

Bureau of Transportation Statistics

Challenges and Improvements for the 2012 Commodity Flow Survey

APDU Webinar

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CFS Objectives and Background

- Section 111 of ISTEA, required BTS to collect statistics on goods movement
- The Commodity Flow Survey is the only comprehensive source of information on national freight flows.
- Provides information on commodities shipped, value, weight, ton-miles, origin/destinations by all modes of transportation
- National source of data for the highway mode that carries about 71% of the value and 70% of the tonnage of freight transported.
- Fourth in series - previously conducted in 1993, 1997 & 2002
- Conducted through a major partnership between:
 - [Bureau of Transportation Statistics \(BTS\)](#),
 - Research and Innovative Technology Administration, U.S. Department of Transportation
 - [U.S. Census Bureau](#)
 - U.S. Department of Commerce



Survey Methods

- Component of economic census; mandatory reporting
- 4th in series - conducted in 1993, 1997, 2002 & 2007
- Sample of 100,000 shipping establishments from Census Business Register (~760,000)
- Includes: Mining, Manufacturing, Wholesale, Auxiliaries, few Retail Services
- Sample stratified by industry, size, geography
- Mailout/mailback paper survey
- 4 quarters of calendar year – sample of weekly shipments

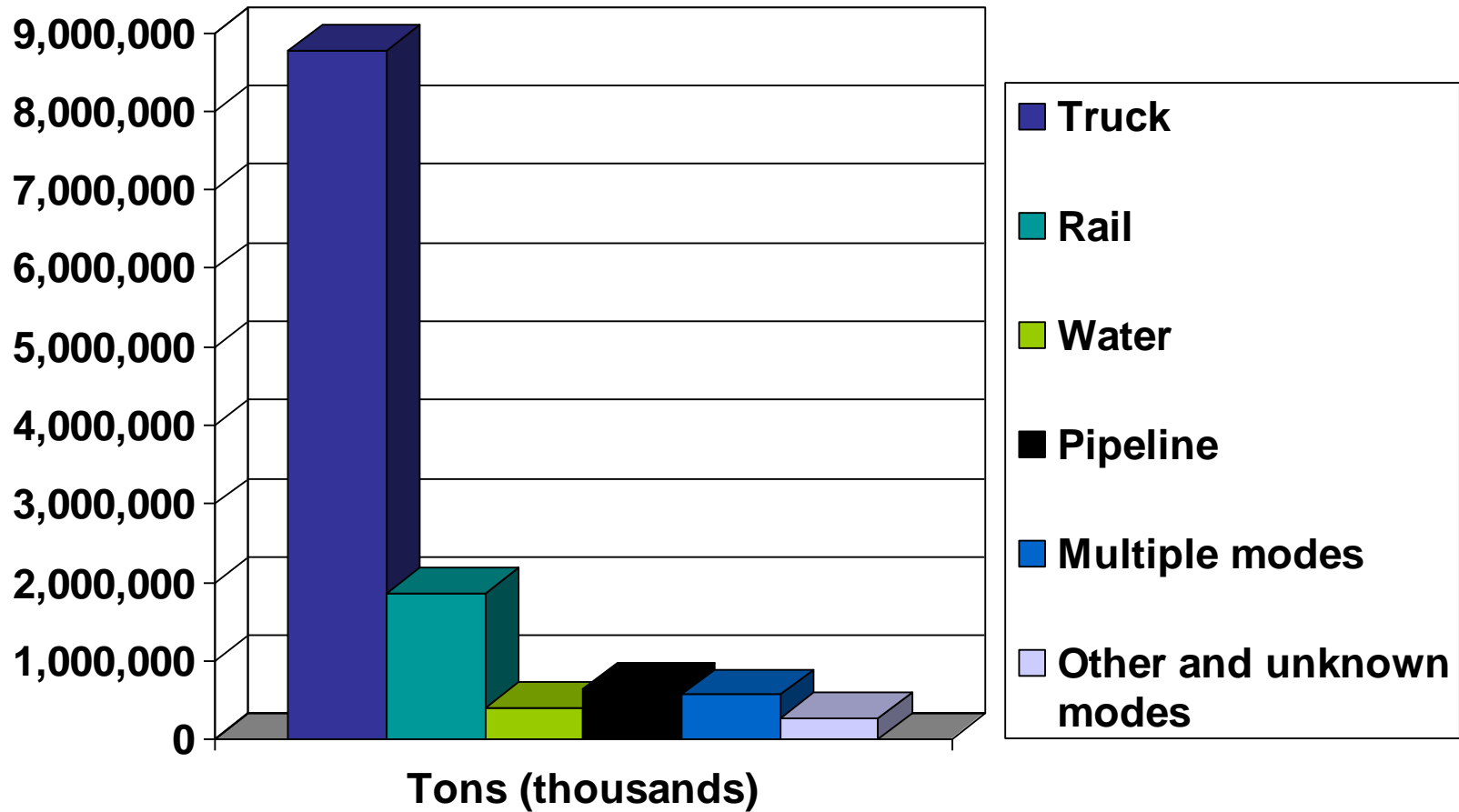
Major Uses and Key Applications of the CFS

- Foundation of FHWA's Freight Analysis Framework.
- Fundamental input for freight flow datasets & models developed by private vendors.
- Provides input and calibration for freight flow models.
- Used by federal, state and local/regional analysts for policy, management and investment decisions.
- Analyze and map spatial patterns of commodity and vehicle flows.
- Provides denominator data for conducting safety risk analyses and security assessments of hazardous material flows.

Key Highlights of 2007 CFS Results

- American businesses shipped 12.5 billion tons of goods in 2007, valued at \$11.7 trillion, totaling 3.3 trillion ton-miles.
- Trucking continues to dominate the movement of freight: 71% of the value (\$8.3 trillion); 70% of weight (8.8 billion tons); and 39% of the ton-miles (1.3 trillion ton-miles) of freight shipments.
- The top commodities by total value were electronic and office equipment (\$1 trillion). By weight, gravel and crushed stone represented the largest tonnage (2 billion tons). Coal was the top commodity by ton-miles in 2007 with 836 billion ton miles.
- Since 2002, the value of shipments increased 39%, tonnage increased 8%, and ton-miles increased 7%.

2007 CFS: Tons by Mode of Transportation for the U.S.



Results: Hazardous Material Tonnage by Mode

Million Tons
of Hazardous
Materials
(area of circle
proportionate
to tonnage)

2

10

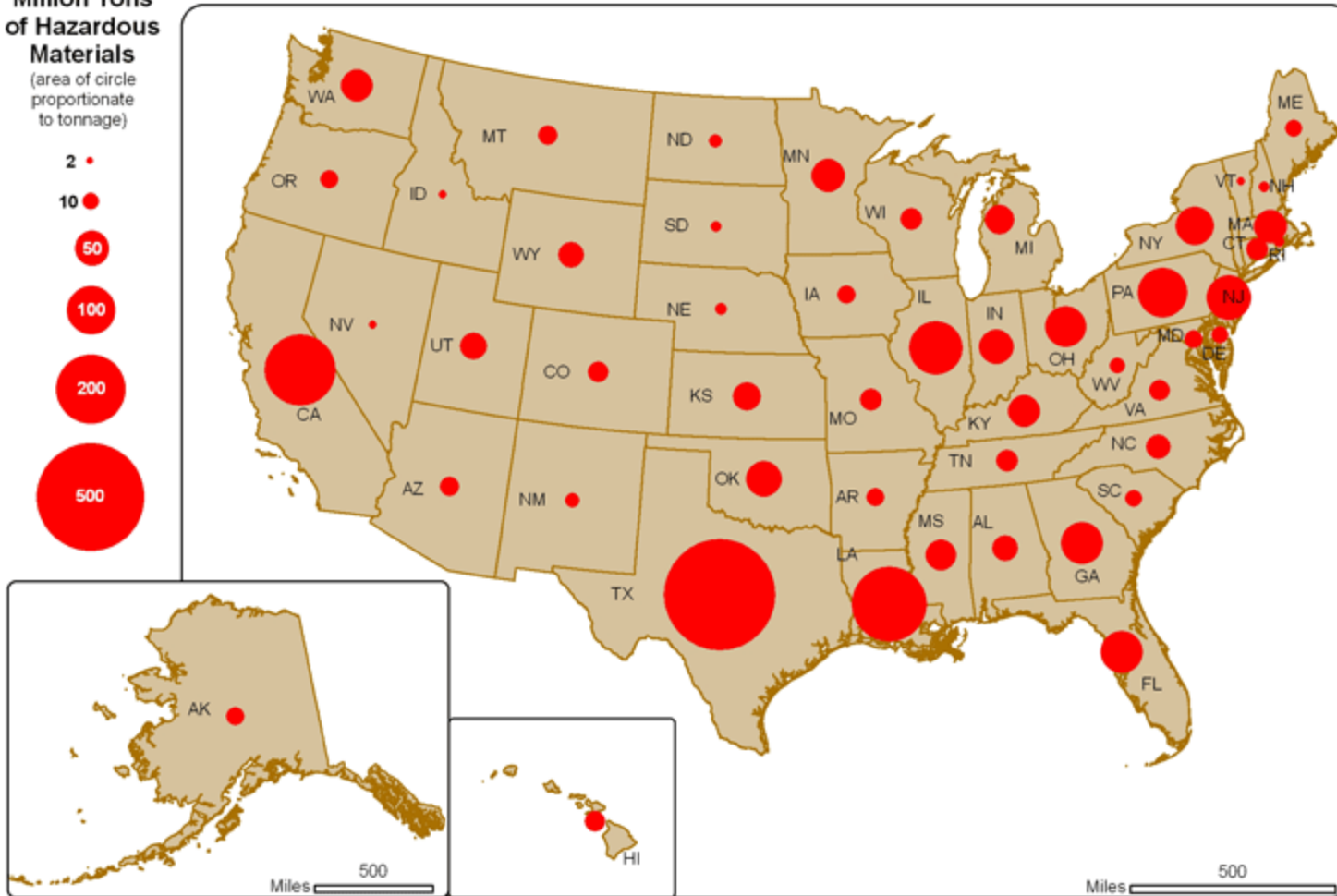
50

100

200

500

SOURCE: U.S. Dep



Data suppressed for Pipeline and Air



U.S. Department of Transportation
Research and Innovative Technology Administration

2007 CFS Key Enhancements and Improvements

Apparent Improvements for 2007 CFS

- Data Dissemination: American Fact Finder (AFF) and Data by type of Industry (NAICS)
- Expanded coverage of Freight gateways – growing ports and border crossing
- Expanded coverage for hazardous materials
- Third Party Logistics questions on the fourth quarter questionnaire
- Increased sample size and improved sample design
- Noise added in an effort to publish a greater number of data cells
- Drayage included in mileage calculation processing – modal assignment

Transparent Improvements for 2007 CFS

- Dedicated BTS staff involvement in planning and operations of 2007 CFS
- Developed GeoMiler, a GIS software routing tool
- Improved data quality by correcting problematic shipments more consistently and systematically
- Expanded editing process
- Joint Investigative Teams (BTS-Census)
- Lessons learned documented from 2002 CFS, used in planning for the 2007 CFS
- Pre-canvass for improving CFS frame
- Conducted cognitive interviews of potential respondents



Planning for the 2012 CFS

- Continuous Improvement Process
 - Joint teams with BTS and Census
 - Multiple research projects

- Commodity Flow Survey Data Users' Workshop
 - Transportation Research Board – Keck Center: Washington DC
November 16, 2010
www.trb.org/Conferences/CFS2010.aspx

 - Discussions Panels:
 - Content and Uses
 - Scope, Classification, & Geography
 - Product Tools and Functionality



Suggested Changes and Improvements

- Content and Uses
 - Capture/Publish additional characteristics (e.g., equipment type, commodity packaging, time-sensitivity, establishment characteristics, transportation costs)
- Scope, Classification & Geography
 - Better estimates for rare transportation modes (e.g., air & water)
 - More spatial detail
- Product Tools and Functionality
 - Origin and Destination Tables
 - Microdata



Challenges

What changes and improvements can reasonably be made to the CFS given:

- Budget and resources?
- Timing and schedule?
- Authority and confidentiality?
- Sample frame?
- Changes in transportation industry and logistics?
- Statistical standards and guidelines?
- Need to measure change & track trends?

CAUTION! *There is danger in trying to adapt a single survey into one that does everything. The CFS may not always be the best vehicle for some freight information.*



Current Efforts

- Enhanced pre-canvass operation
- Cognitive Interviewing to test respondents' ability to provide additional information
- Expanded coverage of geographic areas and modes
- Further improvements to sample design
- Web reporting option
- Expanded quality control and data edits
- Increased use of automated computer data entry and processing
- Exploration of more disaggregated tables/microdata
- Update and improve commodity coding manual – SCTG to include emerging commodities such as biofuels
- Update & improve GeoMiler software for mileage calculation



Where to find CFS data and publications

OPTION 1:

- For access to 2007 CFS tables on the BTS website, visit...
http://www.bts.gov/publications/commodity_flow_survey/
- For access to 2007 CFS data sets on American Fact Finder from the BTS website, visit the link above and then click on the "Interactive Tables" link under the "2007 CFS Data Sets" heading
- To order a free copy of a 2007 CFS print report, visit...
<https://1bts.rita.dot.gov/pdc/index.xml>

OPTION 2:

- To access 2007 CFS tables directly from American Fact Finder follow the steps below...
 - 1) Go to <factfinder.census.gov>
 - 2) Click "get data" under Economic Census
 - 3) Click "2007 Commodity Flow Survey"
 - 4) Then select any of the geographic area, hazardous materials, or export series data sets available



2012 CFS Milestones

- | | |
|---------------------|----------------------------------|
| ▪ November 16, 2010 | CFS Data Users Workshop |
| ▪ January 10, 2011 | Pre-canvass mailed out |
| ▪ March – May 2011 | Questionnaire revised & tested |
| ▪ May 2011 | Pre-canvass completed |
| ▪ July 2011 | Finalize geo & industry coverage |
| ▪ August 2011 | Finalize questionnaire |
| ▪ September 2011 | Select sample |
| ▪ October 2011 | Finalize electronic reporting |
| ▪ December 20, 2011 | Initial mail-out |
| ▪ December 2012 | Preliminary data release |
| ▪ December 2013 | Final data release |



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