7) Overview of the FAF3 Freight Flow Matrix Construction Process

*Michael Sprung, Federal Highway Administration*

Email: michael.sprung@dot.gov

Additional Authors:

Frank Southworth, Diane Davidson, Ho-Ling Hwang, Bruce Peterson, S-M Chin, David Vogt, and J-M Li

Poster Summary:

The Freight Analysis Framework version 3 (FAF3) is a Federal Highway Administration (FHWA) freight data product which provides a national origin-destination matrix of commodity flows to, from, and within the United States. FAF3 freight flows are reported in terms of both annual tons and annual dollars of freight moved by mode of transportation. Based largely on the 2007 Commodity Flow Survey (CFS), FAF3 utilizes domestic freight flow characteristics, geographic regions, and the SCTG commodity coding system from CFS. However, many freight flows were not captured by the 2007 CFS due to scope and sample size limitations. Approximately 100,000 establishments were sampled out of some 754,000 freight moving establishments in 2007 and imports are out of scope entirely. To estimate missing data values, the approach taken in FAF3 was to use a combination of a novel Log-Linear Modeling approach (LLM) with an Iterative Proportional Fitting (IPF) routine that also uses additional data inputs to fill in the missing pieces. The complete FAF3 Origin-Destination-Commodity-Mode database is made up of 131 Origins x 131 Destinations x 43 Commodity Classes x 8 Modal categories, for annual tons and dollars. This poster illustrates how the 2007 CFS data were integrated with several additional data sources using LLM and IPF to create a comprehensive FAF3 national freight flow matrix.

More detailed documentation on the sources and methods utilized in the development of FAF3 are available from the FHWA website at the following link:

http://www.ops.fhwa.dot.gov/freight/freight_analysis/faf/index.htm