

Tracking freight flows

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Credit: AI-generated image ([disclaimer](#))

A new freight database developed with assistance from the Department of Energy's Oak Ridge National Laboratory will help transportation officials improve highways, railroads and other trade routes across the country. With funding from the Department of Transportation's Bureau of Transportation Statistics (BTS) and Federal Highway Administration, ORNL data experts recently provided specialized data development, statistical analysis and modeling support to create the Freight Analysis

Framework (FAF), the most comprehensive public source of freight transportation data in the nation.

U.S. Transportation Secretary Anthony Foxx and Federal Highway Administrator Gregory Nadeau recently announced the release of the updated database known as FAF4. "A [transportation network](#) that can support the freight needs of this country is essential to a healthy economy," Foxx said.

The Department of Transportation updates the framework every five years based on numbers from its BTS Commodity Flow Survey, which captures about 70 percent of freight transportation. ORNL fills in the other 30 percent, adding data on the domestic movements of foreign trade along with business segments such as crude petroleum and retail services that are not represented in the BTS survey.

Researchers apply sophisticated modeling techniques to integrate disparate data sources into a comprehensive database that provides a national picture of freight flows.

With about two million records in the latest FAF database, this resource captures freight movement by origin, destination, commodity, mode, trade type, tonnage and value. Users can determine the amount and type of goods that move by highway, waterway, rail, and other modes of transportation between states, regions and across the nation. An ORNL-developed data extraction tool makes it easy for users to access the information they need online through the [FAF website](#).

"FAF data help planners in the public and private sectors to better understand freight movement, analyze market trends, and make strategic decisions," said Diane Davidson, leader of ORNL's Transportation Planning and Decision Science Group. "Transportation planners use it to target resources to improve operations or increase capacity."

Trends in FAF4 show that approximately 17 billion tons of goods were moved in 2012 on the transportation network, which breaks down to 47 million tons of goods valued at more than \$49 billion a day. Trucks transported the bulk of those goods, hauling 64 percent of the weight and 71 percent of the value. These and other data from FAF4 can help direct infrastructure investments.

The FAF4 is one of the most used tools in a suite of transportation analytics developed by ORNL's Center for Transportation Analysis, which supports vehicle and transportation system-wide efficiency gains through the development of predictive information, analytical methods and vehicle systems data.

Provided by Oak Ridge National Laboratory

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