MOTOR CARRIER ATTACHMENT

FMCSA Truck Parking Activities Report

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Truck Parking Activities at the Federal Motor Carrier Safety Administration

The Federal Motor Carrier Safety Administration (FMCSA) prioritizes truck driver safety through many activities and resources targeted to address challenges with motor carrier operations and technology. For truck parking in particular, FMCSA has been dedicated to listening to stakeholders within the trucking industry to understand the problem, advocate and bring attention to the need for solutions, and to work with partners to drive resources for solutions.

This document describes the new priorities and existing truck parking resources at the FMCSA and how FMCSA's efforts align with the overall truck parking activities at the United States Department of Transportation (USDOT). Further, it reflects the increased emphasis and priority FMCSA has placed under the Biden Administration to address truck parking challenges with our partners throughout the nation.

Activities to support truck parking exist throughout USDOT. Many of the modal administrations at USDOT have resources to support States and local governments, as well as private sector stakeholders in addressing the critical issue of truck parking shortages in the nation. To optimize the use of these resources, the Federal Highway Administration (FHWA) leads a Truck Parking Working Group (TPWG) to plan and implement solutions. FMCSA actively participates in that group and works to support States and the Commercial Motor Vehicle (CMV) industry through its research, programs, and funding described below.

FMCSA Activities on Truck Parking

The following describes new efforts FMCSA is prioritizing and existing resources at FMCSA for truck parking. These activities align with the broader TPWG.

Stakeholder Outreach and Truck Parking Prioritization

FMCSA works with trucking stakeholders throughout the industry, as well as States and local governments, to listen to concerns and bring awareness to safety challenges. For truck parking, FMCSA strives to learn from industry stakeholders, specifically drivers, about the issues in finding safe parking. Further, FMCSA looks to drivers for ideas on needs and solutions. On their behalf, FMCSA works to identify opportunities to target FMCSA resources and to work with modal partners on other options that can support solutions. FMCSA is supporting outreach to bring together private and public stakeholders. For example, there is a need to engage local government planners and economic developers on development and transportation decision-making to consider truck parking in plans. FMCSA is dedicated to fostering these types of discussions focused on solutions to help reduce the potential for safety and security problems when drivers cannot park.

Grant Programs

FMCSA has several grant programs where truck parking is an eligible activity. Truck parking was added to the Notice of Funding Opportunities for FMCSA's grants in 2018, and FMCSA worked to reach out to

eligible entities to provide awareness of best practices and opportunities for using FMCSA resources for truck parking. Since then, FMCSA awarded almost $11 million for truck parking information systems and related research. Since then, the number of States applying for and receiving these grants increased. 2021 had the highest award amount of $4,317,311 and 2023 had $3,961,360.

Recent grants funded under these programs are listed in Table 1 and detailed in Appendix A. These grants, combined with other modal administration funding, help to support truck parking options for states, local governments, and other stakeholders.

These programs include:

High Priority – Commercial Motor Vehicle Grants (HP-CMV)

These grants support innovative and impactful projects that advance FMCSA's mission to reduce crashes, injuries, and fatalities involving large trucks and buses. Funding can support safety and compliance projects, increasing public awareness and education, development of new technologies, and reducing number and rate of CMV crashes.

High Priority – Innovative Technology Development Grants (HP-ITD)

These grants provide funding and expertise to develop innovative technology deployment within States' reach. States identify their own technology priorities and needs, and the ITD safety innovation experts help States leverage the most appropriate tools.

Table 1. FMCSA Grants for Truck Parking

Year	State	Type	Project	Amount
2018	Delaware	HP-ITD	Truck parking information system	$347,237
2020	Texas	HP-CMV	Truck Parking App	$490,000
2021	Connecticut	HP-ITD	Truck Parking Information Management System	$1,467,559
2021	Indiana	HP-ITD	Truck Parking Information Management System	$850,000
2021	Washington	HP-ITD	Truck Parking Technology	$1,999,752
2022	Texas	HP-CMV	Study of Drivers and Parking	$350,000
2022	Kentucky	HP-ITD	Truck Parking Information Management System Expansion	$300,000
2022	Montana	HP-ITD	Truck Parking Information Management System	$1,145,947
2023	Texas	HP-CMV	Study of Drivers and Parking	$370,000
2023	Delaware	HP-ITD	Truck Parking Information Management System Expansion	$320,960
2023	Indiana	HP-ITD	Truck Parking Technology	$2,000,000
2023	Kentucky	HP-ITD	Truck Parking Information Management System Expansion	$1,270,400

Technology Activities

FMCSA has been at the forefront of developing innovative technologies that support CMV safety including with truck parking availability detection and information dissemination technologies or Truck Parking Information Management Systems (TPIMS). Activities include:

SmartPark Real-Time Parking Availability (2007-2014)

The SmartPark program was prompted by a 2000 National Transportation Safety Board (NTSB) recommendation[1] that the FMCSA create a guide for truckers on parking availability options. A 2002 study on adequacy of truck parking by the FHWA recommended use of technology for real-time information on the location and availability of parking, which FMCSA subsequently studied in 2005.

FMCSA awarded two contracts between 2007 and 2009 for field operational tests of two different types of technologies (video imaging and magnetometry) that evolved to Doppler and laser/light curtain technology to detect open spaces. The outcome of this work showed the feasibility of commercially available technology (Doppler and laser/light curtain) to determine truck parking space occupancy accurately and reliably. A Phase I report[2] was released in 2014 that discussed ways two truck parking areas can be networked in such a way that trucks can be diverted from a filled area to an unfilled area.

FMCSA initiated a second Phase of SmartPark, Phase II[3], that focused on information dissemination, reservations, maximization of space, gathering of historical data to make forecasts of availability, and self-sustainability. In Phase II, FMCSA tested side-fired laser side scanners at the ingress and egress points of parking areas to monitor vehicles entering and exiting the site, as well as traveler information dissemination. There were issues with the equipment being damaged, and researchers found some problems with information dissemination methods. However, the report provided some key lessons that would support future efforts, especially in the set-up of equipment and means for getting information to drivers that will improve driver safety. For example, Phase II helped identify what might work best for technology systems and reservations options that could be tested in future research.

Since this work, several states have deployed SmartPark systems and similar systems. Each year, more and more states are working on ways to detect parking availability and to disseminate that information. In addition, FMCSA technology staff have worked with states that obtained non-FMCSA grant funding for truck parking information systems to provide technical guidance.

Webinars to Encourage use of Grants for Truck Parking Systems

FMCSA plans to provide information resources to states and other eligible entities on the importance of truck parking and best practices or lessons learned in advancing truck parking technology. The goal is to help grow the number of eligible entities using FMCSA's resources to design and implement truck parking technologies. Additionally, FMCSA plans to align efforts with FHWA on capacity projects to target areas for complementary parking technology solutions. This is slated for Fiscal Year 2024.

Use of Connected Data to Understand Truck Parking Behavior and Technology Options

FMCSA studied various technology options such as:

- Using a free truck parking application to determine if it was effective for truck drivers to find available parking.

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[1] NTSB Highway Special Investigation Report: Truck Parking Areas (NTSB/SIR-00/01); see https://www.ntsb.gov/news/events/Documents/truck_bus-SIR0001.pdf for the final report and https://data.ntsb.gov/carol-main-public/sr-details/H-00-019 for details about safety recommendation H-00-019.

[2] FMCSA SmartPark Technology Demonstration Project; November 1, 2013: https://rosap.ntl.bts.gov/view/dot/167

[3] FMCSA SmartPark Technology Demonstration Project, Phase II: Final Report; May 1, 2018: https://rosap.ntl.bts.gov/view/dot/35959

- Using data to study truck driver behavior and parking decisions during their day-to-day operation and in response to hours-of-service requirements.
- Assessing the truck parking challenges and recommendations for addressing truck parking to inform parking investors from the private sector on safe parking practices to improve parking options and support supply chains.

Continued efforts are expected with the next round of grants for Fiscal Year 2024.

Policy

With the requirement for most drivers to use Electronic Logging Device (ELD) systems to monitor hours of service (HOS), some drivers report concerns about finding parking safely. FMCSA allows drivers to use personal conveyance, which is the movement from a shipper or receiver to the nearest resting, if the CMV is being moved solely to enable the driver to obtain the required rest at a safe location. FMCSA works with law enforcement to ensure that drivers do not try to use personal conveyance beyond finding the nearest parking option.

Data and Analysis

There are several data and analytical research efforts for truck parking developed by FMCSA. For example:

Mapping the Relationship of Parking to Fatal Crashes

FMCSA has mapped[4] fatal crashes and the relationship to parking locations (official spaces and unofficial spaces like ramps and shoulders). FMCSA plans to investigate non-fatal crashes next (Fiscal Year 2024).

Mapping Areas of Truck Parking Demand to Target Solutions

FMCSA is planning to build on the above work to map areas of demand to target for capacity and technology solutions, especially where higher levels of crashes are observed (Fiscal Year 2024)

Quantifying the Safety Impacts and Costs due to Truck Parking Shortages

The FMCSA Research Division is exploring the costs and benefits of creating additional truck parking. FMCSA has performed some preliminary estimates developed on these issues, but more work is needed to precisely determine the costs and benefits of each additional truck parking space. This work will be underway in Fiscal Year 2025, but FMCSA will continue to run preliminary analytics to support USDOT-wide truck parking efforts and studies underway.

Safety

FMCSA monitors and implements requirements for driver safety, and this includes hours of service (HOS). FMCSA works with stakeholders to understand the challenges of drivers, to research and develop programs and regulations that help promote safety, and to understand ways technology can assist. Truck parking continues to be part of a comprehensive effort to improve safety of CMV operations, and FMCSA's significant outreach with State departments of transportation and the law enforcement community help to identify the ways in which safety impacts like those from the parking shortage can be

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[4] FMCSA Analysis Division; 2023 ART Forum Presentation analyzing truck parking crashes (2018-2020): https://www.fmcsa.dot.gov/sites/fmcsa.dot.gov/files/2023-04/Art%20Forum%202023%20Truck%20Parking%20Crashes%20508.pdf

communicated. This helps FMCSA work with USDOT partners and other stakeholders, such as those through the National Coalition on Truck Parking to identify needs and target resources.

Appendix A – Recent Truck Parking Related Grant Awards

2018

Delaware Department of Transportation (HP-ITD): $347,237

- Development and deployment of a truck parking information system pilot.

2020

Texas A&M Transportation Institute (with Iowa DOT and Wisconsin DOT) (HP-CMV): $490,000

- Project to study effectiveness of a truck parking app to help drivers find available parking.

2021

Connecticut Department of Motor Vehicles (HP-ITD): $1,467,559

- Development of a Truck Parking Information Management System (TPIMS) for real-time dissemination of commercial vehicle parking information.

Indiana Department of Transportation (HO-ITD): $850,000

- TPIMS project that will use roadside dynamic messaging signs, third-party applications, and a website to view the number of available truck parking.

Washington Department of Transportation (HP-ITD): $1,999,752

- Project to implement detection sensors for truck parking availability and methods to disseminate information to drivers.

2022

Texas A&M Transportation Institute (HP-CMV): $350,000

- Project to understand truck driver behavior and parking decisions during their day-to-day operation and in response to hours-of-service requirements.

Kentucky Department of Transportation (HP-ITD): $300,000

- Update/upgrade Kentucky's current TPIMS to make the system more accurate.

Montana Department of Transportation (HP-ITD): $1.15M

- Project to deploy parking stall identification and availability systems to identify available parking.

2023

Texas A&M Transportation Institute (HP-CMV): $370,000

- Project focused on understanding truck parking challenges and recommendations for addressing truck parking with private truck parking investors.

Delaware Department of Transportation (HP-ITD): $320,960

- Project to augment the Delaware Truck Parking Information System (TPIMS) Pilot Project by transmitting parking availability information in real time to Dynamic Message Signs (DMS) to display parking options.

Indiana Department of Transportation (HP-ITD): $2M

- Project to increase the real-time truck parking information at welcome centers and one truck parking facility on heavy freight-traffic corridors.

Kentucky Department of Transportation (HP-ITD): $1,270,400

- Project to enhance and expand truck parking information management systems (TPIMS) in Kentucky with technology enhancements to improve accuracy.