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# **U.S. Logistics & Multimodal Transport Presentation**

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# Presentation Outline

- General Information about the U.S.
- Overview of U.S. Transport System
  - Rail Transport
  - Highway Transport
  - Multimodal Transport

# General Information About United States

- U.S. is a large country
- Land: 9,161,923 sq km (compare to China's 9,596,960 sq km)
- Distance
  - Los Angeles to NYC - 4545 km
  - Seattle to Miami - 5365 km
  - Oakland to Chicago - 3456 km
- Population - 307 million
- GDP - \$14 trillion

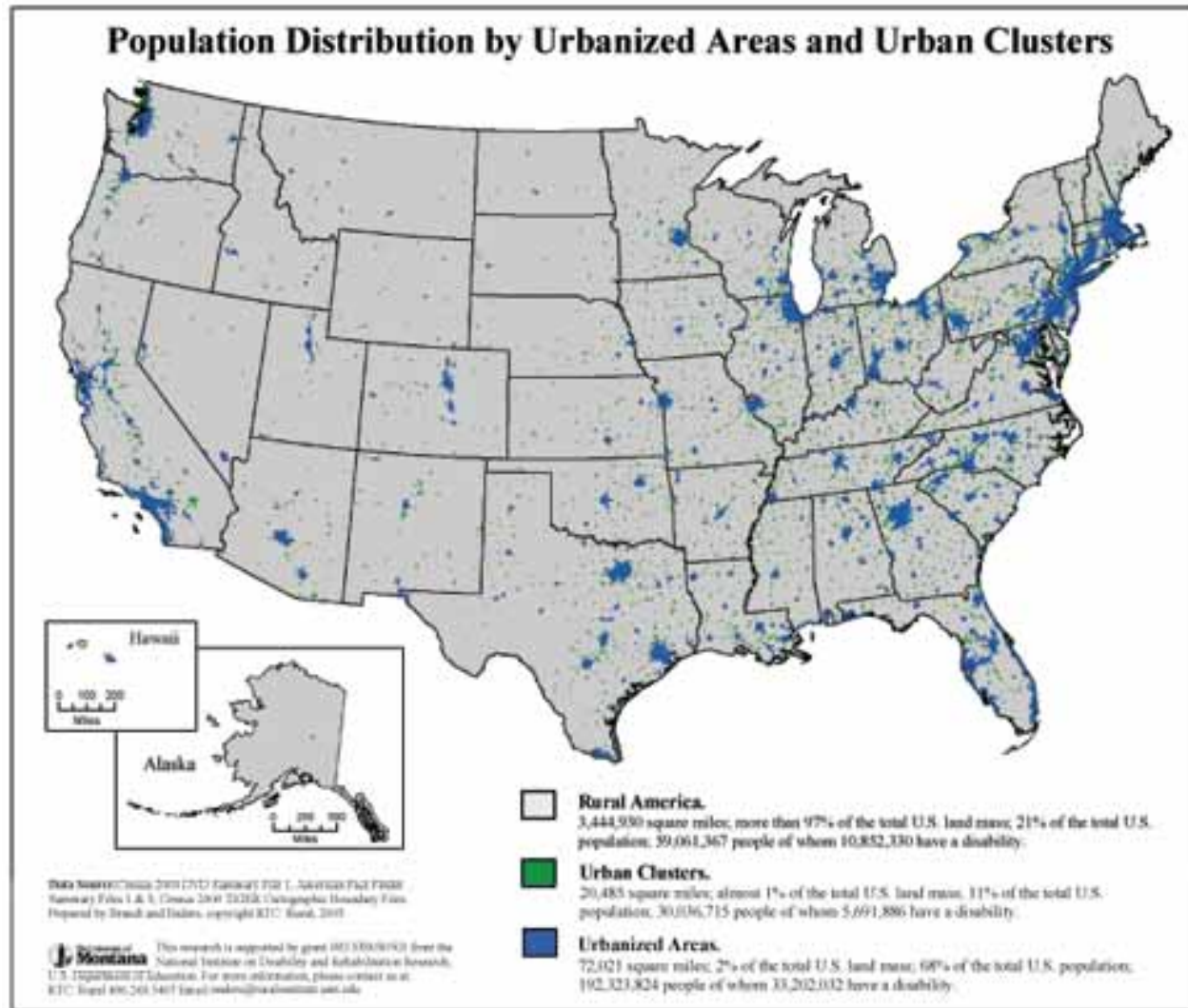
# U.S. - A Highly Urbanized Nation

- ❑ Urban area: 239,590 sq km, 3% of land mass
  - Urban Population: 237 million, 79% of total
- ❑ Rural area: 8,922,333 sq km, 97% of land mass
  - Rural Population: 63 million, 21% of total
- ❑ Population still moving to urban areas

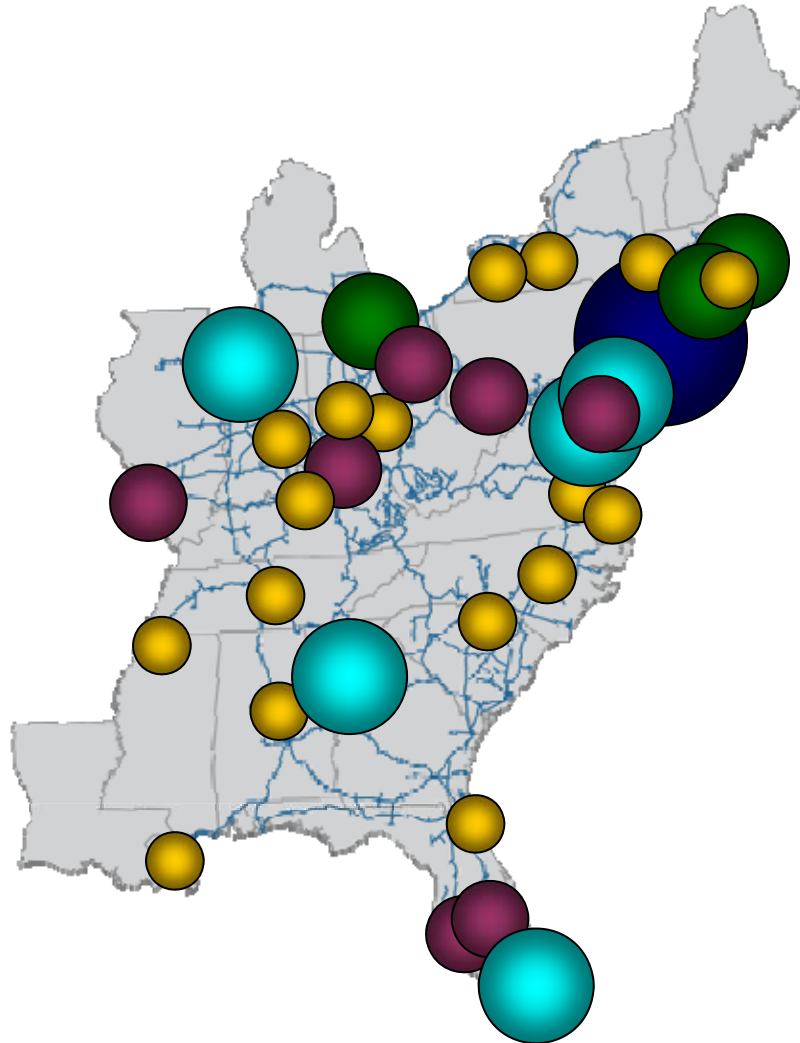


# United States Population Distribution

Efficient transportation is important to serve dispersed urban population



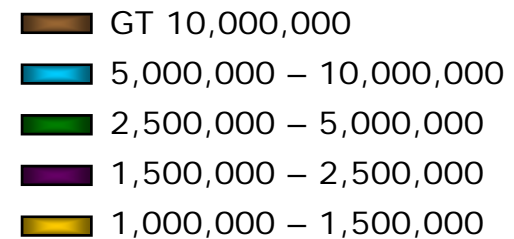
# U.S. Population Distribution Drives Multimodal Usage



Eastern U.S. region holds 66% of the U.S. population

Approximately 75% of U.S. consumption takes place in the East

Projected population growth will increase volume and capacity requirements



# U.S. is Advanced in Transport & Logistics System

- Global leader in multimodal transportation
- Highly advanced in logistics
- Excellent highway transportation system
- Well developed freight rail system
- Weak water transportation supported by subsidies & Jones Act
  - Mainly inland waterway (Ingram Barge) or short sea (Matson, Crowley)
  - Almost all deep sea carriers were acquired by foreign firms (American President Lines by NOL, Sealand by Maersk) or liquidated (US Lines)

# U.S. Transport & Logistics System

- Light transport regulation (focus on antitrust, safety and insurance), augmented by industry self regulation
- No regulation targeting logistics or multimodal transportation industry
- Transport deregulation in the nineteen eighties drastically improves efficiency and lowers logistics cost
- Logistics cost as a % of GDP dropped from almost 18% to 7.7% in 2009 (Half of China)
- Deregulation flushed out weak carriers
  - Only 2 of the Top 50 motor carriers survived
  - Only 5 major railroads left from almost 20

# U.S. Logistics Costs % of GDP is Among The Best

## What Drove Logistics Costs Down from 2000 to 2004?

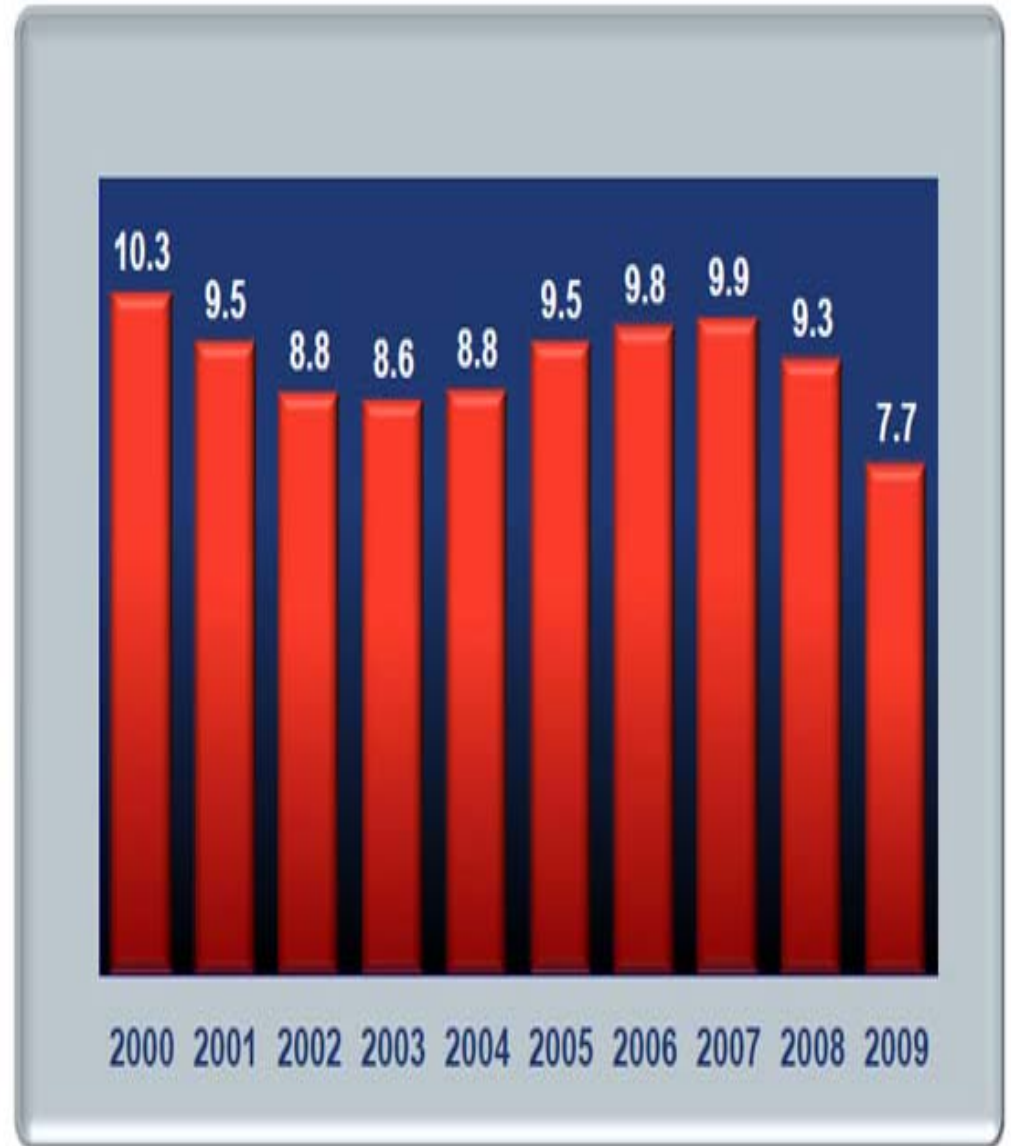
- ✓ Transportation deregulation
- ✓ Excess capacity
- ✓ Low fuel costs

## What Drove Logistics Costs Up from 2005 to 2007?

- Higher fuel costs
- Congestion
- Aging infrastructure
- Public policy
- Increasing U.S. labor cost

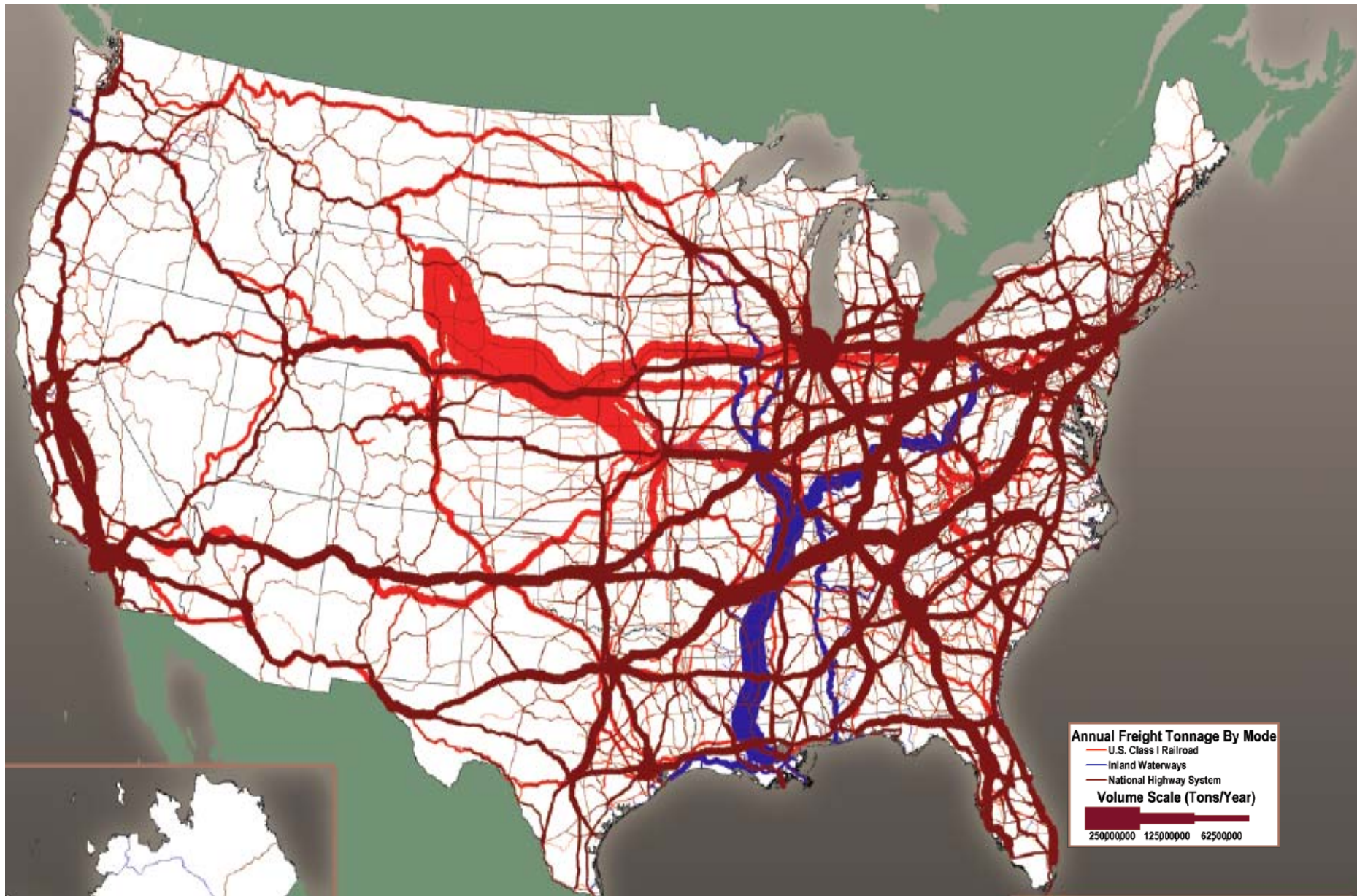
## What Drove Logistics Costs Down from 2008 to 2009?

- Lower fuel costs
- Low interest rate
- Excess carrier capacity





# U.S. Annual Freight Tonnage by Mode



# U.S. Rail Transport System



# Ranking of World's Rail System (Network Length)

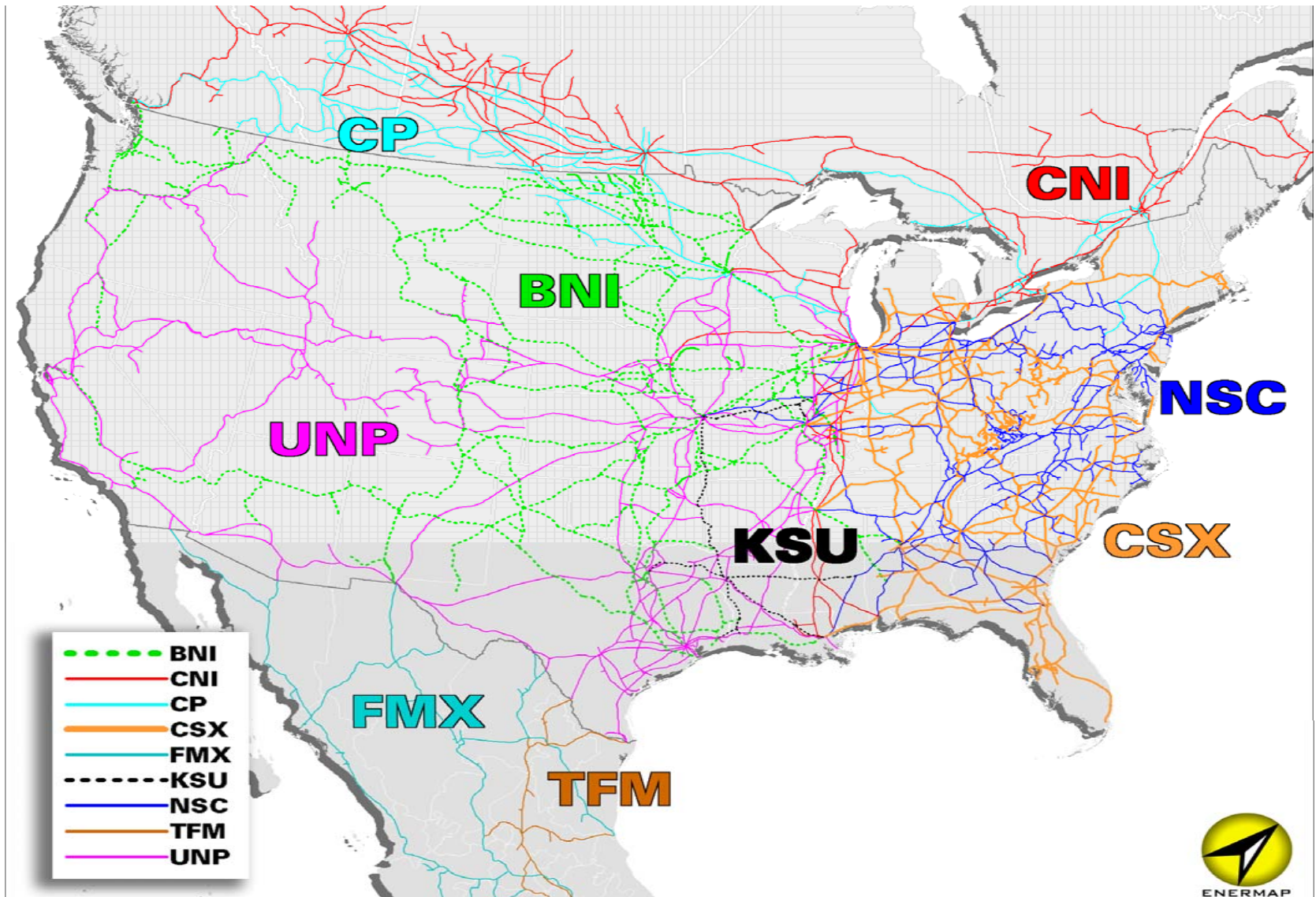
■ <u>United States</u>	226,612 km
■ <u>Russia</u>	87,157 km
■ <u>China</u>	100,000 km
■ <u>India</u>	63,221 km
■ <u>Canada</u>	48,068 km



# U.S. Rail Industry Structure

- Dominated by 5 major US carriers & 2 Canadian carriers (CN, CP) with large U.S. operations
  - BNSF & Union Pacific serve the West
  - Norfolk Southern & CSX serve the East
  - Kansas City Southern is the NAFTA railroad that operates the largest Mexican rail network
- Many short line and regional railroads with tiny market share

# U.S. Rail System Map (Data from Morgan Stanley Research)



# Current Situation of U.S. Railroads

- Unlike Chinese railroads, U.S railroads are freight oriented and offer only minimal passenger service
- After the deregulation shakeout, all major U.S. freight railroads are profitable today
- Amtrak - the only national passenger railroad, suffers huge loss every year
- Amtrak and metro passenger railroads depends on government subsidy to survive

# Ownership Structure of U.S. Railroads

- Unlike Chinese railroads, U.S. railroads are all privately owned (except Amtrak)
- U.S. Government fostered rail expansion with land grants
- U.S. railroads own their tracks, right of ways and operating assets
- No vertical separation or vertical access (except as part of merger requirement or by voluntary agreement)
- Parallel competition among railroads

# Major U.S. Rail Gateways & Ports

## Gateways

- Chicago is the most important gateway where all major railroads connect
- Midwest - St. Louis, Kansas City
- South - Memphis, Atlanta

## Ports

- West - Los Angeles (most important), Seattle/Tacoma, Oakland, Portland
- East - Port Elizabeth (most important), Charleston, Norfolk/Hampton Roads, Savannah, Miami/Port Everglades
- Gulf – Houston, New Orleans

# Integrated Rail - Sea Connection

## Port of Los Angeles





# Rail Capacity Allocated By Pricing

- U.S. railroads are generally free to set transportation rates based on market forces (multimodal rates are totally free)
- Rates are set based on value of service, cost, volume commitment, capacity and competitive factors
  - Long term contract and spot pricing
  - Confidential and published rates
- Improved pricing climate supports capacity expansion & service improvements

# Fast Multimodal Transit Time

- Chicago to Los Angeles (3,270 km)
  - Express intermodal trains 3rd morning (e.g. Depart 10pm Fri, arrive 5am Mon)
  - Container trains 4th day to 5th day
- Los Angeles to Chicago (3,270 km)
  - Express trailer trains 3rd day
  - Container trains 4th to 5th day
- Chicago to New Jersey (1,290 km)
  - Express trailer trains 2nd morning
  - Container trains 3rd day
- New Jersey to Chicago (1,290 km)
  - Express trailer trains 2nd morning
  - Container trains 3rd day



# U.S. Highway Transport System



# Ranking of World's Roadway Network

- U.S.A. 6.5 million km
- China 3.8 million km
- India 3.3 million km
- Brazil 1.8 million km
- Japan 1.3 million km

# Highway Carriers Are Classified by Weight of Cargo Carried

- **Truckload (TL)** - generally over 10,000 lbs
  - Common (serves all shippers)
  - Contract (serves only shippers under contract)
  - Dedicated (provides customized services to a small number of shippers under contract)
- **Less Than Truckload (LTL)** - generally 70 to 10,000 lbs
  - Mostly Common
- **Parcel** – less than 70 lbs
  - Almost all are Common

# Highway Carriers Are Also Classified by Type of Commodities Transported

- General Commodities (mostly in Vans)
- Household goods (high cube vans)
- Expedited (often in small vehicles)
- Perishable, Temperature Controlled (reefers)
- Bulk (hopper)
- Gas and Liquid (tank)
- Flatbed
- Heavy, oversize (low boys)
- Explosives, ammunition (travel at night, carefully screened drivers)

# Current Status of Highway Carriers

- Since 1980s deregulation, all union TL and virtually all union LTL carriers have gone out of business (except YRC Worldwide, ABF)
- TL market is highly fragmented (carriers with over 1,000 trucks controlled only 16% of market)
- LTL market is concentrated in a small number of network carriers
- **Increasing rail usage in moving long distance cargo (e.g. multimodal is a core service of JB Hunt)**

# JB Hunt Truck Delivering 53ft Container to Multimodal Rail Terminal





# U.S. Multimodal Transportation



# U.S. Multimodal Transport Development

- Intermodal marketing companies and domestic freight forwarders are pioneers in multimodal transport development
- APL open the way for ocean carriers to play a key role in multimodal transport growth
- JB Hunt's partnership with BNSF led the shift of long distance transport from highway to rail
- Outsourcing of terminal operations reduced both fixed & variable cost and diminished capital investment
- Railroads now embraced multimodal transport as a core business



# Double Stacked Train of 53 ft JB Hunt Domestic Containers



# Dedicated Train of 53 ft RoadRailers





# Container Coupled with Chassis Moving as Trailers to Reduce Transit Time



# Norfolk & Southern RoadRailer





# Norfolk & Southern RoadRailer



# FedEx Trailer with Side Skirt to Reduce Drag

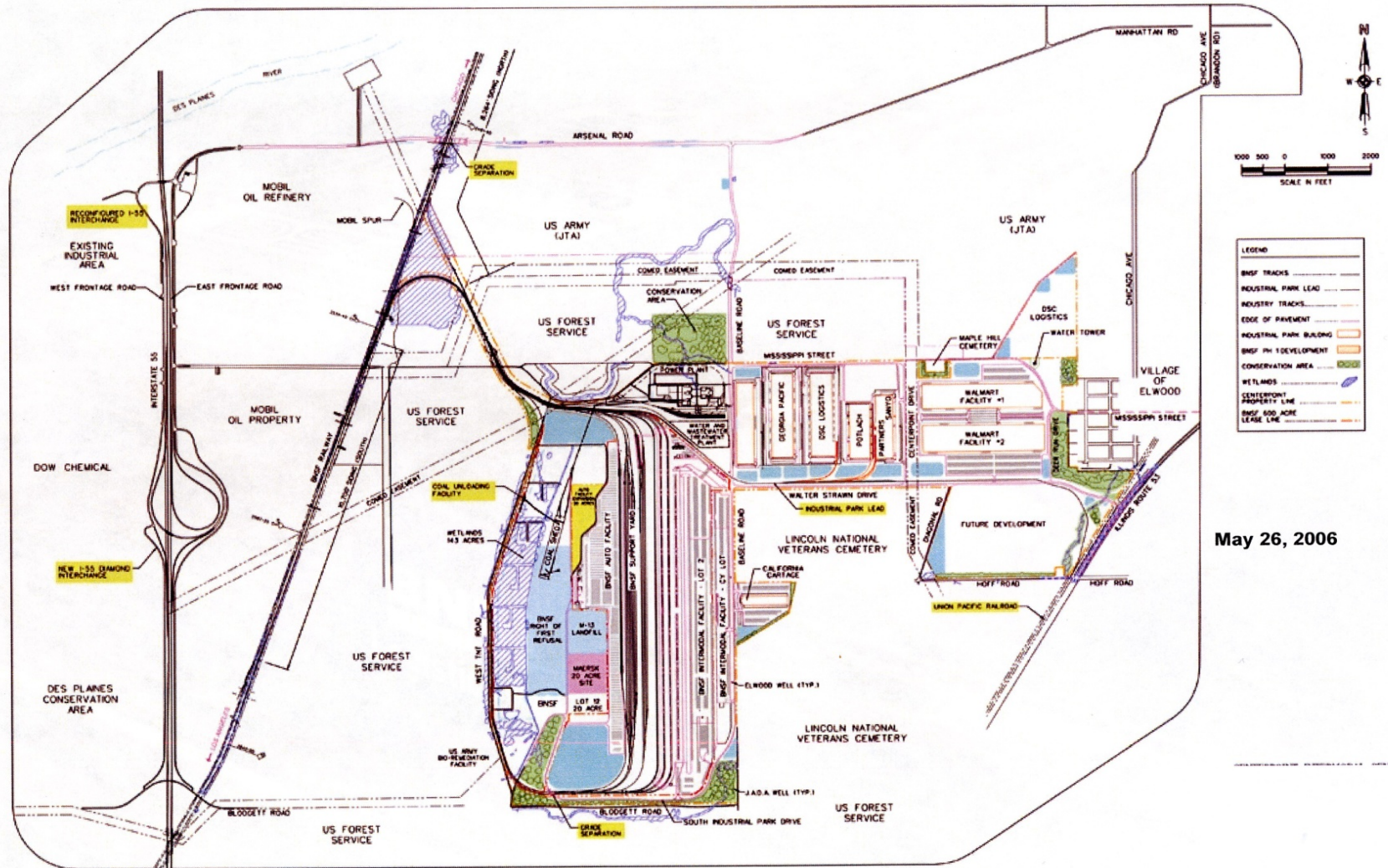




# Trailers Lifted Onto Flat Wagon at BNSF Willow Springs Multimodal Hub



# BNSF Logistics Park Chicago (LPC) Multimodal Hub Design





# Aerial View of LPC Integrated Logistics Park/Multimodal Hub





# BNSF LPC Multimodal Hub



# BNSF Multimodal Hub Automated Gate Control





# WalMart Logistics Center Near BNSF LPC





# New UP Multimodal Hub North of BNSF LPC





# New UP Multimodal Hub North of BNSF LPC





# New UP Multimodal Hub North of BNSF LPC



Спасибо! Thank you! 谢谢 !

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