

TEXAS FREIGHT NETWORK TECHNOLOGY AND OPERATIONS PLAN



Strategy

TRUCK PARKING AVAILABILITY SYSTEM

Freight Technology Area	Advanced Traveler Information Systems
Owner	TxDOT Divisions
Key Stakeholders	TxDOT Districts, Metropolitan Planning Organizations (MPOs), Trucking Industry Groups
End-Users	Truckers, Trucking Companies/Dispatchers, Texas Department of Public Safety (TxDPS) Law Enforcement

Motivation

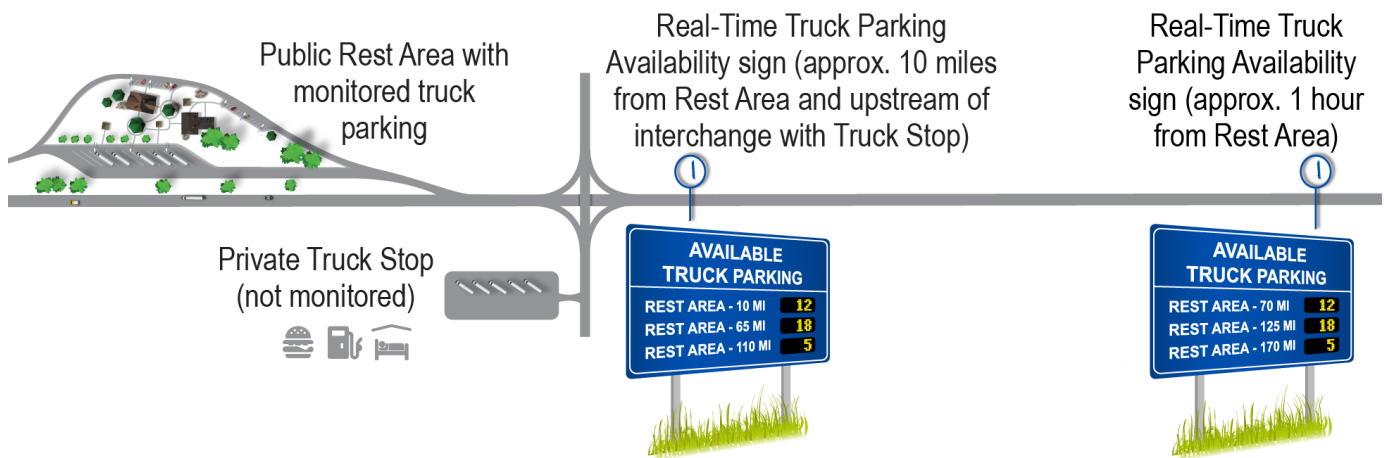
Truck drivers need access to truck parking facilities for staging, mandatory breaks, rest, and other daily needs. Truck parking is in short supply in Texas and nationally. For truck parking locations with available space, the lack of real-time truck parking availability information makes it difficult for truck drivers to make informed parking decisions.

Strategy Description

Truck Parking Availability Systems (TPAS) is an Intelligent Transportation System (ITS) application to assist truck drivers in locating available parking spaces in real-time so they can make informed decisions about their parking needs. The TPAS strategy includes monitoring real-time parking availability at strategic statewide public truck parking areas and publishing parking availability data for freight industry use.

Contribution to 2018 Texas Freight Mobility Plan Goals

- ✓ Safety
- ✓ Economic Competitiveness
- ✓ Asset Preservation and Utilization
- ✓ Mobility and Reliability
- ✓ Multimodal Connectivity



Strategy Scope

- Instrument public State Rest Areas (SRAs) with detection technology to monitor truck parking availability in real-time.
- Implement a processing and evaluation platform (TxDOT Advanced Traffic Management System [ATMS] or a third-party software) from which the truck parking data from the field can be processed into usable information.
- Publish real-time truck parking availability data on roadside signs at key decision points to help truckers make informed decisions on where to park.
- Utilize a public data feed to make truck parking availability data available to other systems and groups, such as DriveTexas, private sector truck parking apps, and freight companies' Truck Management Systems.
- Store availability and utilization data in a database to support future freight planning projects and studies.

Examples of User Needs Addressed*

- Need to develop the Houston-Dallas-San Antonio triangle with new smart technologies to improve operations.
- Need for more TPAS deployments to provide information to truckers.

Potential Benefits*

Safety	Mobility
<ul style="list-style-type: none"> • 10% to 15% reduction in fatigue-related crashes 	<ul style="list-style-type: none"> • 15-minute average travel time saving per space
Vehicle Operating Costs	Benefit/Cost Range
<ul style="list-style-type: none"> • 2 gallons average fuel savings per day per truck 	<ul style="list-style-type: none"> • 3:1 to 8:1
Emissions	
15 miles average reduced miles traveled per truck	

TPAS on I-94 in Minnesota

"67% of truck drivers reported TPAS information significantly improved their ability to find parking and comply with HOS regulations."

Survey by American Transportation Research Institute (ATRI), 2017

Cost Estimates*

Sample Capital Cost	Sample Annual O&M Cost
<ul style="list-style-type: none"> • For 5 sites, each with 20 parking spaces: \$1.1M • For 5 sites, each with 50 parking spaces: \$1.4M • Truck Parking Availability Data Published on Website/App: \$53K 	<ul style="list-style-type: none"> • For 5 sites, each with 20 parking spaces: \$127K • For 5 sites, each with 50 parking spaces: \$344K • Truck Parking Availability Data Published on Website/App: \$11K

Timescale for Implementation

Near-Term (0-2 years)	Medium-Term (2-5 years)	Long-Term (5-7 years)
✓ Plan	✓ Deliver	✓ Operate & Maintain

Freight Modes Covered: Highways

* The full list of user needs and supporting sources for benefits and costs can be found in the FNTOP Strategies and Conceptual Framework Report.

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