

TRUCK PARKING AVAILABILITY SYSTEM

BY: FLORIDA DEPARTMENT OF TRANSPORTATION

IN THIS CASE STUDY YOU WILL LEARN:

1. Why a truck parking system is essential to both the efficient movement of goods and the safety of truck drivers.
2. How stakeholder engagement and academic partnerships can be leveraged to build out a statewide truck parking system.
3. Where sponsorship opportunities might be available to offset maintenance costs for a truck parking system.

BACKGROUND

In October 2013, a survey of nearly 4,000 truck drivers revealed that 83% of the respondents routinely took longer than 30 minutes to find parking. Thirty-nine percent took longer than one hour leaving many truck drivers resorting to unsafe parking methods on interstate mainline shoulders, on ramps or in vacant lots.

The seriousness of this situation was addressed in Section 1401 of MAP-21, referred to as "Jason's Law." In 2009, commercial truck driver Jason Rivenburg sought a safe spot to rest before delivering a load of milk early the next morning. Rivenburg's unfamiliarity with nearby parking options led him to park at an abandoned gas station, where he was murdered. He left behind a young son and a wife pregnant with twins. Because of this incident, Rivenburg's wife championed "Jason's Law," which moves solving the truck parking crisis from an industry issue to a national issue, expanding eligibility for states to use federal highway funds for truck parking projects.

Because of the lack of identifiable parking locations, truck drivers nearing the end of their allotted Hours of Service (HOS) spend time searching for parking while approaching fatigue limits, presenting a public safety hazard. In addition, non-necessary driving increases environmental and community impacts through increased emissions and congestion of the roadways. To address these issues, the Florida Department of Transportation (FDOT) has developed a Truck Parking Availability System (TPAS) to meet the goals and objectives outlined in MAP-21, the National Strategic Freight Plan and the Florida Freight Mobility and Trade Plan.

TSMO PLANNING, STRATEGIES AND DEPLOYMENT

Leveraging the extensive deployment of the state's Intelligent Transportation System (ITS) infrastructure, the FDOT developed a Transportation Systems Management and Operations (TSMO) solution to notify truck drivers about parking availability at public facilities along the interstates including welcome centers, rest areas and weigh stations. Building upon the Fiscal Year 2015 award of an Accelerated Innovation Deployment (AID) grant, FDOT prepared documents for installation including systems engineering (concept of operations and project systems engineering management plan); concept plans; environment, utility, right of way and railroad clearance as well as a design-build Request for Proposal (RFP) with associated specifications and estimates. As a proactive measure, the documents were concurrently developed for the remaining facilities throughout the state. Partly due to this level of preparation, the FDOT submitted a proposal and was awarded a FASTLANE grant in 2016 to support the full statewide deployment of TPAS at all locations. The TPAS was subsequently installed at 74 public facilities within the state of Florida, covering the entire Florida interstate system including a significant portion of the National Highway Freight Network within Florida.



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TPAS deployed in-ground space detection at the rest areas and welcome centers, and microwave detection for ingress/egress monitoring at the weigh stations to gather real-time parking availability information. That information is shared using roadside-embedded dynamic message signs (DMS), the Florida 511 (FL511.com) website and third-party data feeds.

FREIGHT MANAGEMENT

While TPAS will improve safety for drivers and dramatically reduce parking search times by providing real-time information, it will also contribute to efficiency of freight movement. Drivers will more easily meet hours of service rest periods and TPAS will allow for staging to meet on-time pickup and delivery, a key to effective travel time reliability of freight movement. Future stages of the project will include historical data analysis and predictive parking availability (at both public and private parking facilities) to further enhance route and logistics planning for freight management.

TRAVELER INFORMATION

Traveler information and public communications are major components to the success of the system. The use of DMS, FL511.com and stakeholder engagement through partnerships with the Florida Trucking Association (FTA), were established to successfully provide the information to the commercial vehicle operators.

ACTIVE TRAFFIC MANAGEMENT

FDOT's Regional Transportation Management Centers (RTMCs) integrate and disseminate the TPAS information. The RTMCs are part of a larger system, which includes traffic incident management, integrated corridor management, connected and automated vehicle deployment, among other TSMO strategies. By incorporating active freight management into the RTMC activities, a robust, multimodal solution to traffic management will be developed by combining data from various sources such as ITS, TPAS and traffic monitoring sites communications.

PLANNING AND EXECUTION

The TPAS program involved extensive coordination with stakeholders. During the concept development phase, university partners were engaged to study and establish the technology solutions for deployment. Public involvement occurred, both with partner agencies and the public, to inform them of the project needs and goals and the overall benefit to the community.

Internal FDOT communications occurred continuously across multiple offices of the department to incorporate additional value-added benefits and provide planning consistency.

These offices include planning, transportation data analytics, traffic engineering and operations, as well as maintenance to leverage best



practices and incorporate future requirements. Florida Highway Patrol (FHP) personnel were involved in the process from the enforcement and traffic safety perspective. Stakeholder engagement with the FTA was to determine the appropriate method of information dissemination.

OUTCOME, BENEFITS AND LEARNINGS

The TPAS program is being shared nationally as a best practice for deployment of TSMO strategies to effectively address truck parking. FDOT's approach to maintenance is providing funding based on prescribed formulas at the device level, allowing for effective benefit cost analysis by other states to include long-term maintenance.

The innovative use of sponsorship signs, which was approved by the Federal Highway Administration (FHWA), offsets maintenance costs of the system. The reduction in travel time, energy consumption and emissions will provide a benefit to both the commercial vehicle operators as well as the citizens of the state. Real-time knowledge of parking availability also allows for data-driven decision making for future truck-parking capacity improvements.

FURTHER INFORMATION

NOCoE Knowledge Center: <https://transportationops.org/knowledge-center>