Florida Department of Transportation Research

FDOT Identification of Prospective Solutions for Florida Trade Imbalance and Empty Backhauls

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Current Situation

Business is booming in Florida. With a population of 21 million -the third most populous state in the U.S.-Florida has a robust and growing economy. Many of the goods we buy and sell are imported into our state and shipped by truck. However, Florida has a freight imbalance. As trucks move millions of tons of freight into the state each year, outbound trucks are departing empty or half full. Simply put, Florida is importing about twice as much as it is exporting.

Trucks commuting with empty loads (called empty backhauling) create uncovered costs of about $64 an hour, a previous study showed. This imbalance results in raised shipping costs for customers and a reduction in the effectiveness of moving freight. Even marginal gains in exports originating in Florida could make meaningful corrections to this imbalance, lower shipping costs, and increase effectiveness of the transportation system.

In a recent study, University of South Florida researchers explored opportunities to reduce Florida's current challenge with empty backhauling.

Research Objectives

The goal of this project was to identify sites and counties that have the greatest need for empty backhauling relief in Florida, and then evaluate high-performing manufacturing industries that might work for those areas. If manufacturing could increase in those places, empty backhauling could likewise be reduced.

Project Activities

Following a literature review on empty backhauling, the University of South Florida research team used weigh-in-motion data to determine sites and counties with the greatest backhauling deficits. Then, they identified leading and emerging manufacturing industries in those areas that could create more outbound freight.

For example, researchers found that Duval County had 8.48% empty backhauling for agricultural products. If exports of these commodities increased by 10%, empty backhauling trucks would be reduced to 7.63%. Similarly, if manufacturing increased by 100% at any location, empty backhauling trucks would be reduced to zero.

Through in-person interviews with major shippers, freight forwarders, and manufacturers, researchers found that reliability of transportation infrastructure, the mount of goods being shipped, and the flexibility of movement impact companies' mode choice for moving freight. With that information, the team developed various recommendations to reduce empty backhauling and to improve overall freight movement across all industries, including maximizing use of seaports and seeking out online platforms like Uber Freight and Amazon Freight to provide work opportunities to Florida truckers.

Project Conclusions and Benefits

This research project confirmed that Florida has significant potential to alleviate the empty backhauling problem. Increasing manufacturing production, diversifying trade opportunities, and incentivizing emerging sectors are initiatives that could prove to be beneficial and bring more balance trade to Florida's freight economy.

For more information, please see *fdot.gov/research*.