

Integrating Logistical Data

presented to

**Workshop on Applications of Interoperable Modeling in
the Food and Consumer Goods Industry**

**The Data Center
Massachusetts Institute of Technology**

presented by

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Transportation leadership you can trust.

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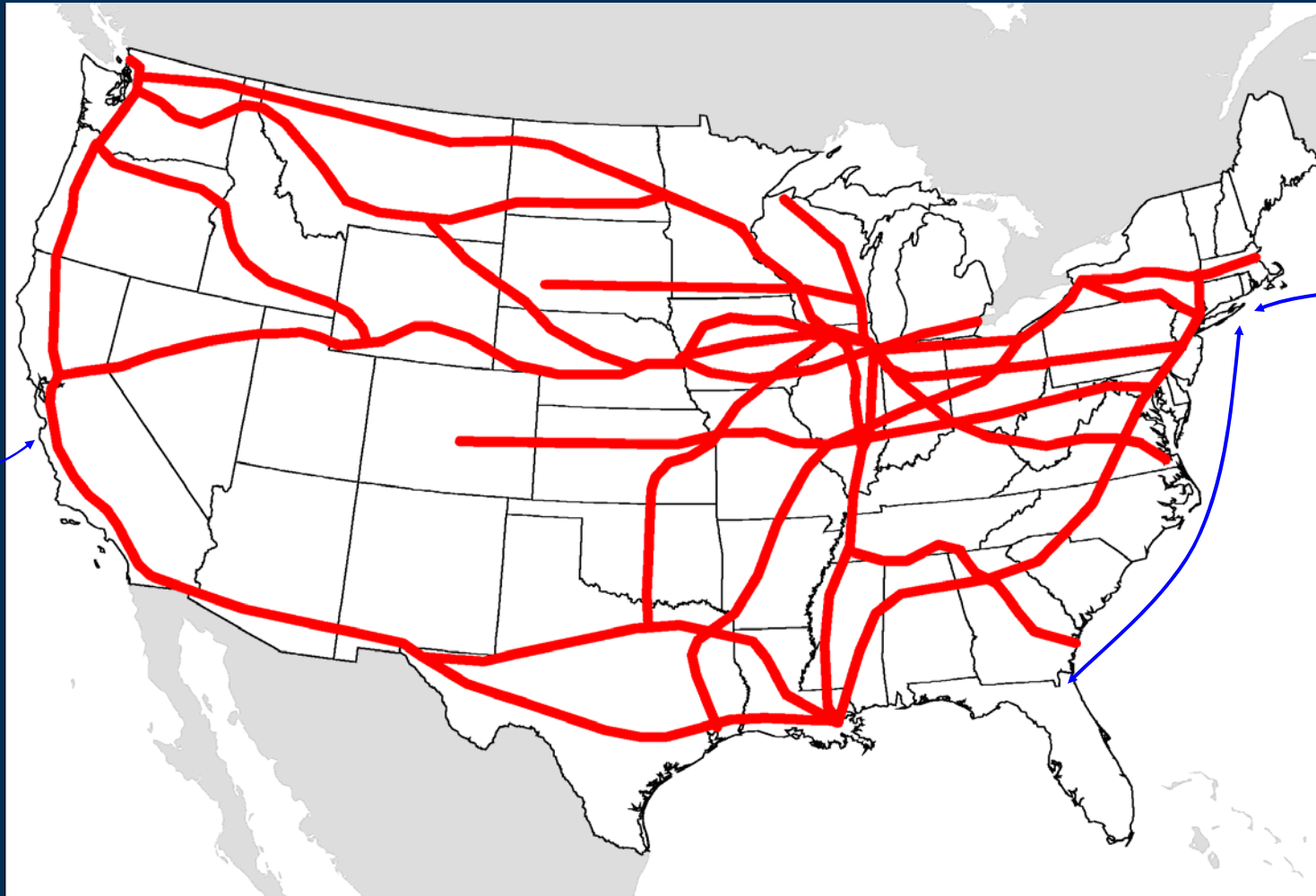
18th Century/Sail Era

Colonial economies were built on water transport; it cost as much to move a ton of goods 30 miles inland as across the Atlantic; 2 out of 3 settlers lived within 50 miles of the Atlantic coast; coastal and Atlantic trade dominated



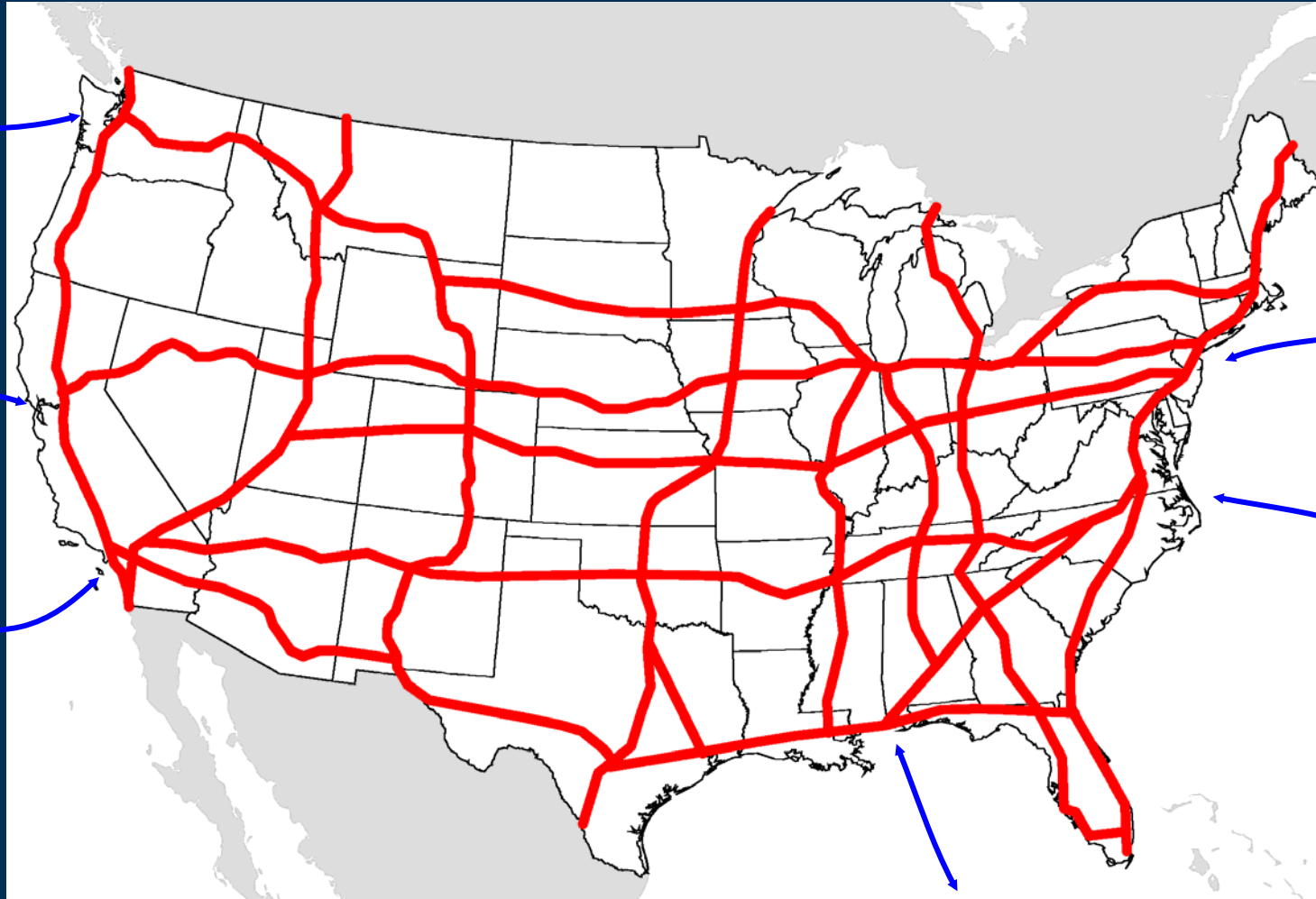
19th Century/Rail Era

Regional economies were built on rail technology that freed business and industry from ports; east-west rail lines were built to follow development of the Midwest and West; domestic trade dominated



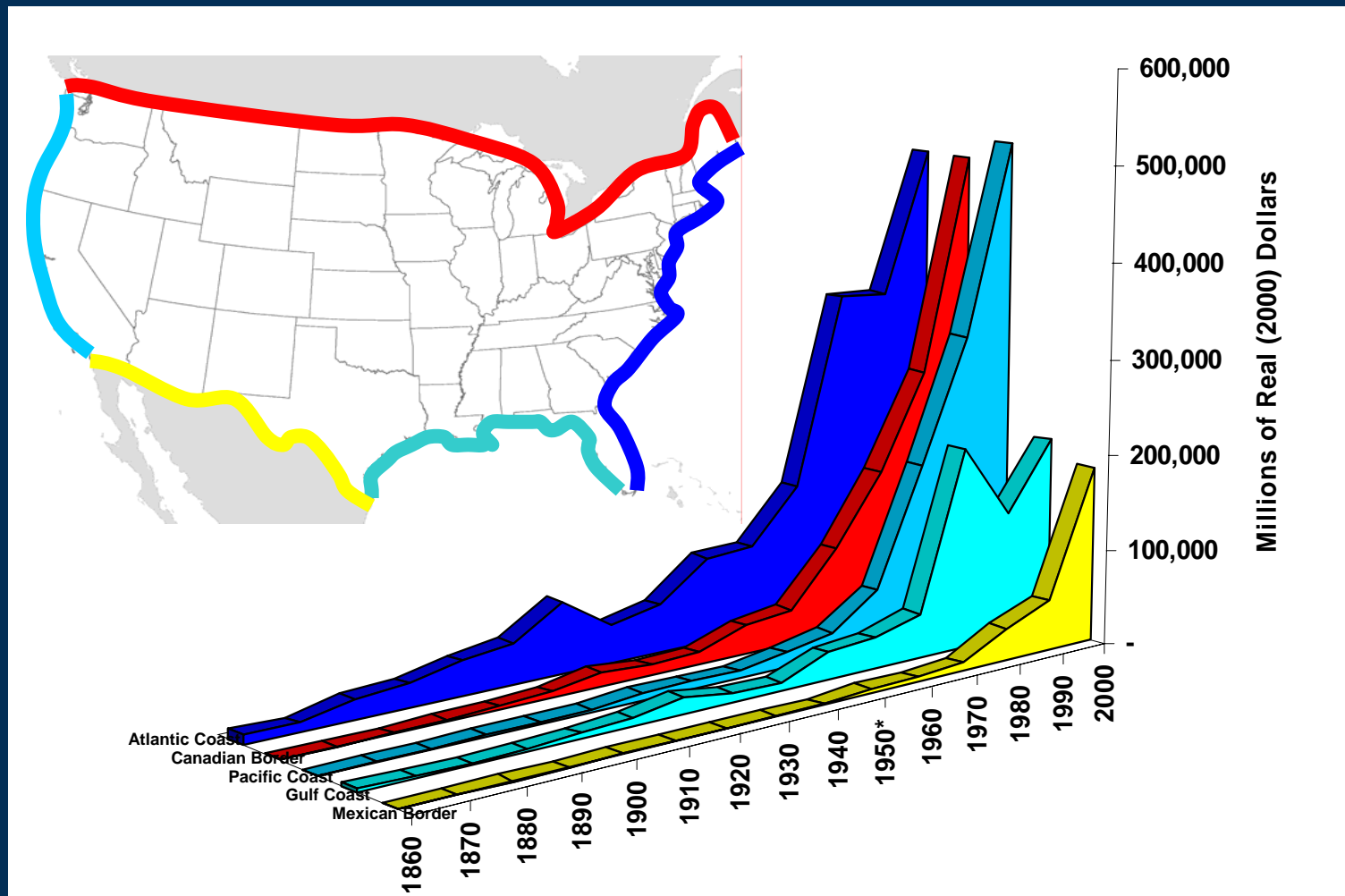
20th Century/Truck Era

National economy was built on truck and highway technology that freed business and industry from rail terminals; an east-west and north-south Interstate highway grid was built to connect cities and regional economies; Pacific and Gulf trade expanded

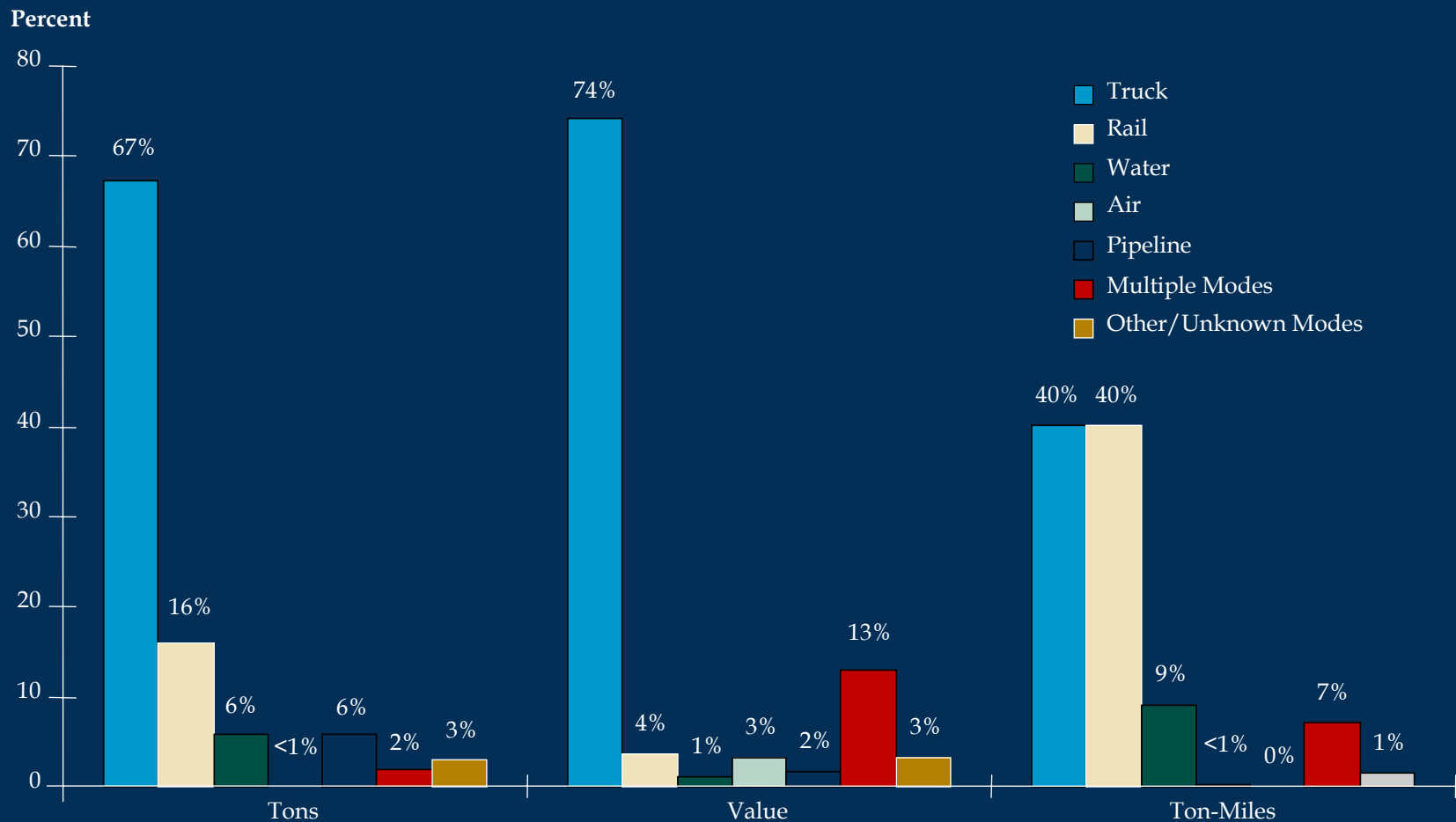


21st Century/Information Era

Global economy is being built on information, telecommunications, and low-cost, long-haul transport by water, rail, and air; north-south NAFTA trade is expanding rapidly



Freight Tons, Value, and Ton-Miles by Mode 2002



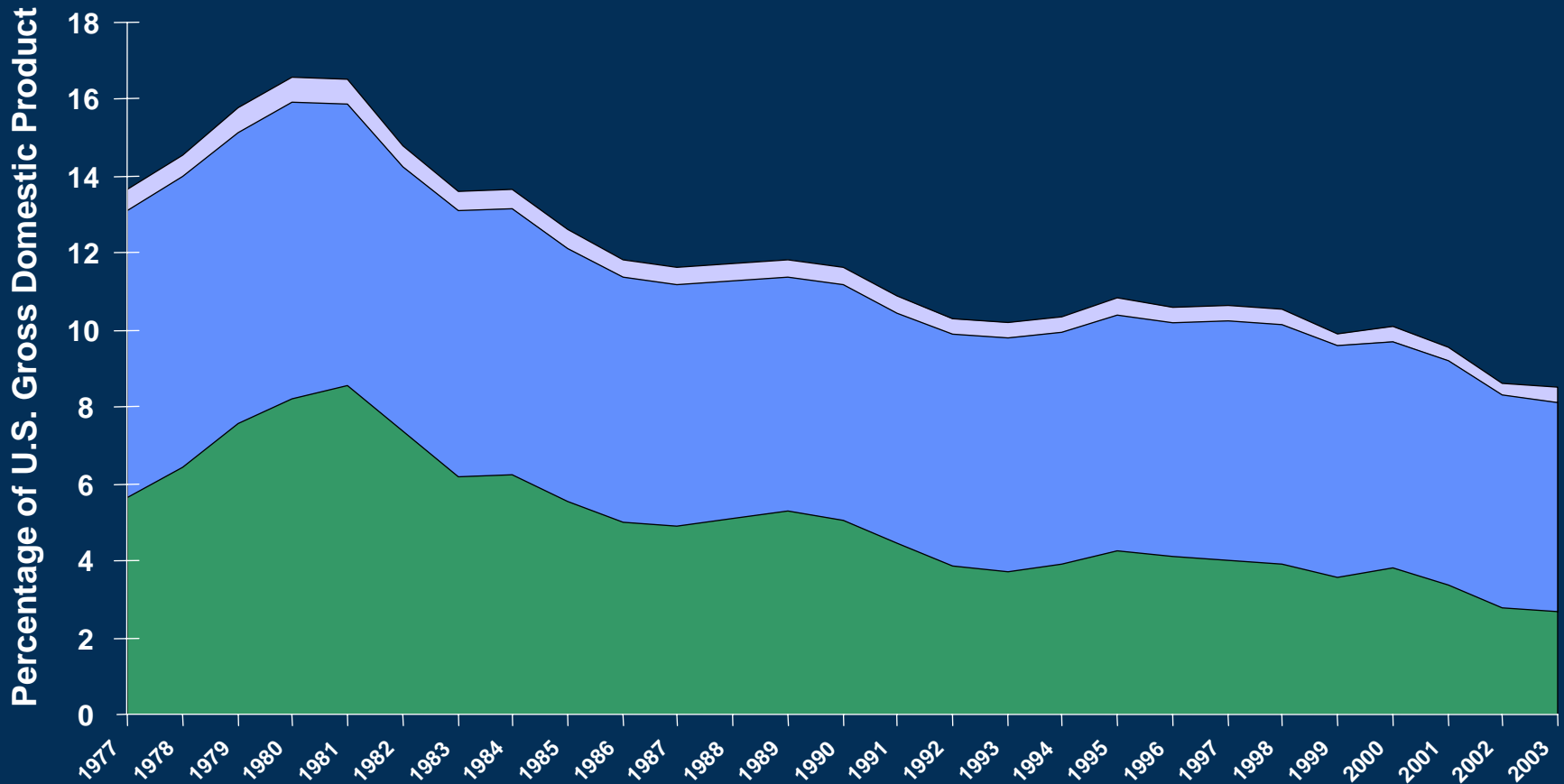
Source: Bureau of Transportation Statistics and U.S. Census Bureau, "2002 Economic Census, Transportation, 2002 Commodity Flow Survey," Table 1b.

Average Annual Daily Truck Traffic 1998



Source: FHWA Freight Analysis Framework

Total Logistics Cost Percentage of U.S. Gross Domestic Product

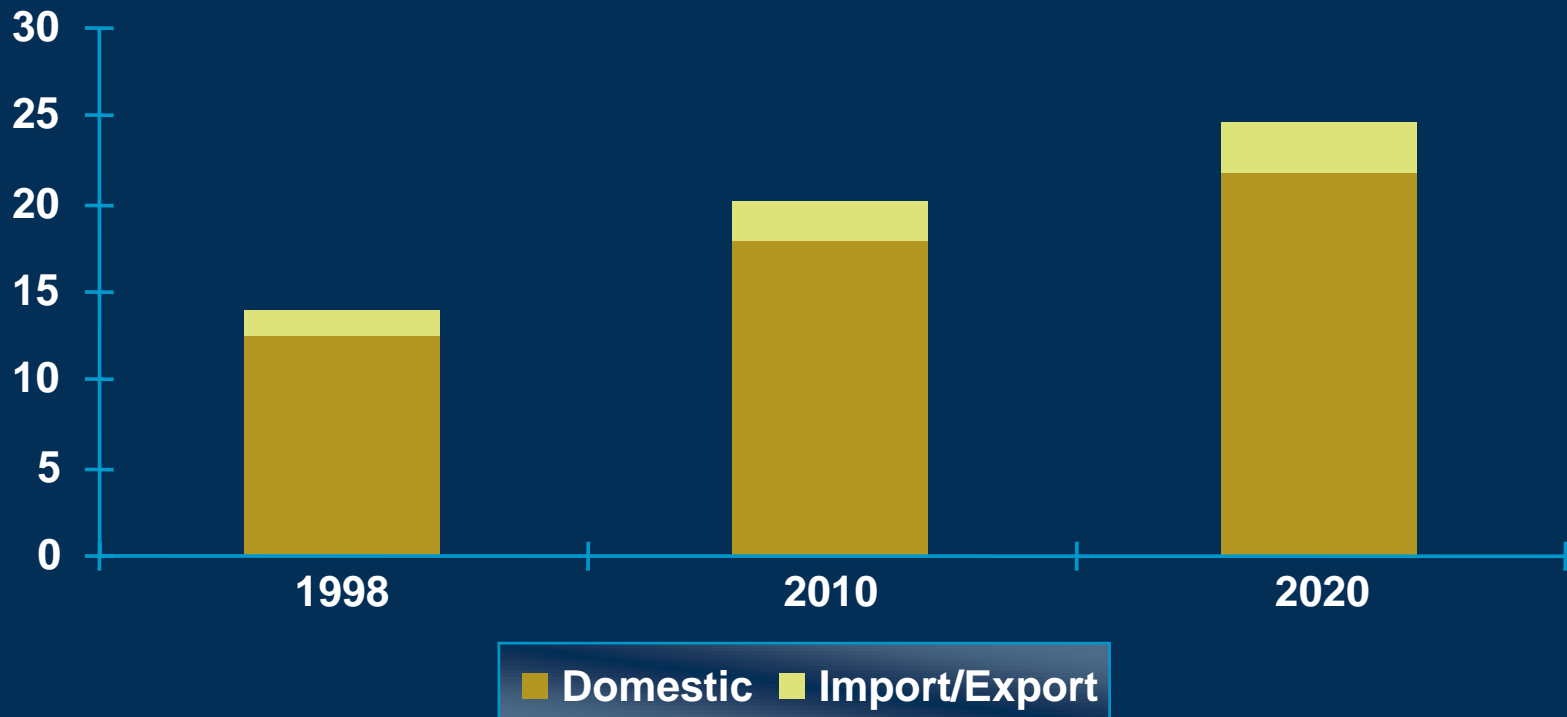


Source: Rosalyn A. Wilson, *State of Logistics Report*, Council of Logistics Management, 2003

U.S. Freight Tonnage Forecast 1998 to 2020

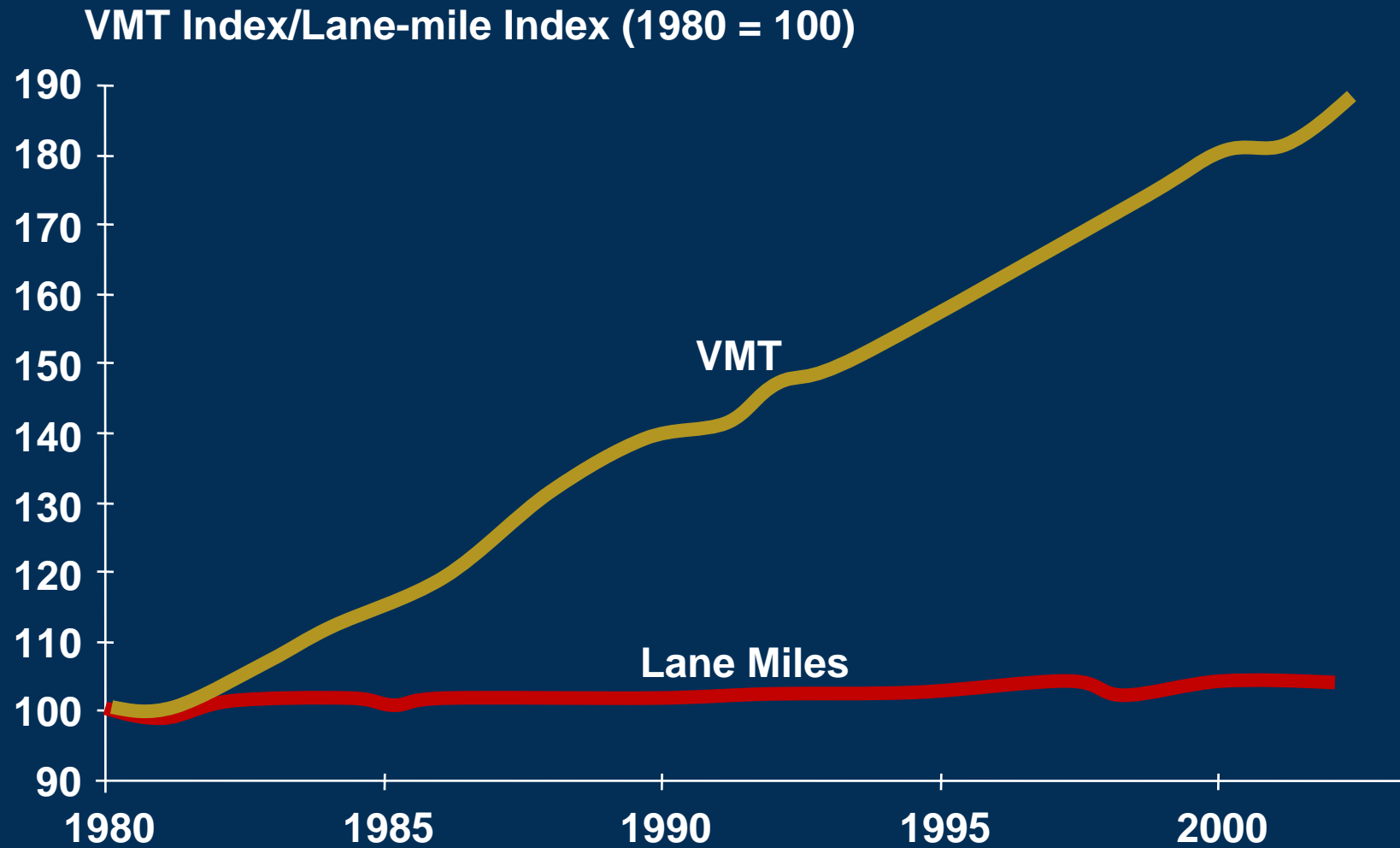
- With moderate economic growth (about 3 percent CAGR), import/export freight tonnage could double and domestic freight tonnage could increase by about 60 percent

Freight Tons (in Billions)



Source: AASHTO *Freight-Rail Bottom Line Report*, 2003 (prepared by Cambridge Systematics, Inc.)

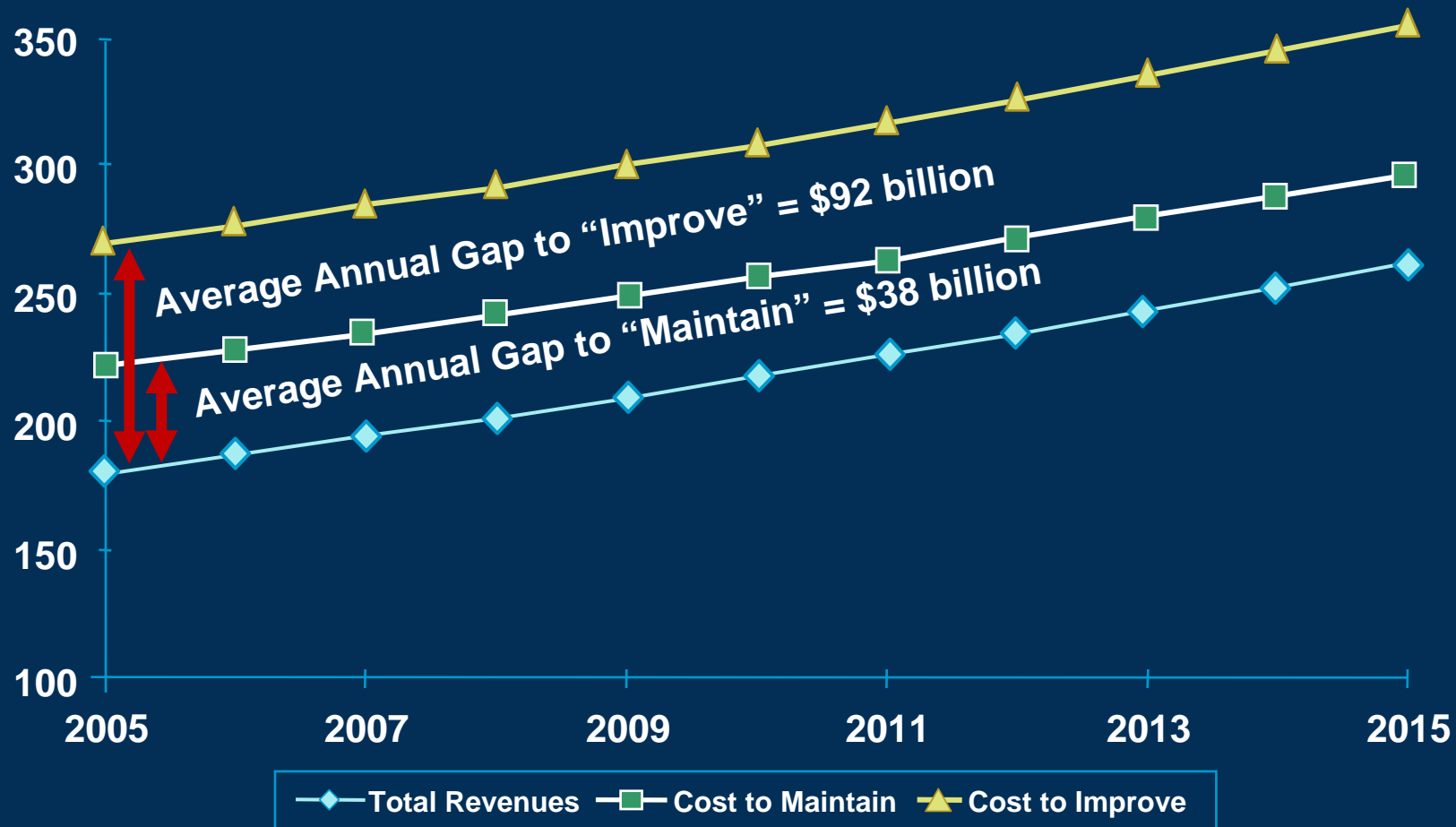
Vehicle Miles of Travel and Lane Miles 1980 to 2003



Source: Federal Highway Administration, Highway Statistics

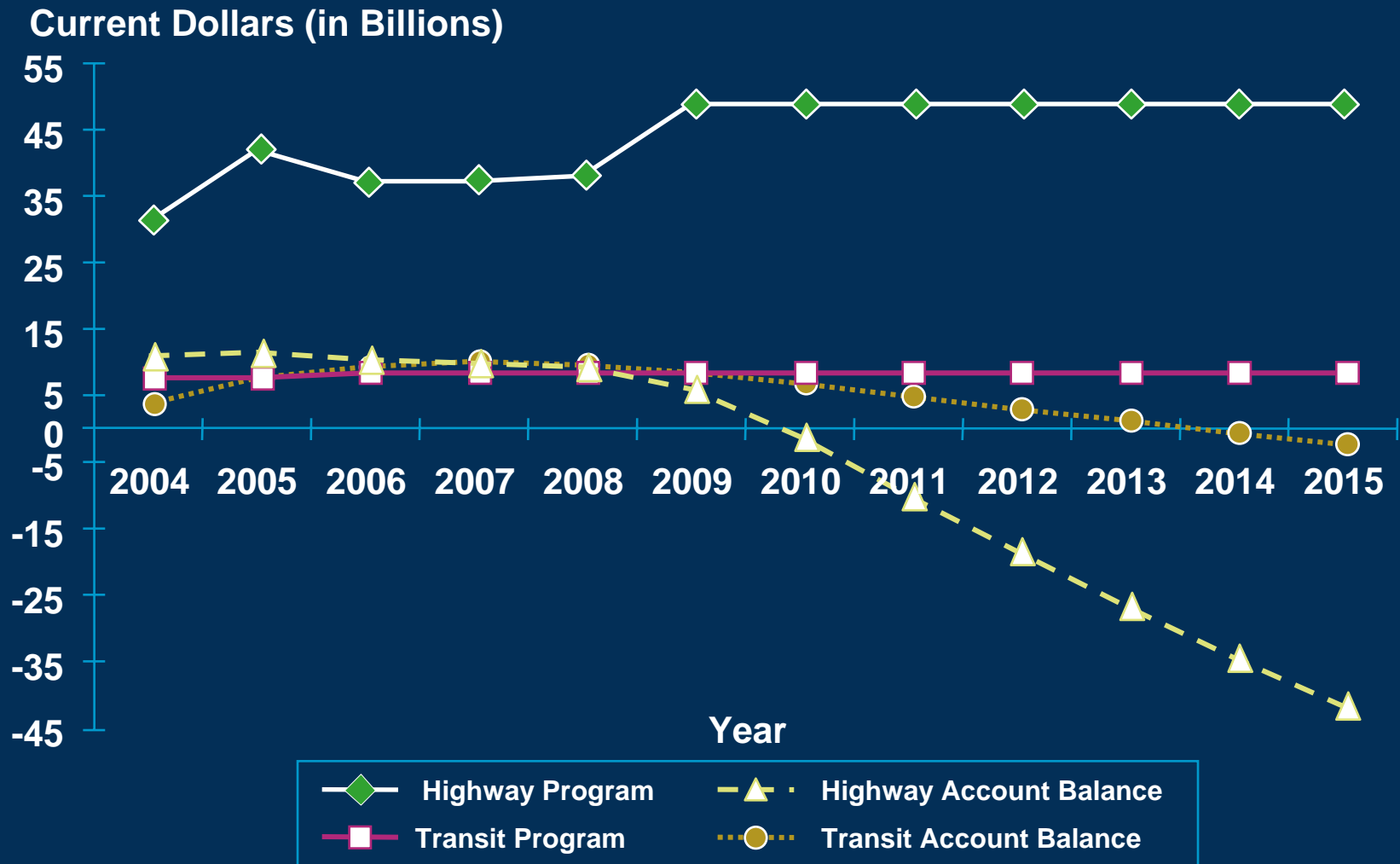
Annual National Highway and Transit Needs and Revenues 2005-2015

Current Dollars (in Billions)



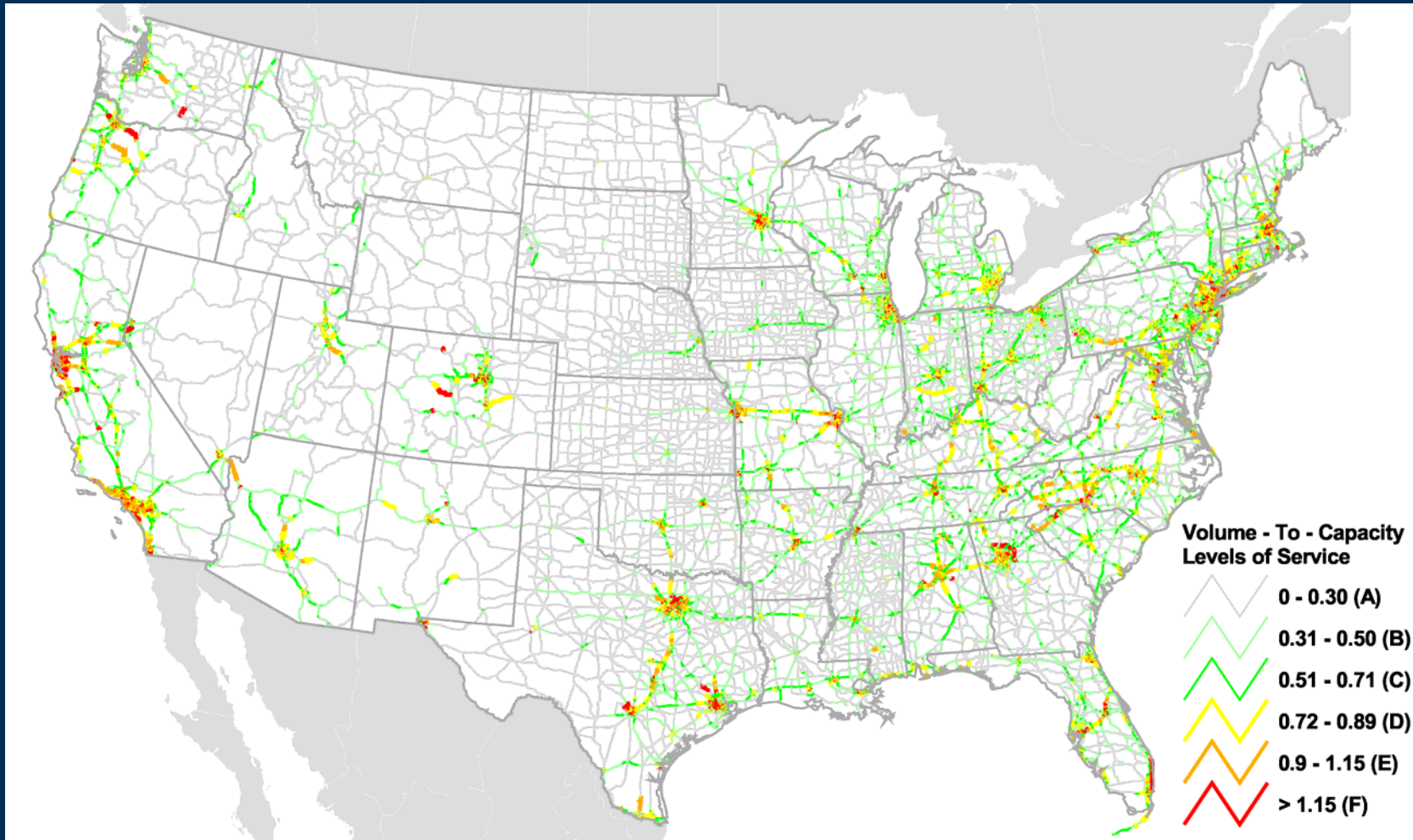
Source: "Future Highway and Public Transportation Finance Study, Phase I – Current Outlook and Short-Term Solutions." Prepared by Cambridge Systematics for the National Chamber Foundation of the U.S. Chamber of Commerce, May 18, 2005

Estimated Highway and Transit Program Levels and HTF Account Balances Under the Administration's Revised SAFETEA Proposal (Assuming Level Funding After 2009)



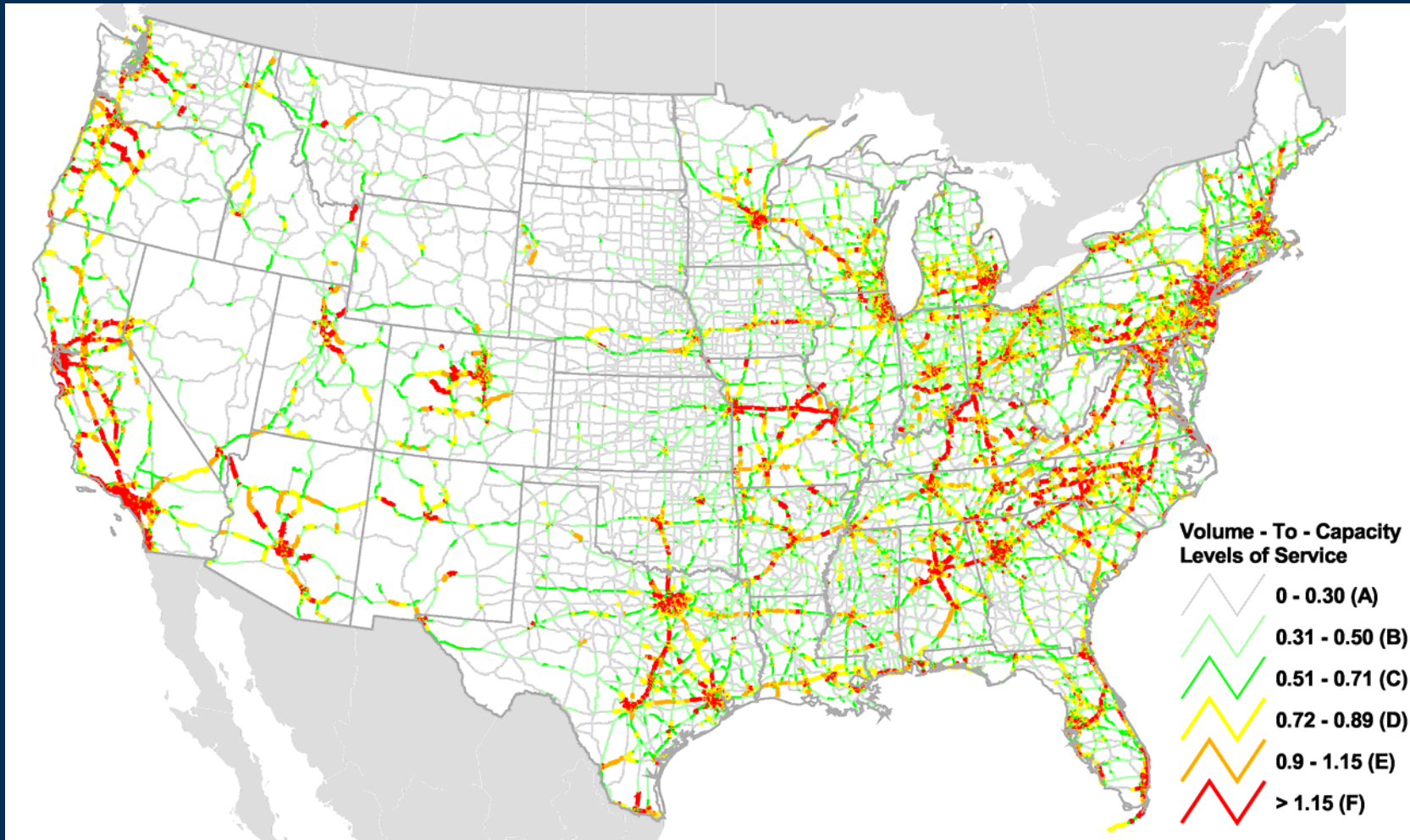
Source: "Future Highway and Public Transportation Finance Study, Phase I – Current Outlook and Short-Term Solutions." Prepared by Cambridge Systematics and Mercator Advisors for the National Chamber Foundation of the U.S. Chamber of Commerce, May 18, 2005

Congested Highways 1998



Source: Federal Highway Administration Highway Freight Analysis Framework data

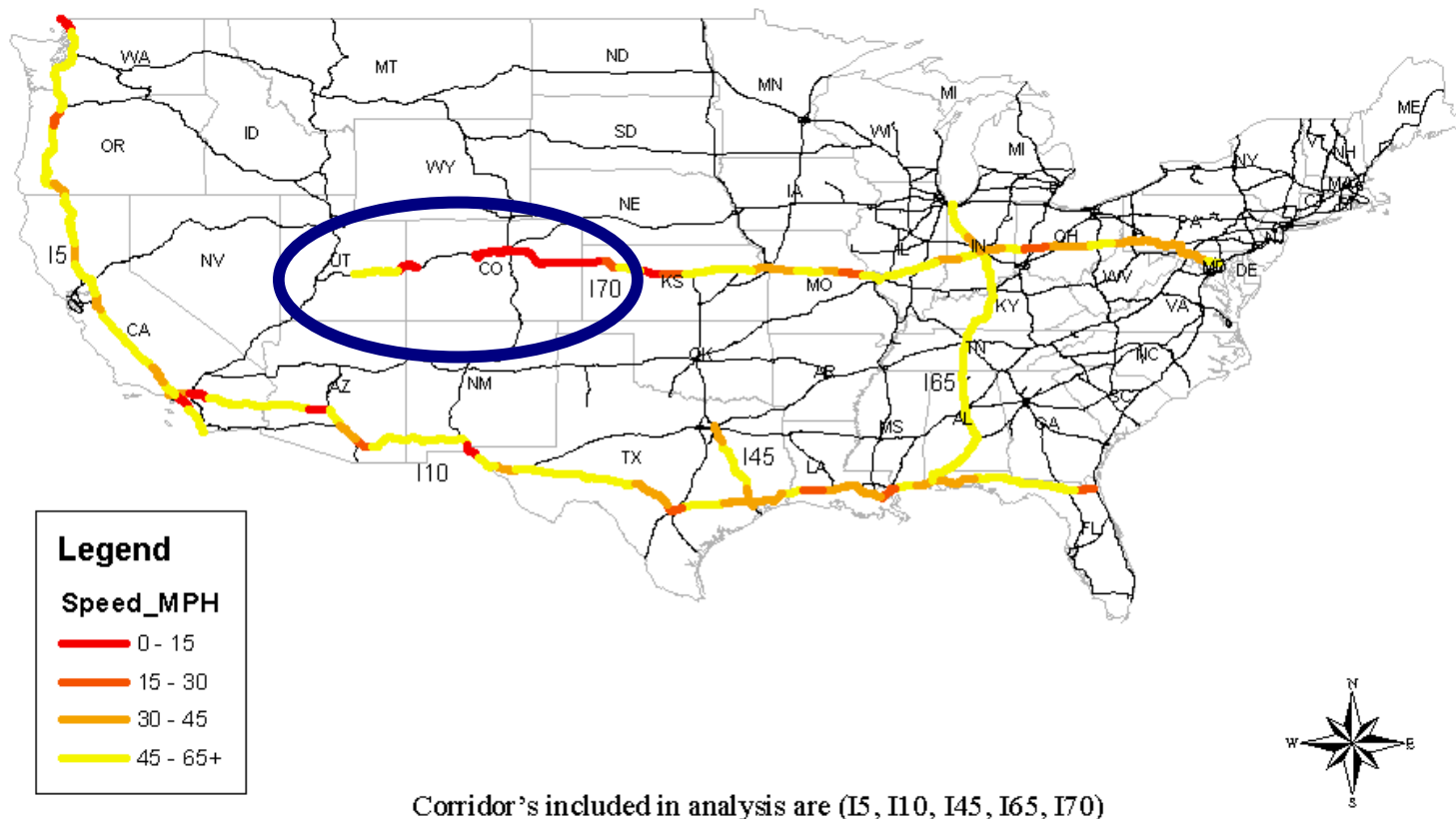
Potentially Congested Highways 2020



Source: Federal Highway Administration Highway Freight Analysis Framework data

Highway Speeds – Truck Probes

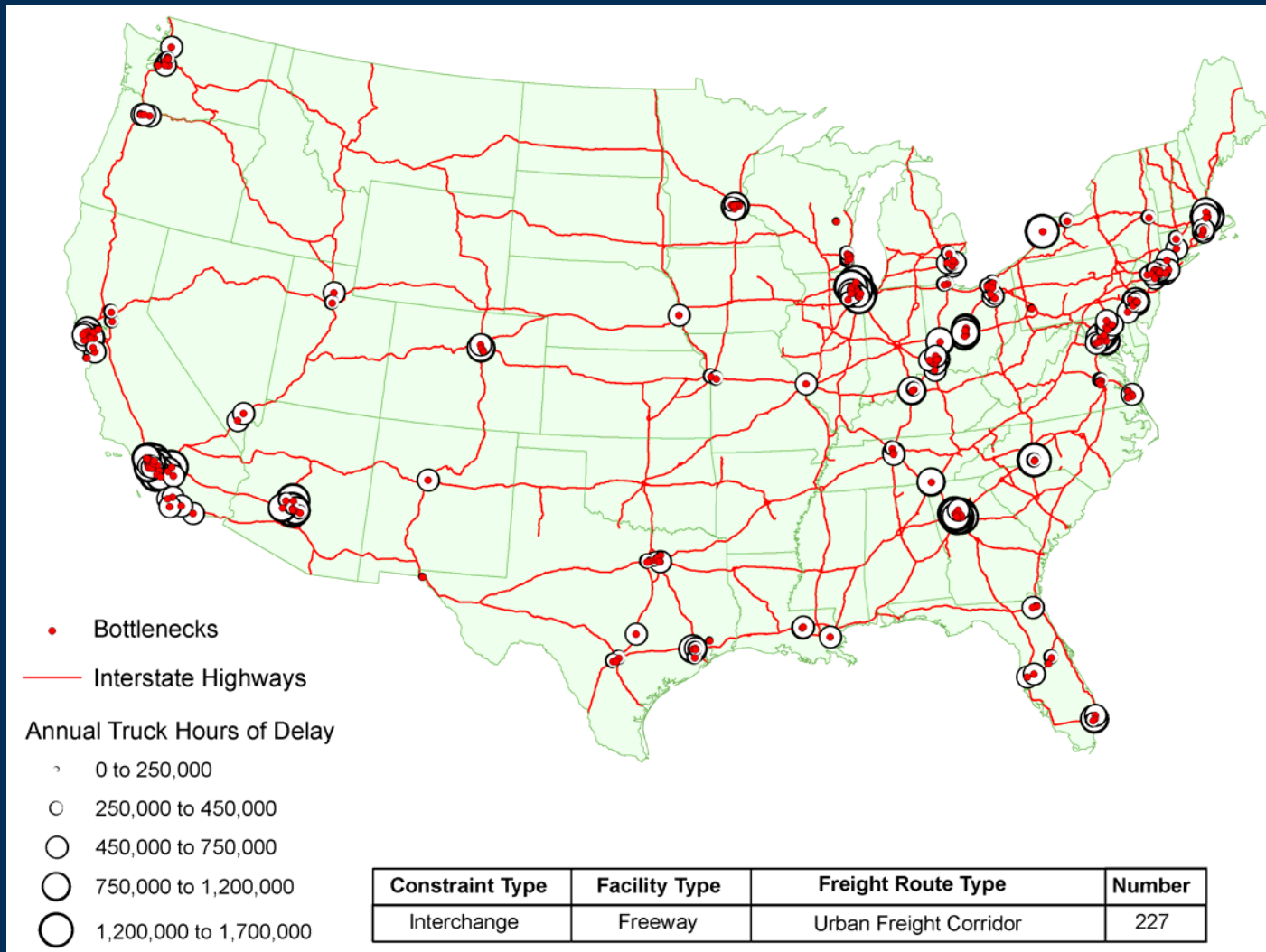
Corridor Data Based on March 19, 2003
From 12:00pm - 4:00pm PST
Truck Speed Calculation Based on 50-mile increments



Source: American Transportation Research Institute for FHWA, Travel Times in Freight Significant Corridors Project.

Truck Congestion Bottlenecks

Annual Truck Hours of Delay at Urban Highway Interchanges, 2004

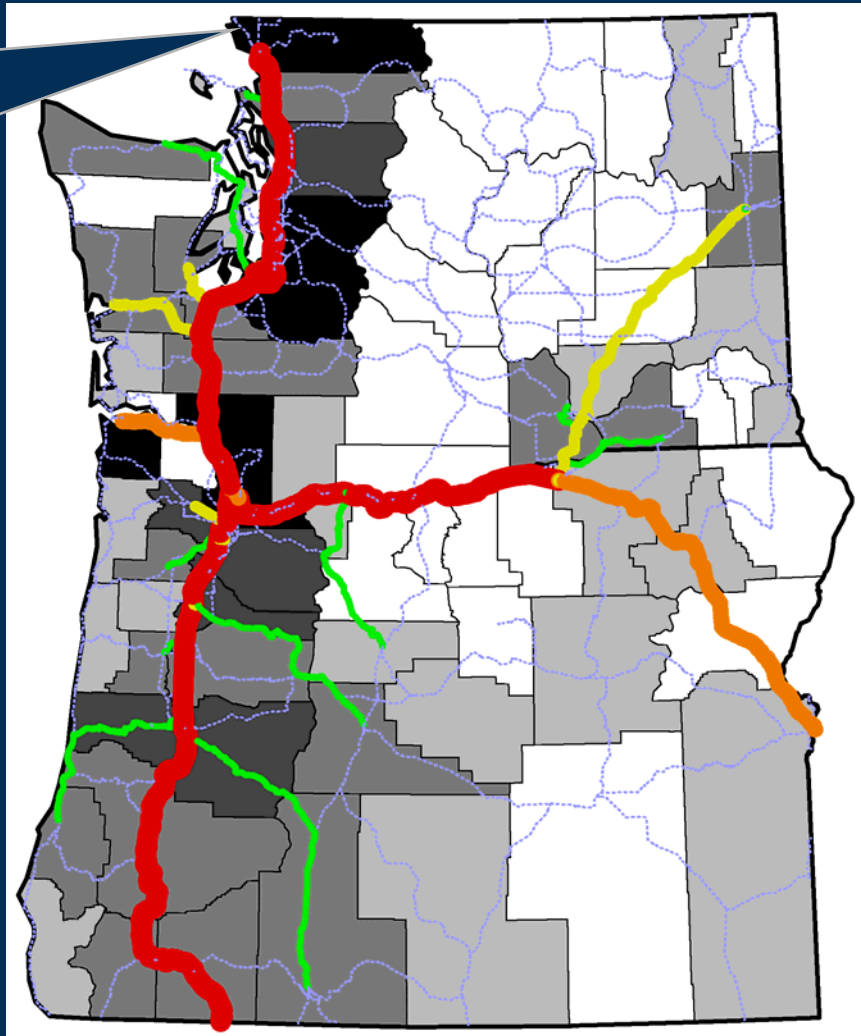


Source: Cambridge Systematics, Inc., prepared for the Federal Highway Administration, draft March 2005.

Oregon-Washington Origins and Destinations for Truck Freight Crossing the I-5 and I-205 Bridges at Portland-Vancouver

With Tonnage of Freight on Truck Routes Used to Access Bridge

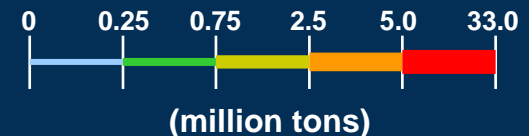
Note:
Commodities shipped to or from British Columbia are assigned to Whatcom County



Origins and Destinations of Truck Freight Crossing I-5 and I-205 Columbia River Bridges, 1998, All Commodities



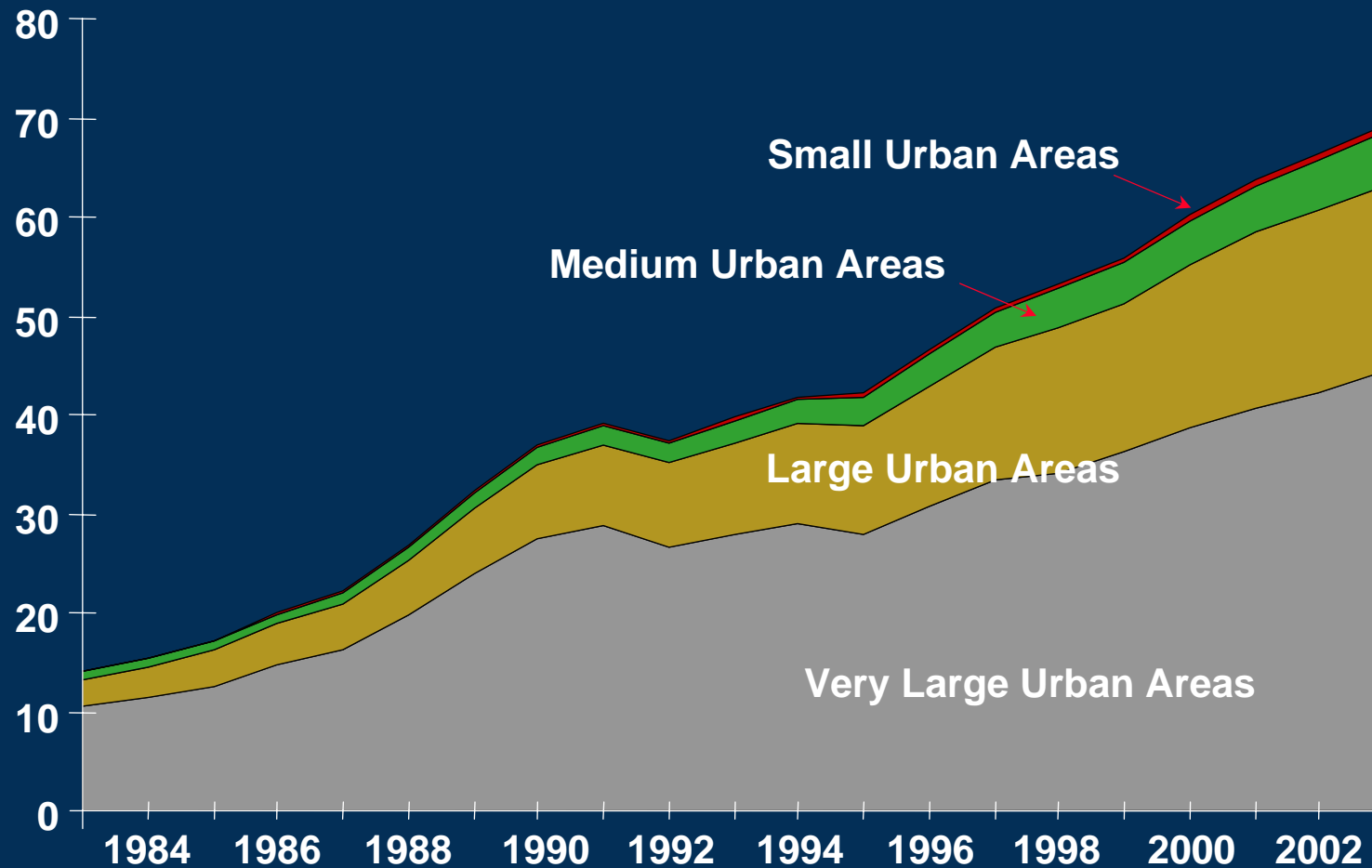
Volume of Truck Freight on Routes Used to Access I-5 and I-205 Columbia River Bridges, 1998, All Commodities



Source: Cambridge Systematics based on Reebie Associates TRANSEARCH data, 1998

Annual Congestion Costs 85 Metropolitan Areas

Annual Costs (in Billions of 2002 Dollars)

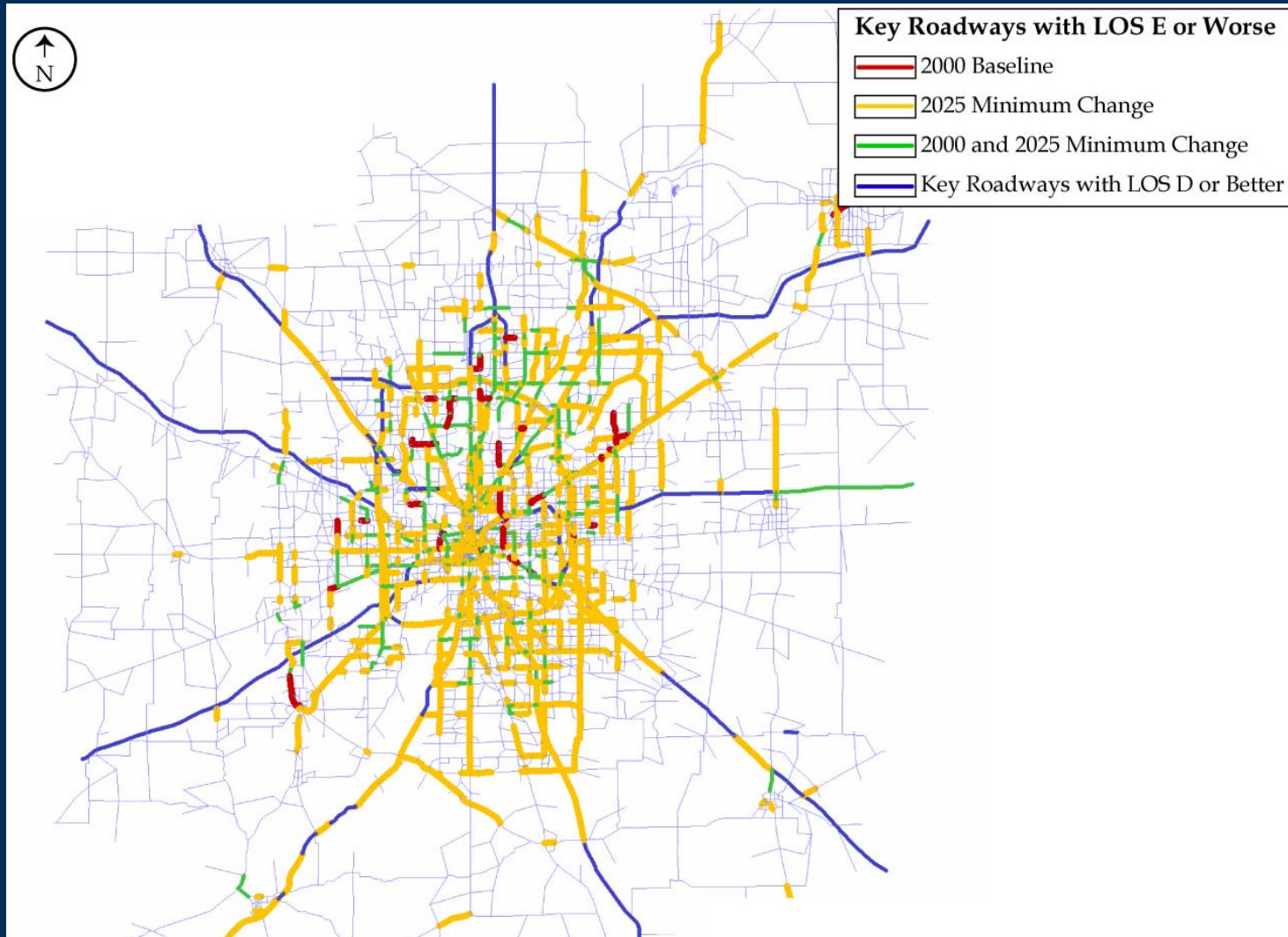


Source: Based on data reported by Texas Transportation Institute (TTI).



Source: Cambridge Systematics based on Georgia DOT and Atlanta Regional Commission data.

Highway Speeds – Automobile Probes



Source: Cambridge Systematics based on Indiana DOT and Indianapolis MPO data.

Integrating Logistical Data

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