

<p>Project Title: A supply chain-oriented methodology to analyze performance of port-related multimodal freight infrastructure</p>
<p>Project Abstract (Brief Description): Cargo moves between ships and trucks at a port. Therefore, it is logical to conclude that truck activities will influence vessel activity, and vice-versa. Although one might expect a direct and straightforward relation between these two shipment modes, that is rarely the case. Several factors such as multiple and different final destinations of consolidated cargos, different truck capacities, and customs clearance and regulations influence cargo movements and transfers between these two transportation modes.</p> <p>As part of previous efforts, TTI has developed a methodology relating truck-vessel activity. In subsequent work, TTI enhanced the original methodology by analyzing terminal capacity and operations to identify possible causes related to port activities that influence roadway behavior of trucks. This past work used statistical analyses that delivered quantitative relations in the form of coefficients that could be translated into truck traffic for the surrounding roads of a given port.</p> <p>This project will build on these past studies to develop a supply chain-oriented methodology to analyze performance of the port-related multimodal freight infrastructure. Specifically, the project team will identify and match up the key freight corridors with ship activity to analyze what happens on relevant supply chain corridors at times of ship arrivals and departures. This multimodal fluidity analysis will apply supply chain fluidity measures for marine and truck data, identify key commodities influencing multimodal transportation behavior, and estimate impact costs. Fluidity measures will focus primarily on travel time behavior.</p>
<p>Describe Implementation of Research Outcomes (or why not implemented) - Place any photos here <i>To be determined upon conclusion of the project:</i> The implementation of this project will consist of applying the methodology developed to a specific case to illustrate how this methodology can be used by State DOTs to improve planning for port access infrastructure.</p>
<p>Impacts/Benefits of Implementation (actual, not anticipated) <i>To be determined upon conclusion of the project:</i> This work will enable planners to understand the relationships between levels of port activity and the effect of the activity on the surrounding infrastructure. Last mile and immediate hinterland infrastructure has become a major concern to port areas across the country.</p>
<p>Web Links: martrec.uark.edu</p>
<p>Budget (Funding) Amounts & Source(s) (US DOT +Match(s) =Total Costs): MarTREC \$59,545 and Match \$29,772. Total \$89,317</p>
<p>Project Start and End Dates: August 2022 - August 2023. Complete</p>
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