

Data Management Plan (DMP) for the Freight Analysis Framework dataset

Office of Statistical and Economic Analysis,
Bureau of Transportation Statistics (BTS),
U.S. Department of Transportation (USDOT)
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2023-09-29: Initial DMP written

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0. Dataset and Contact Information

Title of Dataset: Freight Analysis Framework

URL: <https://doi.org/10.21949/1529108>

This is an ☒ initial DMP or a ☐ revised DMP.

Organizational Contact Information

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1. Data Description:

The Freight Analysis Framework (FAF) creates a comprehensive picture of freight movement among states and major metropolitan areas by all modes of transportation. The FAF integrates data from a variety of sources. Starting with data from the Commodity Flow Survey (CFS) and international trade data from the Census Bureau, FAF incorporates data from agriculture, extraction, utility, construction, service, and other sectors.

The FAF5 Regional Database of tonnage, value, and ton-miles by FAF regions of origin and destination, commodity type, and mode, benchmarked to the 2017 Commodity Flow Survey is available. Weights are in thousands of tons, activity is in millions of ton-miles, and values are in millions of 2017 constant dollars. Files are available for download in .csv and MS Access formats on <<<https://www.bts.gov/faf>>> and <<<https://faf.ornl.gov/faf5/>>>. An online Data Tabulation Tool (DTT), which uses the FAF data to create tabular summaries and visualizations for users, is also provided.

State-level databases are also provided. These databases are derived from the regional databases. Tonnage, value, and ton-miles by origin state and destination state are provided.

The current version of FAF provides estimates for tonnage, value, and ton-miles by origin-destination pair of FAF regions, commodity type, and mode for:

- Base year (Y)
- Annual estimates (Y + 1 through Y + 4)
- Forecast year estimates (Y + 5, Y + 6, Y + 7 and Y + 8 through Y + 28 in 5-year increments)
- Historical trend estimates (1997 through Y – 5; State-level only)

FAF versions are denoted using *a*, *b* and *c* as in FAF*a.b.c*. Version ID is determined as follows. A new version of FAF is initiated every five years in year Y, in years ending 2 and 7. The first digit, *a*, in the version ID corresponds to this. For example, the first version of FAF was developed for commodity flows in year 1997 and FAF1 refers to this release, while FAF5 refers to the 2017-based version.

- Base year 1997: FAF1
- Base year 2002: FAF2
- Base year 2007: FAF3
- Base year 2012: FAF4
- Base year 2017: FAF5

The second digit, *b*, of the FAF version ID corresponds to major, planned release dates within the five year cycle. At this time, the following notation is used with *b* denoting what has been added in the release:

- 1 (e.g., FAF 5.1): annual estimates for Y+1 and an updated DTT
- 2: annual estimates for Y+2, an updated DTT, and forecast year estimates
- 3: truck flow network assignments for Y and Y+28, ton-mile estimates for all years, and an updated DTT
- 4: annual estimates for Y+3 and an updated DTT
- 5: annual estimates for Y+4 and an updated DTT

The version identifier *c* is used for other updates in between FAF*a.b* releases. The *a.b.c* versions cover preliminary annual estimates as well as adjustments such as data improvements or corrections. “Major” releases are FAF*a.b* releases; all other releases are “minor”.

The main websites, <<<https://www.bts.gov/faf>>> and <<<https://faf.ornl.gov/faf5/>>>, contain several documentation items:

- A User Guide
- A DTT guide called the “Getting Started Guide”
- A detailed methodology that describes the FAF data development

Each downloadable regional or state-level database contains a Metadata file. This file provides a data dictionary for the geographic regions, commodity types, and mode codes that appear in the database.

The website <<https://ops.fhwa.dot.gov/freight/freight_analysis/faf/>> contains the FAF5 Forecasts Report (PDF), which documents the commodity flow forecast development process.

Detailed documentation is currently being prepared for the Annual Estimates development process, ton-mile estimation, and the historical trends (reprocessed state-level data) development process.

2. Standards Employed:

The data files collected here are saved in the ubiquitous comma-separated value (.csv) format and in the widely used Microsoft Access (.accdb) format.

Documentation includes the User Guide, “Getting Started Guide”, and methodology report as noted in Section 1; and this data management plan and metadata and readme files created in 2023.

A DCAT-US Schema v1.1 .json metadata file will be created to describe the archival location of this data, and that .json file will be uploaded to data.gov and transportation.data.gov

Necessary software tools: The file formats found in the zip files include:

- .csv files which can be opened and analyzed using any program (such as R or SAS) that can read in millions of records (note: these files can generally also be opened in text editors, but such editors typically do not have analysis capabilities)
- .accdb files, which can be opened with Microsoft Access; and
- The .xlsx metadata file, which can be opened with Microsoft Excel which can be opened with any GIS software program.

The documentation (methodology report and user guides) are in .pdf format and can be opened with PDF readers.

The data are reviewed for quality and completeness before each data release. However, released data sometimes contain issues that are not known until users report them. Users can report any issues to FAF@dot.gov and BTS will address them.

3. Access Policies:

These data files are in the public domain, and can be shared without restriction. The data files contain no sensitive information.

4. Re-Use, Redistribution, and Derivative Products Policies:

These data are managed by the Bureau of Transportation Statistics. The data are in the public domain, and may be re-used without restriction.

Citation of the data is appreciated. Please use the following recommended citation for FAF5:

U.S. Department of Transportation, Bureau of Transportation Statistics (BTS), Federal Highway Administration (FHWA). (2017) Freight Analysis Framework, FAF5 [datasets].
<https://doi.org/10.21949/1529108>

5. Archiving and Preservation Plans:

The dataset will be archived in the National Transportation Library Repository and Open Science Access Portal (ROSA P). Prior to archiving, the data are stored on the secured BTS networks and drives, which are backed up nightly. The US DOT systems are secured from outside users and backed up daily. The data are also stored on a vendor network and drives (at Oak Ridge National Laboratory).

Files in ROSA P are backed up in NTL drives at US DOT, daily; at the Centers for Disease Control, the repository managing facility, daily; and in Amazon Web Service Cloud servers in Virginia and Oregon daily.

The dataset will be retained in perpetuity.

NTL staff will mint persistent Digital Object Identifiers (DOIs) for each dataset stored in ROSA P. These DOIs will be associated with dataset documentation as soon as they become available for use.

The DOIs associated with this dataset include: <https://doi.org/10.21949/1529108>

The assigned DOI resolves to the repository landing page for the “Freight Analysis Framework, FAF5, Reprocessed” dataset, so that users may locate associated metadata and supporting files.

ROSA P meets all the criteria outlined on the “Guidelines for Evaluating Repositories for Conformance with the DOT Public Access Plan” page: <https://ntl.bts.gov/publicaccess/evaluatingrepositories.html>

6. Policies Affecting this Data Management Plan

This document was created to meet the requirements enumerated in the U.S. Department of Transportation's 'Plan to Increase Public Access to the Results of Federally-Funded Scientific Research' Version 1.1 << <https://doi.org/10.21949/1520559> >> and guidelines suggested by the DOT Public Access website << <https://doi.org/10.21949/1503647> >>, in effect and current as of December 03, 2020.