



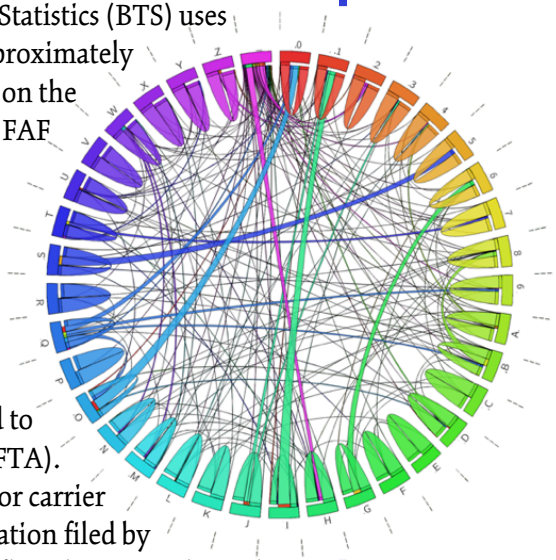
**Project #** RES2016-32, Lee D. Han, University of Tennessee

**Project Title** Automated Plate Recognition and Truck Trip Tracking

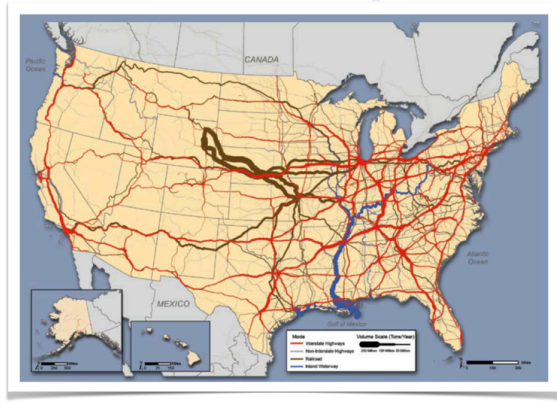
**Purpose** The movement of freight in terms of specific commodities and motor carriers, is illusive at national and state levels. At the national level, Bureau of Transportation Statistics (BTS) uses Freight Analysis Framework (FAF) to approximately estimate the movements of commodities on the nation's transportation networks. While FAF is an arduous and admirable effort with much success at the national level, its derived routing details at state and metropolitan level can deviate appreciably from the actual local truck and freight movements.

An additional issue at state level is related to the International Fuel Tax Agreement (IFTA). Tennessee has significant amount of motor carrier traffic on its highways, yet the documentation filed by carriers on quarterly basis often do not reflect their trips through the state. Consequently, the fuel taxes paid at other states are often under-refunded or under-redistributed back to Tennessee.

To address these issues, state and metropolitan level motor carrier tracking and OD study would provide much needed facts for calibrating FAF's freight routing algorithm, at national level, and shed light on the amount Tennessee is under-refunded, at state level.



**Scope/Significance** Multiple temporary Automated License Plate Recognition (ALPR) stations will be set up at strategic Interstate locations where motor carriers enter or exit Tennessee. The plates will be read, recognized, and matched so that the origin-destination (OD) information of the vehicles can be used to generate an aggregated picture of freight



movements specifically into, out of, and through Tennessee. Results of this effort could serve to calibrate FAF's truck routing statistics for the State of Tennessee. They could also be used to assess the fairness of IFTA fuel tax refund mechanism.

- Outcomes** Three major outcomes are expected.
- License plate tracked motor carrier movements through the State of Tennessee from neighboring states.
  - Comparison of the truck trips against BTS FAF figures and IFTA refund decisions.
  - Recommendations for a motor carrier tracking system in Tennessee for safety, operational efficiency, and economy.

**Time/Status** The study began in fall 2016 and is to be completed in mid-2018.

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