Collaborative, Open, and Virtual: Opportunities for Transportation Statistics

Pat Hu
Associate Administrator, Research and Innovative Technology Administration
Director, Bureau of Transportation Statistics
U.S. Department of Transportation

September 17, 2013
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 assignments 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
Virtualization

Cloud computing, web services, data virtualization

What are the implications?

- Data quality, data comparability
- Interpretation of results
- Misuses

Are there other opportunities?