



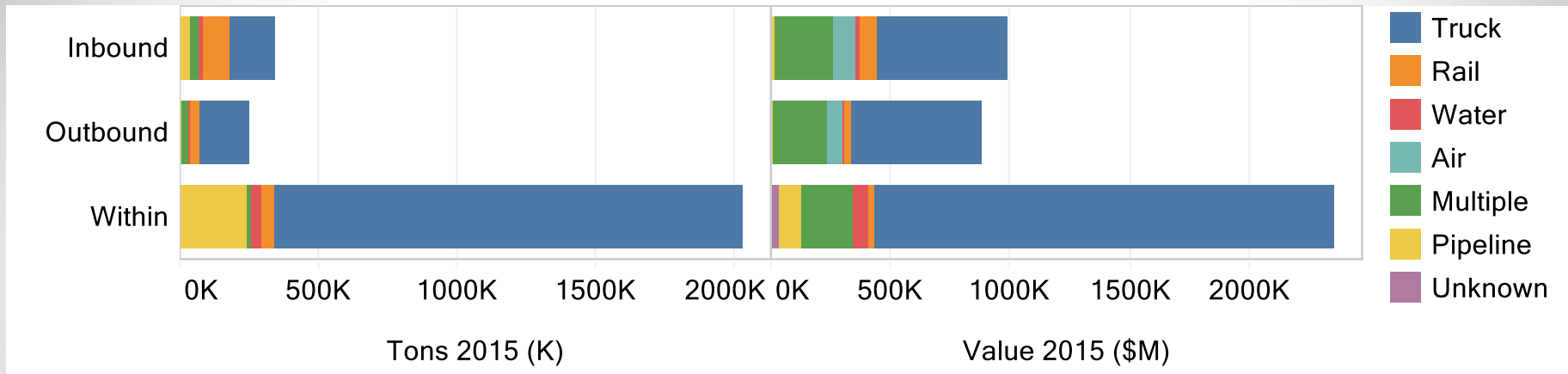
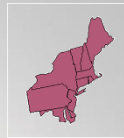
FREIGHT IN THE NORTHEAST

*NASTO Conference
Philadelphia, PA*

*Joseph Bryan, WSP
July 2017*

NASTO States Freight Volume 2015

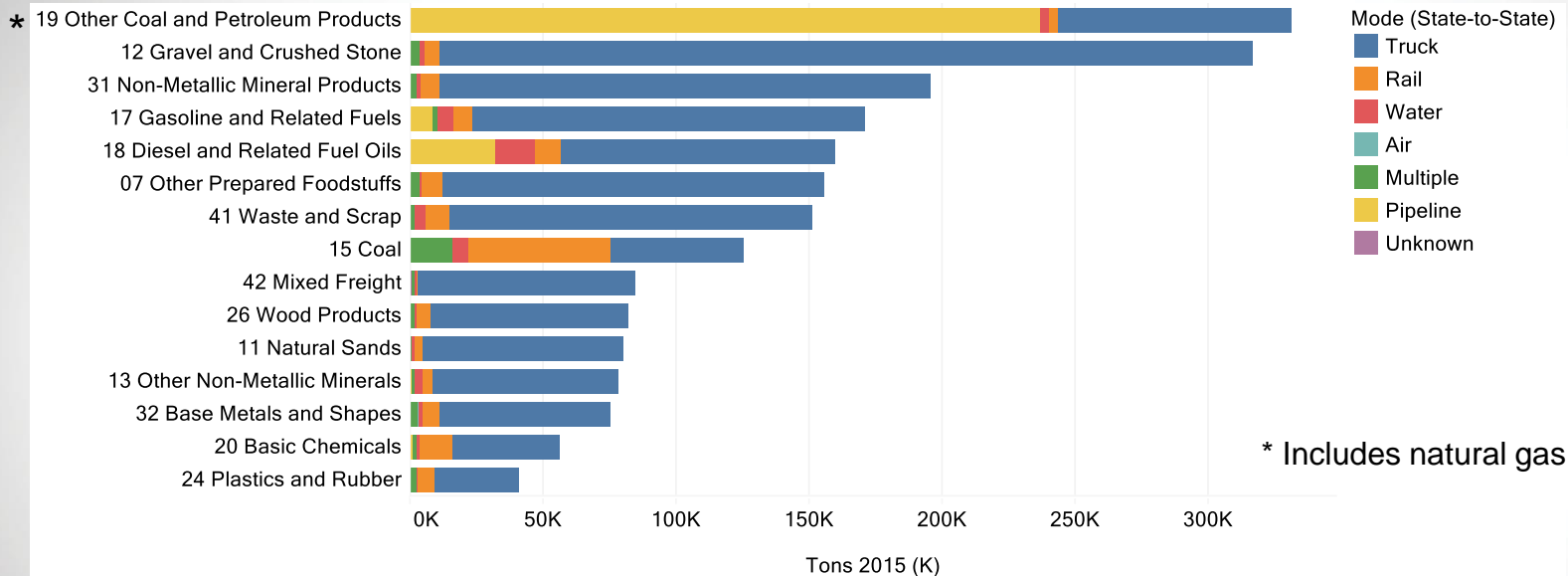
2.6 billion tons, \$4.2 trillion product value



- Regional freight is $\frac{3}{4}$ of tons, $\frac{1}{2}$ of product value, mainly by truck and pipeline
- Inbound tons from other markets are $\frac{1}{3}$ more than outbound
- Tonnage trade with other markets is nearly 60% truck, $\frac{1}{4}$ rail

NASTO States Freight Volume 2015

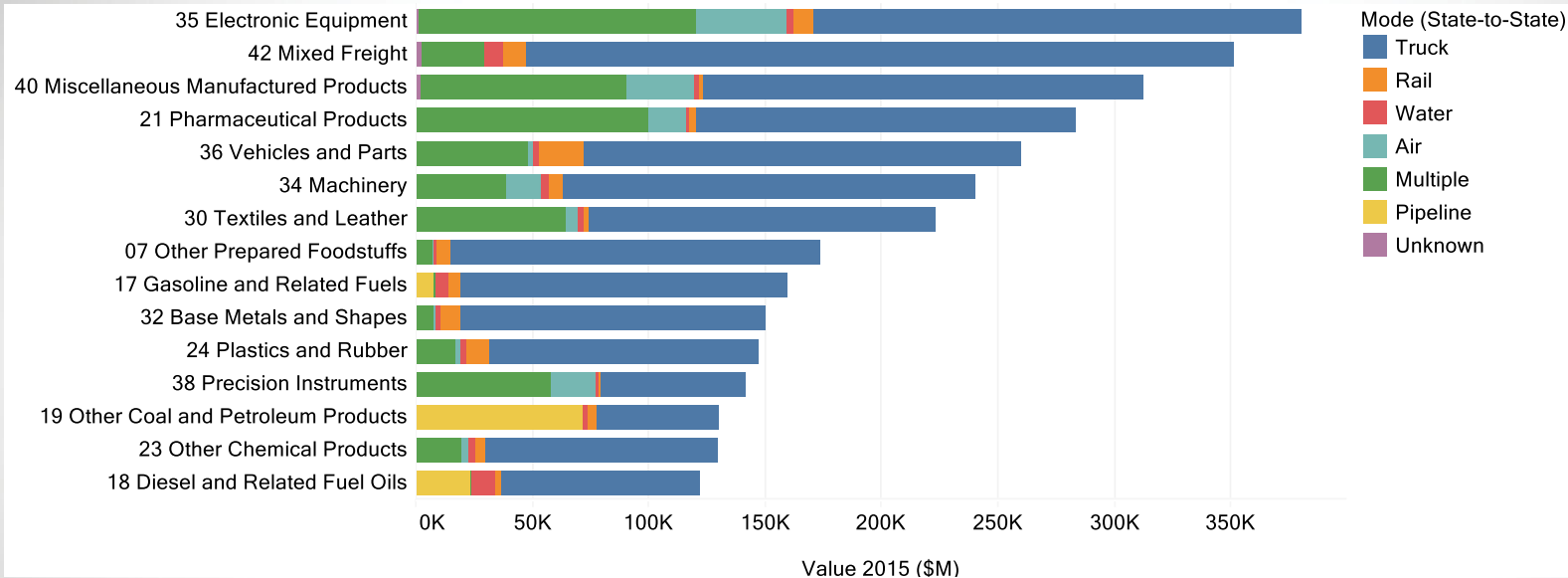
Top commodities by tonnage



- Substantially bulks: fuels, construction aggregates
- Substantially truck and pipeline – and coal by rail

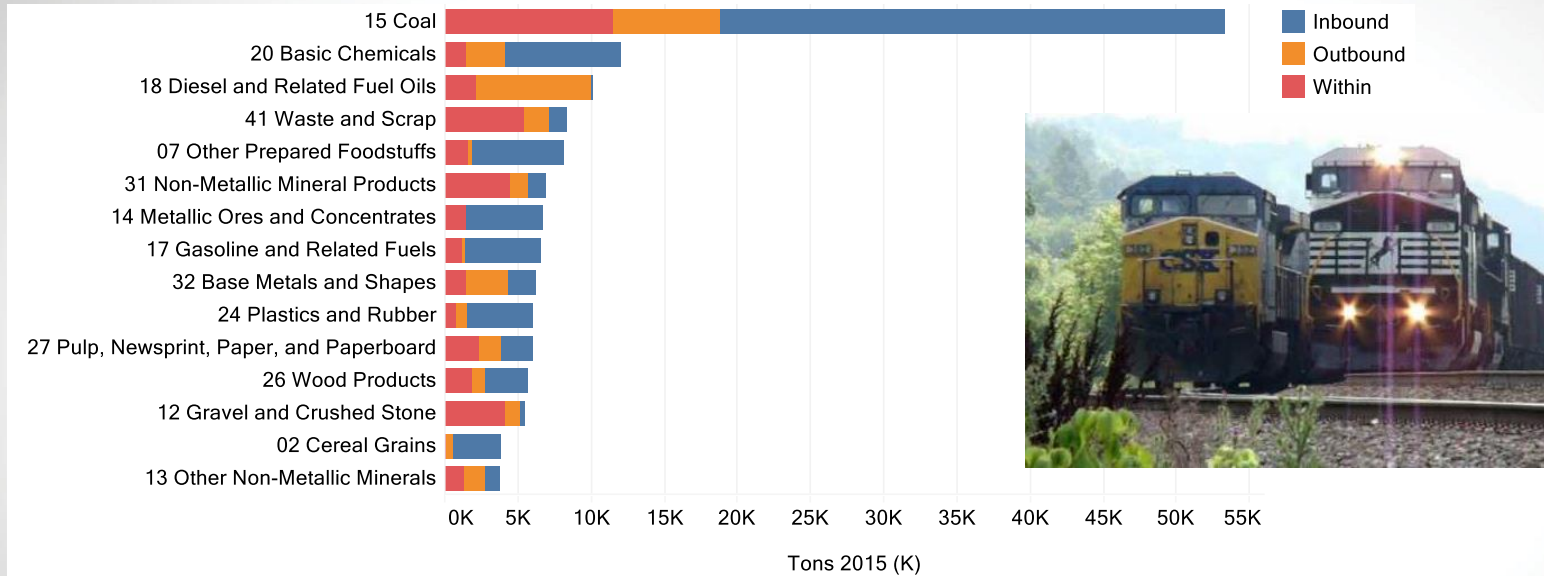
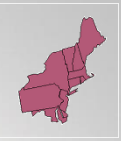
NASTO States Freight Volume 2015

Top commodities by product value



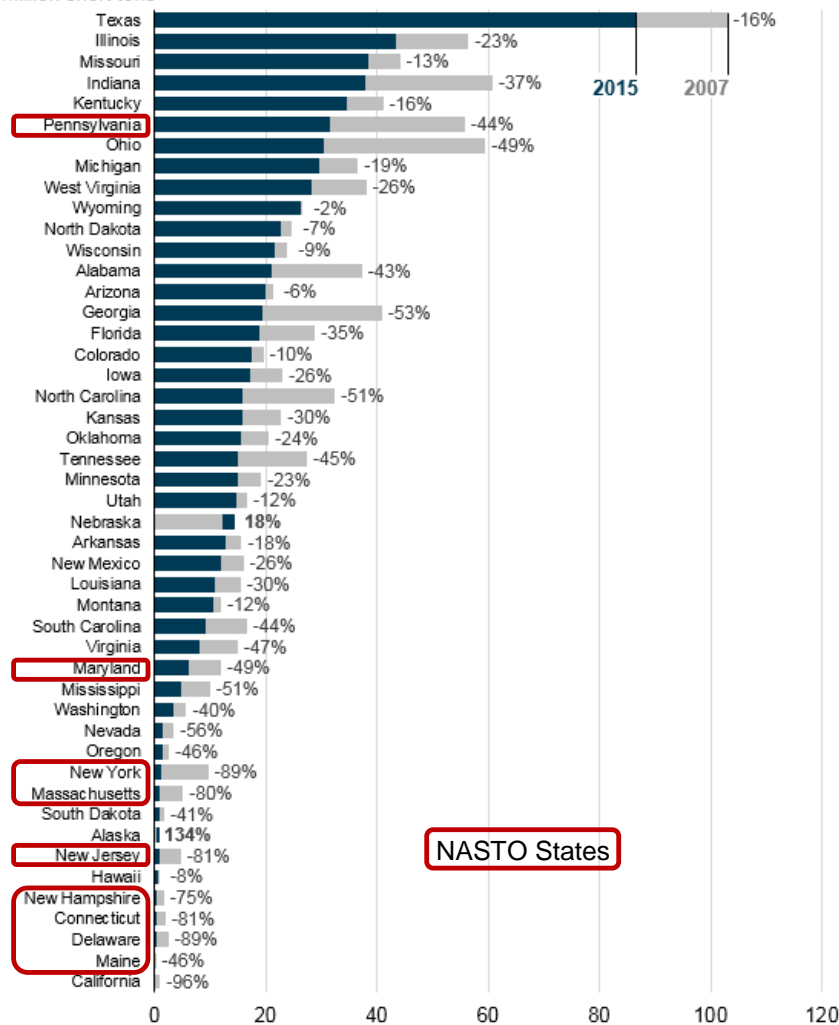
- Different mix by value: electronics, pharma, mixed freight
- Much trucking and multiple modes - which includes rail intermodal and small package

NASTO States Freight Rail Tonnage 2015



- 82 million tons, mainly inbound and regional
- Baseload is coal, almost $\frac{2}{3}$ of tonnage

Electric power consumption of coal by state, 2007 and 2015
million short tons



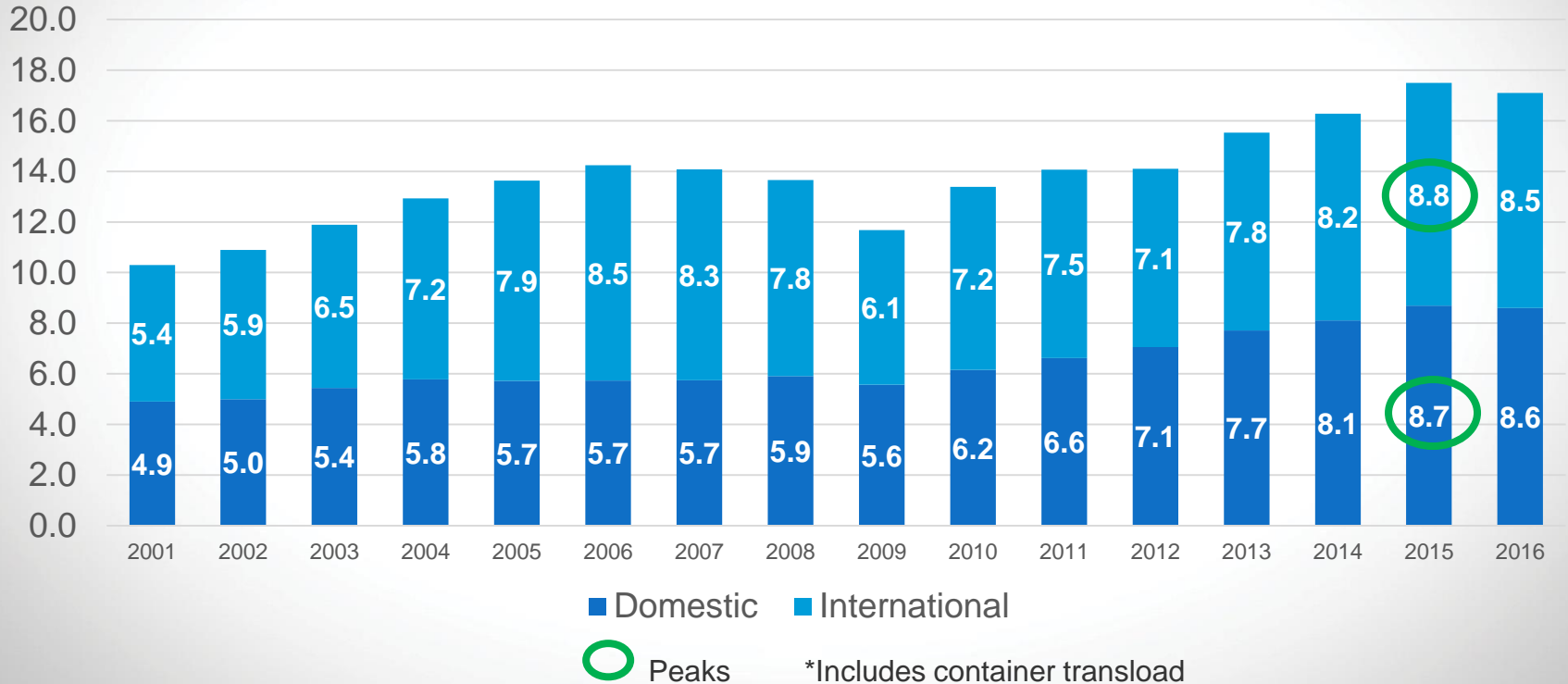
Coal Outlook is Daunting

- 29% nationwide decline in coal use for electric power from 2007 peak to 2015
- Much higher decline in NASTO states that use coal
- Mainly displaced by natural gas: cheaper, cleaner, abundant – and a NASTO product
- Renewables also contribute

➡ Railroads need new traffic

Intermodal a Key Source for New Rail Business

Domestic* Container Volumes have Surpassed International

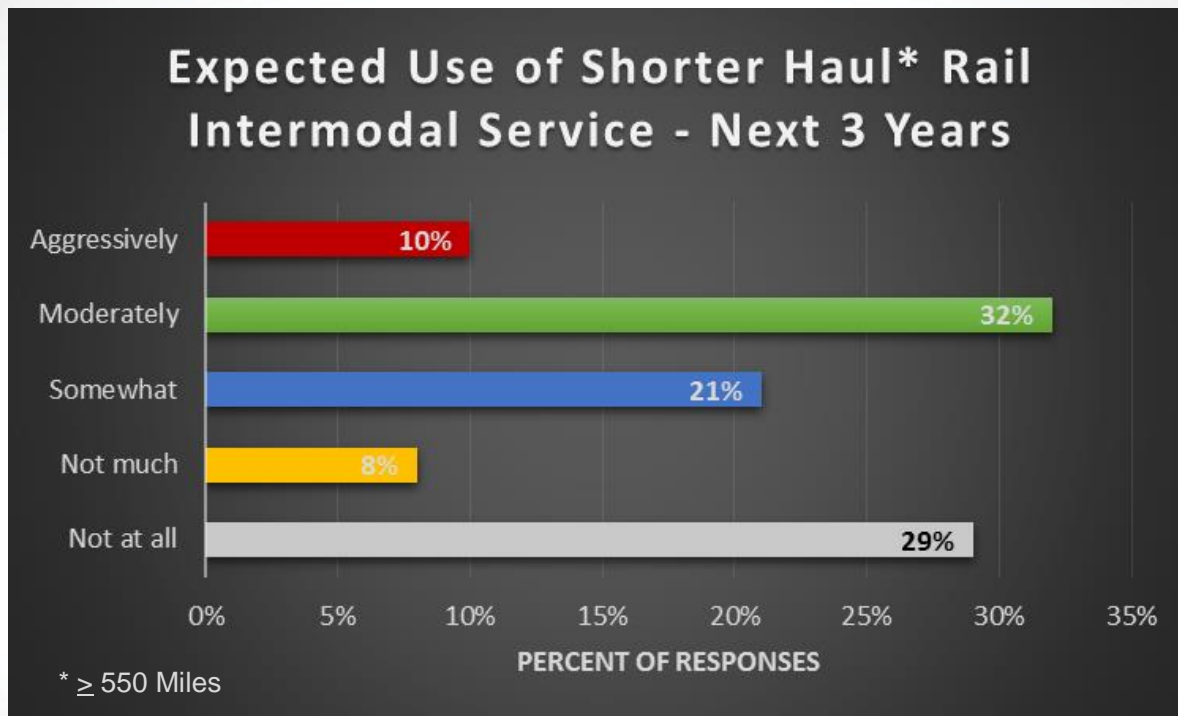


Shorter Haul Intermodal Contributing to Growth Especially in East



- One example: CSX intermodal hub operating model
 - Enabled by new crane technology
 - Greater (& green) terminal capacity
 - Builds corridor density to go beyond point-to-point service
 - Serves formerly underserved markets: “550+ Miles”
- Began in OH, expanding in NC
 - Affects entire network: NASTO, SASHTO, MAASTO
 - ➔ More lanes & markets in play

Shorter Haul Intermodal Prospects are Encouraging

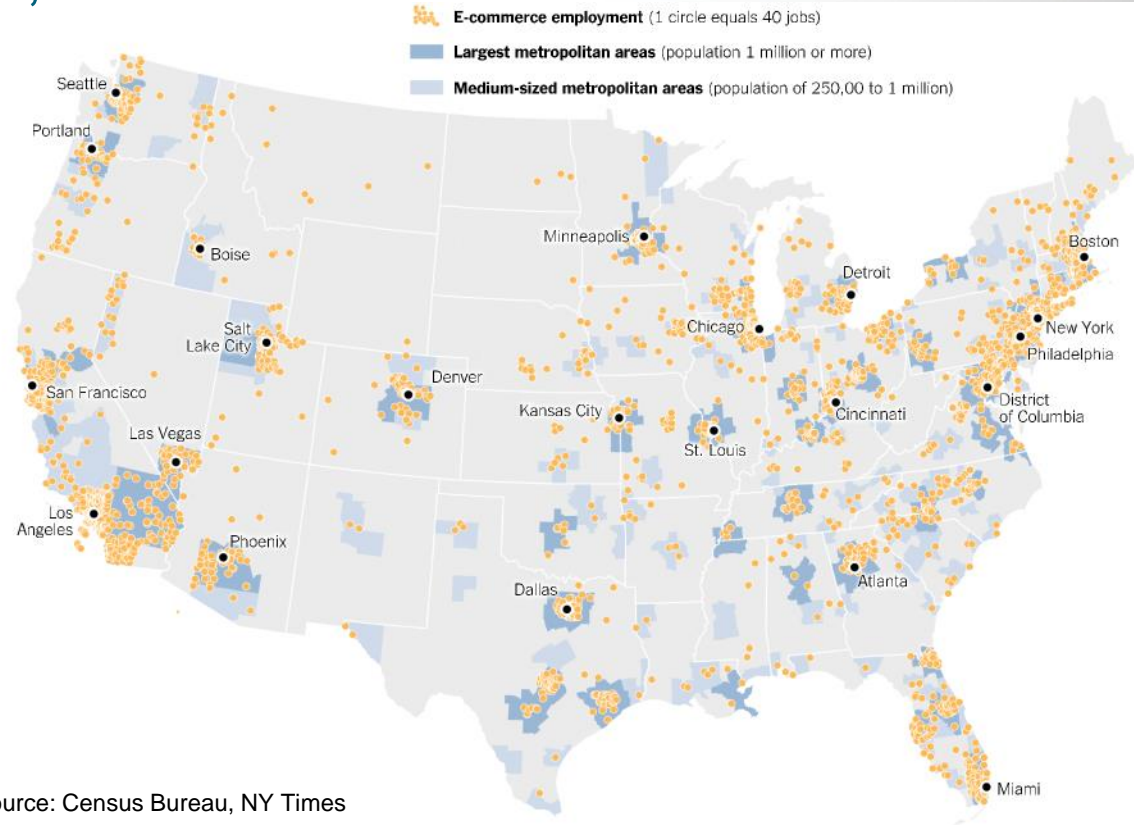


- Nearly $\frac{2}{3}$ of shippers expect to use shorter haul intermodal service
- Two out of five expect to use it moderately or aggressively

E-Commerce is Driving Retail Volume

Truck, Intermodal Rail, Air

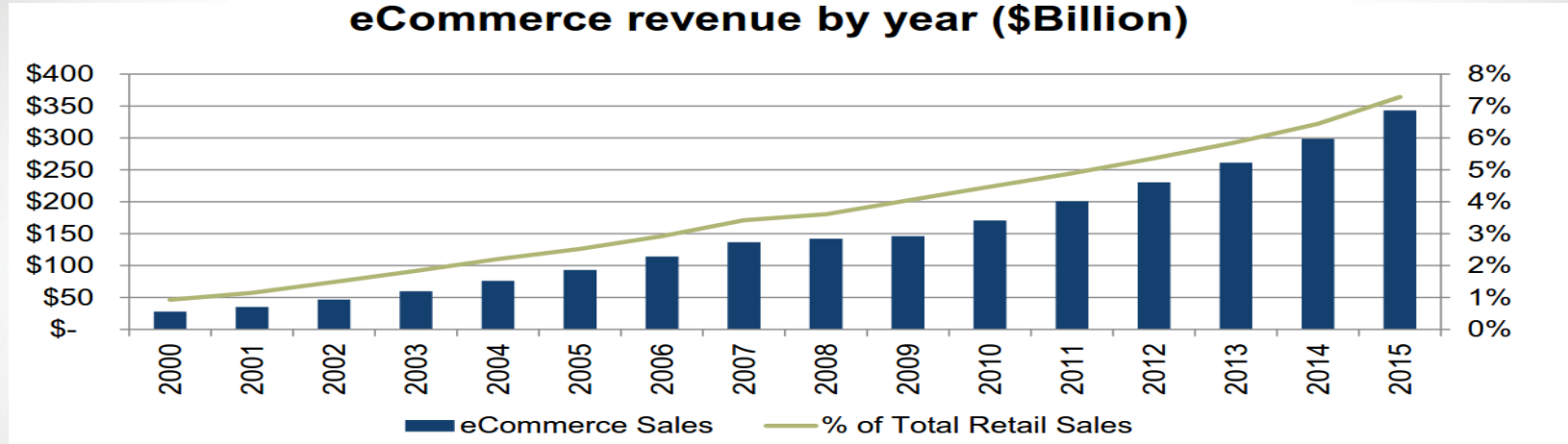
- Growth and jobs in major metro areas
- Northeast Corridor a prime location
- But growth also occurring elsewhere in NASTO region



Source: Census Bureau, NY Times

E-Commerce: Small Now, Growing Disruptively

- E-Commerce compound growth rate 17% since 2000, vs. 3% for storefront retail



- Signals profound and costly shift in retail with large effect on freight patterns
 - Storefront vs. on-line strategies being invented
- ➔ Rapid growth in Home Delivery

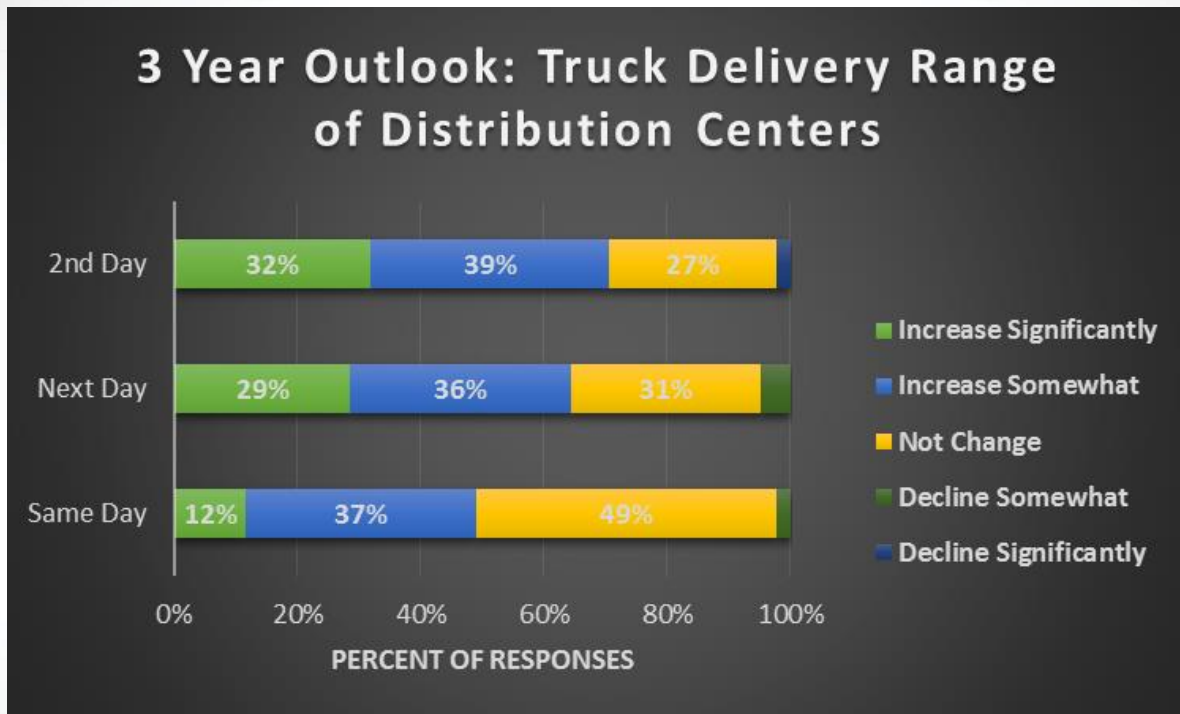
Chart Source: Alix Partners
analysis of US Census data

Home Delivery Market Dynamics

- Battle for convenience
 - Store or collection point pickup vs. delivery to consumer door
 - Same day and 1 hour delivery require local staging facilities
- Battle to capture and grow limited route density
 - Free delivery option now standard; same day is competitive wedge
 - Free delivery encourages household bulks (e.g. paper products, pet food) ➡ means more and larger delivery trucks
- Amazon purchase of Whole Foods is about density

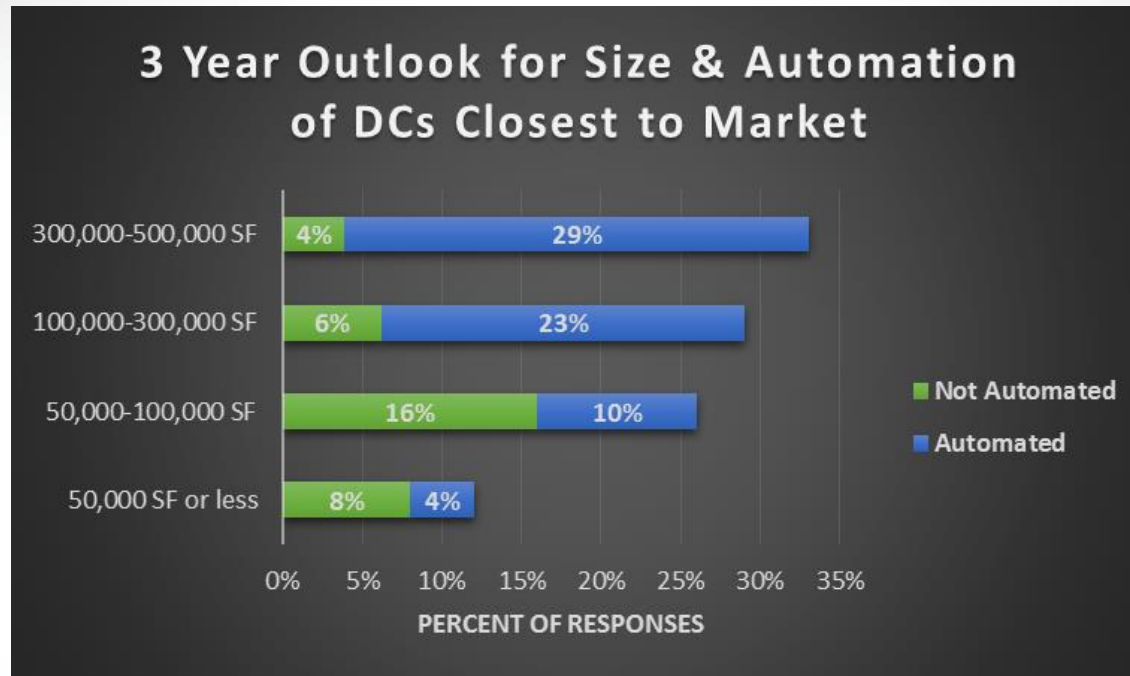


Home Delivery Pushes DCs Closer to Markets



- Nearly 1/2 of surveyed shippers see same-day delivery needs increasing
- Nearly 2/3 see next day delivery needs increasing

Close-in DCs are Urban Scale and Automated



- $\frac{2}{3}$ of DCs closest to market are under 300,000 SF ➔ *Urban Scale*
- Pronounced rise in automation as size increases
- Automation can *triple* freight output per SF



Thank You!

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