FDOT’s Truck Parking Availability System (TPAS)

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Florida Department of Transportation (FDOT)
Presentation Overview

• Truck Parking Availability System (TPAS)
• Research Projects
• Federal Grants
• TPAS Deployment Locations
• Project Delivery
• Deployment Mechanisms
• Project Schedule
• TPAS Architecture
• Data Dissemination
FDOT’s Truck Parking Availability System (TPAS)

TPAS supports

• Federal Motor Carrier Safety Administration (FMCSA) Hours of Service regulation
• Safe and convenient parking options
• Just-in-time delivery
• Advance planning for freight operation
• Reduced truck parking violations
• Electronic monitoring and dissemination of information

First phase deployment at

• Rest Areas
• Weigh Stations
• Welcome Centers

FDOT planning to incorporate private truck parking information in future
Florida International University (FIU) Research

Identify current supply and demand of public parking
• Identified need to “balance” parking use

Assess technology to improve parking management
• Provide advanced notification of parking availability
• Two pilot projects
  • Leon County (in-pavement Sensors)
  • St. Johns County
    (ingress/egress counts w/ detectors)
University of Florida (UF) Research

Evaluation of in-ground sensors to examine their capabilities

- Tested four different vendors

Resulted in FDOT Developmental Specification 660

- Turnover Accuracy – 90%
- Occupancy Accuracy – 95%

Ground-truth data through video logs
Federal Grants

- Federal AID: $1 Million
- FASTLANE: $11 Million

Commercial Vehicle Parking System Project

- Location: Florida: I-95 and I-4 Corridors
- Award Recipient: Florida Department of Transportation
- Innovation: Commercial Vehicle Parking Availability Notification System
- Award Fiscal Year: 2015
- Project Aspect: Operation
- Description: This project will provide reliable real-time information about commercial vehicle parking availability to dispatchers and commercial vehicle drivers allowing for educated decisions on parking at rest areas and weigh stations. FDOT has completed the Survey of Commercial Truck Parking Potential.
TPAS Deployment Locations

- 52 rest areas (45 in 2019)
- 20 weigh stations
- 3 welcome centers

<table>
<thead>
<tr>
<th>Number of Truck Parking Spaces Monitored</th>
<th>2,352</th>
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<tbody>
<tr>
<td>Wireless Detection System (WDS)</td>
<td>1,875</td>
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<td>Microwave Vehicle Detection System (MVDS)</td>
<td>477</td>
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4 Corridors: I-95, I-4, I-75, I-10
3 Welcome Centers
20 Weigh Stations
45 Rest Areas
Truck Parking Sites Located in FDOT Districts 1, 2, 3, 4, 5 and 7
Project Delivery

STAGE 1
Implementation of technology to accurately assess and disseminate the availability of truck parking

STAGE 2
Development of predictive analysis for future parking availability

STAGE 3
Incorporation of private parking locations for systemwide resource utilization

Three-stage approach to statewide comprehensive truck parking solution
## Deployment Mechanism

<table>
<thead>
<tr>
<th>Funding</th>
<th>Corridor</th>
<th>Sites</th>
<th>Vendor</th>
<th>Winning Bid Price</th>
<th>Procurement</th>
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<td>FDOT District 5 (Phase I)</td>
<td>I-4, I-95</td>
<td>5 Rest Areas, 2 Weigh Stations</td>
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<td>I-10</td>
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<td>FDOT District 5 (Phase II)</td>
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<td>FDOT District 2</td>
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<td>FDOT District 1</td>
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<td>CivicSmart</td>
<td>$1,441,170.64</td>
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Project Schedule
TPAS Architecture

Data collection
- In-ground sensors
- Ingress and egress sensors

Data communications
- Existing ITS network

Data collection, processing, and storage
- RTMC using SunGuide® system

Data dissemination
- Embedded roadside Dynamic Message Sign (DMS)
- Connected Vehicle and Dedicated Short Range Communications (DSRC) - Future
- Florida 511
- Data Integration and Video Aggregation System (DIVAS)
Data Dissemination Using Roadside Signs

Criteria used for roadside signs

- Two to three miles upstream of the parking facility preferably prior to an upstream exit ramp for better decision-making
- Manual of Uniform Traffic Control Devices (MUTCD) compliant
- Near existing ITS communication and power source
- Near an existing CCTV for message verification
Data Dissemination using FL511

FL511 Website Truck Parking Facility Map View

FL511 Mobile App Truck Parking Facilities List View

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Questions?

Thank you!

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