

Title: GPS/GIS Analysis of Tennessee Truck Trips

Description:

Freight transportation planning is largely limited by the amount, quality and detail of truck trip data. Most truck movement data is reported at the inter-county level and is represented as aggregated tonnages that must be broken down to truck trips. Additionally, intra-county flows can be largely under-represented and commercially available commodity flow databases (e.g., TRANSEARCH) are prohibitively expensive. Surveying truck drivers (such as at truck stops or at terminal gates) and following trucks from terminals is time-consuming and requires a great amount of labor to geocode the trip origins and destinations. Truck trip traffic generated from these aforementioned sources relies on outdated and insufficient traffic generation data and models, shortest path algorithms and spot counts and the results are seldom validated. The American Transportation Research Institute (ATRI), with the Federal Highway Administration (FHWA) developed the Freight Performance Measures Web-Based (FPMWeb) tool. FPMWeb continually measures operating speeds (using GPS device data) of a large sample of trucks along 25 interstate highways. The proposed research will analyze raw ATRI GPS truck data to achieve the following goals:

- Provide key indicators of performance for freight intermodal terminals in Memphis TN.
- Develop maps with travel times, flows for intercity truck traffic.
- Develop a model able to predict turn-around times at these terminals based on the demand, type of movement, terminal features among others. The proposed measures of performance and model can be used to capture with increased accuracy different operational strategies that reduce congestion in the vicinity of freight terminals.
- Determine Tennessee's primary truck freight trading partners in the U.S. by zip code, along with the primary corridors that support these linkages. The resulting truck trip distribution and supporting GIS layers will be delivered to TDOT.
- Analysis of Tennessee truck corridors with a particular focus on travel times, flows and intracity truck traffic

Start Date: 2011/9/1

End Date: 2012/6/30

Funding Source: The Center for Intermodal Freight Transportation Studies (CIFTS)

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