



Florida Department of Transportation Research

Commercial Motor Vehicle Parking Trends at Rest Areas and Weigh Stations

BDK80 977-14

A trillion or so pounds of freight move through Florida each year, mostly in semi tractor trailers. These trucks are a major presence on Florida's highways and come with major safety concerns. To reduce the possibility of collisions, drivers are specially trained and licensed. They also work under rules that require breaks and rest periods; yet, increasing commercial truck travel has led to greater demands on the limited truck parking at Florida's interstate rest areas.

Inadequate truck parking is a national problem as increased heavy-truck traffic, tighter delivery schedules, and federally regulated limits on driving time have produced demand for parking that exceeds capacity. This problem is more than an inconvenience; studies have linked it with fatigue-related crashes. Truck drivers may be forced to park illegally on entrance/exit ramps, roadway shoulders, or other unauthorized areas during required downtime. This practice can affect roadway operations, create unsafe situations, and lead to drop offs, erosion problems, clogged drainage systems, air pollution, and degrade pavement prematurely.

In this project, Florida International University researchers studied the truck parking problem in Florida, determining the supply and demand characteristics for commercial truck parking and testing a smart management technology for truck parking to increase the efficiency of commercial drivers and reduce problems resulting from inadequate parking facilities. The research was conducted in two phases.

In phase one, the research team determined the level of the parking problem at all 53 public rest areas managed by the Florida Department of Transportation (FDOT) along the I-10, I-75, and I-95 corridors. The research team defined seven segments on the Interstate system, each including three to five public rest areas. Team members traveled each segment for two or three nights, visiting each rest area to collect data on supply



Because of inadequate rest area parking, this truck is parked illegally on the exit ramp shoulder.

and demand characteristics. The research team interviewed security officers, state troopers, county sheriffs, and FDOT staff, and explored truck parking patterns and safety issues in unauthorized areas on limited access highways.

In phase two, the research team developed and deployed a pilot system for truck parking management. The team based design of the pilot system - including wireless communications, data collection, and data processing - on review of the literature, commercially available technologies, and meetings with FDOT and other stakeholders. They chose wireless ground sensors which combined magnetic induction and infrared sensing to more accurately determine vehicle presence. The system was installed in two rest areas on I-10, and gave a very detailed picture of truck use of the rest areas. The open database design would allow integration of the system with FDOT's advanced traffic management system software, SunGuide.

The pilot system could be used to inform truck drivers about parking as well as to provide continuing data about rest area use and parking needs to FDOT planners. Improved rest facilities can produce safer highways and a more efficient freight system.

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For more information, visit <http://www.dot.state.fl.us/research-center>