Freight Advanced Traveler Information System (FRATIS)

Mansooreh Mollaghasemi, Ph.D.
Founder & CEO
Productivity Apex, Inc.
Orlando, Florida
www.productivityapex.com

The Freight Advanced Traveler Information System (FRATIS) is a USDOT funded program whose objective is to develop and deploy an information sharing / transfer capability that enables the coordination of moves between parties to maximize loaded moves and minimize unproductive moves. This work involved the development of a robust optimization algorithm to serve as a planning tool for the freight community and a communication component that facilitates the exchange of real-time information between stakeholders during the execution, and monitoring stages of freight operations. For every freight pickup and delivery job, the optimization algorithm finds all of the feasible scheduling opportunities that will minimize delays due to traffic, minimize wait time in queues, maximize value-added moves, minimize unproductive moves, and maximize load matching and backhauls. The system was designed and deployed through an easy-to-use web-based tool with an intuitive graphical user interface, and integrated with web services to capture traffic, weather, and waiting time data; the tool then distributes the optimum driver itineraries to be displayed individually for each driver on their in-cab devices. This capability has been able to achieve both private and public benefits through maximizing private freight community efficiency and productivity while reducing the freight-induced congestion on the roads, particularly during peak hours. In this talk, we will share progress to date including sites where FRATIS is implemented.