CIA TEAM

MOBILITY & OPS

NJDOT – Sal Cowan

FHWA – Ek Phomsavath

Automated Traffic Signal Performance Measures

Purpose:

Modernize traffic signal management

Receive high-resolution data

Implement performance-based maintenance and operations strategies

Improve safety and efficiency while cutting congestion and cost

Using Data to Improve

Traffic Incident Management (TIM)

<u>Purpose:</u>

Integrate NJDOT traffic incident systems with NJ State Police Computer Aided Dispatch (CAD)

- Real-time data exchange between partners

- Enhanced motorist information (511 / Waze)

- Supports future CV/AV technologies

STIC GRANT
CONNECTED VEHICLE
ROAD SERVICE SAFETY MESSAGES

HOW CAN WE INCREASE

SERVICE PATROL PERSONNEL SAFETY?

CONNECTED VEHICLE
ROAD SERVICE SAFETY MESSAGES

Deploy "ITS Beacon – Hazard Lights"
Vehicle Hazard Light Radio Adaptation

Posts GPS location and hazard light status

Transmits vehicle ID, location and 'ON' status.

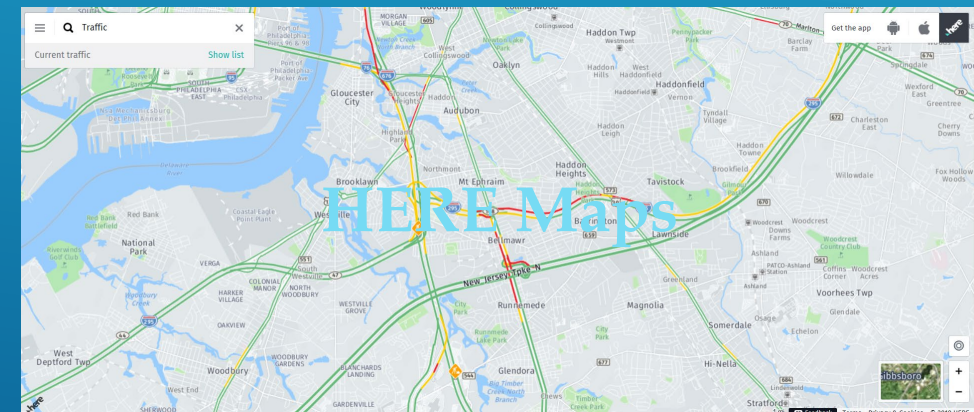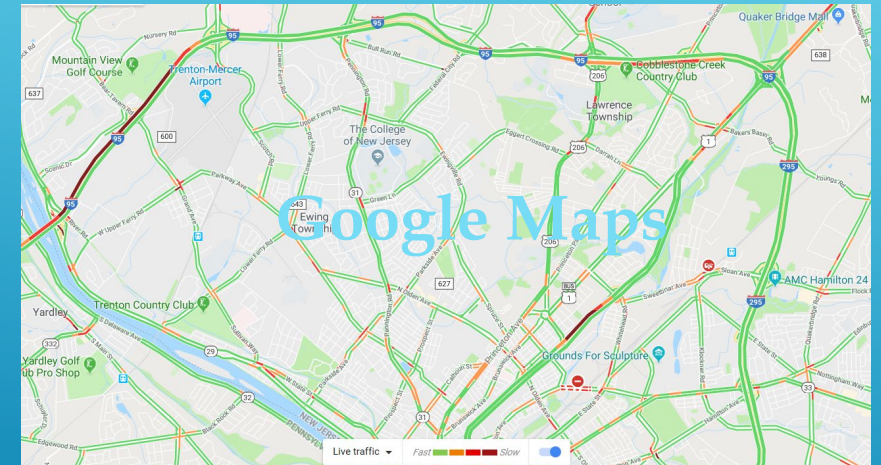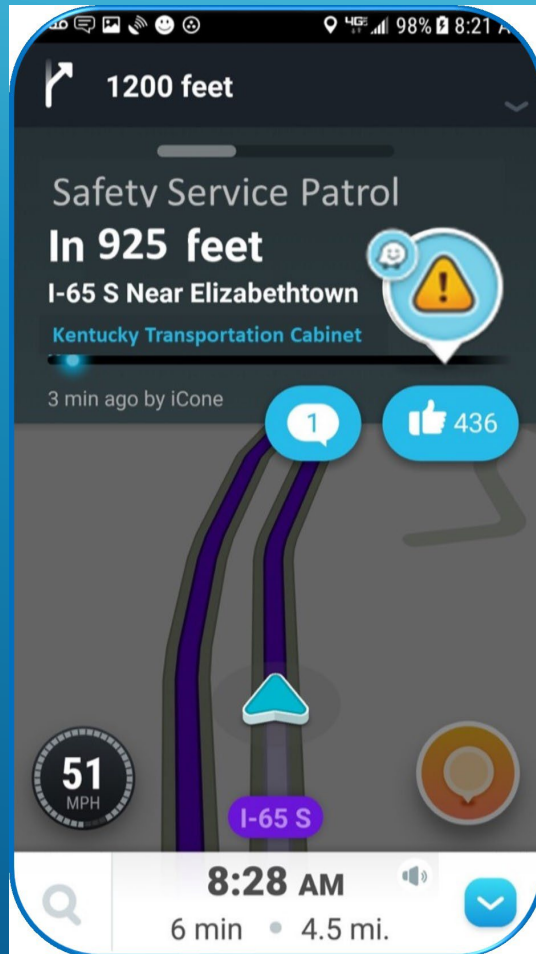Status posted to XML within 2 minutes.

Updates status every 15 minutes.

Re-transmits location if the vehicle moves more than 500 ft.

iCone

Connected Tech
PUT YOUR WORKERS ON THE MAP

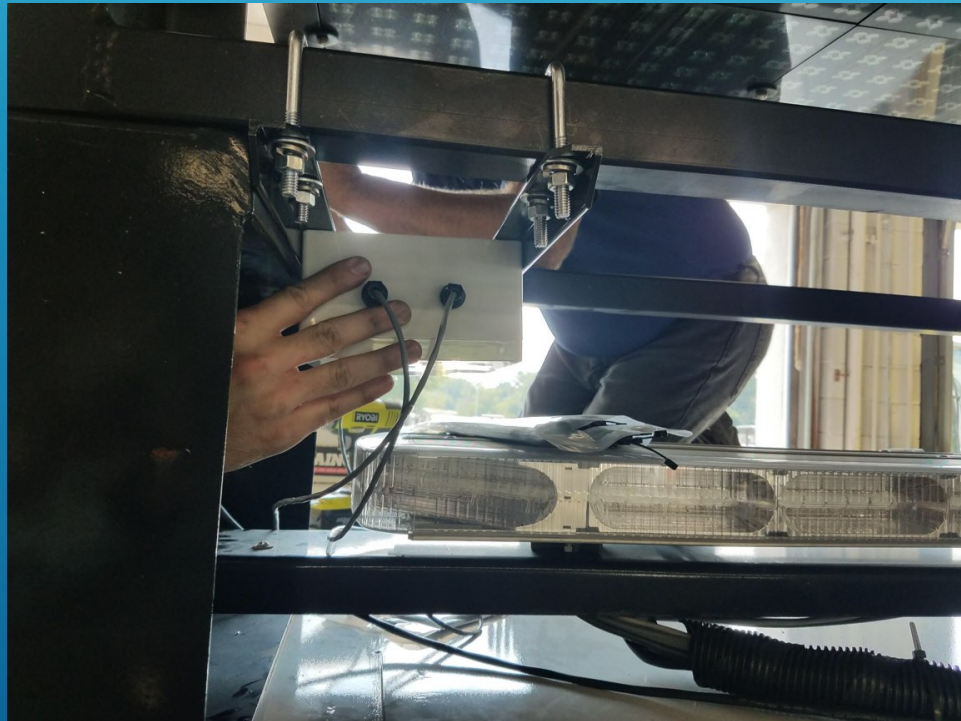# CONNECTED VEHICLE
ROAD SERVICE SAFETY MESSAGES

Provide vehicle location to as many apps and maps as possible
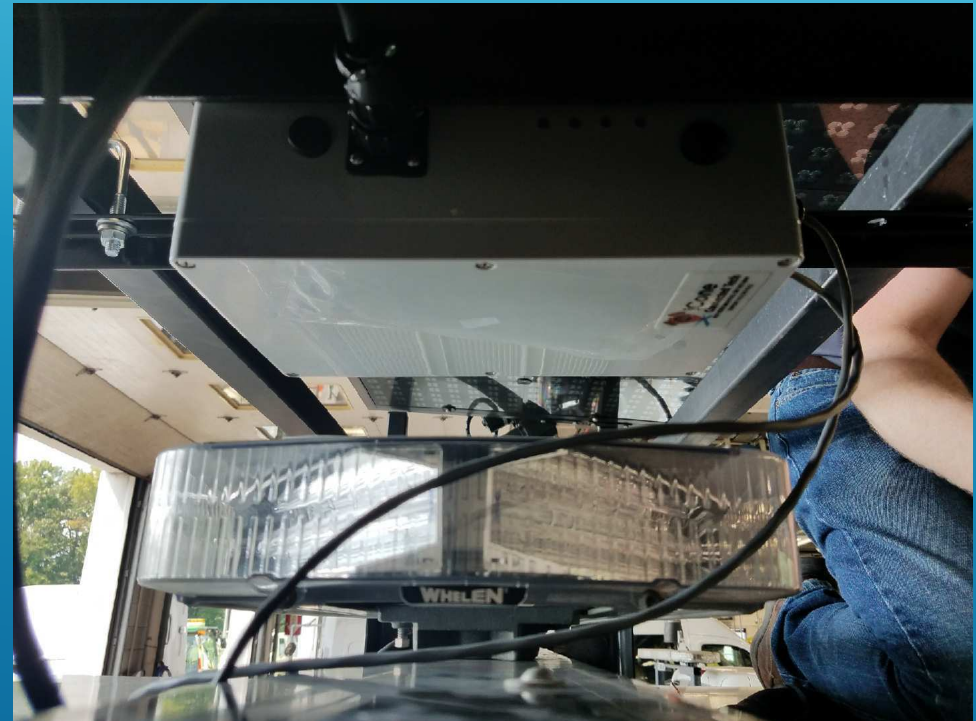
CONNECTED VEHICLE
ROAD SERVICE SAFETY MESSAGES

Simple Installation

Multiple Trucks Per Day

CONNECTED VEHICLE ROAD SERVICE SAFETY MESSAGES

Pilot Project Goals

- Create "smarter and connected" response vehicles on NJ's road network

- Alert motorists to the presence of road service vehicles and personnel

- Enhance awareness of the State's Move Over Law

- Develop standards and specifications for data delivery from field vehicles to various internet mapping and crowdsourcing applications

- Evaluate cellular strength along all interstates in New Jersey

- Integrate fleet location data into layers on 511NJ

WEATHER SAVVY ROADS INNOVATION GRANT

What Causes Weather Related Accidents?

Wet roads….73%

Snow and sleet …. 17%

Icy roads …. 13%

Foggy conditions…3%

WEATHER SAVVY ROADS INNOVATION GRANT

NJ awarded $322,460 to deploy Integrating Mobile Observations (IMO) with EDC4

- Collect weather and road condition data from up to 20 NJDOT vehicles
  - Operations dump trucks/plows
  - Safety Service Patrol trucks
  - Incident Management Response Team Vehicles

- Vaisala Surface Patrol HD pavement Temp/Humidity Sensors (20)
- Windshield mounted cameras (20)

WEATHER SAVVY ROADS INNOVATION GRANT

<u>Project Goals</u>

- Cost-Efficient use of NJDOT resources

- Proactive Resource Management

- Improved Situational Awareness of Roadway Conditions Year Round

AID & STIC INCENTIVE FUNDING PROJECT UPDATE

Agency	Amount	Project Description
Arizona Department of Transportation (ADOT)	$1,000,000	ADOT will advance the use of data collection for transportation operations of several communities along the state's "Sun Corridor" – a region as large as Indiana stretching from Phoenix to the state's borders with Mexico and New Mexico – to improve transportation investments and streamline the federally required environmental reviews they require.
Florida Department of Transportation (FDOT)	$1,000,000	Using state-of-the-art connected vehicle technology, FDOT will improve safety for bicyclists and pedestrians near the University of Florida and throughout the City of Gainesville by improving access to real-time traffic information to them and enhancing the city's existing "SmartTraffic" system.
Iowa Department of Transportation	$1,000,000	Iowa will use its AID grant to implement "bridge bundling," an innovative contracting method, to quickly and cost-effectively replace several deficient bridges throughout the state.
Minnesota Department of Transportation (MnDOT)	$1,000,000	MnDOT will use its AID funding to improve roadway safety by creating a signalized "restricted crossing U-turn" (RCUT) intersection on Trunk Highway 65.
Oklahoma Department of Transportation (ODOT)	$1,000,000	ODOT will use its AID funds in Elk City (Beckham County) to build the state's first "diverging diamond interchange," which have been shown in many other states to be safer than traditional four-leaf clover or other standard interchanges.
Utah Department of Transportation (UDOT)	$1,000,000	UDOT will use its AID grant to expand the state's use of 3D modeling, e-construction, and other state-of-the-art techniques that improve accuracy and cost-effectiveness of project planning and preliminary engineering.
Illinois Department of Transportation/Williamson County	$771,690	Williamson County will use warm mix asphalt – an early EDC innovation that has many benefits including reduction in paving costs and improve working conditions by reducing exposure to fuel emissions, fumes, and odors – for the Saraville Road resurfacing project.
New Hampshire Department of Transportation/Town of East Kingston	$631,925	The Town of East Kingston will use its AID grant to use long-lasting Ultra High Performance Concrete and prefabricated bridge elements in the rehabilitation of a bridge.
New Hampshire Department of Transportation/City of Dover	$649,500	The City of Dover will improve roadway safety, and reduce traffic interruptions caused by poor or outdated traffic signal timing, with automated traffic signal performance systems.
New Jersey Department of Transportation (NJDOT)	$322,462	NJDOT will use its AID grant to start a "weather-savvy roads" pilot program to improve roadway safety and operational efficiency by delivering real-time information about changing weather conditions from road maintenance vehicles to existing data sensors throughout the state.
TOTAL	**$8,375,577**	

NEW JERSEY DEPARTMENT OF TRANSPORTATION
NEWS

For Immediate Release:
September 17, 2018

Contact: Steve Schapiro
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NJDOT receives federal Accelerated Innovation Deployment grant for pilot road weather management system
Program funds efforts to improve operational safety and efficiency of roadways

(Trenton) – The New Jersey Department of Transportation (NJDOT) today announced its first ever Accelerated Innovation Deployment (AID) grant award from the Federal Highway Administration (FHWA) to better manage the State's road system during weather events.

This $322,461 grant will support a weather savvy roads pilot program in which up to 20 NJDOT vehicles will be outfitted with dashboard cameras and weather sensors that will feed data directly to the Department, allowing for improved situation awareness of road conditions and faster and more accurate resource allocation during weather events year-round. This is the first AID grant applied for through New Jersey's State Transportation Innovation Council (STIC).

"The New Jersey Department of Transportation is always looking for advancements in technology to improve safety," NJDOT Commissioner Diane Gutierrez-Scaccetti said. "This Federal grant allows us to test new technology so we can better manage our roadways ahead of storms, and enhance safety for the motoring public."

This award complements an initiative underway by the State that will build off NJDOT's intelligent transportation work, in an effort to devise a statewide 'smart' framework. Earlier this summer, New Jersey was selected as one of five states to participate in a national smart communities learning lab, being held later this year in Chicago.

FHWA works with partners at the State level through the Every Day Counts program, which is designed to identify market-ready areas of technological innovation that can be deployed to address transportation challenges. The Road Weather Management – Weather-Savvy Roads program funds vehicle-based observation technologies to proactively manage the road system during and ahead of heavy storms. The vehicle-based cameras will allow for enhanced operational collaboration, improved resource allocation, and enhanced situational awareness for highway operations crews working on the roadway

AID & STIC INCENTIVE FUNDING PROJECT UPDATE

STIC Incentive Projects (FY 2014-2018)

NJ	2015	1. Advancement of Data Driven Safety Analysis ($41,600) 2. Advancing the use of mobile devices in the administration and oversight of the Local Public Agencies program ($21,464)	$ 63,064
NJ	2017	1. Purchase, use, and evaluate Unmanned Aerial Systems (UAS) with the goal of developing guidance and specifications for bridge inspection and traffic incident monitoring ($47,956) 2. Hold Local Agency Peer Exchanges for Local Safety Program delivery utilizing Data Driven Safety Analysis tools ($18,564) 3. Purchase and evaluate the use of tablets for construction and work zone inspection ($32,404)	$ 98,924
NJ	2018	Implementation of Connected Vehicle – Road Service Safety Messages	$ 31,680