EXECUTIVE SUMMARY - *updated FEBRUARY 2019*

USDOT Tier-1 University Transportation Center

CM2

Cooperative Mobility for Competitive Megaregions

MEGAREGION TRUCK FLOW ESTIMATION MODEL

Megaregion Truck Flow Estimation Model (#CM2-6)

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Final Research Report:
http://sites.utexas.edu/cm2/files/2018/10/PanChun-Megaregion-TruckFlow-Estimation-Model-FinalReport_Accessible.pdf

TSU

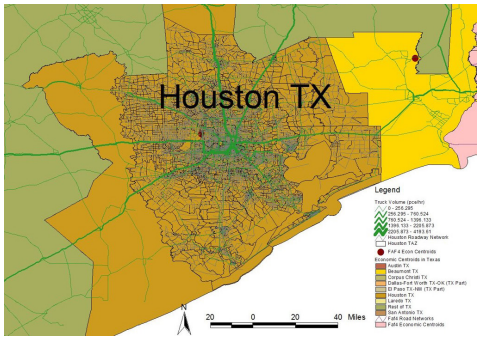
TEXAS SOUTHERN UNIVERSITY

Freight transportation has played a critical role in the development of megaregion economies. Trucks are the dominant mode of freight transportation and also one of the major contributors to roadway congestion and emissions.

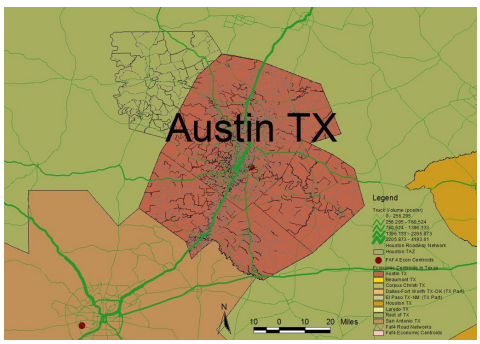
To facilitate efficient freight transport, improve the competence of megaregions, and ensure the general success of the megaregional economy, it is necessary to gain a better understanding of the spatial and temporal patterns of megaregion truck movement. However, this important issue has not been thoroughly examined due to the lack of sufficient data and appropriate methods. Most studies of megaregions are still limited to academic interest; applied research on megaregional freight movement is still at an early stage.

The objectives of this research is to develop an analytical model for estimating megaregion truck flows, which helps to evaluate and improve freight mobility in megaregions. It reviews existing studies on this issue, identifies available and ready-to-use freight datasets, and develops the state-of-practice methods for truck flow estimation.

Based on the available freight data, this research intends to develop a replicable method to explore the spatial and temporal patterns of commodities moved by truck in megaregions. It develops an analytical framework to load the commodities carried by truck onto a road network, which is a spatial integration of the Federal Highway Administration (FHWA)'s Freight Analysis Framework (FAF) and the megaregion freight transportation facilities. It also estimates the amount of off-peak (night time) truck traffic within the Texas Triangle. It selects Texas Triangle as an empirical case to demonstrate the implementation of the megaregion truck flow model.



Hourly Truck Volume in Houston



Hourly Truck Volume in Austin

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