• Focus on key Midwest freight corridors
• Collect real-time parking data
• Monitor 137 public and private sites
• Aggregate and analyze data
• Share parking availability data through multiple channels
• Measure impact on parking, truck-related safety
Detection Approach and Methodology

• Detection methodology – magnetometers by Sensys; panel sign is supplied by ROCAL out of Ohio and the LED Changeable Message Sign is provided by SES America; and Intelligent Outdoor IP PTZ Dome cameras and Network Bullet cameras by TKH Group Security Solutions

• Technologies:
What is the solution?

Create a system that:

• Collects usage data from public and private truck parking sites

• Aggregates the data based on a common format and set of criteria

• Shares the data in a useful, convenient and consistent format with users
Key TPIMS decisions

- Public vs. private sites
- Data Collection
  - Entrance and exit or individual space counts
- Data Aggregation
  - Integrated with ATMS or separate
  - Local or cloud
- Data Communication
Data collection technology

Entrance and Exit Counts
- In-pavement magnetometer
- Video cameras
- Laser technology
- Radar

Space Occupancy Counts
- Infrared/magnetometers
- Microwave/magnetometers
- Video cameras
Data aggregation

- Highly technical solution
- Long time frame
- Large service area
- Multiple audiences
  - Partner agencies
  - App developers
  - Freight users
- Unseen problem
Data communication

The MAASTO TPIMS Project
Public Data Feed

Dynamic Public Feed - example

JSON format

```json
[{
"siteId":"WI000941S0012400ERSTARE53","timeStamp":"2016-08-15T20:35:15Z","timeStampStatic":"2015-05-03T12:24:19Z","reportedAvailable":"25","trend":"FILLING","open":true,"trustData":true}]
```

Dynamic Public Feed - live URL

https://transportal.cee.wisc.edu/TPIMS/dynamic
Lessons learned

Communication goals and outcomes for multi-jurisdictional projects are best aligned when you can:

1. Align through process
2. Emphasize adaptability
3. Communicate for action
Lesson 1: Align through process

- “Scope” out issues and solutions when developing the statement of work
- Adapt early to external requirements/constraints
- Reconfirm needs and roles throughout process
Performance Measures

Parking Utilization
• Are drivers utilizing TPIMS to inform their parking decisions?
• Have driver-perceived parking shortages declined?

Safety and Security
• Are truck parking facilities more safe and secure?
• Is there a reduction in illegal or informal parking?
• Is there a reduction in fatigue-related crashes?

System Reliability
• Is there a decline in the average time spent looking for parking?
• Is the system meeting its performance requirements for accuracy?
Lesson 2: Emphasize adaptability

• Realize audiences may have the same goals, but different paths
• Provide resources that users can tailor to their own needs
• Stress outcomes over outputs
## Seamless system challenge

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The MAASTO TPIMS Project

Provide customizable support

MAASTO TPIMS Partner States will strengthen America’s freight network by helping commercial truckers make safer, more efficient parking decisions through a user-focused information service that consistently provides timely, reliable parking availability information.

Parking is essential for long-haul trucks driven by the backbone of our freight transportation network. Yet, drivers often struggle for up-to-date, accurate information to ensure safety and compliance, potentially putting the public at risk.

The MAASTO TPIMS Project will provide customizable support for Trucks Park Here, the Web-based service for real-time parking availability information. Developed by MAASTO and DTSC partners, Trucks Park Here offers real-time parking availability data through interactive online maps for commercial trucks. It also provides parking recommendations to help drivers choose the best available parking options.

MAASTO TPIMS Partner States will work together to implement a user-focused information service that consistently provides timely, reliable parking availability information.

How much will the project cost?

The MAASTO TPIMS Project is estimated to cost $20.4 million (in 2015 dollars) to be funded through a $20 million Federal Highway grant and state funds. This project is designed to improve safety and efficiency for commercial truck drivers and reduce congestion on our nation’s highways.

How will the project benefit the MAASTO Partner States?

The MAASTO TPIMS Project will provide more efficient parking options for commercial truck drivers, reducing congestion and improving safety on our nation’s highways. It will also provide valuable data for state transportation agencies, helping them better manage their infrastructure.

The MAASTO TPIMS Project is a collaborative effort among MAASTO partner states, working together to improve transportation and support the freight industry.

MAASTO TPIMS Implementation Guidelines

1. Determine the parking needs and parking availability information for each state in the region.
2. Develop a user-focused information service that provides real-time parking availability data.
3. Implement the MAASTO TPIMS Project in each state.
4. Monitor and evaluate the effectiveness of the MAASTO TPIMS Project.

For more information, please visit MAATSO TPIMS Project website.
Lesson 3: Communicate for action

- Communicate when action counts
- Ask specific audiences for specific actions
- Saturate the audience when action is needed
Project Implementation Phase (Early 2019)

Objectives: Continue driving awareness with end-users, adding call-to-action messaging once system is live. Communicate early impacts.

Tactics:
- TrucksParkHere.com
- Project collateral
- Media Relations
- Trade publications
- Billboards
- Search Engine Marketing
Project Challenges
- Seven months from NTP to RFC
- Familiar components / unfamiliar application
- Statewide deployment
  - 5 Districts, 38 locations
  - No continuous begin / end for project limits
- Site Specific Challenges
  - Rest Areas
  - Weigh Stations
  - Advanced Signs
Indiana’s Design

Project Solutions
- Early coordination with INDOT ITS
  - Truck detection / verification
  - Communications
- To survey or not to survey
  - Practicality
  - Time constraints
- Budget considerations
  - Utilize standard items
  - Eliminate foundations
- Design on the fly
Indiana’s Design
Indiana’s Design

DETAIL A: CELLULAR MODEM COMMUNICATION

NOTES:
1. SEAL ALL CONCRETE EYELET HOLES AFTER 15
2. NOT ALL EQUIPMENT TO BE PLACED EXCEPT TO BE INSTALLED AT ENSO
3. USE MICROFIBER PAVING EXISTING, RESTORE MILLING & MOUNDING NEW PAVING AS FOUND
Site 311 Percent Full
Site 315 Percent Full
Site 304 Percent Full
Lessons learned

- Lessons learned during each of the phases:
  - Construction – Utility locates may not be covered under current contracts due to government property being considered private.
  - Construction project conflicts may not be resolved even with pre-planning if not a capital program improvement project.
  - Software Integration
  - Plan for “unanticipated challenges” during the process

- Plans for future expansion or freight enhancements may include P3 partnerships and MOUs with municipalities
TPIMS

- Focuses on key Midwest freight corridors
- Monitors 137 public and private sites
- Collects real-time parking availability
- Aggregates and analyzes data
- Communicates parking availability to drivers
- Measures impact on truck parking & safety

The Bottom Line:
- Greater driver access to safe, convenient parking
- Improved safety for all drivers in freight corridors
- More efficient freight movement

Session 160: Truck Parking Information Management System Update

Nationally, every 15-minute search by drivers:

$4.4 Billion annually

Costs the economy

AASTO TPIMS Project