I-95 Corridor Coalition: Inside the MAASTO Truck Parking Study

March 13, 2020

Question and Answer Summary

MAASTO Regional Truck Parking Project Overview

Q1: **Anne Strauss-Wieder (NJTPA): How do you handle spaces that are unoccupied but reserved (similar to hotel rooms)?**

A: Brian Comer (HNTB): There are no reservation system as part of our system. Private truck stops want to implement reservation systems (one of the reasons why some of the larger public truck stops didn't want to participate in our system). We're providing our data for free for anyone that wants it.

Q2: **Autumn Young (FDOT): What types of vehicle detection devices did you find were the most accurate?**

A: Chuck Miller (HNTB): All have pros and cons, but mostly depends on configuration of your area. One technology may not work in one configuration, but may work in another. Every state ended up doing a different technology for monitoring truck parking, which made for a good study. We've found generally that magnetometers have worked well and if you can monitor individual space occupancy that's more accurate at this point. Monitoring trucks entering and exiting is more difficult than we imagined and you'll need to restart your system at least once a day.

Q3: **Josh O'Neill (Rhode Island Planning): How are you sending your real time information to truck apps like Trucker Path Pro, etc. I know you guys created a common API, does that go out from each TMC directly to the app developers? Are there requirements to use the API (DSAs, etc.)?**

A: Brian Comer (HNTB): We reached out to the application developers early on and let them know the system was coming and we've been in contact with them since. We've also posted the links to each of the individual states. It was made clear that the states wanted the information to be free for anyone that wanted it. Some states require users to sign in (free), but want information about the developer and want to know who is using the system. Some states are providing it open to anyone.

A: Eric Strack (HNTB): It's a JSON-based web service that each state has deployed that allow third-party developers to grab information from each state.

Q4: **Tom Phelan (BHX Engineering/PennDOT): How did you measure occupancy outside designated parking spaces? This would seem to be an important consideration for areas where utilization consistently exceeds capacity.**

A: Brian Comer (HNTB): This was a big discussion point early on. We decided we'd only monitor designated parking spots, not informal parking areas. Informal areas are not provided as part of what we distribute.

A: Eric Strack (HNTB): With in-and-out counts, we know how many are in the lot, but we don't tell users about the informal spots.

A: Gretchen Ivy (HNTB): that's why we say 'low' as a threshold. They may use it to decide their tolerance for informal parking.

Question and Answer Summary

Q5: *David Rosenberg (NYSDOT): What is the threshold for determining the sites are full?*

A: Chuck Miller (HNTB): Lots are never reported as full. Around 80-90% occupancy is called 'nearing full'.

A: Gretchen Ivy (HNTB): If you had a lot with only 10 spaces, there's a greater sensitivity toward the 'low' threshold, so it really depends on the size of the lot.

Iowa DOT Truck Parking Project

Q6: **Josh O'Neill (Rhode Island Planning): I would think dynamic message signs are the best deployment strategy besides the API and JSON web interface with 3rd Party smartphone apps. Has there been a survey of the trucking industry to see what truckers think is the best approach for data/information delivery, e.g. Smartphone apps vs. Dynamic Messaging Signs?**

A: Chuck Miller (HNTB): Truckers do have to lock cellphones while they're in the cab so one-touch or voice activated interfaces are best for getting information to them.

A: Gretchen Ivy (HNTB): ATRI found in post-deployment surveys that truckers prefer cell-phone or in-app information for planning purposes, but once they're on the road, they rely on the DMS.

Q7: **Tom McQueen (GDOT): I didn't catch hearing what the mechanism for a rest area that is closed? Is that manually entered?**

A: Chuck Miller (HNTB): Yes, it's a manual process. You need good coordination with maintenance folks and make sure those lines of communication are open so you can indicate quickly that the lot is closed.

Q8: **Tom McQueen (GDOT): On private sites, did states pay for deployment or did they just do whatever they wanted?**

A: Eric Strack and Chuck Miller (HNTB): The private sites got grant money if they provided data free of charge and maintained the equipment.

Truck Parking Technologies; Private Sector Engagement

Q9: **Marygrace Parker (I-95CC): 60 GHz wave detection – open or proprietary?**

A: Carl Rundell (TSPS): RADAR is based on DOD technology, but we're now using it for commercial. It's using proprietary software to make point-clouds and algorithms to turn those into useful info. The old spectrum was 24 GHz and now they've opened up this whole new frequency.

Minnesota DOT Truck Parking Project

Q10: **David Rosenberg (NYSDOT): What was the utilization column on the last slide?**

A: Andrew Andrusko (MNDOT): MAASTO is monitoring the performance on a quarterly basis and providing those reports to the FHWA. We're providing data through the RTMC to Kansas and Kansas is reporting to the division office on our performance. Utilization is the utilization of the sites that have the TPIMS system installed. It's telling you how much trucks are parked during when the system is active. Our performance is a bit skewed because we have a lot of downtime due to faulty sensors, so our utilization is a bit lower than we expected. The sites that we installed the systems are in rest stops on the network that have the highest demand. We expect that number to rise in the future.

A: Brian Comer (HTNB): We're actually updating this regionally. This looks at prior utilization under the peak truck period (overnight parking). One of the updates we've made is excluding Friday and the weekend, which is off-peak.

Q11: **Tom McQueen (GDOT): I understand there are peak hours for truck parking; has anyone done analysis illustrating peak seasons/etc**

A: Brian Comer (HTNB): We're working on this now. We're looking at peak time period during the week and now during the year, and seasonally as well.

A: Gretchen Ivy (HNTB): Some of the research that ATRI has done nationally is look at peak season in addition to peak hour. There's a lot of data out there to help determine seasonal variation.

Q12: **Anne Strauss-Wieder (NJTPA): Thinking next steps: How are/can you use this information to identify locations where additional capacity is needed? Thanks.**

A: Andrew Andrusko (MNDOT): In terms of the big picture, if we can expand our TPIMS system in the future, we would use performance data from the system that to help determine locations where truck parking demand may exist. The fundamental problem is that truck corridors change. As the economy changes, in our case, when federal sanctions went in and different commodities changed (corn, soy, beans), our network was affected. We need to plan for economic shifts and seasonal changes to expand capacity. We're even looking to use this system for the private network to determine this information at private sites as well.

Q13: **Tom Phelan (BHX Engineering/PennDOT): Has anyone in the MAASTO group done a study to determine the overall effectiveness of this technology in different environments?**

A: Chuck Miller (HNTB): As far as the states we've worked with are concerned, that is one of the goals. This first and second quarter we're going to be working through bugs, but one of the big benefits will be doing that. We want the system to settle in and want some information about how the technology is faring over time. It's an opportunity to get more information but we're not quite there yet.

Q14: **Tom Phelan (BHX Engineering/PennDOT): It would seem that this technology has limited value in a region where parking facilities are consistently filled beyond their capacity -- since you're displaying "Full" and "0 spaces" messages much of the time. Is there enough availability vs. demand that you didn't see that in your region?**

A: Chuck Miller (HNTB): What we've heard from truck drivers now and especially those ones that are being full. They have a tough decision to figure out how early to get off the road. Especially at night, if you can get information approaching the peak time on those peak shoulders about how many spaces are available, they can make a decision about how early to pull off.

A: Gretchen Ivy (HNTB): We've also found that displaying where the next few sites are and how full they were. Sometimes we found that certain lots are consistently full but others 20-40 minutes further were not, so the drivers could plan in advance. It's hand-in-hand because rest stops only have so much capacity but private truck stops offer larger lots. We found a lot of being able to partner public and private sites together gives a lot more capacity. With the entrance and exit counts we know how overcapacity these lots are getting, so that helps inform if and when capacity could be added to these lots and how much capacity is needed to serve the demand. It has usefulness showing where capacity is needed and how much.

Q15: **Diane Lackey (South Carolina DOT): States: How is competition going to be addressed once the state procurement renewal options for software approach or expire (3-year/5-year caps typically)?**

A: Brian Comer (HNTB): The one state that this would pertain to is Iowa, since they're purchasing the data. They have one-year options, up to five years, then they'd have to reprocure it. It depends on the individual states and how you're procuring data – some just have a TMC doing this internally. Iowa has in included in their contract that they have the equipment at the end of the period or they can have the third party vendor remove it if they choose.

A: Andrew Andrusko (MNDOT): Being involved in the Mid-America Freight Coalition, we've had discussions with the Center for Freight Infrastructure Research and Education at University of Wisconsin as well as WisDOT about potentially involving the cost for the unified truck parking database as part of an additional phase of the federal research in the future. It's in discussions now. We have the ability to operate through our own state RTMC without the need for third party providers so it wouldn't cost us anything additional to provide data to a centralized regional system.

Q16: **Josh O'Neill (Rhode Island Planning): Cost question: How much do the Dynamic Message Signs Cost Per Unit?**

A: Andrew Andrusko (MNDOT): They range in price. Over the interstate, they can cost $300,000 - $400,000. In other locations some cost about $100,00 per site and up. We

have a value deal because we buy in bulk and then install. One of our main concerns is maintenance and training costs.

A: Chuck Miller (HNTB): Some states use a hybrid dynamic/static sign, which is cheaper. Those cost about $65,000 per site. That includes the sign, roadside cabinet, and power source.

Q17: **Marygrace Parker (I-95CC): Do you think having the umbrella of a multi-state grant application was a considerable force in getting states to move ahead with deployment that they might not have readily undertaken if it was a individual state application? And if so, having that lead state with funding to manage oversight as well as each state having "skin in the game" also important?**

A: Brian Comer (HNTB): Back in 2015 when we did the TIGER Grant application, states committed 10% of the funding upfront for local match (10% because it was a rural project). It takes some time to be able to get the federal funds obligated, so they committed those local funds to do some of the upfront systems engineering and ConOps. That was really critical.

At this point, due to technical difficulties, the webinar ended but the phone lines remained active. There were two additional questions.

Q18: **Are they evaluating the various parking technologies?**

A: The MAASTO states indicate this is something they are doing as part of their performance assessment but also may have more research as the continue forward.

Q19: **Are they evaluating the various parking technologies?**

A: The presenters indicated they felt this did help and reiterated that having a regional approach was valuable to them and to the truckers.