Special Report: Truck Parking Shortage

White Paper

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Executive Summary

Finding safe truck parking for drivers is a critical issue estimated to cost the trucking industry over 5.1 billion USD per year. 40% of U.S. drivers spend an estimated 132 hrs of their driving time looking for parking, thus creating redundant costs and losing potential revenues. If drivers didn’t lose this time, America could move more freight, thus rendering truck driver shortage null.

Not only does the issue affect overall transportation costs, but also creates a considerable social problem. 79% of drivers claim to have violated hours of service and 85% say they were forced to park in unauthorized areas because they couldn’t find parking. All of this leads to the loss of job satisfaction. In the meantime, 86% of drivers believe the government is not doing enough to address the issue.

This report highlights three key opportunities to resolve the issue:

1. **Build additional capacity in the areas where truck parking is the scarcest.**

   In many areas across the country, especially in the eastern region, it’s nearly impossible for a driver to find parking during evening hours. The analysis shown in this report highlights the areas where parking capacity needs to be built.

2. **Increase the adoption of technology that brings visibility into available truck parking.**

   Recently, there has been technological advancements that have helped drivers find parking, but not entirely solved the overarching problem. There is more visibility on the road thanks to mobile apps. However, a single parking reservation system is yet to be built. Better application of technology can help drivers lessen the burden of finding a safe place to park nearby. The priority should be creating a reservation system and improving data visibility.

3. **Analyze driver behavior patterns to improve planning and trip efficiency.**

   To alleviate the issue, most, but not all drivers already use best practice to find parking. Educating more truck drivers on the best ways to plan their trip to avoid parking problems would have a small impact, but is easy to implement in the short run.
1. Background

Trucking is the backbone of the U.S. economy, comprising an estimated $726 billion in annual revenue. Over 1.8 million heavy-duty truck drivers transport 70 percent of America's freight. For the gears of the trucking industry to operate efficiently, drivers' basic needs to complete their job must be satisfied.

Truck parking is one of the most significant concerns of truck drivers today. Finding a place to park is a daily requirement for drivers, and recently the issue of has exacerbated. **Although the number of trucks on the road continues to grow substantially, the parking capacity hasn’t kept pace.**

With recent regulatory changes such as the implementation of electronic logging devices, difficulties finding safe parking within the allotted daily hours of service may compound even further.

The Department of Transportation and industry leaders recognize the importance of available truck parking. Considerable effort has been applied to analyze the issue, however, the lack of quantitative analysis has been a bottleneck in providing ample solutions. The Mid-America Association of State Transportation Officials suggested that measures for truck parking haven’t been effectively carried out due to inadequate data. Similarly, experts from the American Transportation Research Institute indicated that studies “lack detailed qualitative information needed to fully understand the scope and extent of truck parking issue.”

Furthermore, legislation such as the TIGER Grant of 2015 provided funding for truck parking information and management systems for eight states, yet the $25 million in funding was used for information, “disseminated through smartphone applications, dynamic road signage, websites and parking facilities” while funding was not used for increased parking capacity.

86% of the surveyed drivers feel that government isn’t doing enough to help alleviate the truck parking issue.

Technological advancements allow Trucker Path to gather the necessary data in large amounts and shift from qualitative to quantitative analysis with data-driven recommendations. Furthermore, having access to the largest community of truck drivers in America provided the opportunity to ask over 3,000 OTR drivers their opinion regarding truck parking.
2. Economic Implications

Drivers waste precious time

40 percent of drivers spend an hour or more looking for truck parking. Those drivers waste an estimated nine percent of driving time searching for parking. A lack of truck parking, especially during peak hours in the afternoon leads to inefficiencies throughout the industry. The lost time could be spent delivering more loads or completing necessary upkeep and pre-trip inspections.

Fleets and drivers earn less

Time spent searching for truck parking can limit a driver’s earning potential. With the loss of time spent looking for truck parking comes the loss of income, not only for the driver but also for fleets. Many drivers lose an estimated 132 hours annually looking for parking, which amounts to around $7,200 of variable costs and additional $720 of profit per driver per year. If 40% of 1.6M drivers in America lose 11 hrs every month, then the industry is losing about $5.1B annually.

HOS violations can be costly as well. HOS fines range from $150 - $16,000 and an accumulation of those can lead to an increase in a driver’s insurance rate and even suspension.

Cargo theft

Due to the lack of safe parking, drivers are oftentimes forced to park at unauthorized locations that are not monitored. 19 percent of truck drivers say their personal belongings have been stolen from their truck while parked. Unsafe parking has also contributed to revenue losses for fleets. According to CargoNet in 2015, cargo theft loss was estimated to be over $173 million.\textsuperscript{vii}
3. Social Impact

Drivers suffer unnecessary stress

Driving a commercial vehicle weighing as much as 80,000 pounds requires alertness for long durations. Drivers should have peace of mind and not feel rushed while searching for truck parking. Anxiety caused by a fear of a potential violation or theft caused by a lack of safe parking attributes to the fact that driving a truck is one the most stressful jobs in America.

New regulations such as the ELD mandate further compounds the issue with truck parking capacity, especially in busier areas. When a driver approaches their HOS limit and has yet to locate parking, it can lead to unsafe operating as drivers rush to find parking before violating their HOS.

Unauthorized parking is unsafe

The shortage of legal parking creates unsafe scenarios for drivers. Trucks are forced to park along on and off-ramps and shoulders of highways. When trucks park on shoulders or ramps, maneuvering in-and-out of traffic poses safety risks. Accidents involving trucks parked on shoulders and ramps have involved injuries and unauthorized parking has even resulted in fatalities. In 2009, Jason Rivenburg parked his truck at an abandoned gas station in South Carolina after being early for a delivery. Tragically, Jason was shot by an armed robber and lost his life.\textsuperscript{viii}

Figure 3.1
Survey: Have you had to park in one of the unauthorized areas below?
% of respondents who said “Yes”

<table>
<thead>
<tr>
<th>Location</th>
<th>% of Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Road Shoulder</td>
<td>74%</td>
</tr>
<tr>
<td>Off-ramp</td>
<td>59%</td>
</tr>
<tr>
<td>Store Parking Lot</td>
<td>32%</td>
</tr>
</tbody>
</table>

Drivers don’t feel appreciated

86 percent of truck drivers from our survey feel ignored by the government. Oftentimes new regulations are implemented or reformed without thorough feedback from the drivers it will affect. Additionally, many shippers and receivers don’t allow trucks to park at their facility leading to drivers parking at unauthorized and often dangerous locations. Drivers should not be the ones to bear the burden of the issue.
4. Lack of Capacity

Our study of the truck parking issue has revealed three major inhibitors that prevent truckers from finding a spot in the evening: lack of parking capacity, not enough information regarding availability, and sometimes driver behavior.

There aren’t enough spots
The lack of capacity is one of the primary reasons why drivers have difficulty with finding parking in a timely manner. Even a well-informed driver would not be able to find parking just because there are not enough spots around.

Trucker Path is the industry leader in gathering real truck parking information. Its navigational app is used by over 500,000 truck drivers who make regular updates on truck parking availability for around 8,000 parking locations listed in the app.

Trucker Path’s big data were used to analyze the severity of this issue. We looked at truck parking availability between May and August of 2016 and asked a simple question “How likely is a truck stop to have an available parking spot at night?”. We looked at 4,600 truck stops on major highways and found that between 11pm and 5am it’s almost impossible to find a spot in many areas in the United States.

The analysis shows that the areas where truck parking shortage is the most severe are mainly in the Eastern part of the country. Even such significant trucking states as California and Texas lack parking capacity as well.

West Coast truck parking shortage is not as severe as that on the East Coast. However, it is still difficult to find a spot at night in many areas away from towns or big cities.
Figure 4.1
Truck Parking Capacity Analysis – United States, May-August, 2016
“How likely is a truck stop to have a free spot between 11pm and 5am?”
See Methodology for details

Not only does the big data prove that there simply aren’t enough spots, but it also highlights the areas where parking needs to be built.

Real-time data on parking availability gathered from 500,000 truck drivers over the past 2 is sufficient to make conclusions where new additional spaces need to be built. By looking closely at each state and highway Trucker Path can help identify the exact areas with the largest shortage.

Trucker Path is willing to further assist the department of transportation by providing necessary data.
Figure 4.2
Truck Parking Capacity Analysis – West Coast, May-August, 2016
“How likely is a truck stop to have a free spot between 11pm and 5am?”
See Methodology for details
Figure 4.3
Truck Parking Capacity Analysis – East Coast, May-August, 2016
“How likely is a truck stop to have a free spot between 11pm and 5am?”
See Methodology for details
5. Insufficient Information

Information isn’t always available

Even though significant effort has been made to bring visibility on available truck parking, there is still room for improvement.

The rapid development of mobile technology has partially resolved the issue. Trucker Path allows truck drivers to update information, thus bringing more visibility on the road. In this case, the app acted as an enabler, and truck drivers are the party responsible for solving the issue. 88% of respondents agree that the Trucker Path app helps them find parking.

Recently, some truck stop chains have added real-time parking tracking to their truck stops. Unfortunately, such a costly addition isn’t feasible for smaller truck stop owners. Furthermore, a vendor based approach means drivers must suffer the inconvenience of multiple apps, and the lack of a unified map view.

There is no standard to reserve

Adopting a standardized system for reserving parking is a potential solution to maximize truck capacity, especially in areas with frequent truck traffic. A driver who already knows where he or she will be parking when their HOS time runs out can alleviate some of the safety risks associated with driver fatigue and stress.

Trucker Path acted as an enabler, and truck drivers are the party responsible for solving the issue.

Of those respondents who work for fleets, only 12 percent said that their carrier pays for parking reservations. However, 45 percent of drivers say they’d be willing to pay. Since fleets are subject to losses in revenue due to a driver’s time being wasted, they could pay for their drivers to reserve parking.

Figure 5.1
Survey: What is the most you would pay to reserve truck parking? % of respondents

Incentivizing truck stops to provide reserved parking is another alternative. We interviewed independent truck stop owners regarding reserved parking. 57 percent said they wouldn’t charge drivers to reserve a parking spot.
6. Driver Behavior

Most drivers already follow best practice for trip planning, yet there is still opportunity at fleets and with independent drivers to improve or apply best practice on a more frequent basis.

Trip planning
Planning a trip beforehand can oftentimes help drivers be more efficient at finding available parking. Generally speaking, it’s best to look up locations where there will be parking along a given route before starting the trip. It’s also imperative to check for updates at least one hour before hitting the HOS limit. Most drivers follow these principles; however, 16% of drivers say they begin to look for less than 30 minutes before hitting their HOS limit.

Figure 6.1
Survey: How long before hitting HOS limit do you start looking for parking?

<table>
<thead>
<tr>
<th>% of respondents</th>
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<tbody>
<tr>
<td>over 1 hour</td>
</tr>
<tr>
<td>1 hour</td>
</tr>
<tr>
<td>30 min</td>
</tr>
<tr>
<td>15 min</td>
</tr>
</tbody>
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Things drivers can do:
- Plan ahead before taking to the road
- Use apps for real-time information
- Explore options to reserve parking
- Check parking situation at least one hour before hitting HOS limit
- Try to start driving earlier in the day

87% of truck drivers say their fleet doesn’t provide recommendations on how to find parking.

Fleets can help too
Our surveyed company drivers highlighted a lack of guidance from their organizations on ways to locate safe and available parking. 87 percent of drivers say their fleet doesn’t give them recommendations for parking. The lack of attentiveness from fleets, especially the largest sized ones, contributes to the high turnover rates in the industry. Fleets with more than $30 million in annual revenue had a turnover rate of 81 percent in the third quarter of 2016. ix

By adopting readily available technology into an in-cab unified device, fleets can improve the driver experience and gain useful parking data.
7. Recommendations

1. Build more capacity

An increase in capacity must be focused on specific areas that have the largest parking issue. A 2015 report by the Virginia Department of Transportation indicated a truck parking shortage of 1,034 estimated spots. Trucker Path is willing to assist the government in resolving this issue.

Some states, like Kentucky and Florida, have taken the initiative to address the parking by allowing trucks to park at weigh stations known as rest havens.

2. Add more technological solutions

Technology has advanced to provide solutions for drivers to utilize daily. The community of truck drivers help each other on the road by using Trucker Path and some corporate truck stop chains have implemented methods of reporting parking availability.

Reservations could be a viable solution as well, as we’ve concluded there’s interest both from fleets and truck stop owners. Fleets and companies have the means and motive to cover the cost for drivers to park. A standardized method of implementation needs to be introduced.

Rest areas that are closed like in California, where there are 13 not in operation could be reopened just for trucks to provide an average of 10 spots per location.

The addition of corridor parking along busy routes such as the one on I-95 built in 2010, added 170 truck parking spots in Maryland and 50 more in Delaware. These same solutions could be issued across other states that face tremendous shortages.

3. Improve driver behavior

For the most part, drivers follow best practice when looking for truck parking. The utilization of information provided by technology and proper advanced planning has helped to improve the situation. However, fleets could spend more effort in providing their drivers, especially new ones, with the necessary tools and advice to handle issues with finding parking.
Methodology

About Trucker Path

Trucker Path is America’s most popular app for truckers with over 500,000 truck drivers as active users. The app lists over 8,000 locations that offer truck parking. Among those locations are truck stops, rest areas, and Wal-Mart stores that allow truck parking – all have been verified and are regularly updated. The listed locations represent 270,000 truck parking spots. Trucker Path is a platform that allows truck drivers to report parking availability at a location – there are three types of updates: “Lot is full”, “Some spots”, “Lots of spots”. Truck drivers make over 700,000 parking updates monthly thus helping each other bring visibility on the road.

Capacity Analysis

To analyze the lack of capacity we looked at the period between May 1, 2016 and August 31, 2016 – millions of data points each reflecting parking availability at a truck stop at a certain moment in time. We removed weekend days, as this is when the parking situation is less problematic. We considered only night hours, i.e. 11pm to 5am - this is when most drivers look to park. Some smaller truck stops were omitted due to the lack of statistically significant amount of data. We analyzed a total of 4,600 truck stops.

Having limited the scope, we calculated the likelihood as a weighted average of different updates. “Lots of spots” was appointed 100% probability, “Some spots” – 25%, “Lot is full” – 0%. 15% value would mean that there is 15% likelihood that a truck stop has a free a spot at night during weekdays.

Survey

We issued a survey to truck drivers to analyze the results and provide tangible conclusions. Over 3,300 truckers responded from February 4, to February 11, 2017. The questionnaire was distributed via email as well as through links from a post on the Trucker Path Facebook page. Responses are from drivers who spend time away from home and for the sake of diligence, replies to certain questions were limited to a specific audience. As an example, owner-operators’ responses were omitted from fleet-related questions.

Survey questions can be found at goo.gl/6PDNU7

Have a question or comment?

Please contact Sam Bokher: sam.bokher@truckerpath.com
Sources:

Some information to support our findings including figures, revenue, and statistics regarding trucking were provided from various industry reports and case studies.

- American Trucking Association
- FHWA TIGER Grant
- OOIDA
- CargoNet Report
- U.S. Department of Transportation
- American Trucking Research Institute
- Kentucky Transportation Cabinet

Endnotes:

4. Regional Truck Parking Information and Management System, TIGER Proposal 2015, MAASTO
5. Managing Critical Truck Parking Case Study, American Transportation Research Institute, published Dec 2016
6. Regional Truck Parking Information and Management System, TIGER Proposal 2015, MAASTO.
8. Jason’s Law Truck Parking Survey Results and Comparative Analysis, Department of Transportation, Federal Highway Authority, published Aug 2015