

# *A Global Truck Parking Problem That Today's Technology Can't Fix*



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# E-Squared Engineering



## ■ Speaker Qualifications

### Int'l Parking and Mobility Institute

Board of Directors, Fmr Chair – Technology Committee, Fmr Chair – ITS & Parking Task Force

ITS Canada Board of Directors, DEI Committee

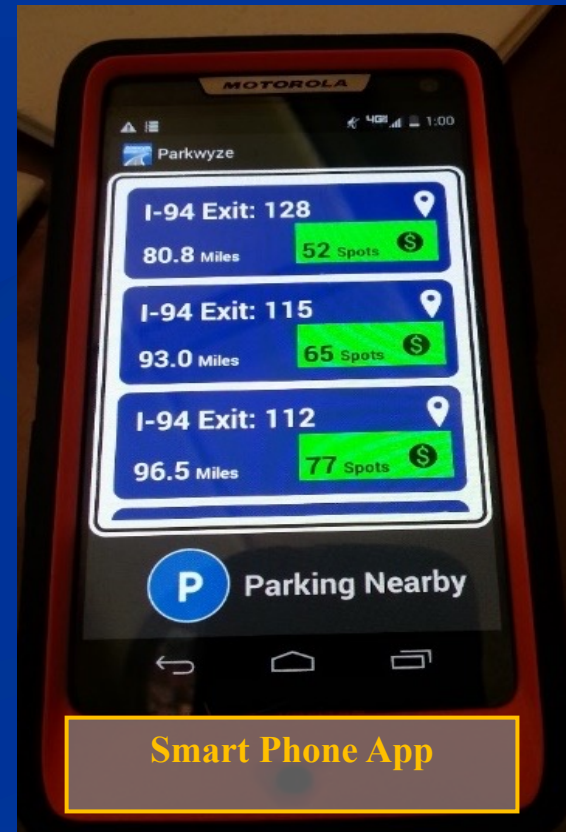
ITE Fmr Chair – Goods Movement Council

Transportation Research Board Fmr Chair -  
Intermodal Frt Transp Committee, Chair – Frt Subcommittee  
(RTSMO)

ITS America Fmr Chair - Intermodal Task Force, Fmr Chair  
– CVO Architecture & Standards Subcommittee

# Agenda

- National Problem
- Traditional Smart Parking Solutions
  - Benefits and Drawbacks
- Hidden in Plain Sight
- Potential Solutions?



# National Problem



# National Problem

“Truck Parking is an Issue for Nearly Every Trucker. Of the nearly 11,700 truck drivers who took the survey .... 98% reported problems finding safe parking. Issues with truck parking were reported in every state and region...

Excerpted from Owner Operators Independent Drivers Association report



# National Problem

Something to think about...

■ NO SPACE TOO SMALL

*“One of the points we’ve been impressing on lawmakers is that no amount of parking is too small, and that every new space is important...”*

Bryce Mongeon, OOIDA.



# Traditional Smart Parking Solns



# Traditional Smart Parking Solns

Two primary methods of determining real-time truck parking availability

1. Counting trucks upon entry and exit of truck parking site
2. Sensor technologies at individual truck parking space locations



# Traditional Smart Parking Solns

1. Counting trucks upon entry and exit of truck parking site (If 20 spaces exist and one truck enters – 19 spaces available...)



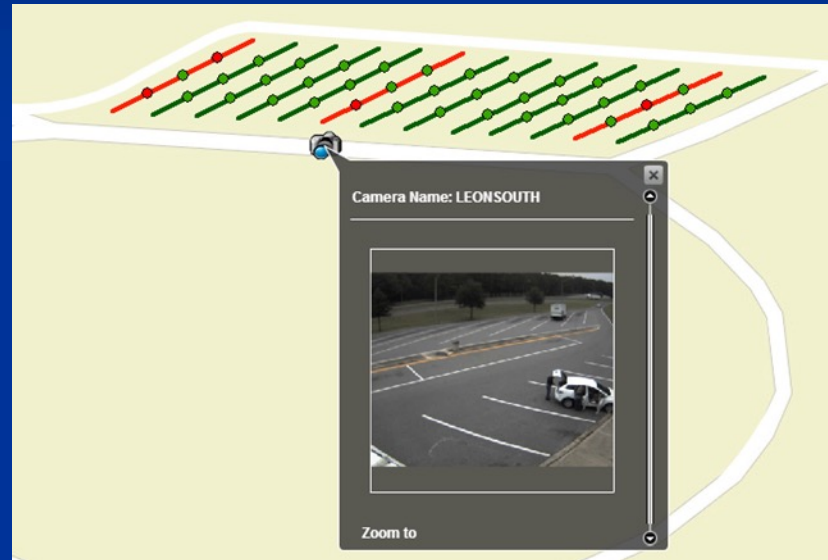
# Traditional Smart Parking Solns

## 2. Sensor technologies at individual truck parking space locations



# Traditional Smart Parking Solns

## In-ground sensors



# Traditional Smart Parking Solns

## In-ground sensors



Loop detectors



Piezoquartz sensor

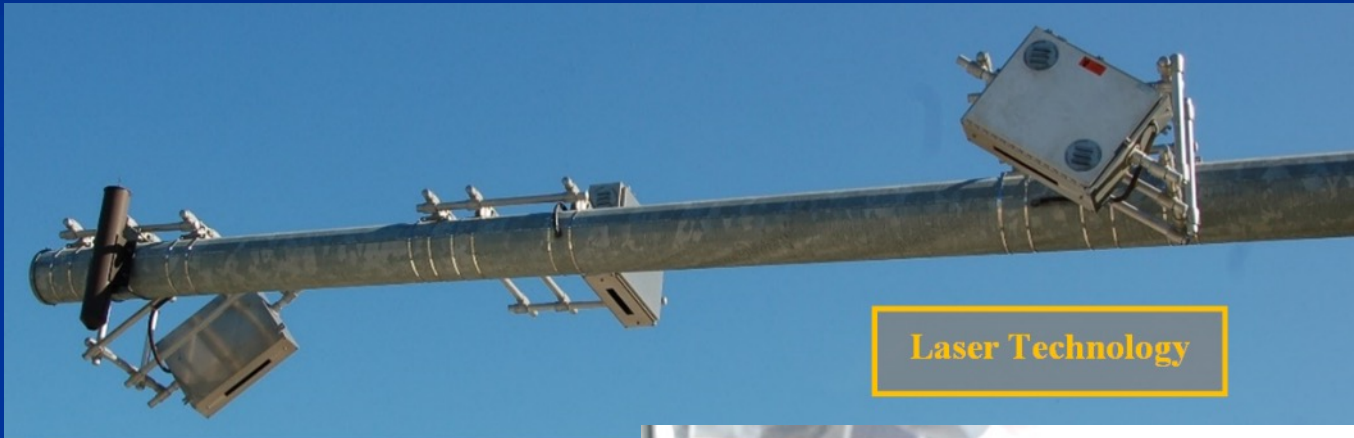
# Traditional Smart Parking Solns

## Overhead/Side Sensors



# Traditional Smart Parking Solns

## Overhead/Side Sensors



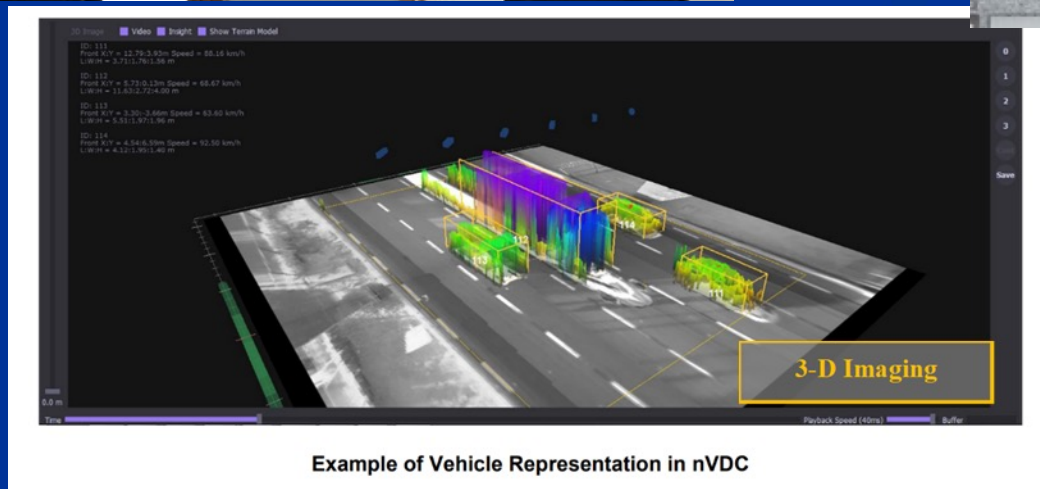
Laser Technology



3-D Imaging

# Traditional Smart Parking Solns

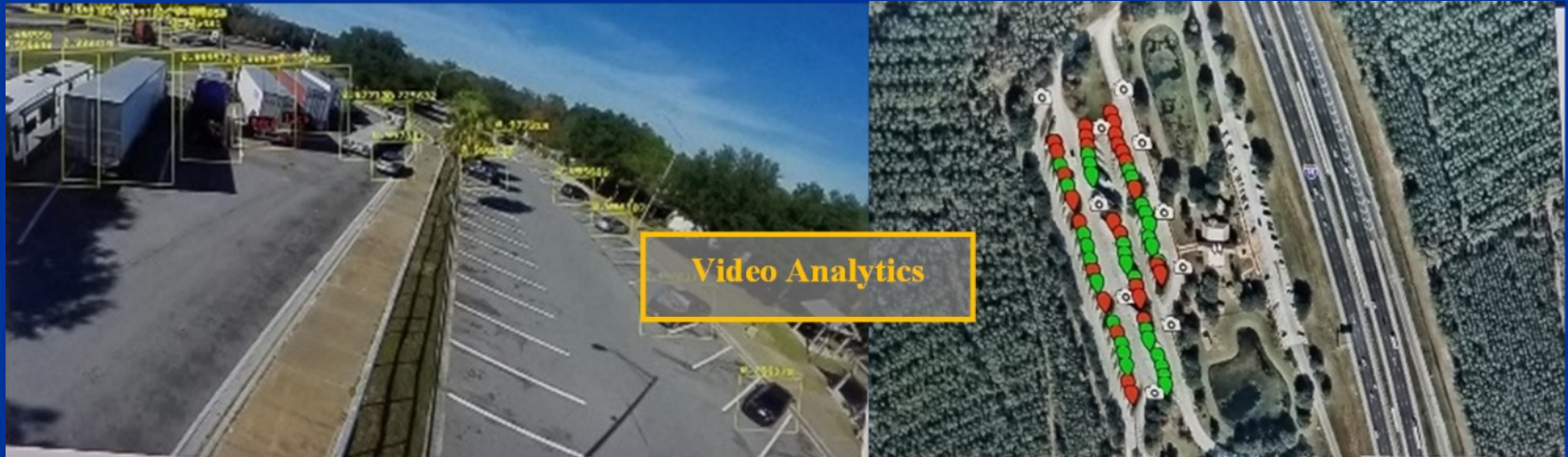
## Overhead/Side Sensors



Example of Vehicle Representation in nVDC

# Traditional Smart Parking Solns

## Overhead/Side Sensors





# Traditional Smart Parking Solns

## Overhead/Side Sensors



LPR Camera

# Traditional Smart Parking Solns

## Overhead/Side Sensors (not automated)



# Traditional Smart Parking Solns

Some challenges realized...

- Cars that park in truck parking sensor spaces
- Cars that enter the truck parking entrance (and are counted) then back out of the truck parking entrance to try and get to the car parking area
- Sensors propagate errors in numbers and need to be updated .. But aren't.
- Others?

# Smart(er) Parking Relationships

- 87% of available truck parking in the USA is located at private truck stop operations (avg # of spaces per truck stop is 143)



# Hidden In Plain Sight



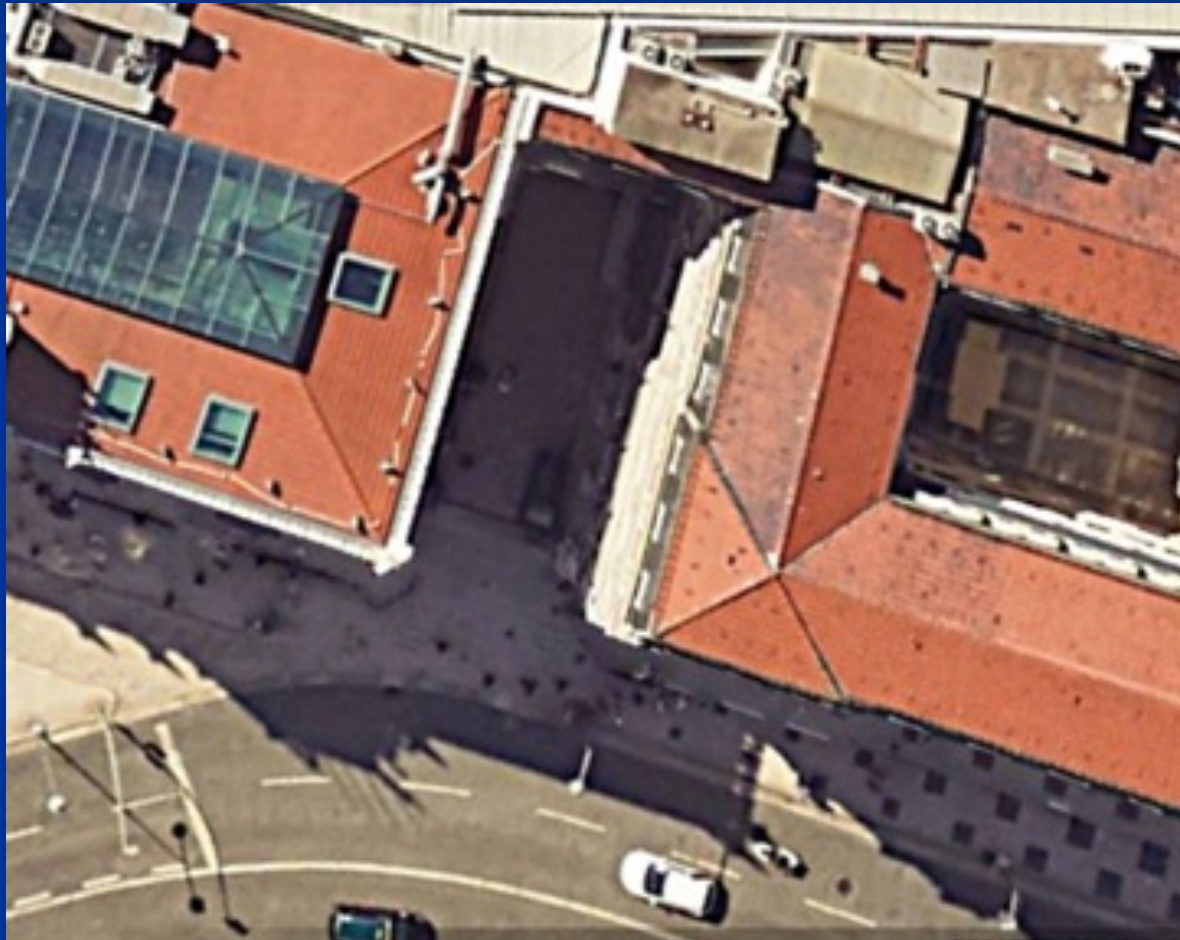
# Hidden In Plain Sight

- All of these Smart Parking systems for trucks required something that is key ... and, unfortunately, often missing. Can you guess what that is?
- Each of the systems required a definite and known truck parking space capacity! (i.e., 100 space capacity and 5 trucks entered the site and are parked...)



# Hidden In Plain Sight

- A quick quiz...



# Hidden In Plain Sight

- A quick quiz...





# Hidden In Plain Sight

## ■ A quick quiz...



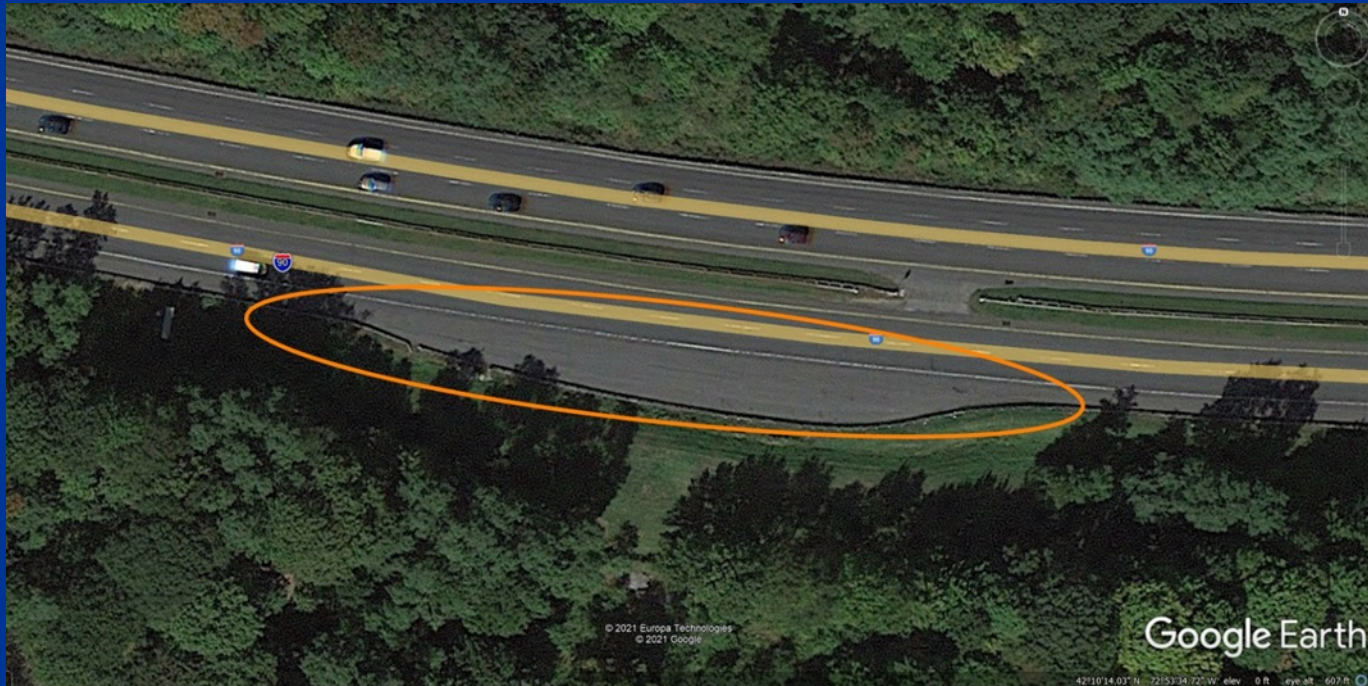
# Hidden In Plain Sight

- Real world truck parking challenges



# Hidden In Plain Sight

- Real world truck parking challenges



# Hidden In Plain Sight

## ■ Real world truck parking challenges



# Hidden In Plain Sight

- Real world truck parking challenges



# Hidden In Plain Sight

- Real world truck parking challenges



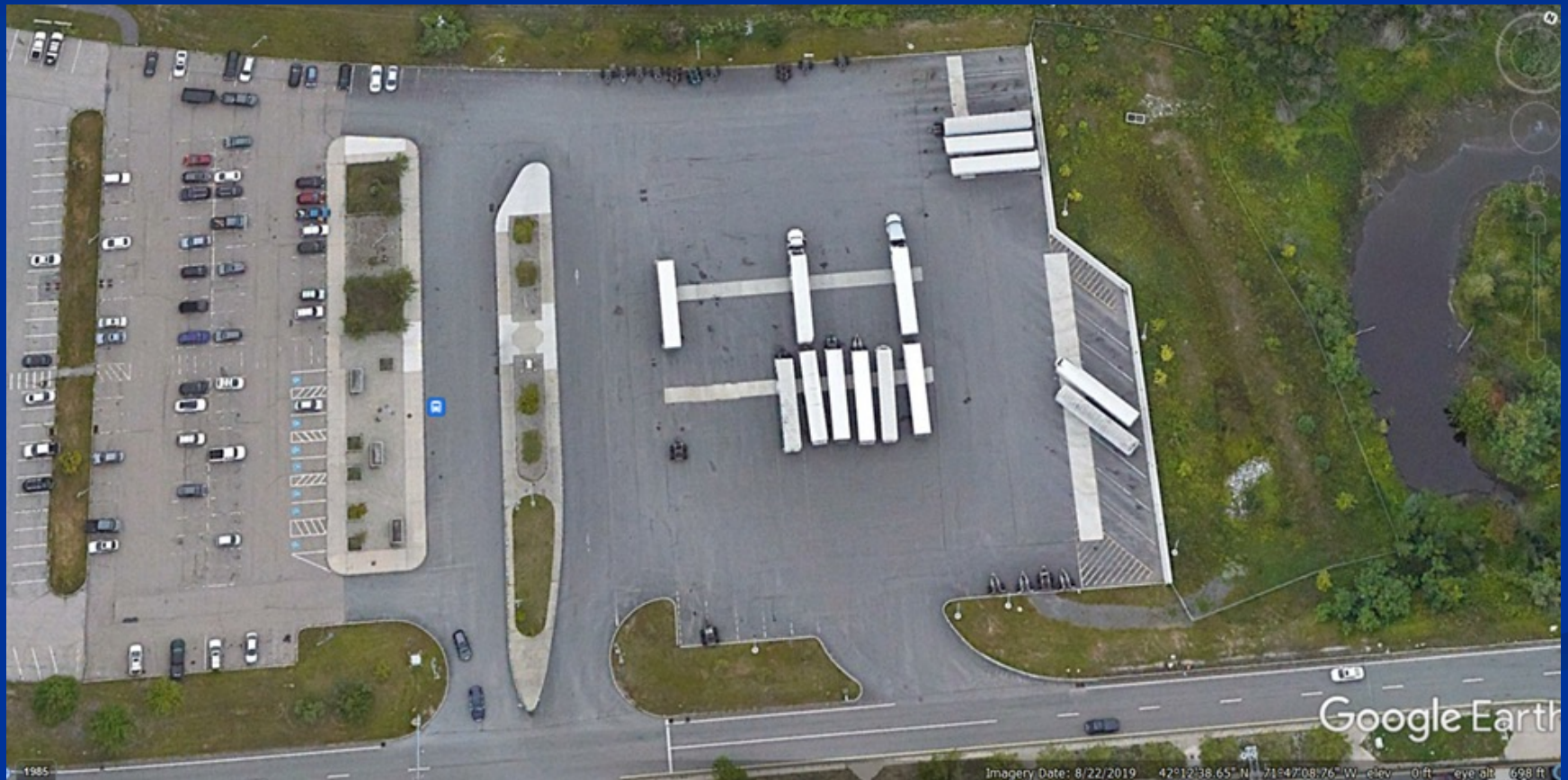
# Hidden In Plain Sight

- Real world truck parking challenges



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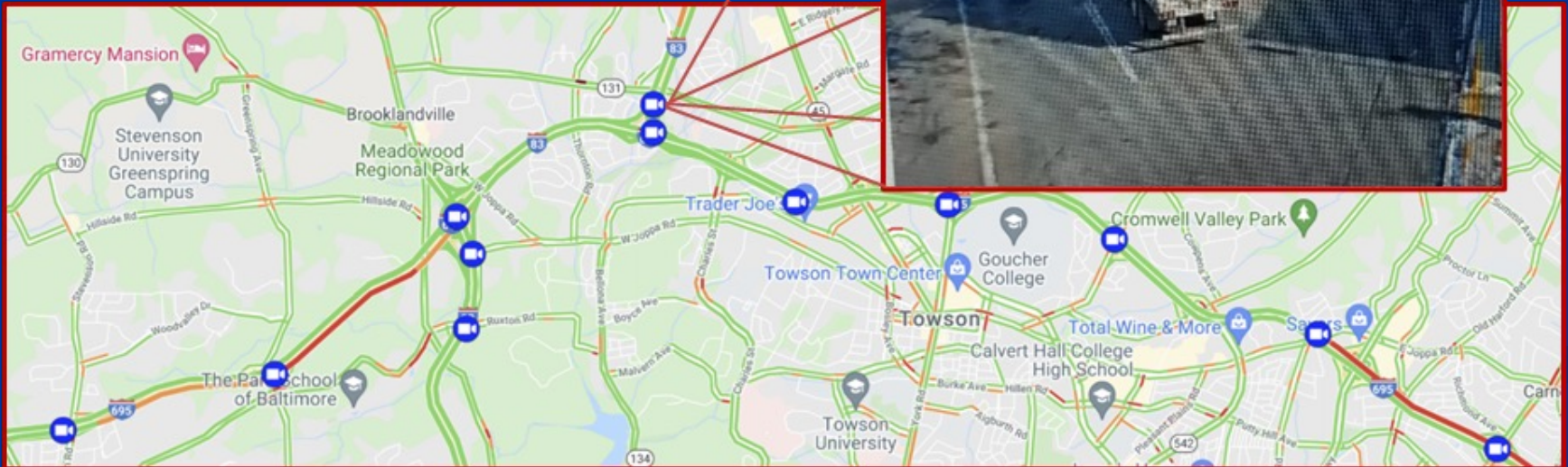


# Potential Solutions?

- **Truck Parking Cams**
- **AI gaming applications**
- **Traffic Mgmt Center CCTV (Open, Nearly Full, Full)**
- **3<sup>rd</sup> Party Monitoring**

# Potential Solutions?

## ■ Truck Parking Cams



# Potential Solutions?

- AI Gaming Application



# Potential Solutions?



# Potential Solutions?

- Traffic Mgmt Center CCTV (Open, Nearly Full, Full)





# Potential Solutions?

## ■ 3<sup>rd</sup> Party Monitoring



# Potential Solutions?

- How would YOU do it?



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