

TRB Panel on the Future of the Interstate

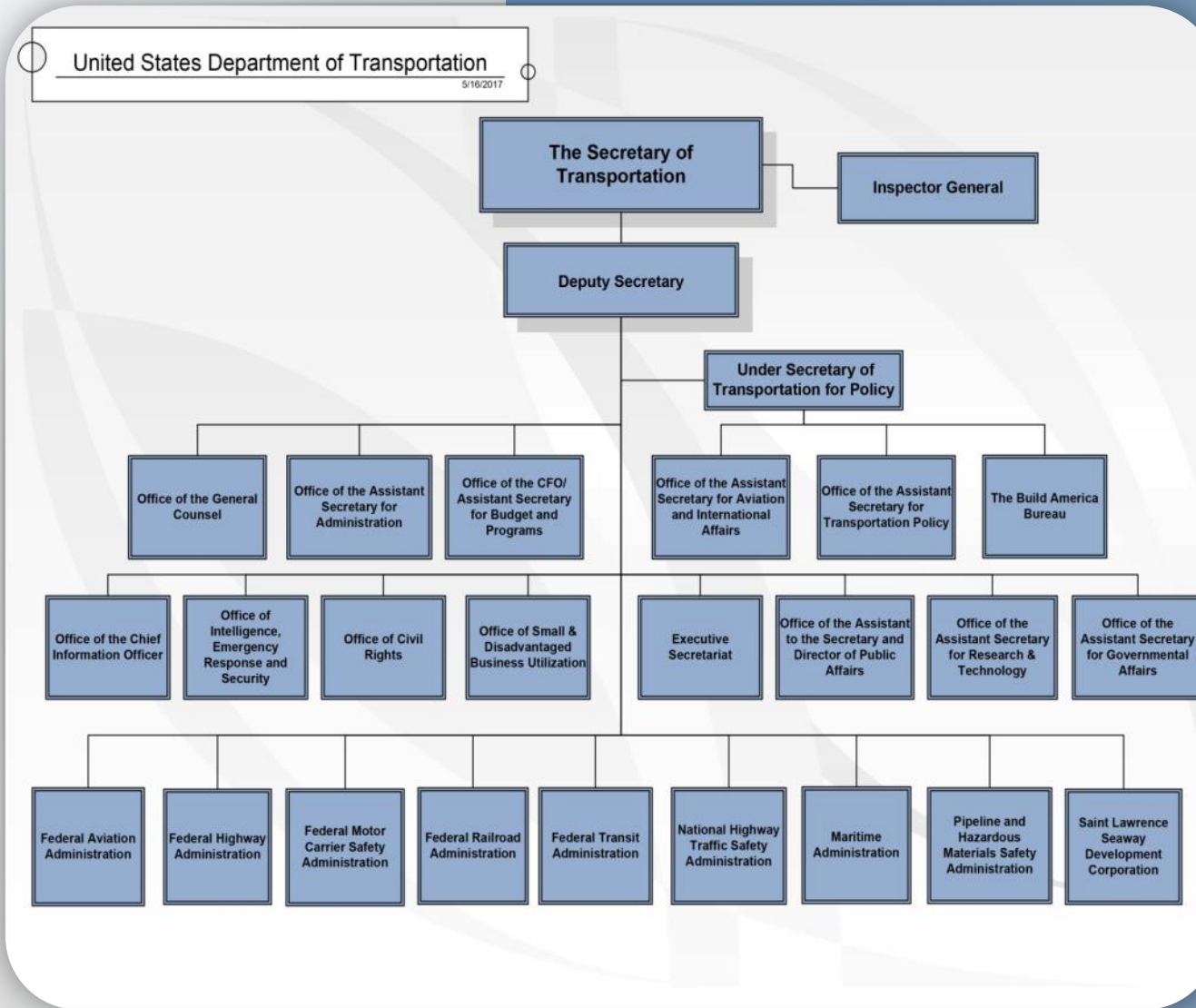
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July 11, 2017



US DOT Operating Administrations

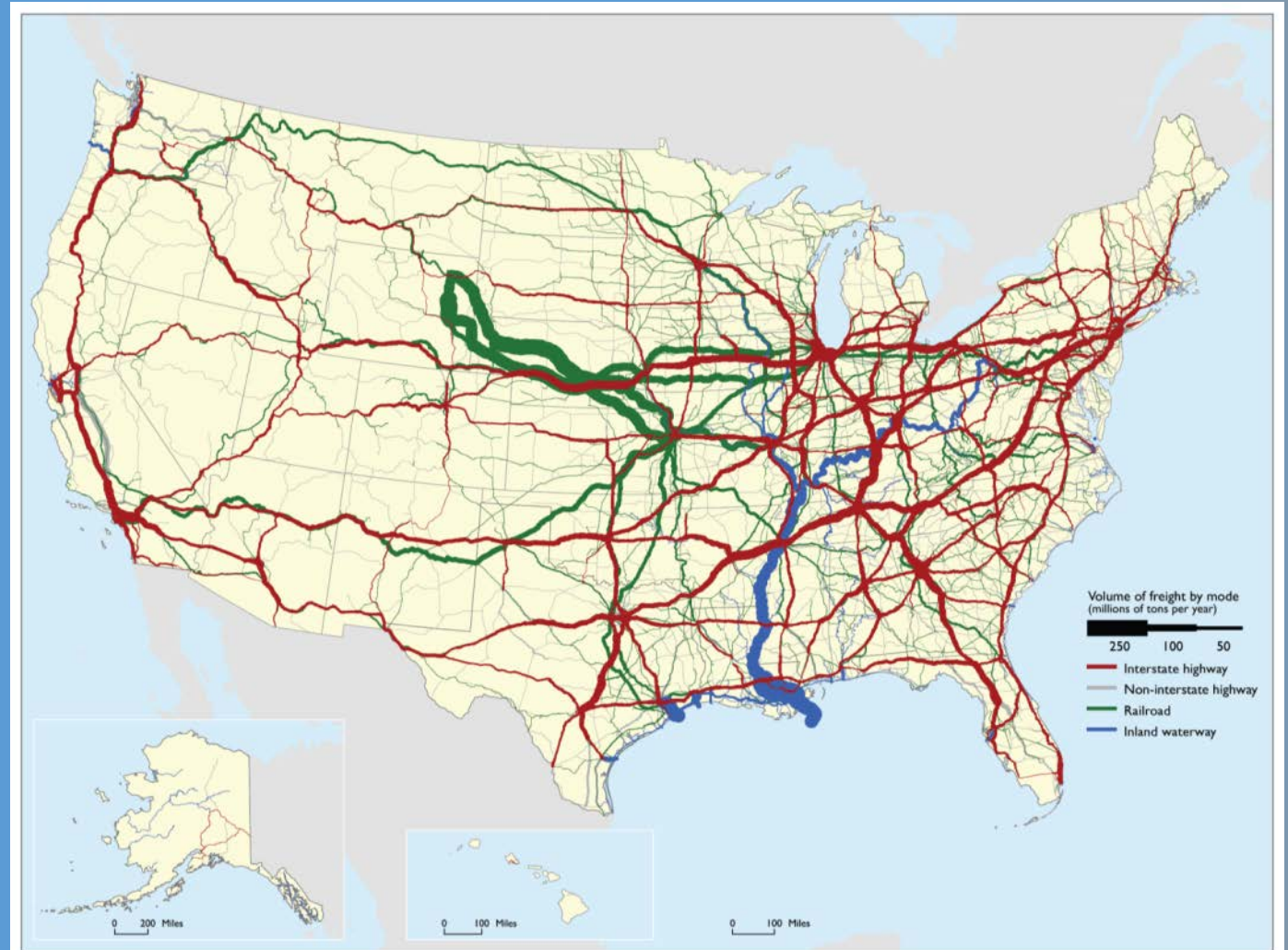
FHWA is one of several agencies within USDOT, some of which handle freight policy, programs, research and data, technical support, training, funding, and regulatory oversight.



Operating Administrations
 FAA: Aviation
 FHWA: Highways
 FMCSA: Motor Carrier Safety
 FRA: Railways
 FTA: Public Transit
 MARAD: Maritime
 NHTSA: Automobile Safety
 PHMSA: Pipelines and HazMat
 SLSDC: St. Lawrence Seaway

National Freight System

- Complex network of 7 million miles of highways, local roads, railways, navigable waterways, and pipelines.
- Serves entire spectrum of agricultural, industrial, retail, and service sectors of our economy.
- More than 3.1 million Americans are employed in operating and supporting the system.

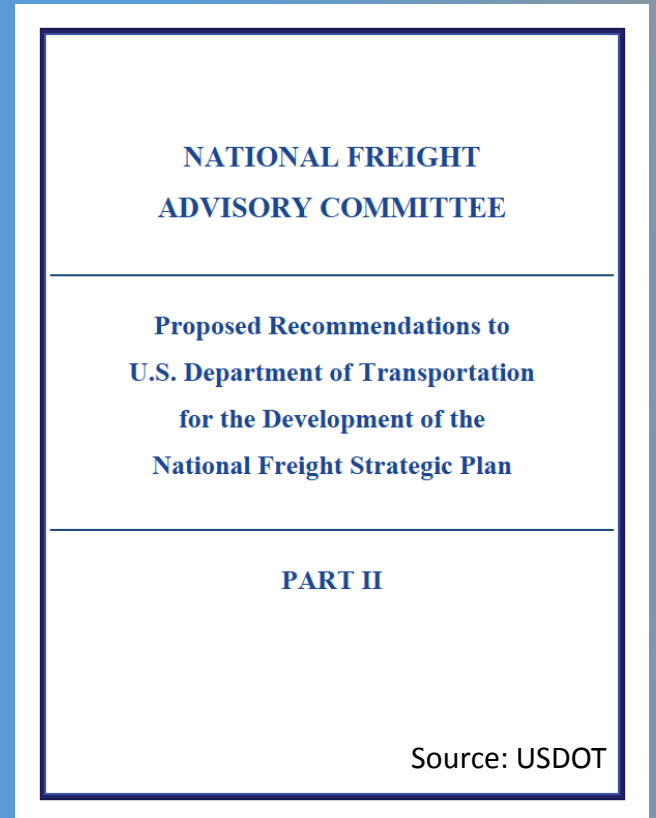


SOURCE: Highways: U.S. Department of Transportation, Federal Highway Administration, *Freight Analysis Framework*, Version 3.5, 2015; Rail: Based on Surface Transportation Board, Annual Carload Waybill Sample and rail freight flow assignments done by Oak Ridge National Laboratory; Inland Waterways: U.S. Army Corps of Engineers, Institute of Water Resources, Annual Vessel Operating Activity and Lock Performance Monitoring System data, September 2015.



National Freight Advisory Committee (2014)

- Established to provide recommendations on freight transportation.
- Issued 2014 report that included recommendations to
 - Improve safety and security across the freight rail network,
 - Highlight funding needs and challenges, and
 - Call for increased streamlining processes and better collection of data and research.
- Exploring ways to improve multijurisdictional freight planning, developing goals related to freight safety, and addressing workforce development needs.
- Recommendations highlight the need for increased transportation investment and greater certainty.
- Recommendations provided a framework for the creation of the NFSP.



Recommendations:

- Streamlining
- Funding
- Data
- Planning
- Capacity enhancements/efficiency



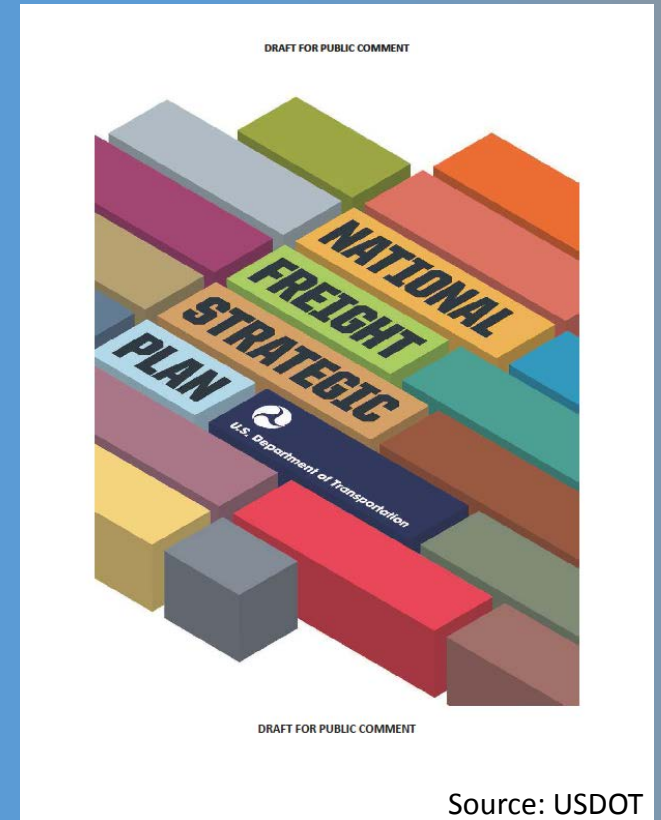
FAST Act: National Highway Freight Program (2015)

- Implement infrastructure and operational improvements that:
 - Strengthen the contribution of freight to economic competitiveness.
 - Reduce congestion and bottlenecks.
 - Reduce the cost of freight transportation.
 - Improve the year-round reliability of freight transportation.
 - Increase productivity, particularly for domestic industries.
- Improve safety, security, efficiency and resiliency of freight transportation.
- Improve the state of good repair.
- Use technology to improve safety, efficiency, and reliability.
- Improve the efficiency and productivity of the Freight Network.
- Support multi-state corridor planning to address highway freight connectivity.
- Reduce the environmental impacts of freight movement.



Draft National Freight Strategic Plan (2015)

- Describes freight transportation system, including major corridors and gateways.
- Assesses the physical, institutional, and financial barriers to improvement.
- Recommends strategies for improved planning, dedicated funding, and innovative technologies.
- Annual cost of congestion is estimated at \$1 trillion, 7% of U.S. economic output.
- Congestion costs trucking companies \$27 billion a year in extra transportation costs.
- The freight industry is experiencing a technological revolution through better data collection and analysis, automation, expedited inspection processes, and autonomous vehicle technologies.

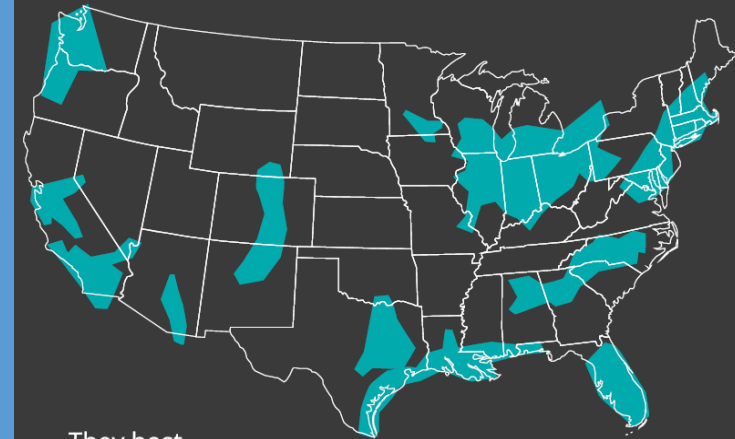


Forces Challenging Nation's Transportation System

- 70 million population increase and 40% freight volume increase by 2045.
- 75% of US population absorbed by Megaregions.
- Most of the population growth in the South and West.
- Public revenues insufficient to keep up with rising costs of maintenance and capacity needs.
- Two-thirds of roads are rated less than Good and a quarter of bridges need significant repair.
- Insufficient highway and transit revenues and an absence of reliable federal funding for rail, marine highways, and ports.
- Future trends in technology such as autonomous vehicles highlight need to address regulatory barriers and infrastructure to support new technology.

POPULATION CENTERS

11 megaregions are linked by transportation, economics, and other factors.



They host
75% of America's
population and employment.

Source: USDOT



Roundtables on the Freight Economy (2016)

The Freight Economy

“... interconnected network enabling the movement of food, energy, fabricated goods, and raw materials to keep citizens employed, communities healthy, and the Nation competitive on a global scale. Together, these components make up the freight economy.”

Changes in population, economy, and technology are affecting the movement of cargo and energy

- By 2045, freight volume will increase more than 40 %.
- Online shopping driving up demand for small package home delivery.
- International trade balances could shift from imports toward exports, but overall globalization will increase, straining ports and border crossings.
- Strong domestic energy production may enable U.S. to become a natural gas net exporter by 2020, but pipeline capacity may hamper growth and lead to greater movement of oil by rail.

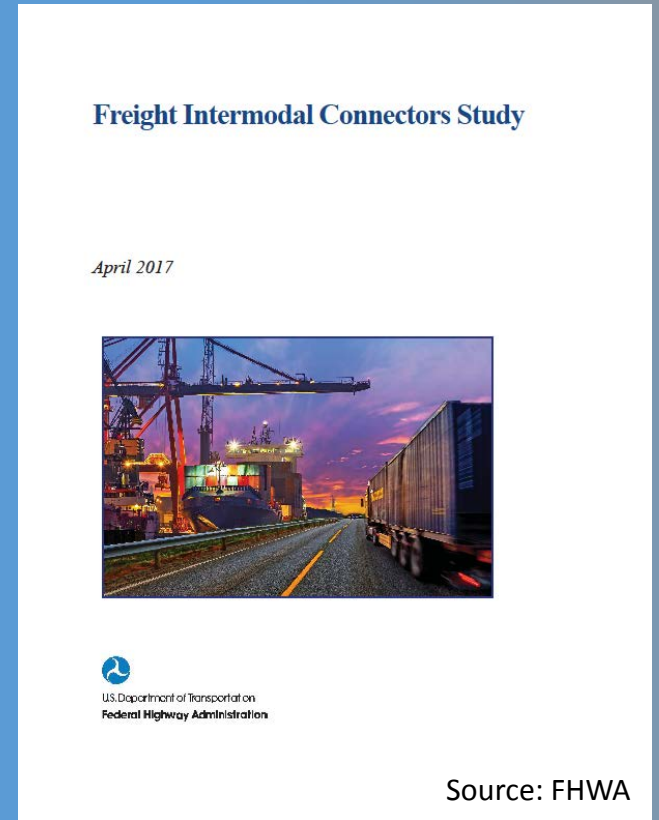
Freight policy options

- Improve freight planning and coordination at national, regional and local levels.
- Target policies and investments aimed at resolving freight congestion.
- Encourage innovative strategies to address first- and last-mile freight issues.



Freight Intermodal Connectors (2017)

- “Last mile” connection between major intermodal facilities and the National Highway System (NHS).
- While accounting for less than one percent of the NHS, these roads are critical for timely and reliable movement of freight.
- 4,237 hours of truck delay occur on freight intermodal connectors daily.
- \$353 million cost of delay on congested connectors.
- \$3.2 billion needed to increase capacity on congested connectors.
- \$2.2 billion estimated cost to improve connector pavement condition to “Good.”



Seaports	40 %
Rail intermodal	26 %
Airports	26 %
Pipeline	7 %

Truck Parking (ongoing)

- Creative and innovative means to provide parking capacity.
- Use of technology & data to understand parking demands and maximize utilization of parking.
- Innovative funding and finance to develop, operate and maintain parking facilities.
- State/regional/local government coordination.
- Understanding how to adapt to future needs, trends, and technology.



Vehicle Size and Weight (VSW)

- Support operation and preservation of highway infrastructure.
- Oversee compliance with Federal VSW laws and regulations.
- Assist states in delivery of VSW program through oversight of:
 - State enforcement plan;
 - Certification of enforcement;
 - Regulatory updates; and
 - Procedures for permits and citations.

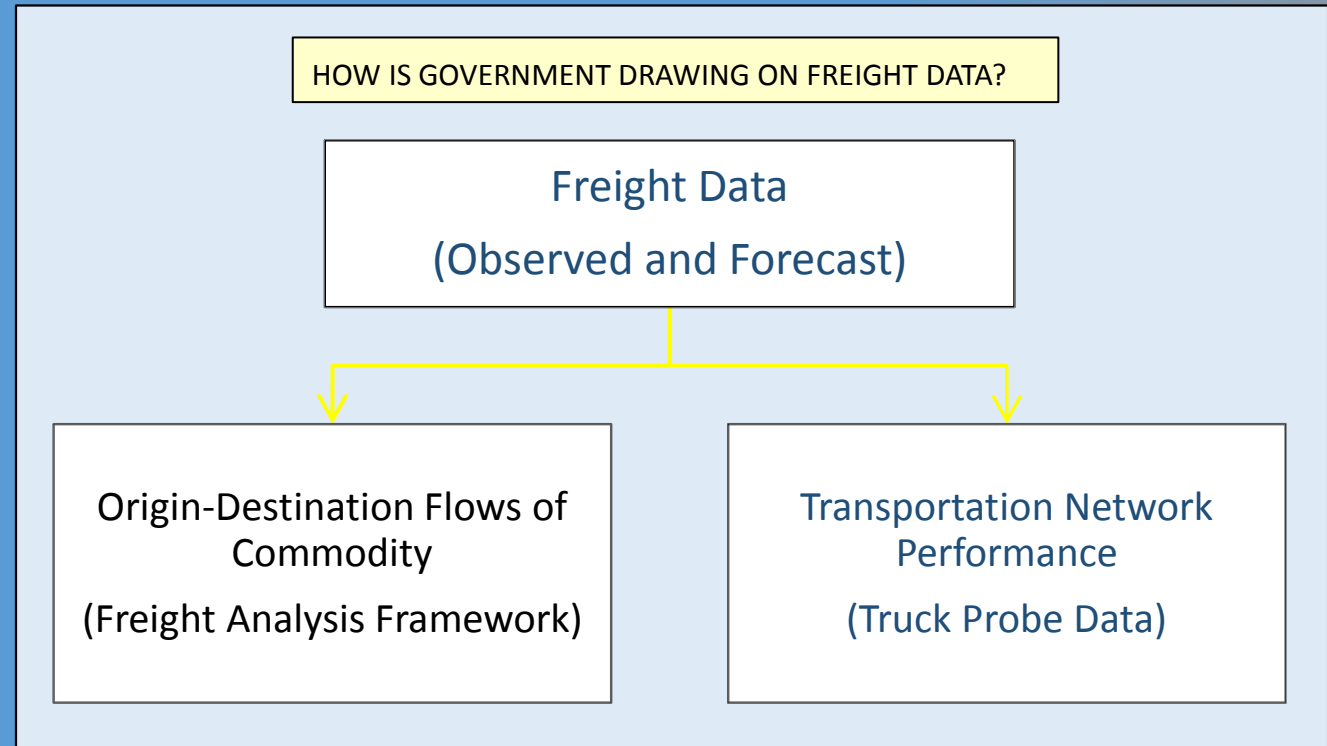


Source: FHWA



Freight Research and Analysis

- Freight Analysis Framework (FAF)
- Freight Performance Measures (FPM)
 - Freight Fluidity Program
 - National Performance Management Research Data Set (NPMRDS)
- Freight Travel Demand Modeling and Data Improvement Strategic Plan
- National Highway Freight Network
- Multi-jurisdictional Corridors
- Comprehensive Truck Size and Weight Research Roadmap (with TRB)
- Analysis of twin 33 foot trailers impacts on Federal-aid highways



Freight Technology And Operations

Freight Advanced Traveler Information System (FRATIS)

FREIGHT TRANSPORTATION QUESTIONS

- Freight specific travel planning and drayage optimization.

Exploratory Advanced Research (EAR) Project

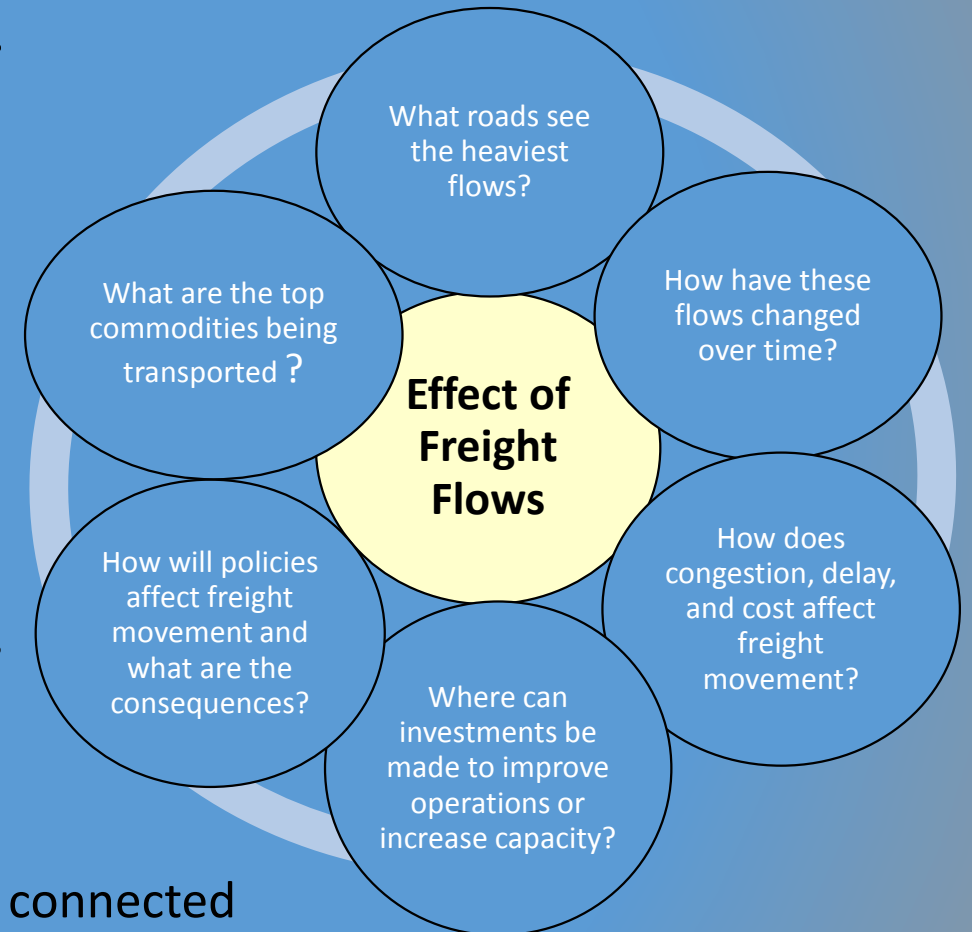
- Freight and Logistic Survey.
- Behavioral-based Freight Demand Modeling.
- Big Data.

Off - Hours Delivery

- Strategy to deal with freight mobility in urban areas.
- Low cost solution with positive impacts to an urban area.
- Shifts freight movements into off-peak hours.

Megaregions

- A network of urban clusters and their surrounding areas, connected by economic, social and infrastructure relationships.



New and Emerging Technologies

- Autonomous trucks
- Connected vehicles
- Truck Platooning
- Vehicle to infrastructure
- Drone delivery
- Shifts in manufacturing locations
- E-commerce growth
- 3D printing
- Digital freight brokers



Source: USDOT



More Information

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