MAASTO Regional Truck Parking

Truck Parking Information Management Systems (TPIMS)

Freight Advisory Council
September 14, 2018

IOWA STATE UNIVERSITY
Institute for Transportation

IOWA DOT

TRUCKS PARK HERE.COM

THE PROBLEM

Lack of Adequate Parking for Truck Drivers

ISSUES FOR DRIVERS

- Driver Hours of Service Limitations - FMCSA

- If rest areas and truck stops are full and a driver's hours are almost up that becomes problematic. Less than desirable options are:
  - Continue to drive past your hours
  - Choose a less than desirable place to park

- Recent survey revealed that 83% of drivers spend greater than 30 minutes searching for parking!!

TIGER GRANT

- MAASTO Consortium (8 of 10 States)
  - Missouri and Illinois Opted out
- Applied for TIGER Grant
  - Regional Truck Parking Information and Management Systems
  - Focus on **ITS technology** to provide real-time data on parking availability at Private and Public truck stops and rest areas.
- MAASTO Award for $25 million
  - Request: Just over $28.5 million
  - Iowa Federal Share = $4,362,807
  - Iowa State Contribution = $498,086

PROJECT EXTENT
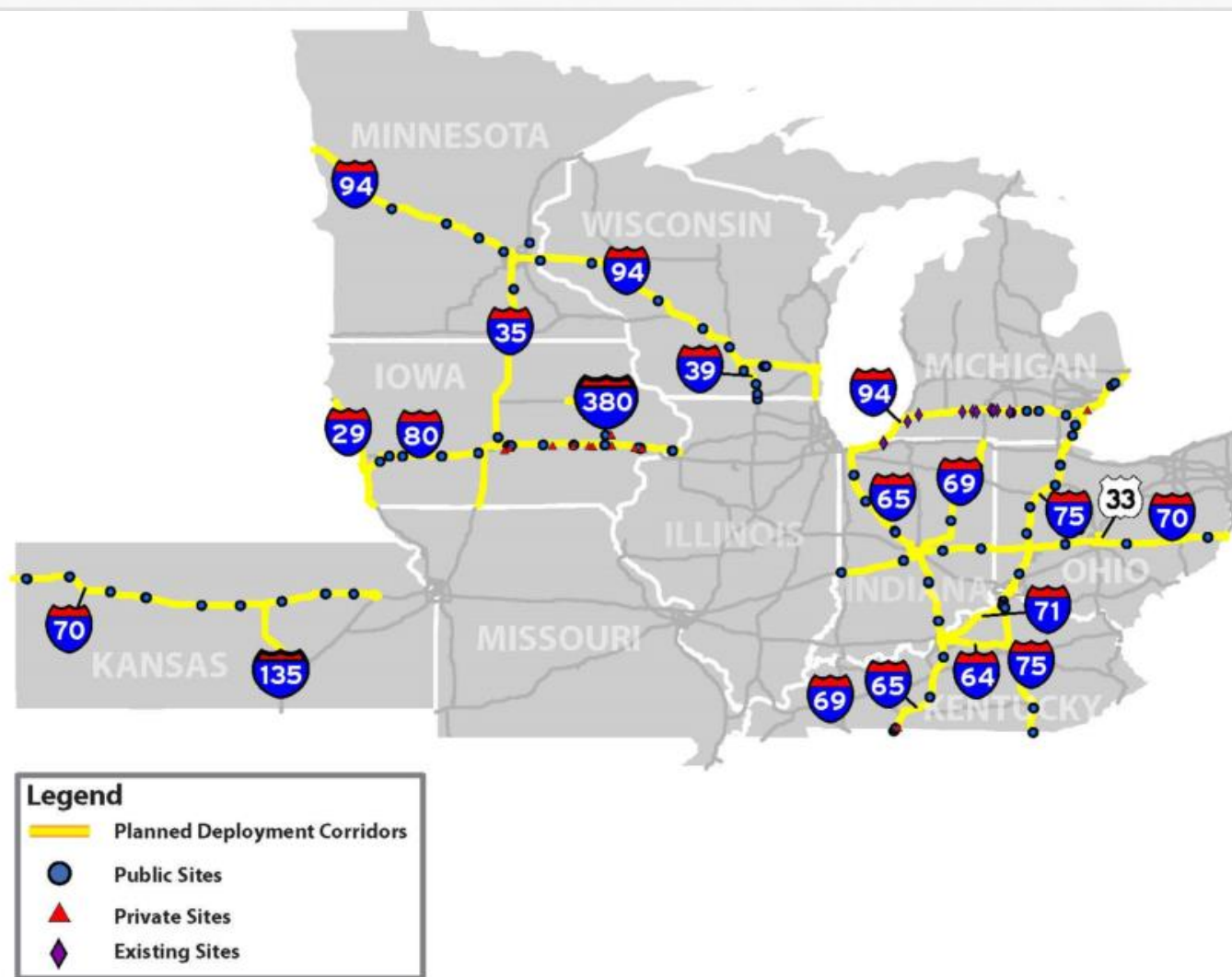
IOWA DEPLOYMENT
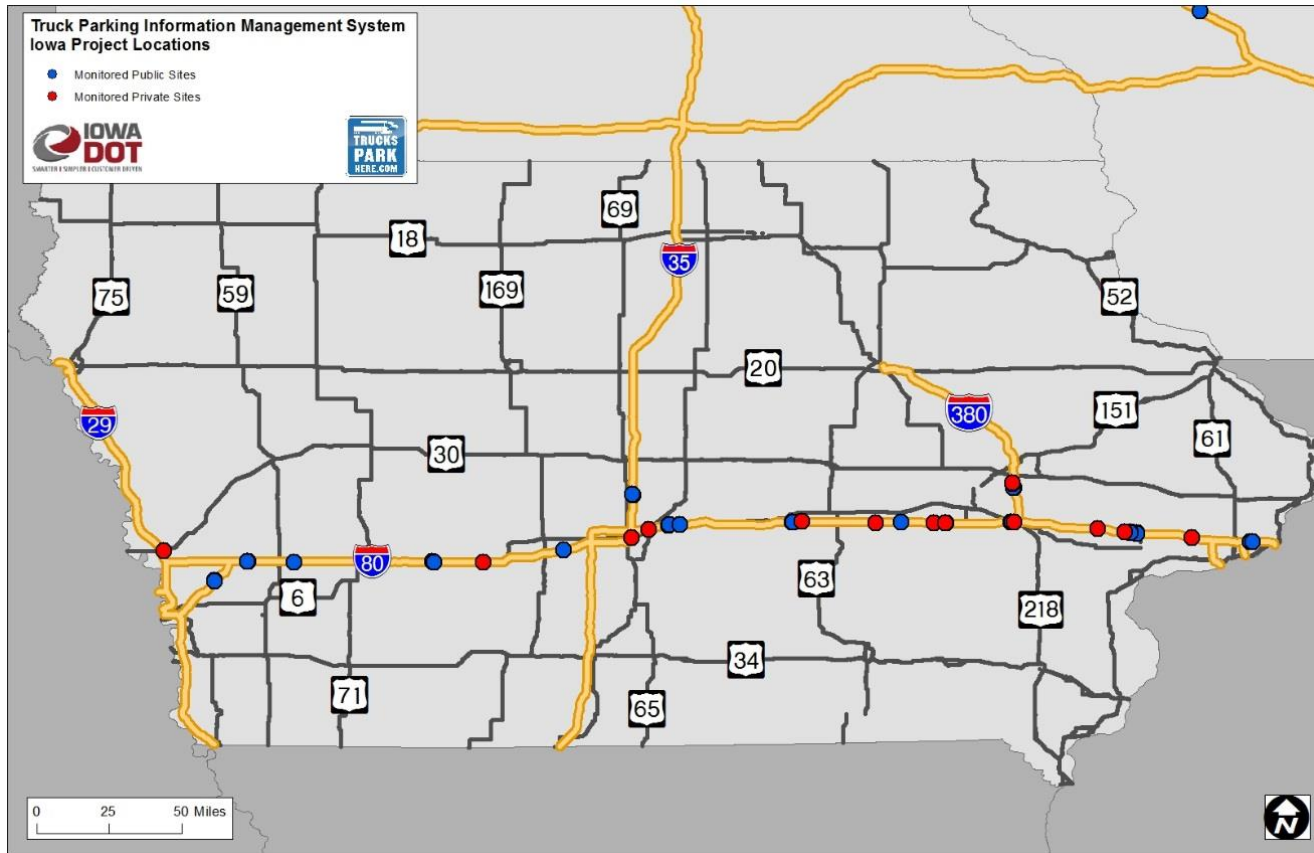
Iowa TPIMS Sites			
Corridor	DOT	Private	Total
I-80	23	11	34
I-29		1	1
I-35	2		
I-235		1	1
I-380	2	2	4
Total	27	15	42

TYPES OF SITES

- Public Rest Areas
- Truck Weigh Stations
- Private Truck Stops
- Prairie Meadows Racetrack and Casino
- Kum&Go Stores
- Casey's General Stores
- Kwik Star
- Taylor Quick Pick
- McDonalds

- No participation by most Pilot and Travel America
  - Interest in own reservation system

TECHNOLOGY SOLUTION

TECHNOLOGY SOLUTION

- In-ground Magnetometer Puck

Existing Light Pole

2 Sensors Per Truck
Parking Stall

16 Parking Stalls
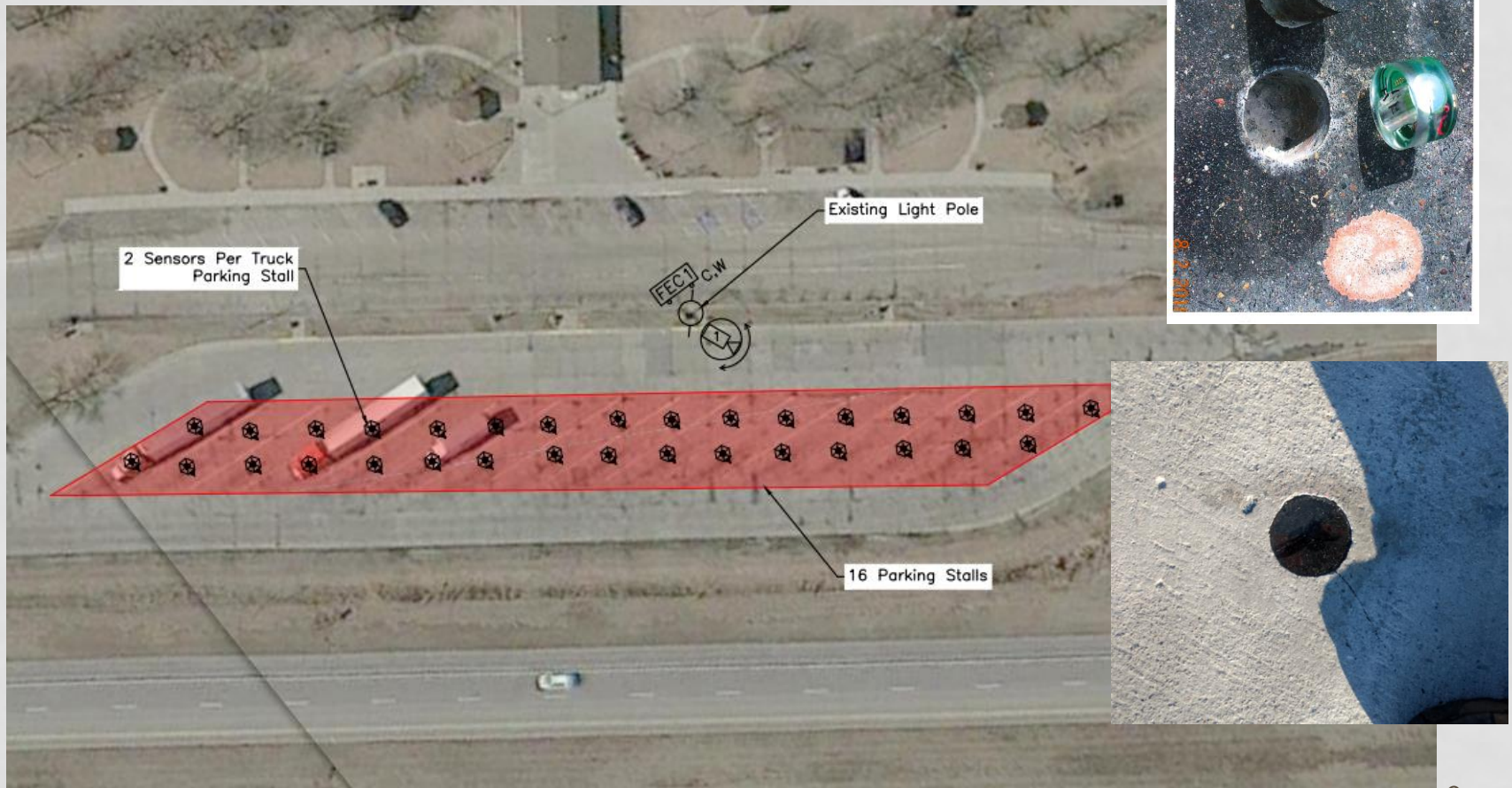
TECHNOLOGY SOLUTION

- Entrance/Exit Counting
- Camera with Built In Video Analytics

TECHNOLOGY SOLUTION

- System Validation with Fish Eye and Pan/Tilt/Zoom Cameras

CONSTRUCTION SCHEDULE

- **All sites fully constructed by mid-October**
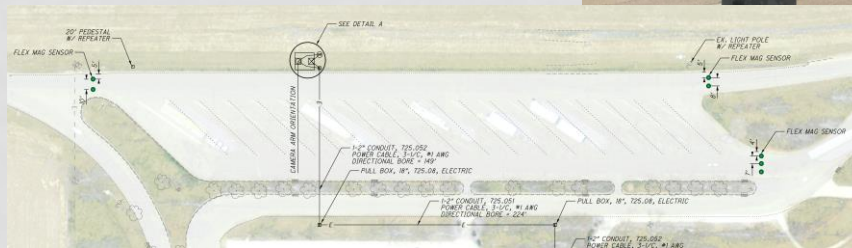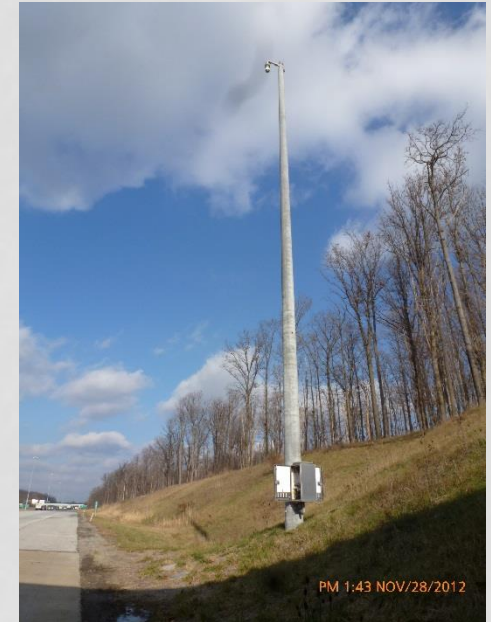
SELF EVALUATION PROCESS

- Contractor individually evaluates all sites are in working order.
- 24-hours of verified data.
- Done remotely with cameras.

Sign Name: <enter site name>

Sign ID: <enter site ID>

Version 1.0

Form Date: 12/16/16

**Available Truck Parking
(Actual #'s on Sign)**

5 Minute Period (Time Elapsed)	Operator Initials	Date	Time (Local)	<Destination 1>		<Destination 2>		<Destination 3>		Notes: Document any Variants or Anomalies
				Enter Availability # from System	Confirm the # Shown on DTPS Matches the System	Enter Availability # from System	Confirm the # Shown 0on DTPS Matches the System	Enter Availability # from System	Confirm the # Shown on DTPS Matches the System	
Example	CAM	mo/day/year	12:02 AM	20	Yes	34	No	5	Yes	
1 (5) min)					Yes or No		Yes or No		Yes or No	
2 (10 min)					Yes or No		Yes or No		Yes or No	
3 (15 min)					Yes or No		Yes or No		Yes or No	
4 (20 min)					Yes or No		Yes or No		Yes or No	
5 (25 min)					Yes or No		Yes or No		Yes or No	
6 (30 min)					Yes or No		Yes or No		Yes or No	
7 (35 min)					Yes or No		Yes or No		Yes or No	
8 (40 min)					Yes or No		Yes or No		Yes or No	
9 (45 min)					Yes or No		Yes or No		Yes or No	
10 (50 min)					Yes or No		Yes or No		Yes or No	
11 (55 min)					Yes or No		Yes or No		Yes or No	
12 (60 min)					Yes or No		Yes or No		Yes or No	

BURN IN PERIOD

- Entire System Evaluation
- 60 Day Review Period Nov- Dec
- 30 Days Documentation
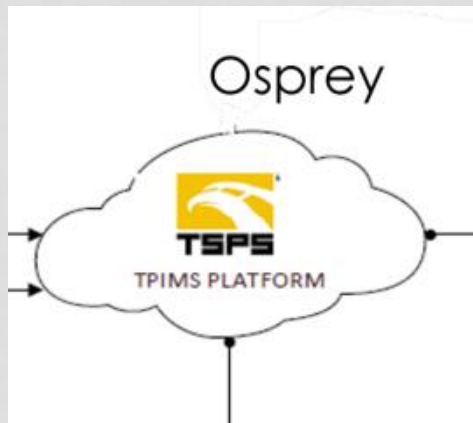- Require 7 Consecutive Days of Data

SYSTEM OPERATION

- **Go Live = January 4, 2019**
- **Runs for 3 years per Grant Requirements**

INFORMATION DISSEMINATION

511 TRAVELER WEBSITE

511 TRAVELER WEBSITE

Pictures available for Public Rest Areas Only

511 TRAVELER WEBSITE

Traveler Information Integration: Privately Owned Truck Stops (no pictures due to privacy considerations)

511 MAP EXAMPLE
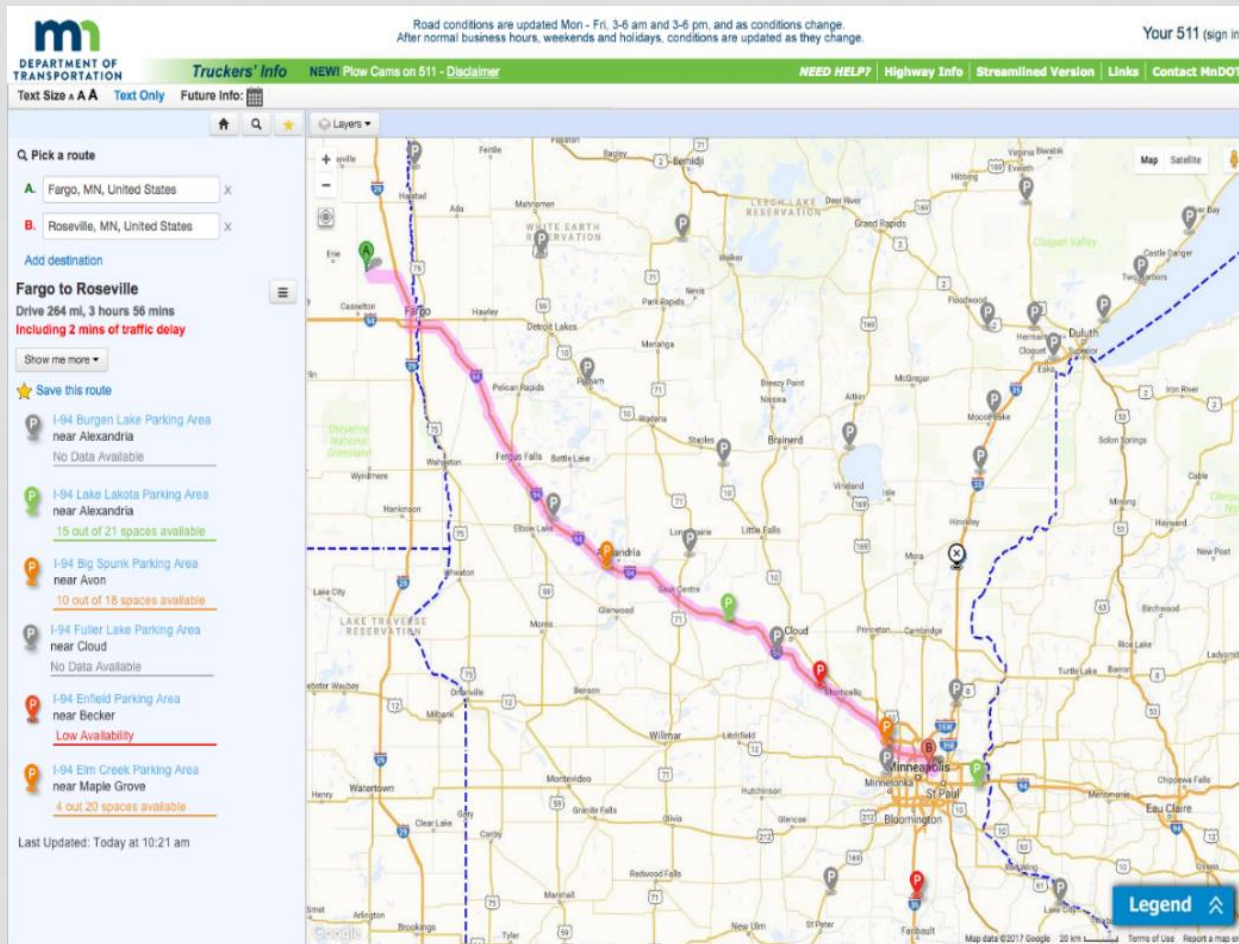
Traveler Information Integration: Main 511 map (MnDOT example) showing parking availability along a personalized route

511 MAP EXAMPLE

| Icon	Meaning	Configuration
(P)	Open	Parking area is 0-70% full **OR** at least 5 available spaces
(P)	Open, but busy	TPIMS feed ≠ LOW Parking area is 70-95% full **AND** Only 4 spaces available
(P)	Low Availability	TPIMS feed = LOW **OR** (Less than 5% of capacity remains open **OR** 0-3 spots are available) *CARS-Park shall never report a site as "Full." Instead, it shall always use the phrase "Low Availability."*
(X)	Closed	If the site is closed either per TPIMS data are the Rest Area Update tool, the Closed icon shall be displayed.
(P)	No real-time data	Real-time data for parking area isn't currently available; only static information is available. *This shall also be used if a "null" value is returned in the TPIMS Open data element.*

MOBILE APP PROTOTYPE
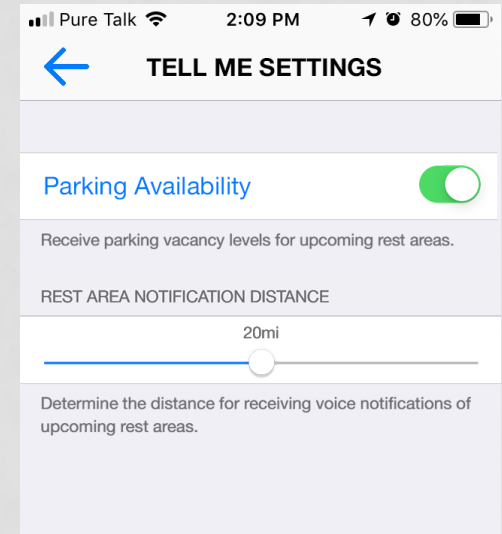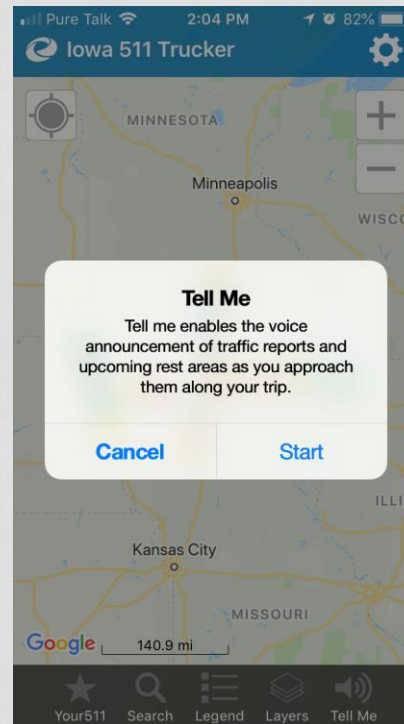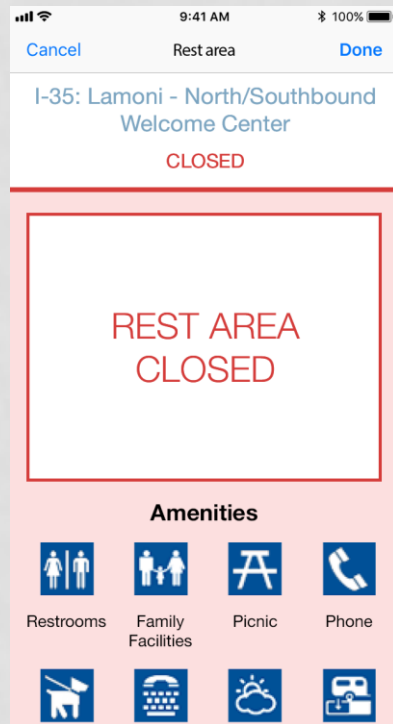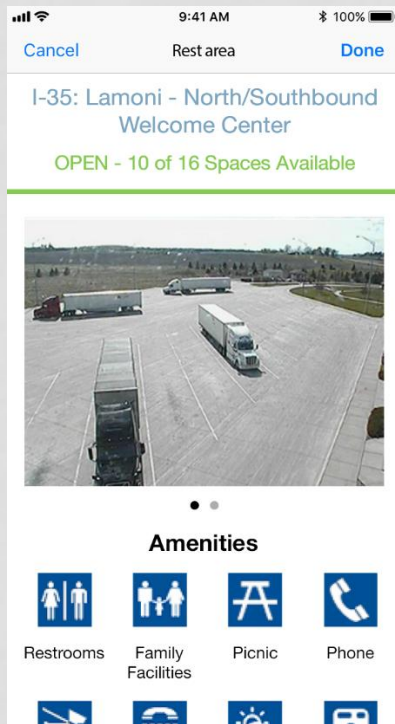
QUESTIONS?

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