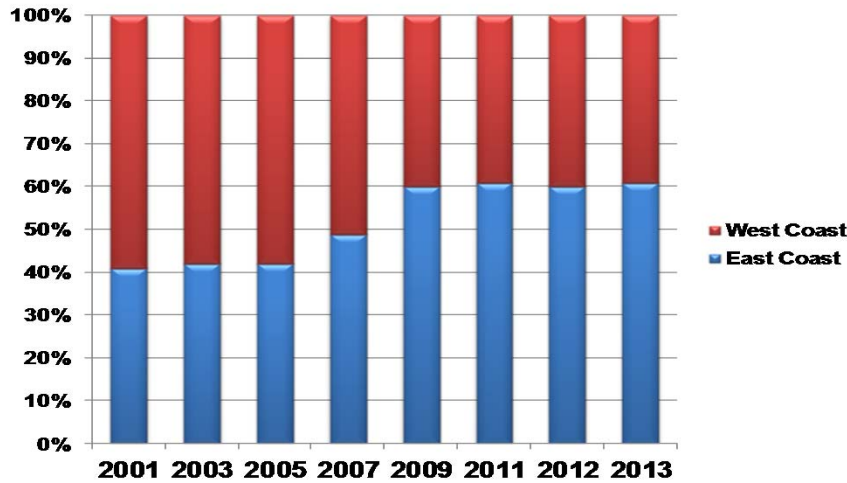
NS Domestic Length of Haul



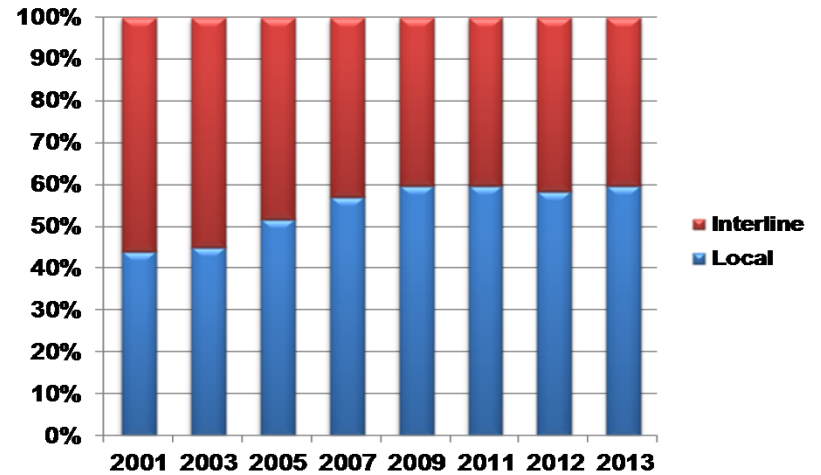
Share growth in points from 2003 to 2013

Recent Trends in NS Length of Haul

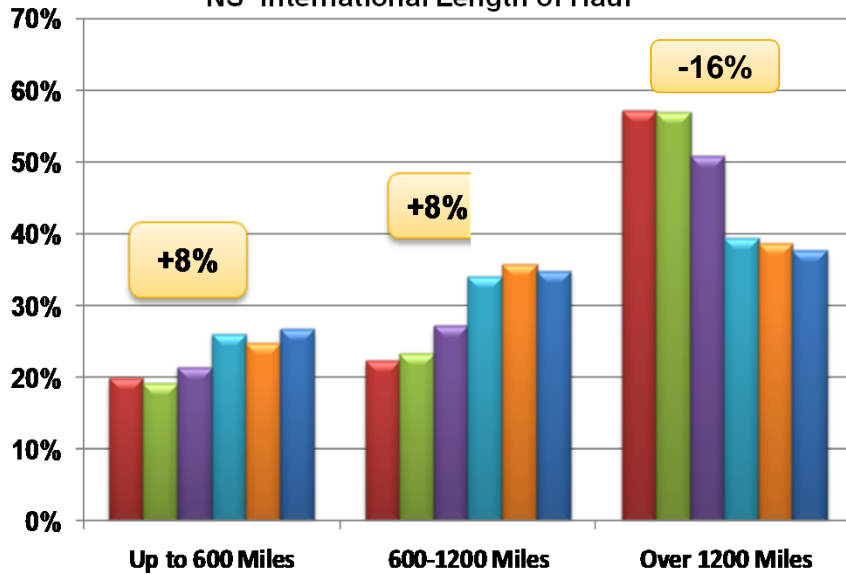
NS East Coast vs. West Coast Market Share



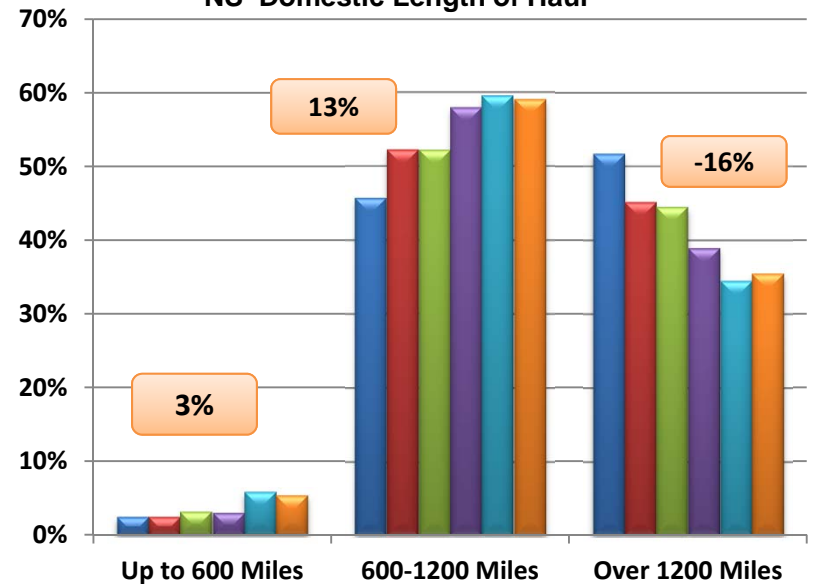
NS Domestic Local vs. Interline



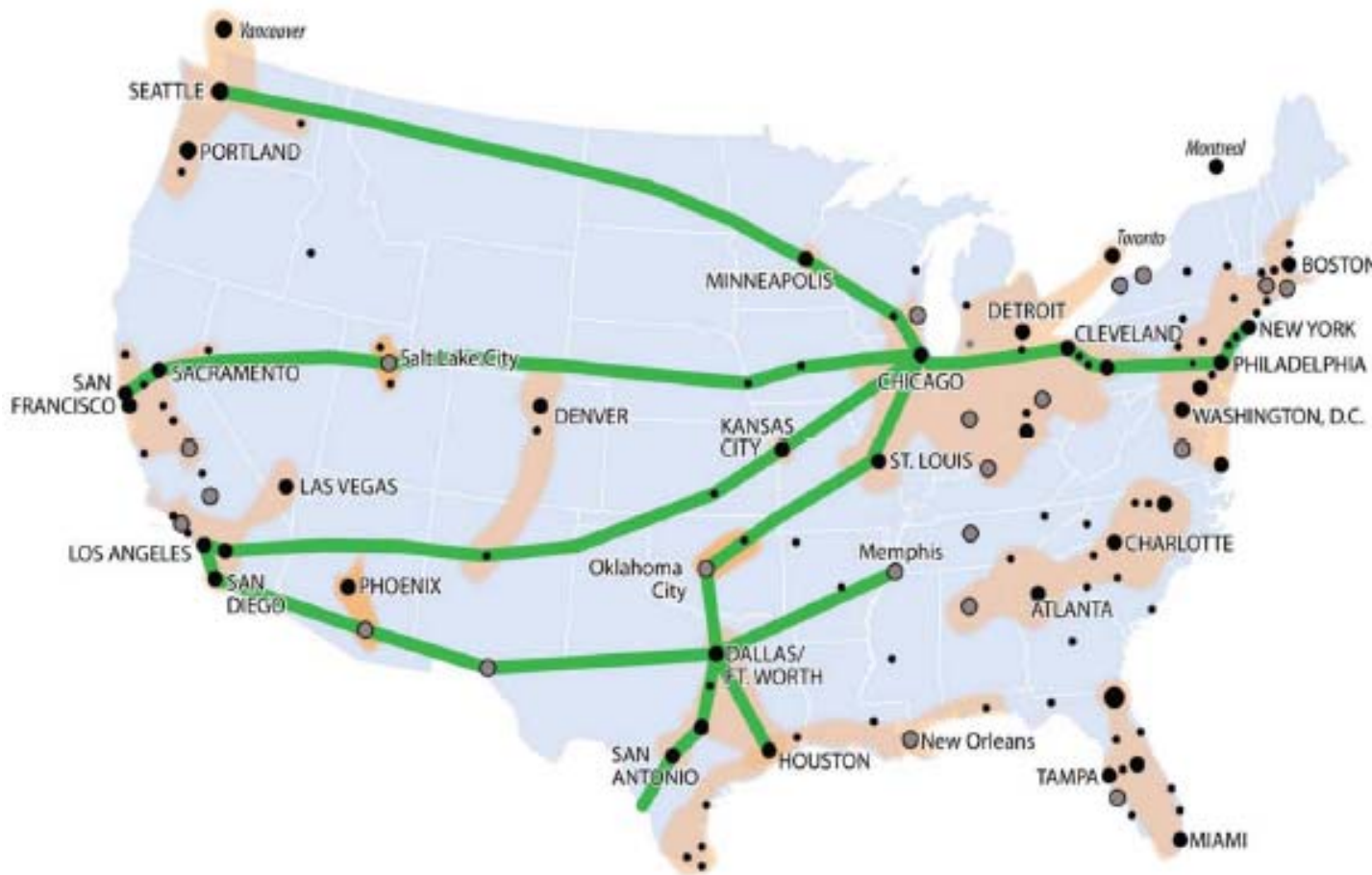
NS International Length of Haul



NS Domestic Length of Haul



Top Intermodal Freight Rail Corridors



<i>Corridor (State to State)</i>	<i>Trailers/ Containers</i>	<i>Avg Length of Haul (miles)</i>
CA /IL	2,485,880	2,220
CA/TX	1,383,520	1,550
WA/IL	797,480	2,230
NJ/IL	544,840	950
PA/IL	498,920	750
OH/IL	457,240	360
TX/IL	448,000	1,170
CA/TN	382,000	2,100
CA/KS	312,320	1,775
CA/AR	297,080	2,025

Market Access and ROIC

MARKETS

- DEMAND FOR TRANSPORTATION SERVICES
- OPPORTUNITIES FOR GROWTH
- RESPONSE TO MARKET NEEDS

REVENUES

- VOLUMES
- COMPETITION
- PRICING

*Economics of
Capital Investments
on Class I RR*

COSTS

- ASSET AND EMPLOYEE
PRODUCTIVITY
- OPERATING EFFICIENCY

PROFITS

- REVENUES > LONG-TERM COSTS
- SUFFICIENT RETURN TO ATTRACT
INVESTMENT

Railroads only call some of the shots

- Customers dictate conveyance in many markets
- Geography can be a limiting factor for rail access
- Infrastructure/Capacity is usually approached incrementally
- Operations, Power-Locomotives, O/D analysis, crews, market demand forecasts –ultimately drive investments decisions

Thank You

