Collaborative, Open, and Virtual:
Opportunities for Transportation Statistics

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The U.S. transportation system is the largest in the world

- More airports and more miles of road and rail than any other country
- Fourth in miles of navigable waterways
- The highest in the world in terms of per capita vehicle ownership

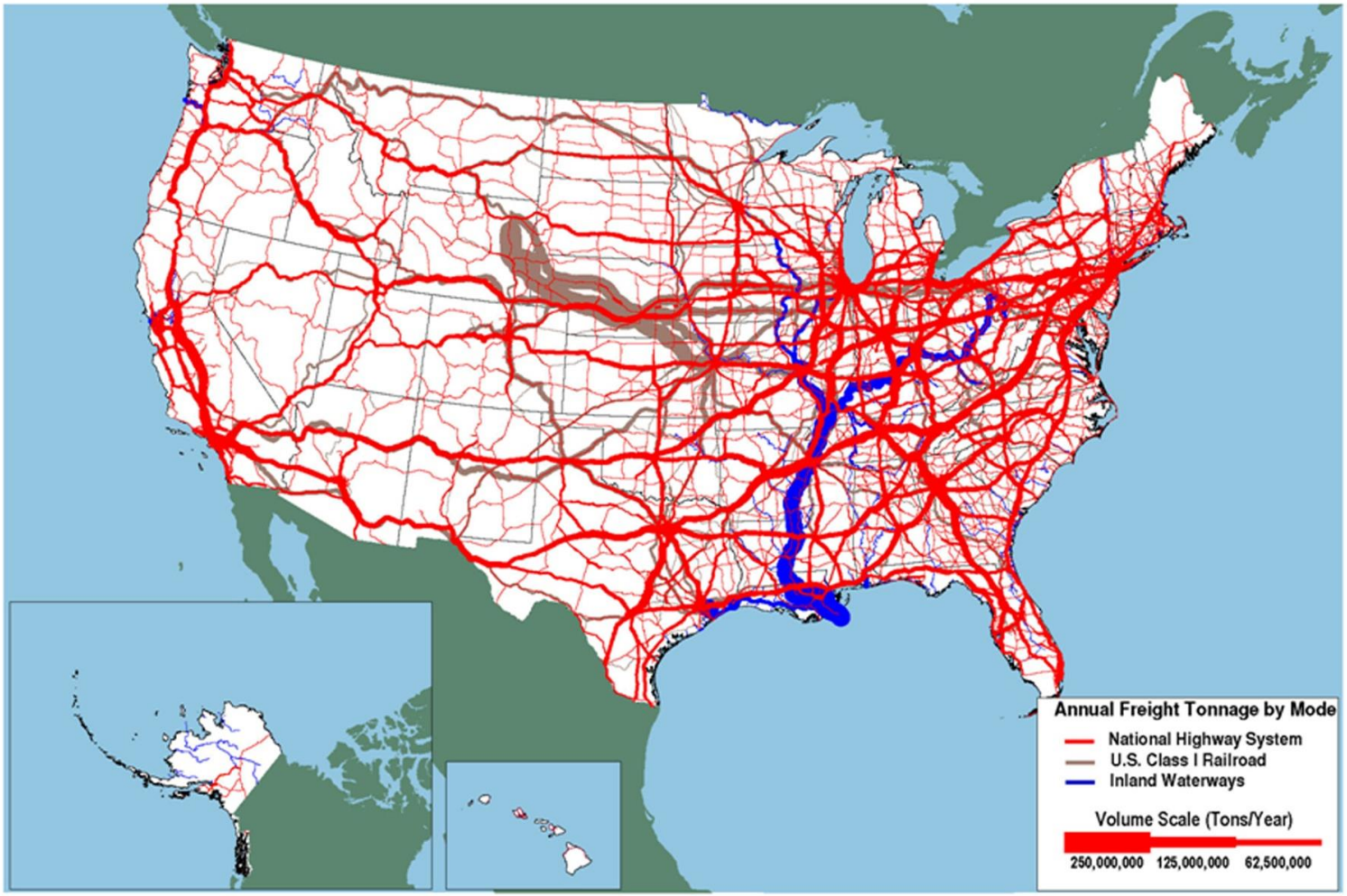
Our nation's transportation system moves people and goods

- Provides mobility for
  - 312 million U.S. residents, of whom 15 million do not own a vehicle
  - 60 million visitors and tourists
- Moves an average of 57 tons of freight per year for every man, woman, and child in the United States

The challenges for transportation statistics

- The complexity of the transportation system
- Many, diverse data providers
- Diverse data user “sandboxes”
- Dissimilarities between *personal* travel and *commercial* traffic – in terms of both their spatial and temporal flows
- Different transportation policy, regulatory and investment decisions requiring different geospatial scales/resolutions in data

Freight Flows



Sources: Highways: U.S. Department of Transportation, Federal Highway Administration, Freight Analysis Framework, Version 3.1, 2010. Rail: Based on Surface Transportation Board, Annual Carload Waybill Sample and rail freight flow assignments done by Oak Ridge National Laboratory. Inland Waterways: U.S. Army Corps of Engineers (USACE), Annual Vessel Operating Activity and Lock Performance Monitoring System data, as processed for USACE by the Tennessee Valley Authority; and USACE, Institute for Water Resources, Waterborne Foreign Trade Data, Water flow asssignments done by Oak Ridge National Laboratory.

The challenges (continued)

- Challenges to strike balances between shrinking resources and changing priorities
- Scarce resources limiting ability to use traditional ways of collecting data
- Communicating insights from, and the value of, transportation statistics
- Future work force needs reflect the ongoing evolution in information technology
  - Statistics, Big data analytics, IT, Visualization

The Opportunities

Collaborations

1. Organization
   - Within the U.S. Department of Transportation
   - Other Federal Statistical Agencies
   - Others
2. Data
   - Administrative records
   - Hybrid approaches
   - Data from mobile devices (e.g., social media, RFID, Connected Vehicles)
   - Proprietary data (e.g., FedEx, Wal-Mart, insurance)
   - Others?

The Opportunities (continued)

- *Openness*
  - The Administration's focus on open data and data as asset
    - Data.Gov initiative
    - 2013 Executive Order: Making Open and Machine-Readable the New Default for Government Information
    - Creating a 21st Century Government
  - Technology-driven opportunities
    - API
    - Mobile apps

The Opportunities (continued)

- *Virtualization*
  - Cloud computing, web services, data virtualization
  - What are the implications?
    - Data quality, data comparability
    - Interpretation of results
    - Misuses
  - Are there other opportunities?