

National Freight Needs

Maryland's Freight Challenge is America's Freight Challenge

presented to

Maryland Freight Summit 2007

Annapolis, Maryland

presented by

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Cambridge Systematics, Inc.

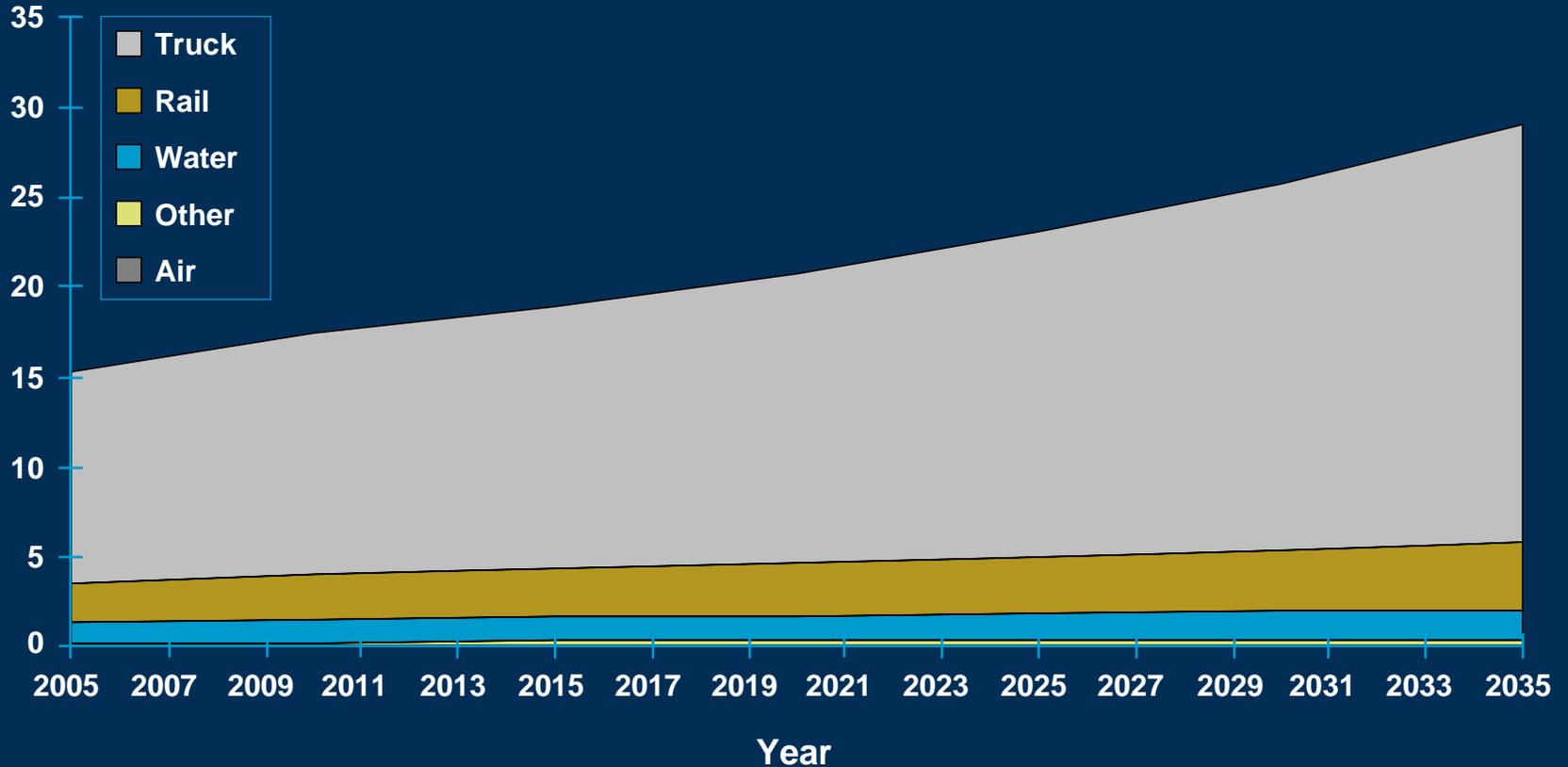
September 10, 2007

Transportation leadership you can trust.

Freight Tonnage by Mode, 2004-2035

With moderate economic growth at about 2.8 percent CAGR, freight tonnage will nearly double by 2035

Net Tons (in Billions)



Source: Global Insight 2004 TRANSEARCH data and economic forecasts.

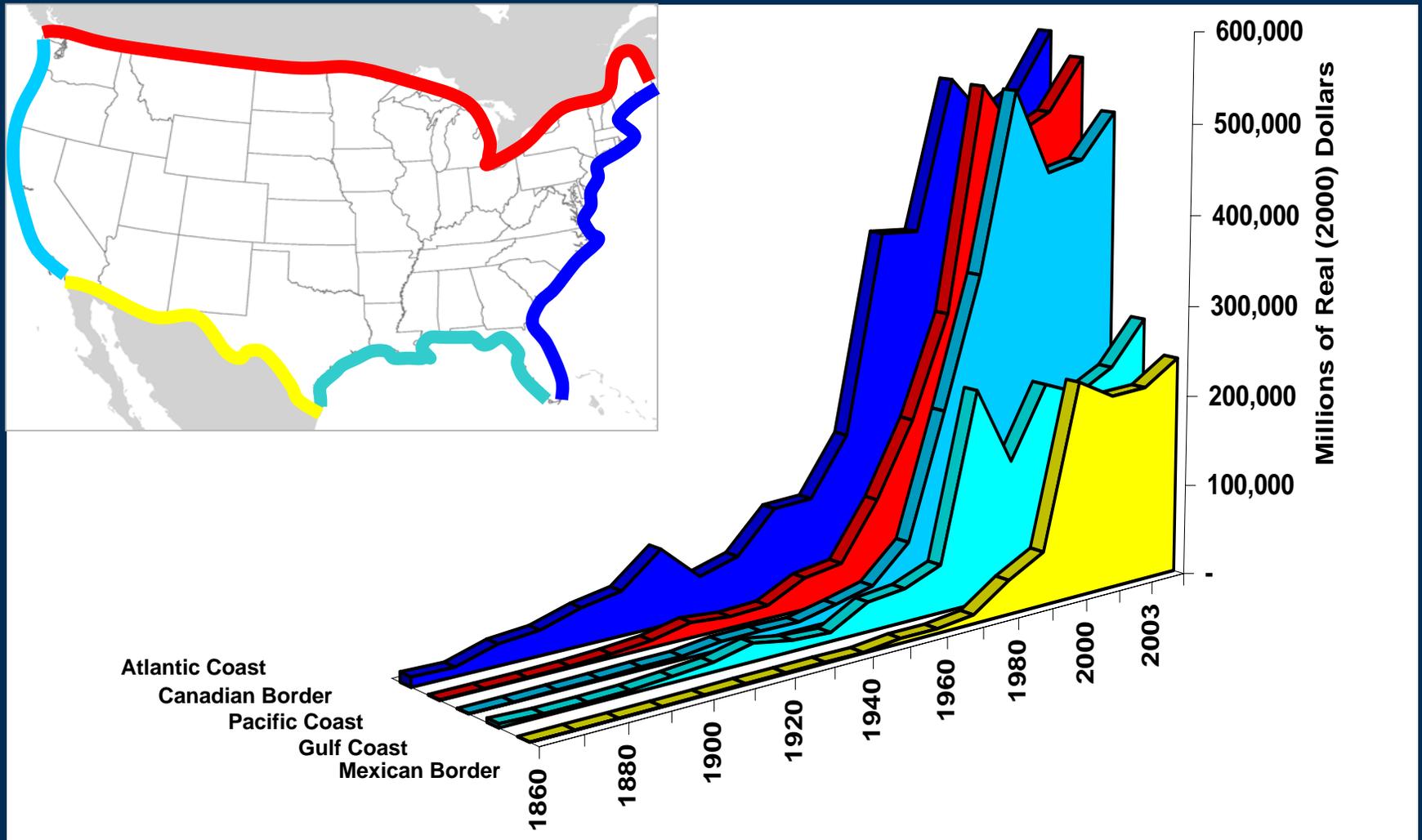
Freight Demand

The four major drivers behind the increasing freight demand are –

- **Consumption**
 - Population growth
- **Production**
 - Expanding durable and non-durable goods manufacturing
- **Trade**
 - Import and export growth
- **Supply Chain Practices**
 - Changing logistics strategies

Trade Growth, 1860 to 2005

The value of U.S. trade—measured in constant dollars by coast and land border—has grown rapidly over the last 30 years

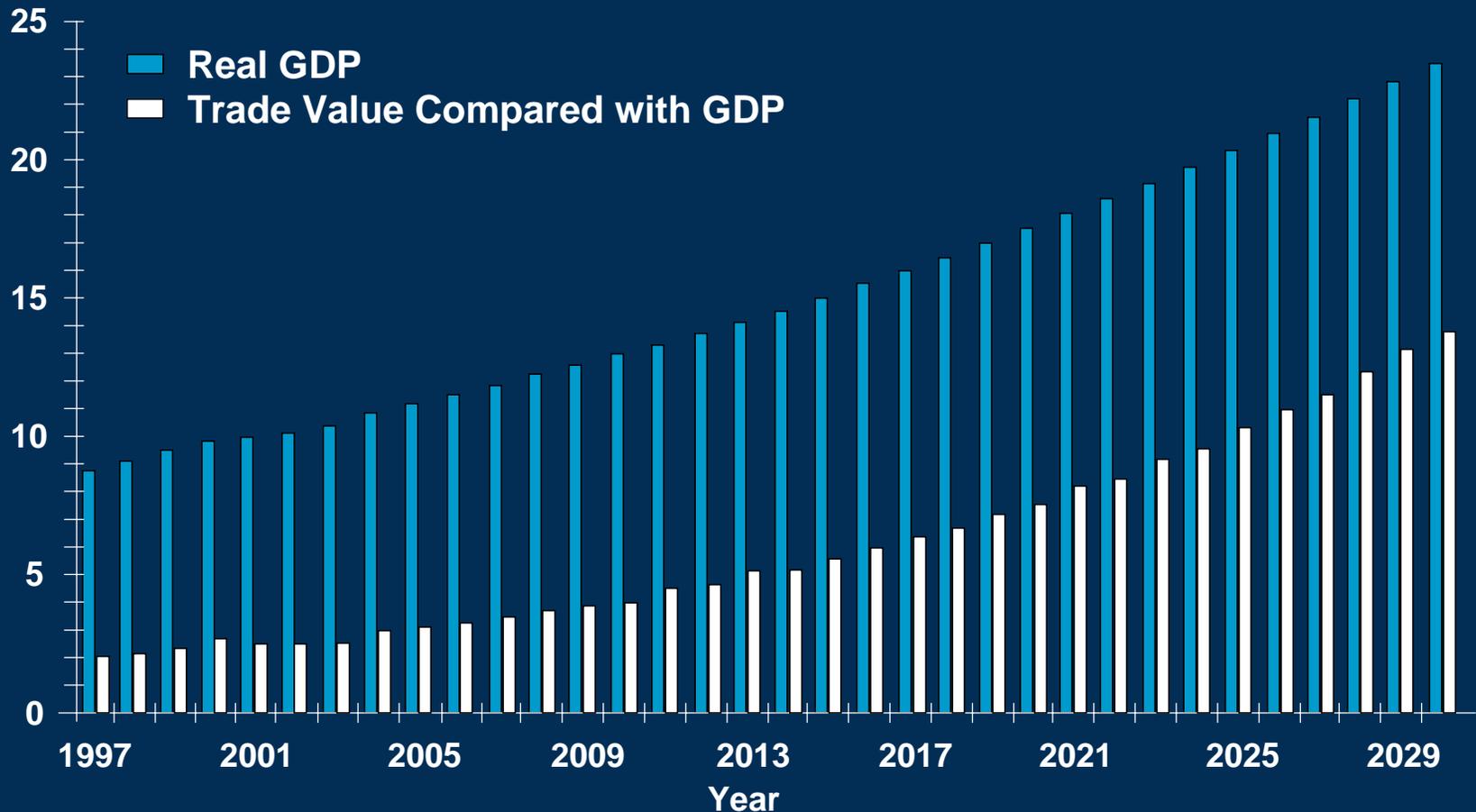


Source: Cambridge Systematics, Inc

Trade Growth, 1997 to 2030

The forecast is for continued trade growth; the value of U.S. imports and exports is expected to be equivalent to 60 percent of GDP by 2030; this trade will concentrate at our major international freight gateways

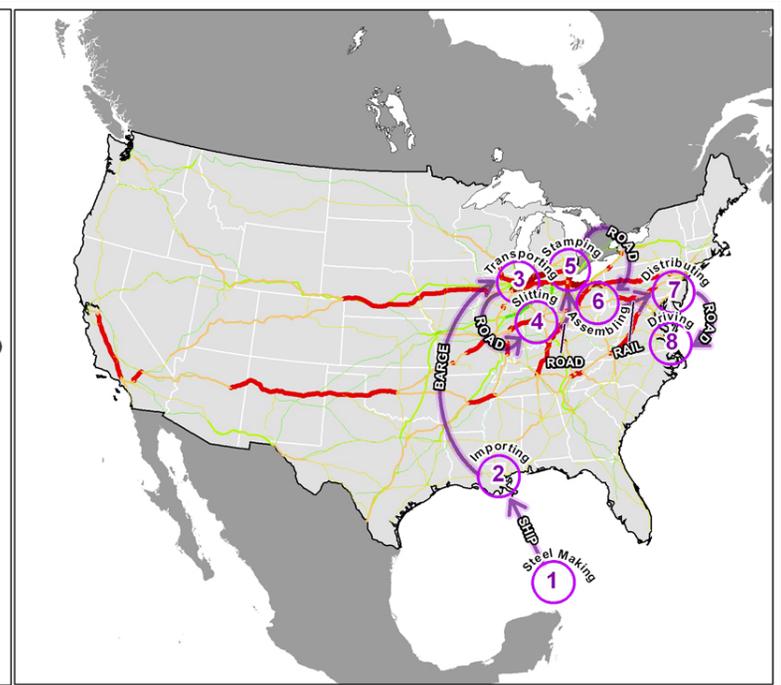
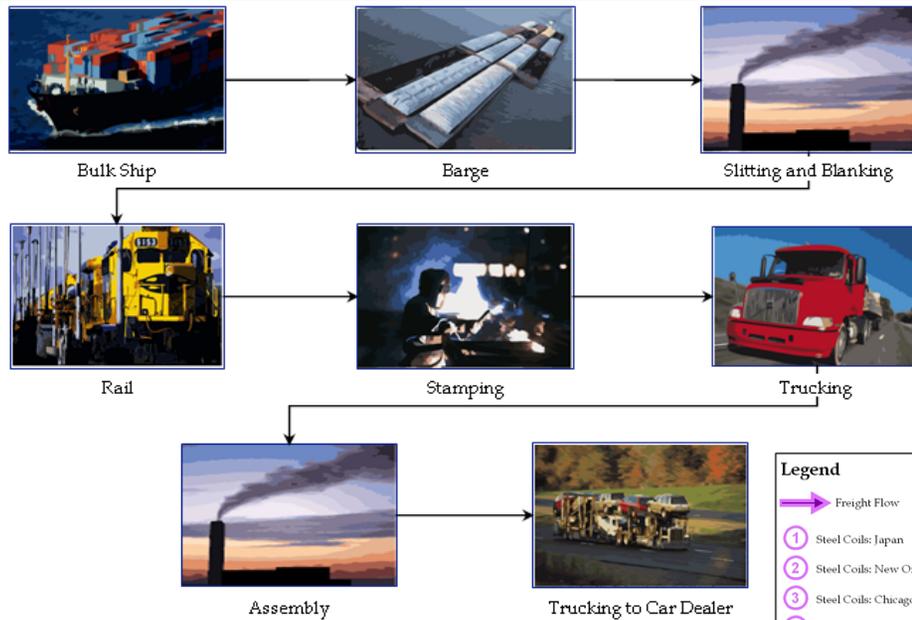
Real GDP



Source: Global Insight

New Automobile Supply Chain

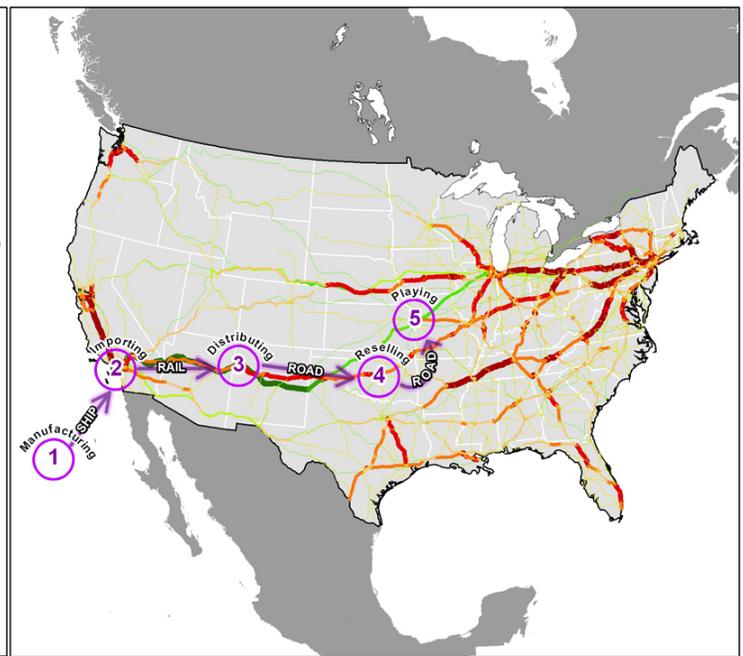
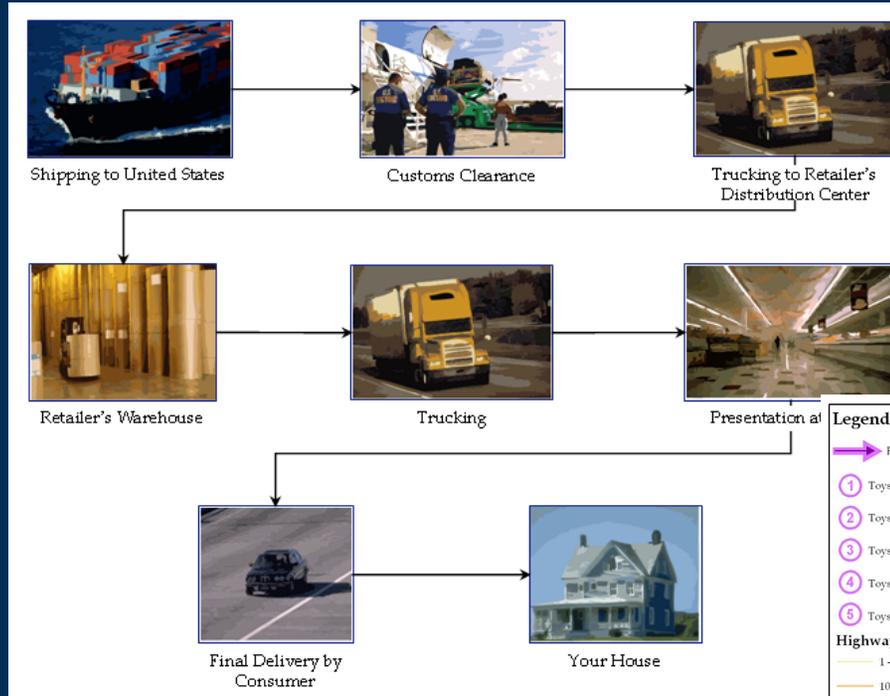
Many supply chains depend on tightly integrated international and domestic freight moves to keep inventory and product costs down



Source: Boston Logistics Group and Cambridge Systematics, Inc

Toys Supply Chain

Retailers, trying to capture market share by ensuring that they can always meet customer demand, are pushing up-stream suppliers to produce and deliver “on demand,” ratcheting up the standard for reliable and cost-effective freight transportation

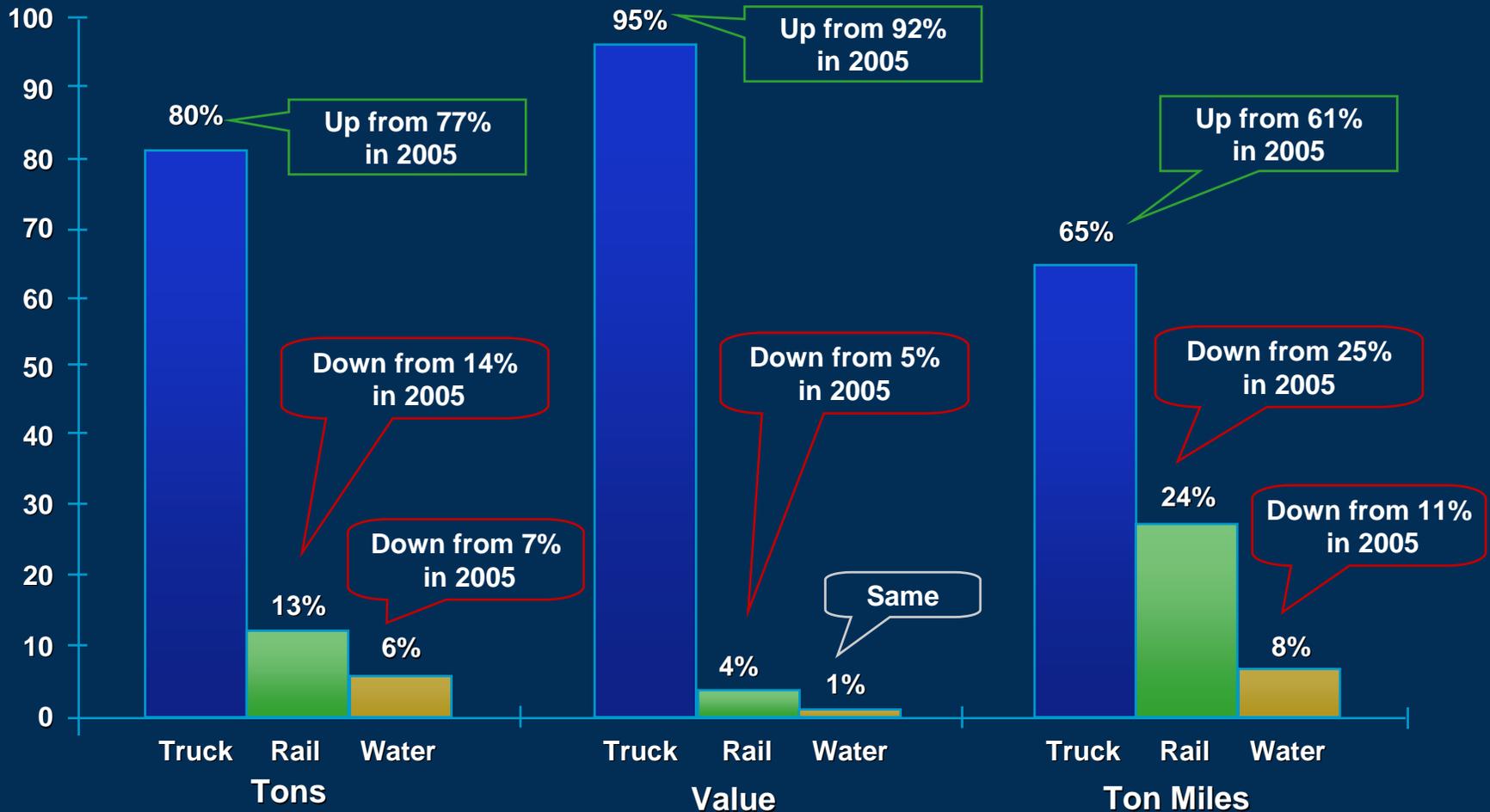


Source: Boston Logistics Group and Cambridge Systematics, Inc

Freight Tons, Value, Ton-Miles by Mode, 2035

As the structure of the U.S. economy changes, generating higher-value, lighter, and more time-sensitive shipments, more freight will likely go by truck and air, less by rail and water

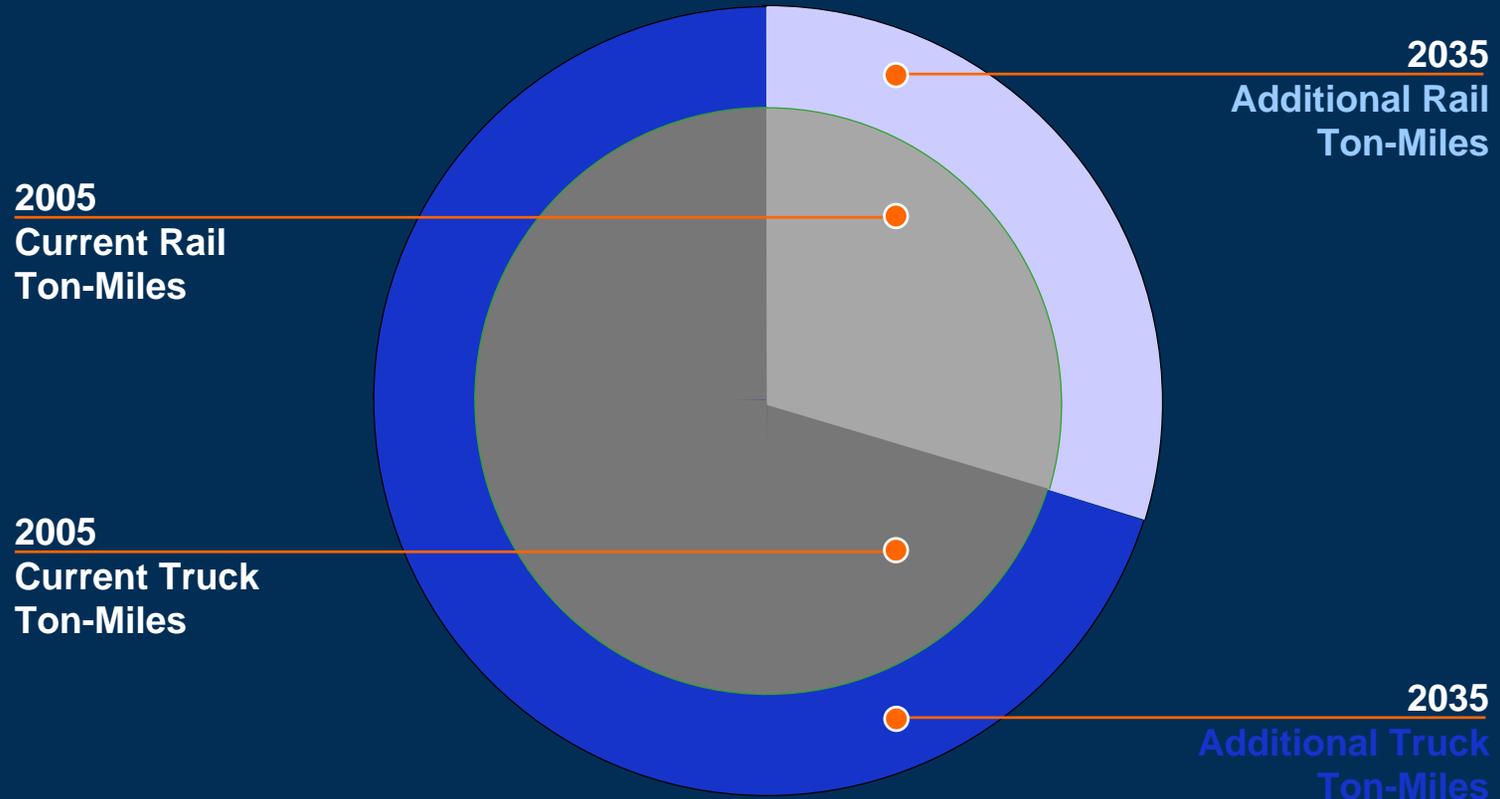
Percent



Source: Global Insight 2004 TRANSEARCH data and economic forecasts.

Modal Shifts

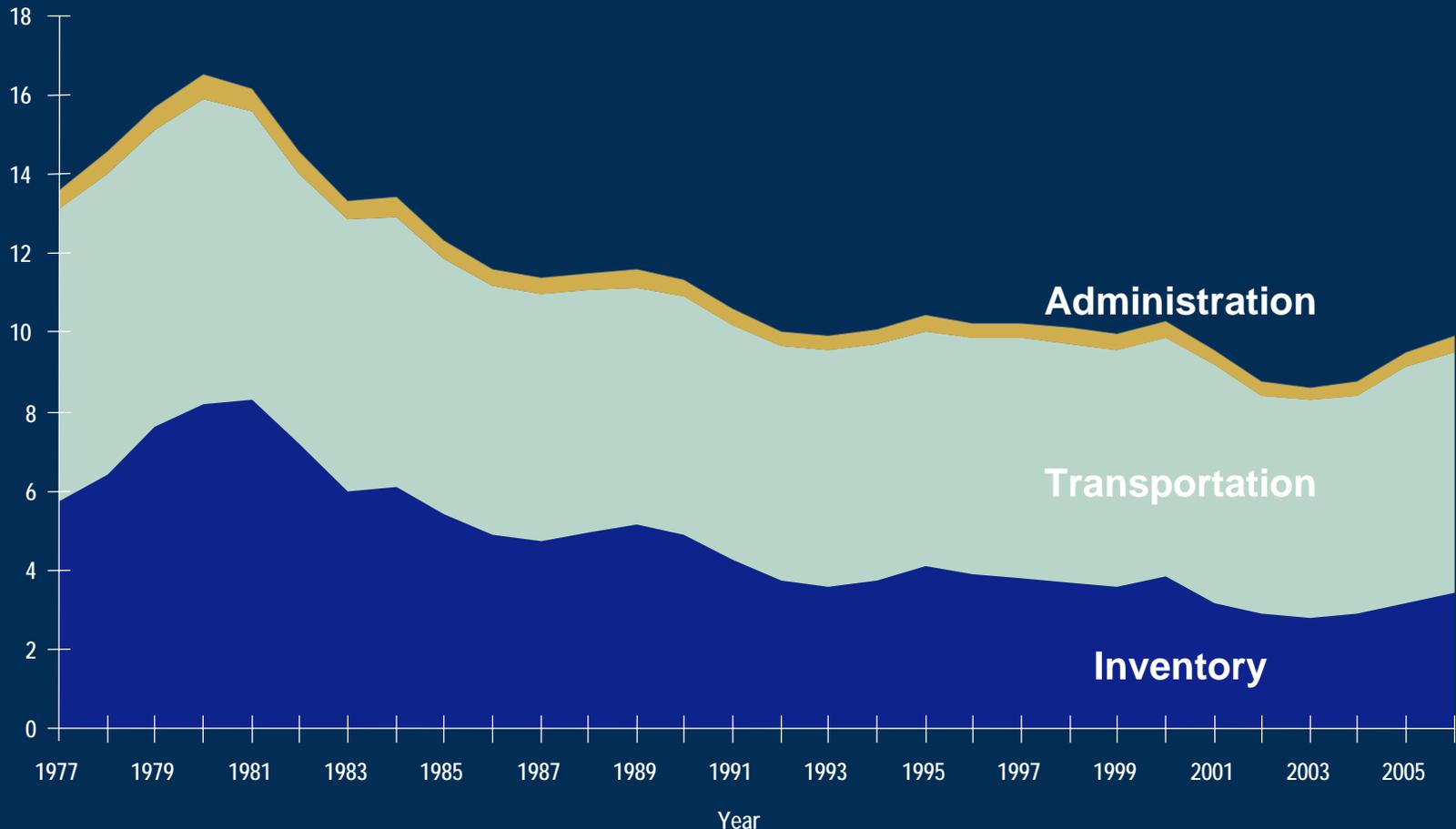
Do the truck and rail freight systems have the capacity to handle the growing volume of freight – even if mode shares remain constant?



Total Logistics Cost

Greater supply chain productivity and lower logistics costs have been critical to U.S. economic growth; but logistics costs are rising, driven by increasing fuel costs and congestion

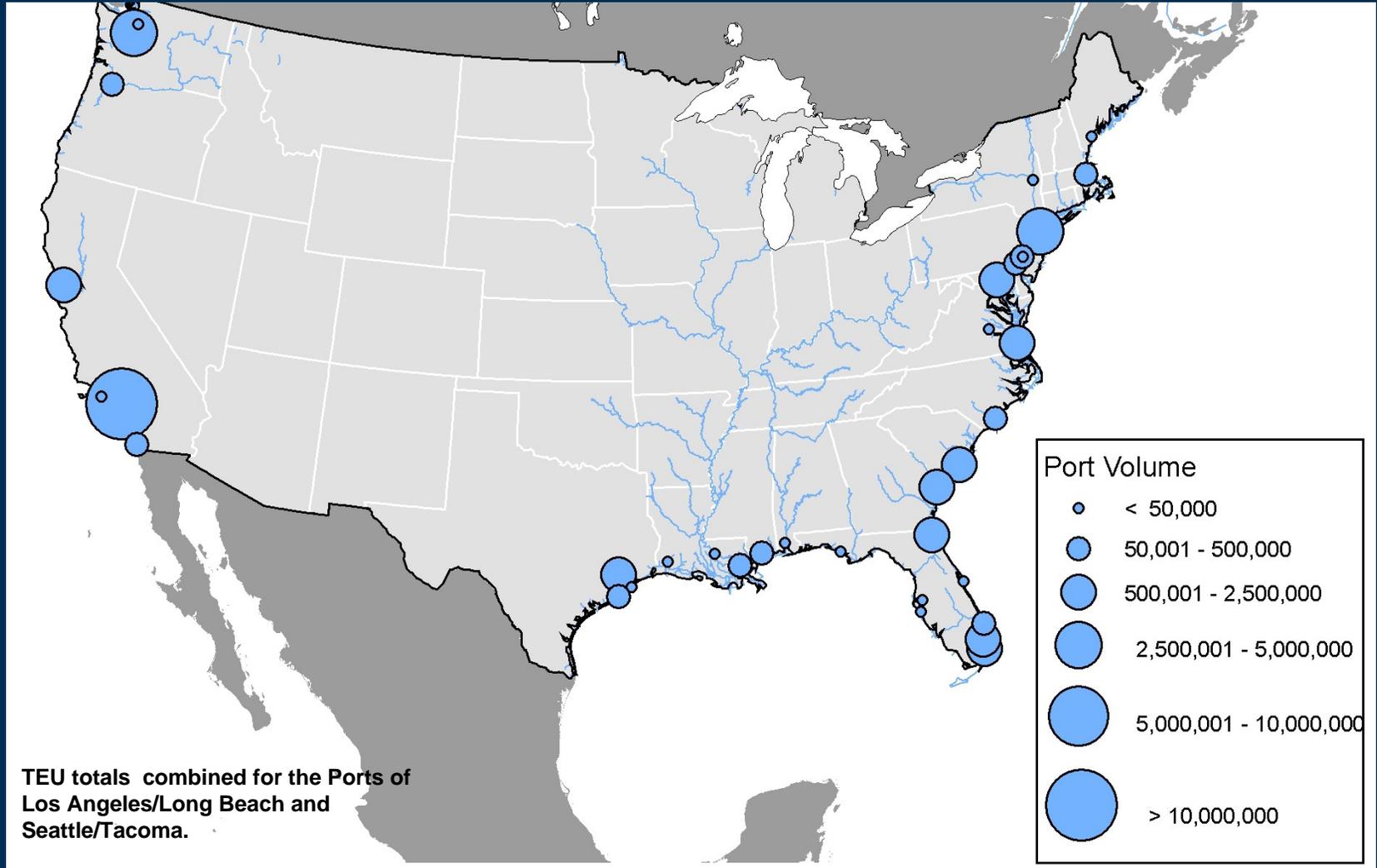
Percentage of U.S. Gross Domestic Product



Source: Rosalyn A. Wilson, *State of Logistics Report*, Council of Logistics Management, 2007.

U.S. Ports by Container (TEU) Volume, 2005

U.S. international container traffic is forecast to triple over the next 20 years, growing from 24 million loaded containers in 2004 to 72 million loaded containers by 2025

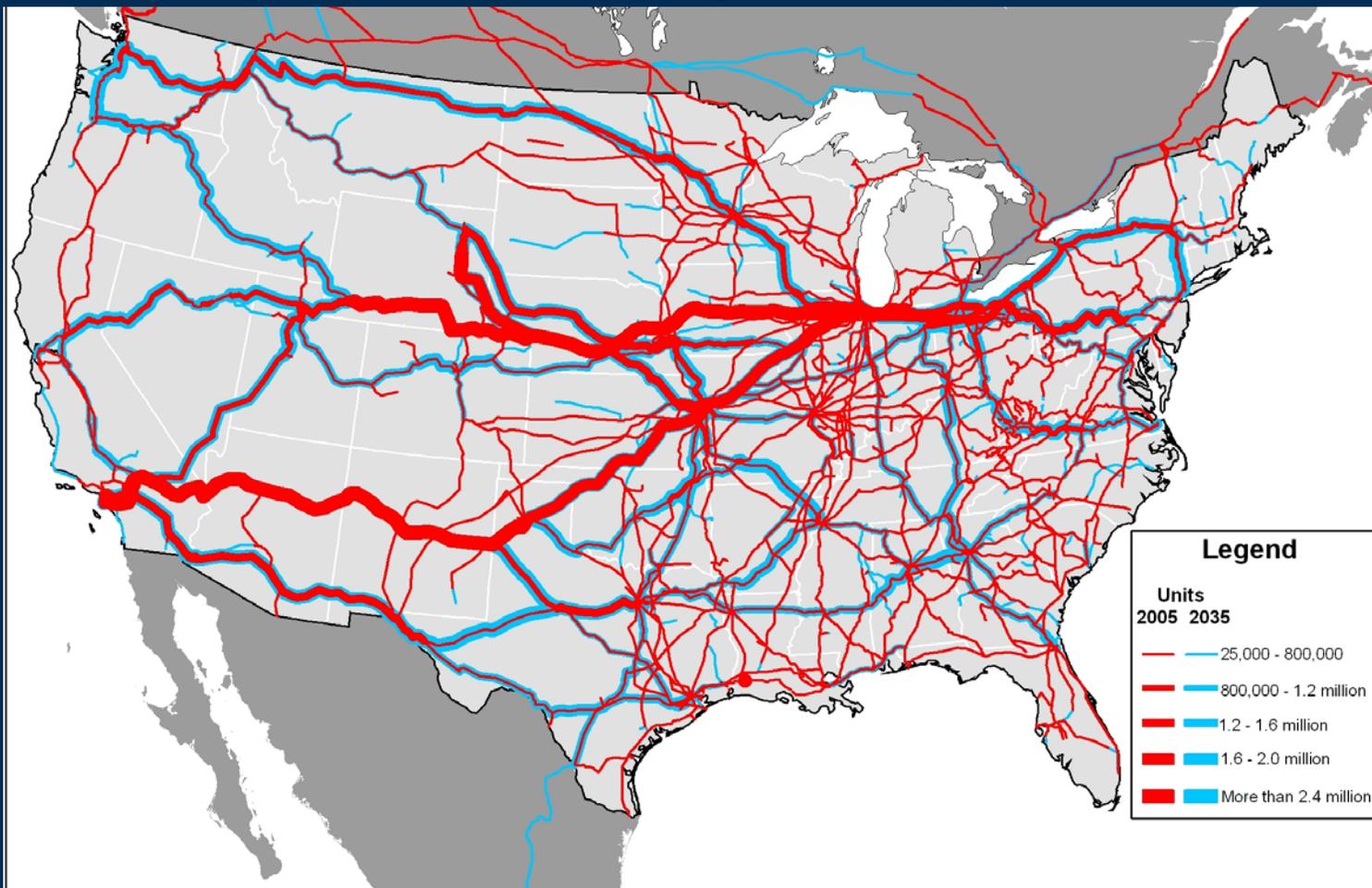


Source: Cambridge Systematics based on American Association of Port Authorities data.

Rail Flows in 2005 and 2035

Railcars and Containers per Year

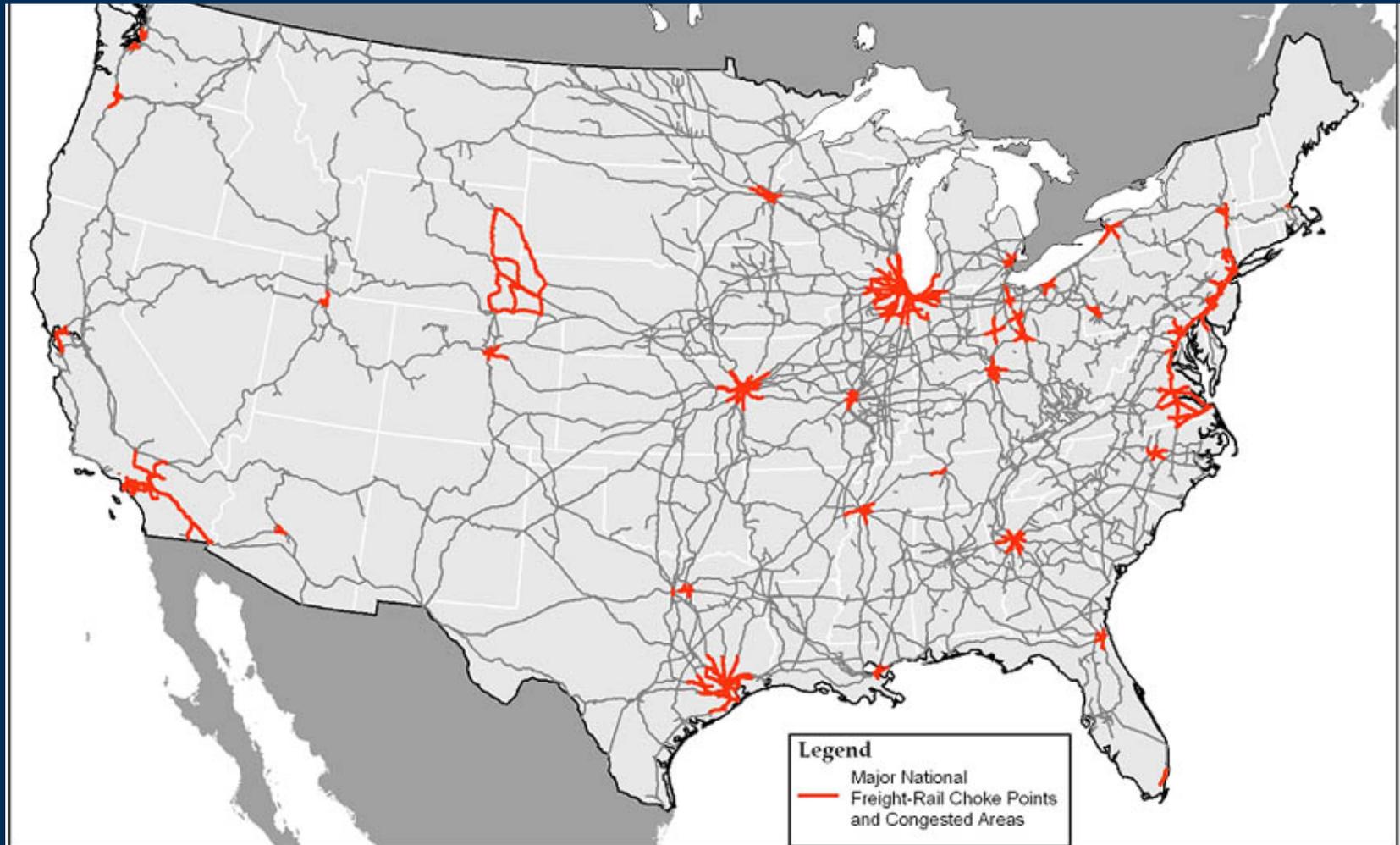
By 2035, every second railcar on the network today will have at least one more railcar behind it; the rail industry must add capacity to handle 71 percent more tonnage and 85 percent more ton-miles



Source: Cambridge Systematics based on Global Insight 2004 TRANSEARCH data and economic forecasts.

Major Rail-Freight Choke Points and Congested Areas, 2007 (preliminary)

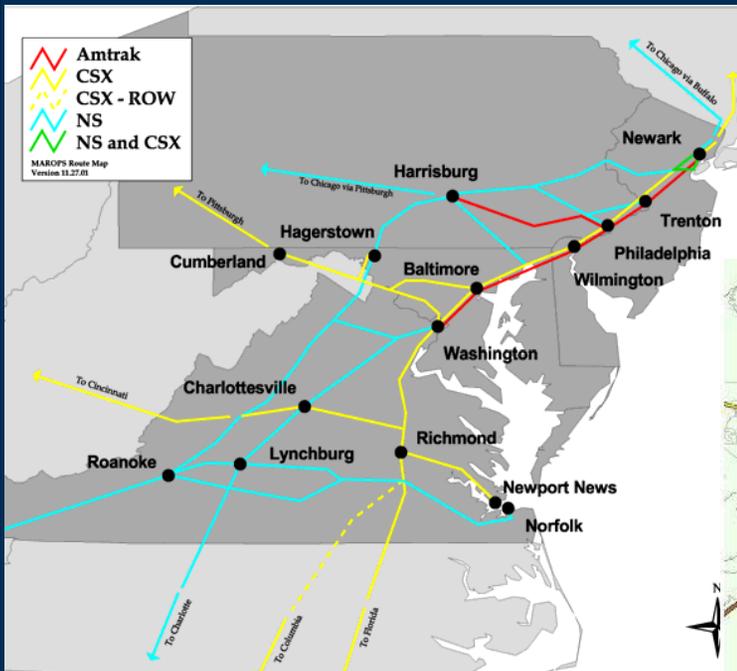
Railroad choke points – locations with recurring congestion and delay – are increasing across the nation



Source: Cambridge Systematics

Mid-Atlantic Rail Operations Study

The I-95 Corridor Coalition's MAROps Study identified 71 major rail choke points requiring \$6.2 billion in improvements of 20 years

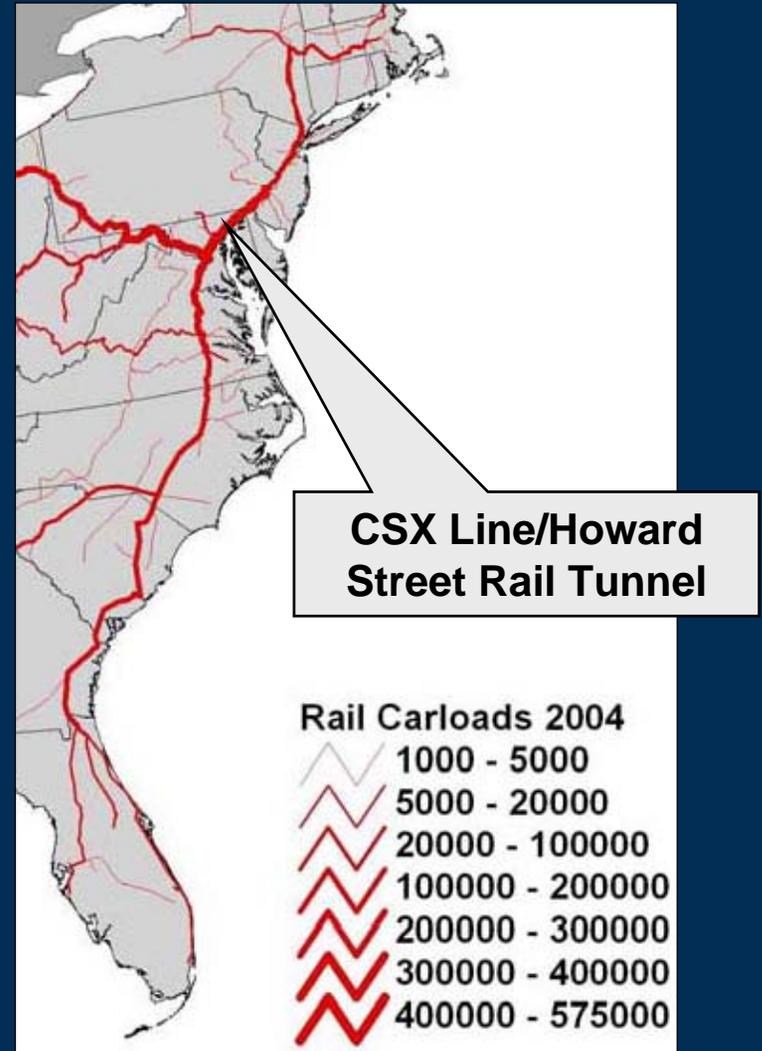


Study Participants:
 CSX, NS, and Amtrak
 NJ, PA, DE, MD, and VA
 I-95 Corridor Coalition
 U.S. DOT/FHWA and FRA

Source: Cambridge Systematics, Mid-Atlantic Rail Operations Study.

Howard Street Rail Tunnel

The tunnel is a critical rail link for Maryland shippers and receivers, and a critical link for shippers and receivers across the Eastern U.S.



Estimated Benefits to the MAROps Region from MAROps Improvements, 2005-2025

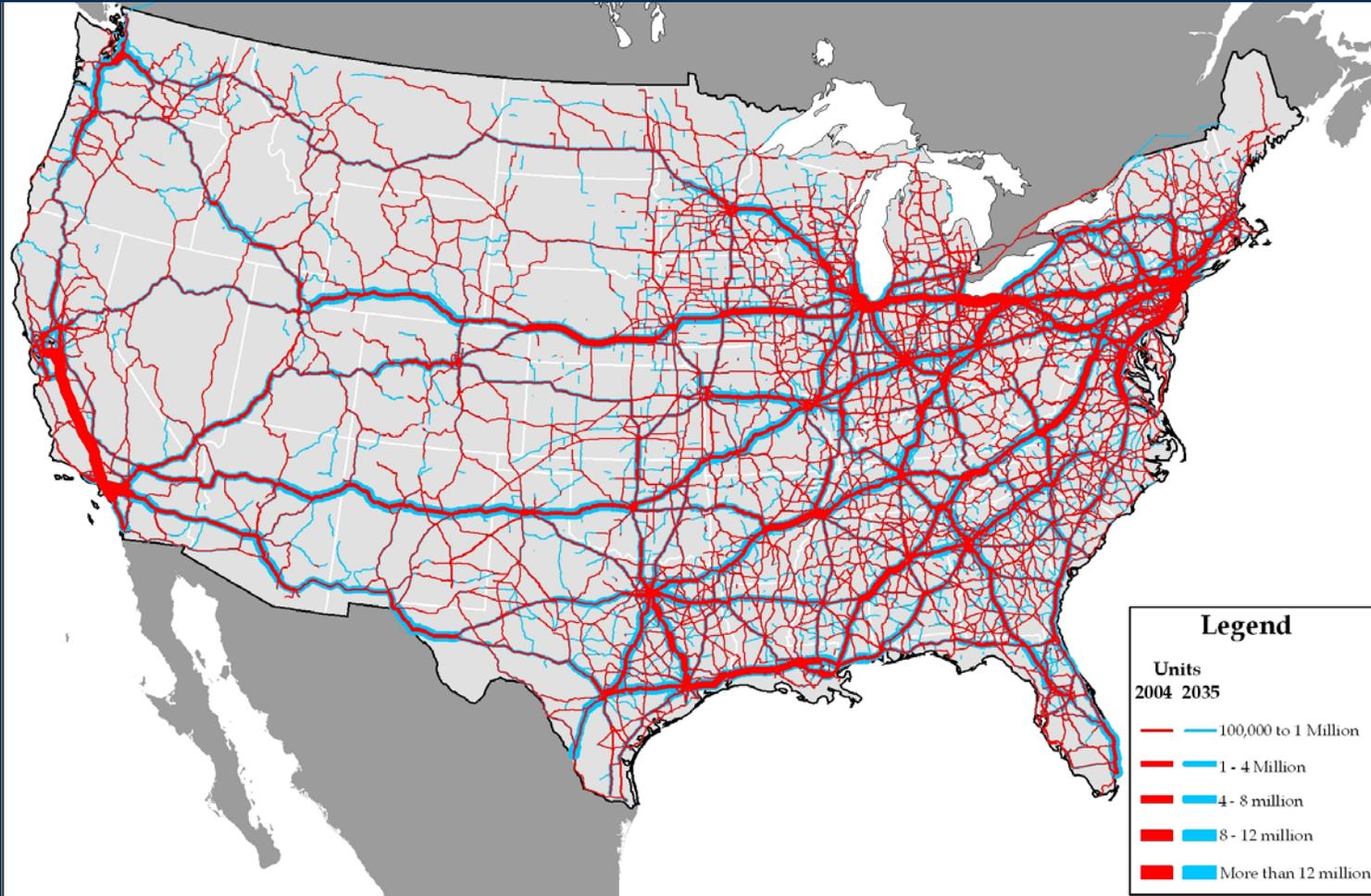
Benefit Category	Direct Benefits (Dollars in Millions, Current)	Indirect Benefits from I/O Model (Dollars in Millions, 2003)	Total Benefits (Dollars in Millions)
Shipper Cost	\$2,888	\$3,198	\$6,086
Highway User Cost (Auto, Non-Work Related)	\$4,831	--	\$4,831
Highway User Cost (Truck)	\$778	\$263	\$1,041
Highway User Cost (Auto, Work-Related)	\$659	\$221	\$880
Total	\$9,156	\$3,682	\$12,838

Source: Cambridge Systematics, *Mid-Atlantic Rail Operations Study*.

Truck-Freight Highway Flows in 2005 and 2035

Trucks per Year

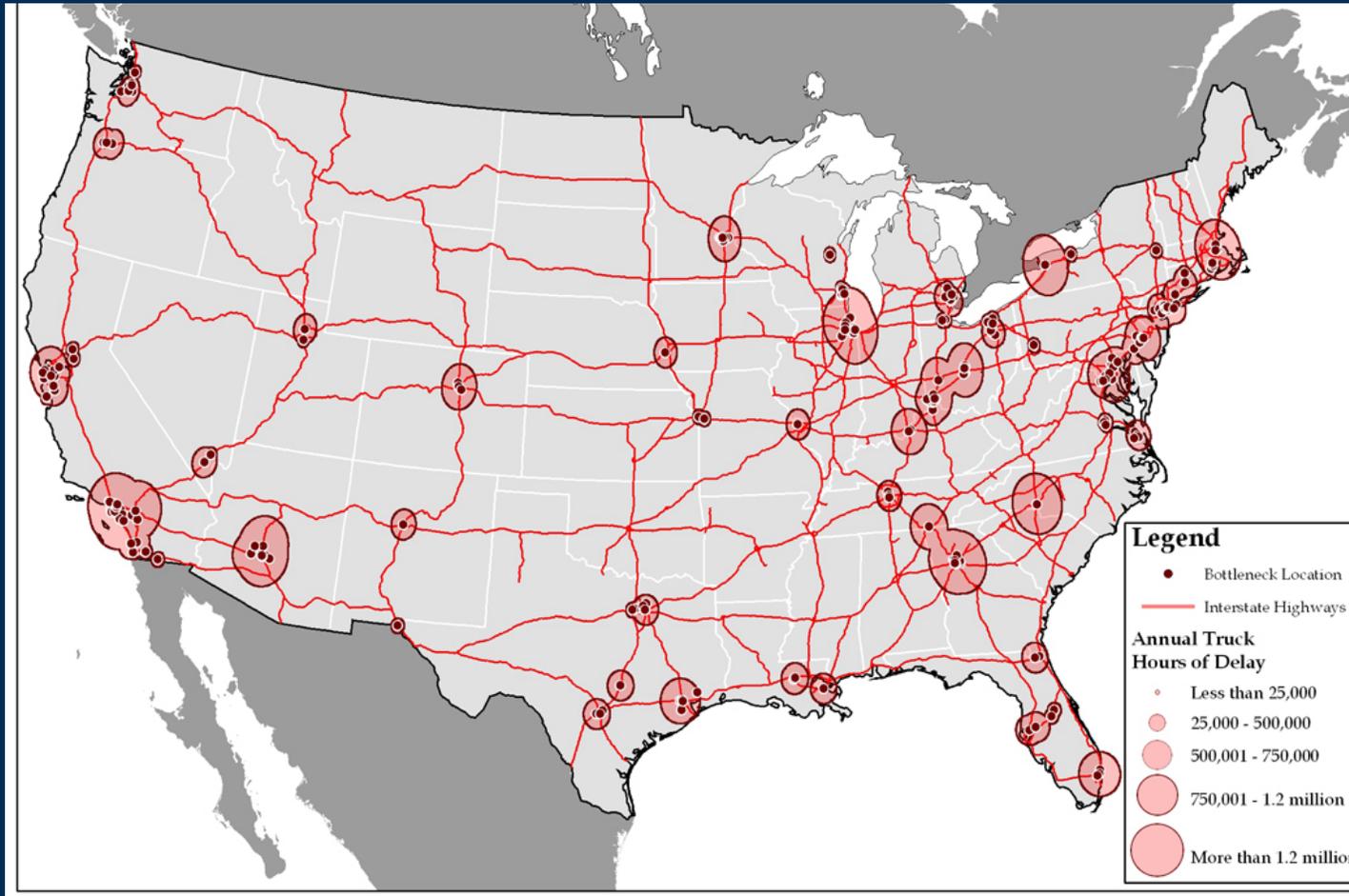
By 2035, every freight truck on the road today will have one more truck behind it; 2,500 miles of interstate will be carrying >50,000 trucks per day compared to 30 miles today



Source: Cambridge Systematics based on Global Insight 2004 TRANSEARCH data and economic forecasts.

Major Truck-Freight Bottlenecks, 2004

Highway bottlenecks caused 240 million hours of delay and cost truckers \$8 billion in lost time in 2004; urban interstate interchange bottlenecks accounted for most of the delay – about 124 million hours of delay at a cost to truckers of \$4 billion

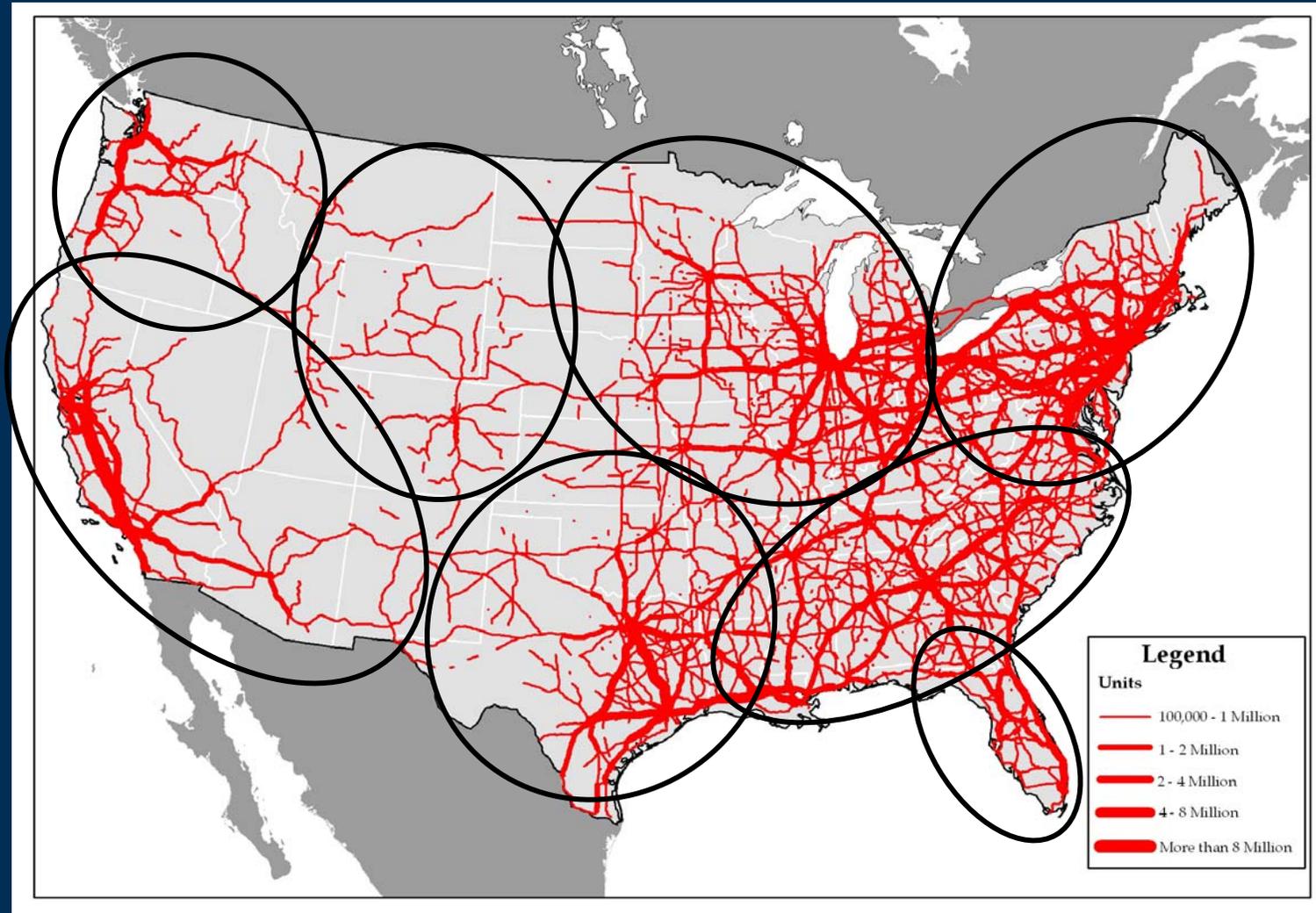


Source: Cambridge Systematics, Inc, "An Initial Assessment of Freight Bottlenecks on Highways," prepared for Federal Highway Administration, October 2005.

Multi-State Freightsheds and Freight Corridors

Truck Trips Between 100 and 500 Miles

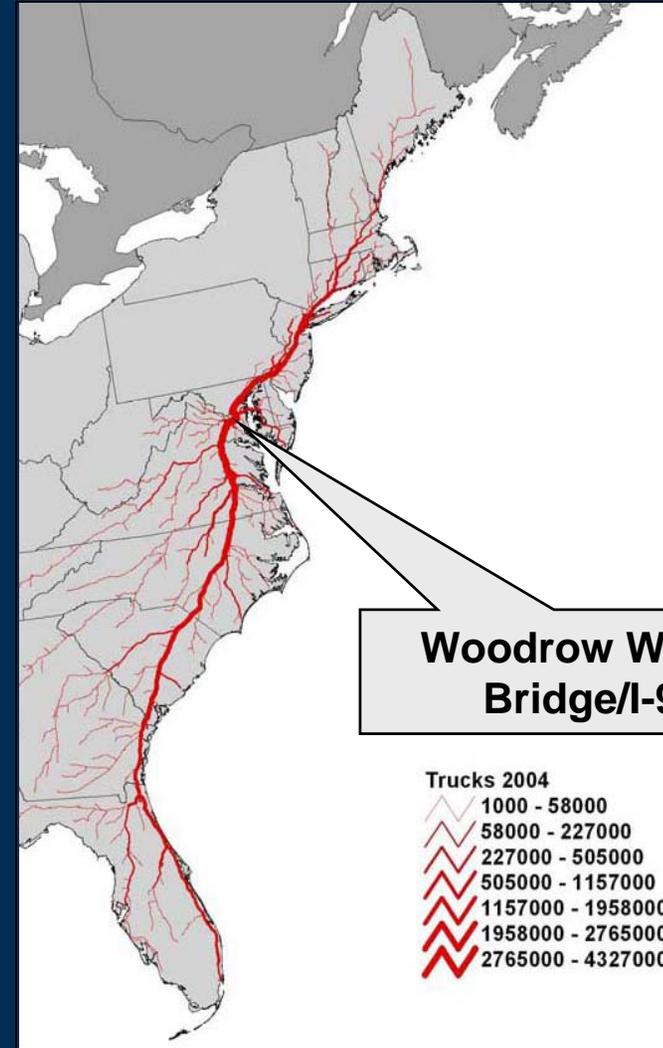
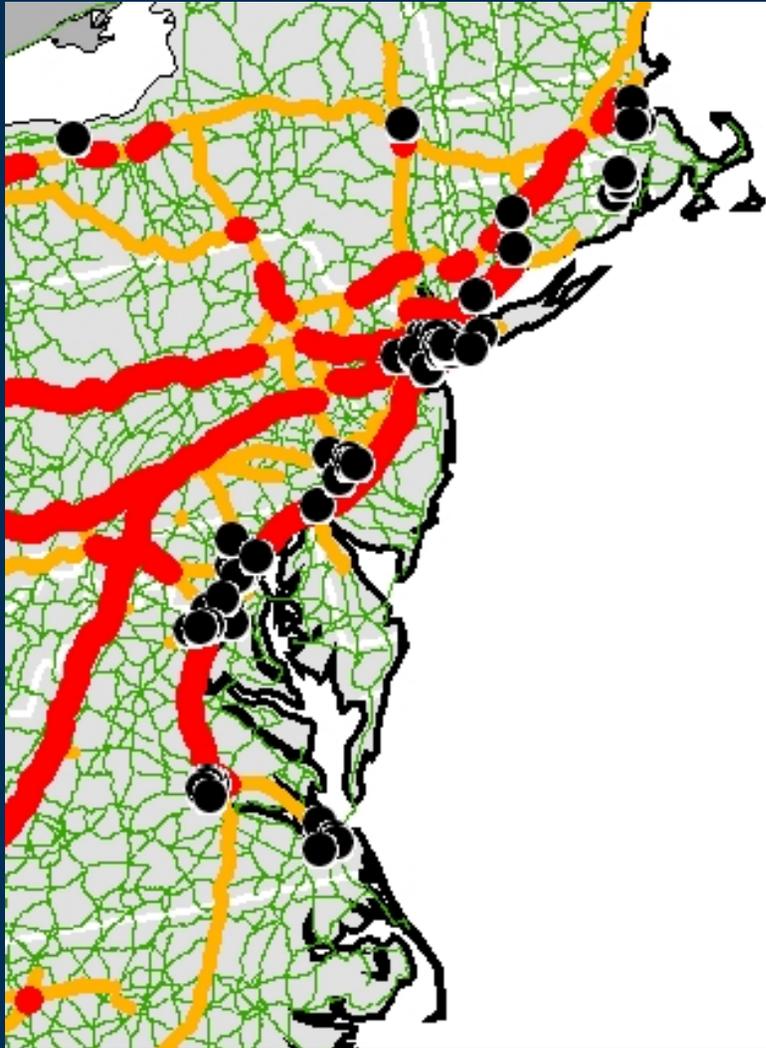
Most truck trips are within economic mega-regions



Source: Cambridge Systematics, AASHTO *Freight Transportation Bottom Line Report*, forthcoming, 2007.

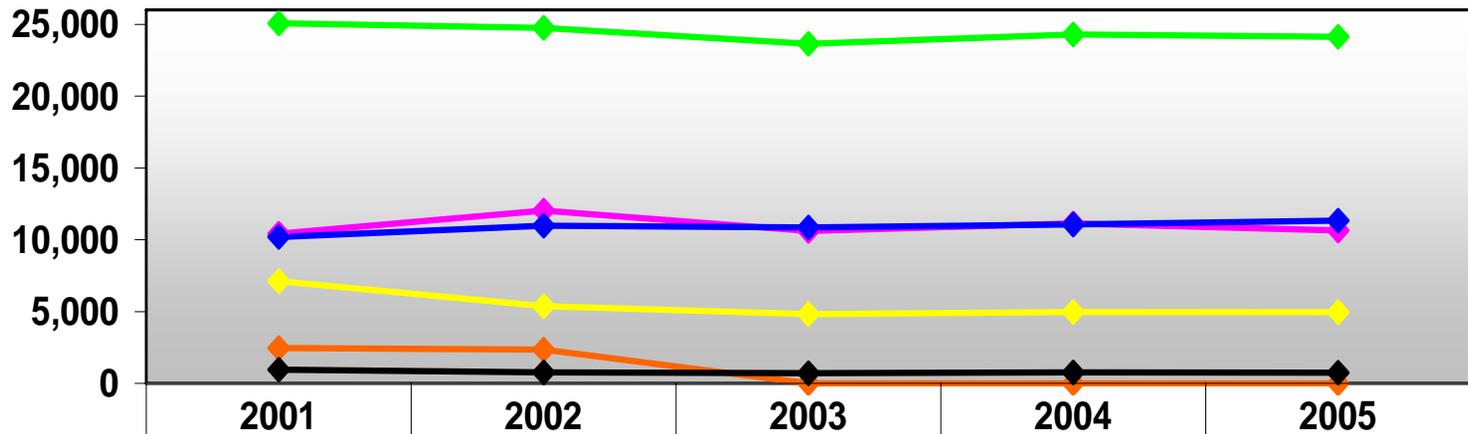
Mid-Atlantic Truck Operations Study

The I-95 Corridor Coalition's MATOps Study—led by Maryland DOT—is building a program to identify and mitigate the worst truck bottlenecks



Freight and Maryland Jobs

298 of Maryland's 611 major employers rely heavily on freight transportation; freight transportation employs over 50,000 Maryland residents



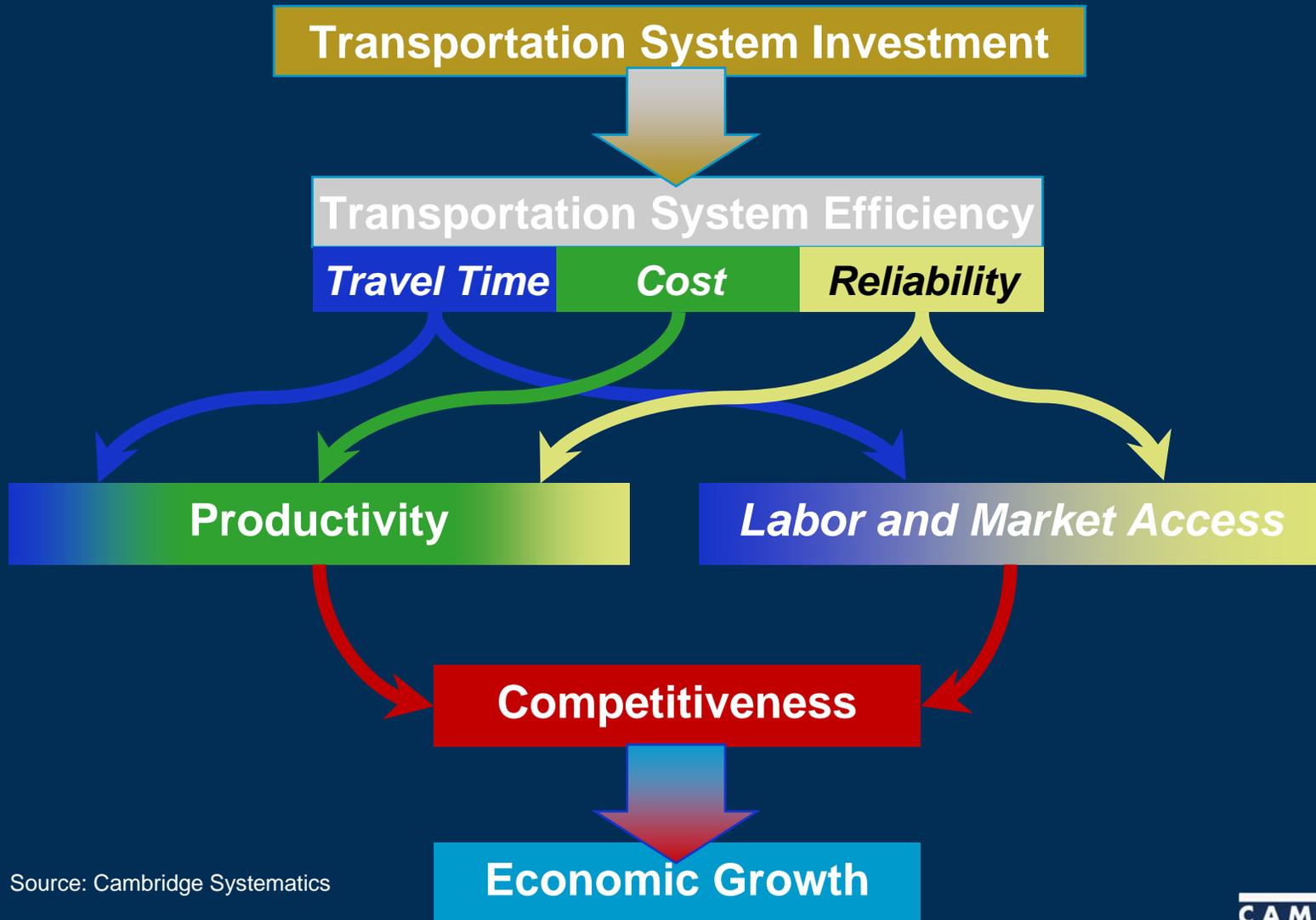
	2001	2002	2003	2004	2005
◆ Truck	25,064	24,755	23,631	24,287	24,120
◆ Warehousing	10,418	12,026	10,619	11,130	10,645
◆ Support	10,196	10,985	10,852	11,057	11,331
◆ Air	7,115	5,373	4,827	4,969	4,957
◆ Rail *	2,463	2,359	0	0	0

Note: Rail data not available after 2003 due to requirements of nondisclosure of confidential information

Source: Maryland Department of Labor, Licensing & Regulation

Economic Effects of Transportation

Transportation investments improve industry productivity and access to markets, resulting in greater competitiveness and growth



Source: Cambridge Systematics

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