THE EASTERN TRANSPORTATION COALITION

CONNECTING FOR SOLUTIONS

TIS Web Summit:
Emerging Technologies in Traveler Information to Improve Safety for Passenger and Commercial Vehicles

June 17, 2020

NOTE: With the widespread use of this web platform, some participants may experience delays or difficulty connecting, we appreciate your patience.

Web & Audio Information

- We recommend that you use a phone line for the audio portion. The call-in phone number is: xxx-xxx-xxx **& enter xxxxxxx** at the prompt

- Participants will be in "Listen Only" mode throughout the web summit

- Please press *0 to speak to an operator for questions regarding audio

- Please call Justin Ferri for difficulties with the web or audio application

- **This web event is being recorded**

- Presentations will be posted to the I-95 Corridor Coalition website. Participants will receive a link to the presentations after they are posted.

Asking Questions

- Please pose your questions using the **chat box**

- Questions will be monitored then answered by the speakers either at the end of their presentation or at the end of the event

Chat (Everyone)

Type your question in the box, then click here

Everyone

Welcome

Denise Markow, PE, TSMO Director
I-95 Corridor Coalition
(soon to be The Eastern Transportation Coalition)
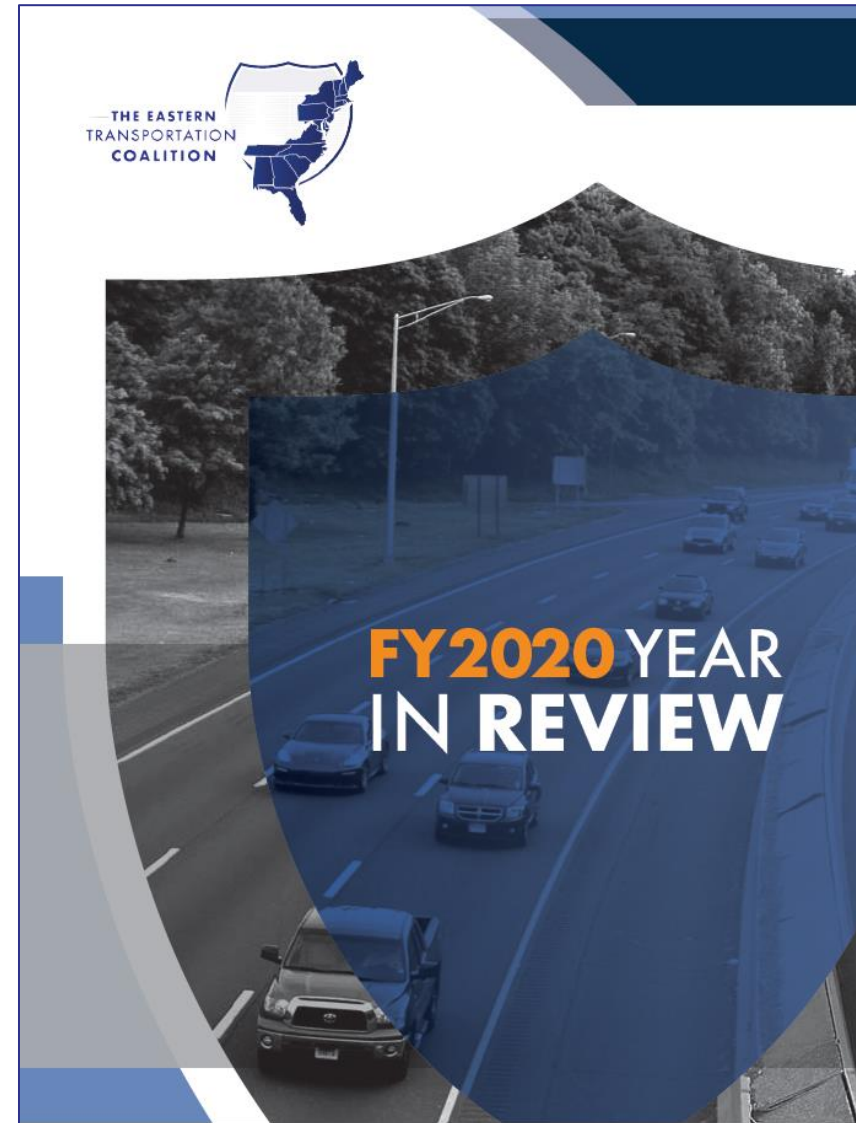
JULY 1st

We "flip the switch"

The Eastern Transportation Coalition

Year in Review

Thanks Mark Kopko & PennDOT!

Welcome Back, Kelly Wells!

Welcome from our TIS Co-Chairs

Mary Ameen, PE

Executive Director

NJTPA

Kelly Wells, PE

State Traveler Info Engineer

North Carolina DOT

Agenda

Time	Topic	Speaker
9:30 am - 9:40 am	Housekeeping Welcome and I-95 Corridor Coalition Remarks	Denise Markow, I-95 Corridor Coalition Kelly Wells, NCDOT & TIS Co-chair
9:40 am - 10:10 am	NJDOT – Use of Voice Assistance in the 511 System	Jim Hadden, for NJDOT/TRANSCOM
10:10 am - 10:40 am	Emergency Ops: The HELP System State Updates (PA, GA, NJ, MD)	Mary Farrell and John Farrell, Information Logistics, Inc.
10:40 am - 11:10 am	Commercial Vehicle Safety Alerts	Rick Schuman, INRIX Gene Conti, for Drivewyze
11:10: am - 11:20 am	Break	
11:20 am - 11:50 am	PennDOT's TSMO Performance Program	Ryan McNary, Pennsylvania DOT
11:50 am - 12:20 pm	New and Traditional Media in Traveler Information	Kevin Loftus, iHeartMedia/Total Traffic & Weather Network
12:20 pm - 12:30 pm	Wrap Up	Mary Ameen, NJTPA & TIS Co-chair

Speakers

Jim Hadden
Jim Hadden
Consulting
(for NJDOT/
TRANSCOM)

President

Rick Schuman
INRIX

*Vice President for
Public Sector,
Americas*

Gene Conti, PhD
The Conti Group
(for Drivewyze)

President

Mary Farrell
Information
Logistics, Inc.

President

John Farrell
Information
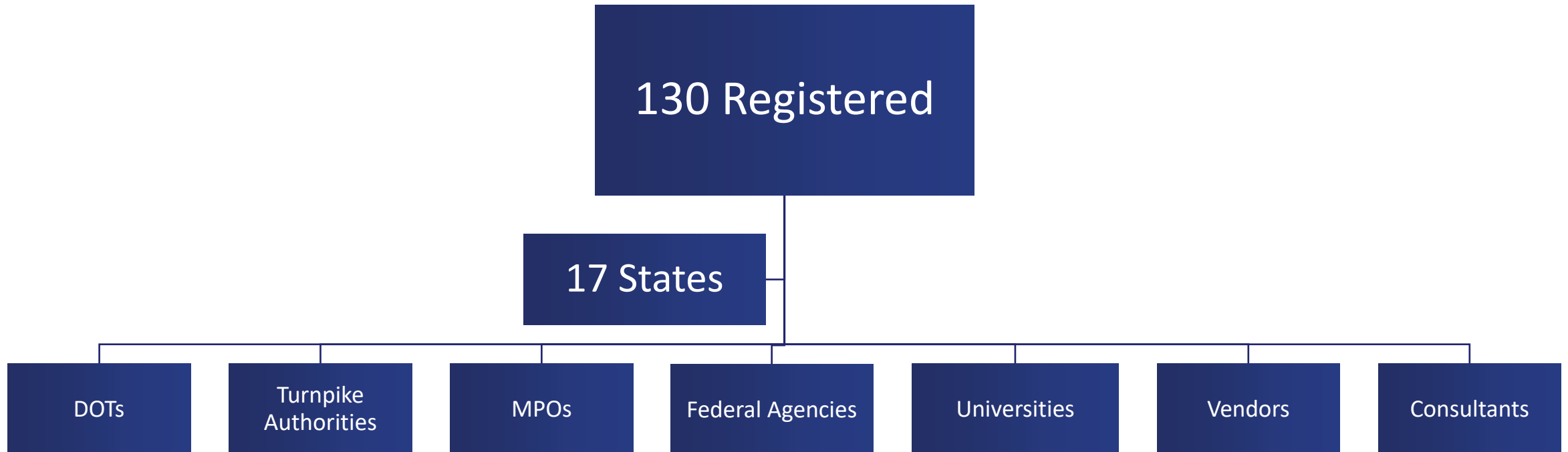Logistics, Inc.

*Vice President of
Product Management*

Ryan McNary
Pennsylvania
Department of
Transportation

*Manager of Traffic
Systems and
Performance*

Kevin Loftus
iHeartMedia/Total
Traffic & Weather
Network

*Senior Vice President
of Operations*

Participants

130 Registered

17 States

| DOTs | Turnpike Authorities | MPOs | Federal Agencies | Universities | Vendors | Consultants |

NJDOT – Use of Voice Assistance in the 511 System

Jim Hadden, *President*
Jim Hadden Consulting (for NJDOT/ TRANSCOM)

Voice Assistants and 511NJ

I-95 Corridor Coalition

TIS Web Summit

June 17, 2020

Presented by Jim Hadden

History of 511

300 *different* travel information phone numbers existed across the country.

July 21, 2000 FCC designates 511 as the single travel information telephone number

AASHTO, APTA and ITS America establish "511 Deployment Coalition"

Goal: help travelers and commuters make informed trip decisions

Updated: Every few minutes

Technology of the 2000s

2000 – **Camera Phones**
2001 – iPod released
2001 -- Wikipedia
2003 -- Skype
2004 – Facebook launched
2005 – You Tube
2006 -- **Twitter**
2006 – Blu-Ray released
2007 -- Amazon Kindle
2007 – **iPhone released**

Accessing 511NJ over time

2006 –   Static website and phone system

2010 –   Dynamic website, Personal Traveler Profiles
Popular Travel Routes, Twitter feeds, XML, GeoRSS
and JSON data feeds

2013 –   Share information on a regional basis.

2019 –   Transitioned to a refreshed website off Adobe flash
and on to HTML 5.0

infosenseglobal
concept to completion and beyond

The future of 511NJ

Department has always seen the value of 511 in supporting state and the region transportation initiatives.

(Pulaski Skyway, Lincoln Tunnel "Helix Fix", Gov's Office, Highway Traffic Safety and NJ Transit initiatives)

Website usage remains strong.
1/19 – 2/20 -- **4.5 million visitors (4 mil desktop, 458K Mobile, 49.6k Tablet)**

Site is mobile browser friendly. (***No official 511NJ app****)

Google, Waze, etc. won't customize/tailor data to department initiatives.

Department always concerned with "Distracted Driving," cell phone/smartphone use while driving

Require some type of interaction with your smartphone to get information.

Voice Assistants however…..

Voice Assistants Facts

1961 – **IBM shoebox**, first digital speech recognition tool. Recognized about 16 words and digits.

2005 – Microsoft introduces speech recognition feature for Office XP

2011 – Watson won Jeopardy beating Ken Jennings and Brad Rutter

2011 – **Apple launched Siri**

2012 – Google launched Google Now

2013 – **Microsoft launched Cortana**

2014 – **Amazon launched Alexa**

2016 – Google Assistant and Google Home

2017 – **Alexa Echo Dot, Google Home launch worldwide**

Voice Assistants Facts (2019)

Google Home – 52 Million Worldwide, 43 million in US – 5,000 + skills

Alexa Devices – 100 million devices – 100,000 + skills

Cortana – 141 million monthly users (current version is phasing out) – 230 + skills

Apple Siri – 500 million customers 1.85 million (No Skills, Siri interacts with apps)

AP – "20 Million Vehicles Shipping in 2023 will Come Equipped with Amazon Alexa, Google Assistant or Both"

More than 100,000 skills from Alexa developers

infosenseglobal
concept to completion and beyond

Voice Assistants (Alexa) and In-Car implementation

Audi

BMW

Buick

Ford

Lexus

Lincoln

Mini

Toyota

Lamborghini

More coming...

Voice Assistants (Alexa) and In-Car implementation

Vehicle not listed? For a full list visit:
https://www.amazon.com/b?node=17744356011

Alexa Echo Auto
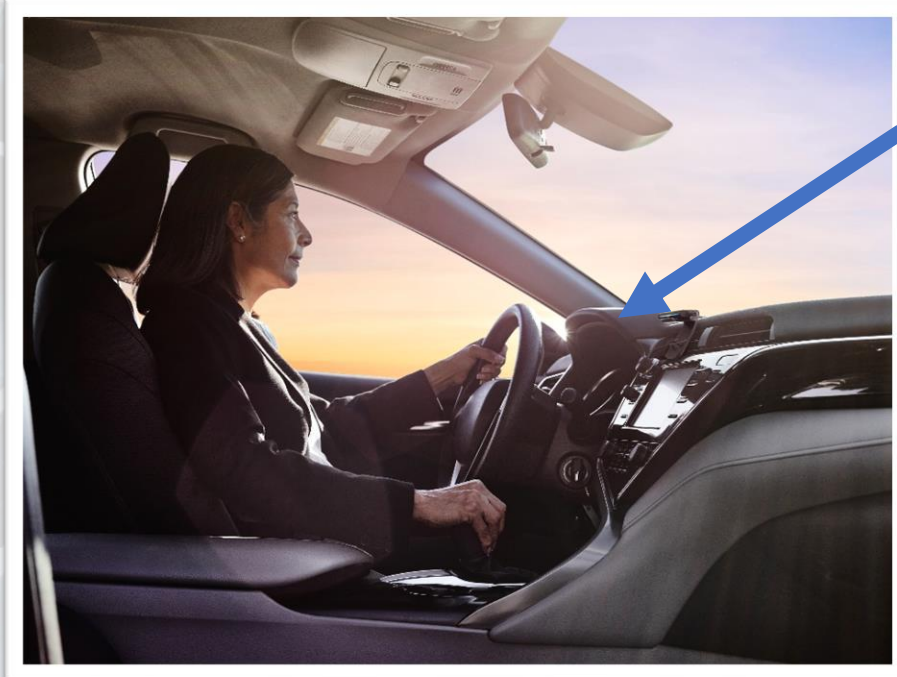
Voice Assistants (Android Auto) and In-Car implementation

Abarth	Cadillac
Acura	Chevrolet
Alpha Romeo	Chrysler
Aston Martin	Dodge
Audi	Ferrari
Bentley	Fiat
BMW	Ford
Buick	
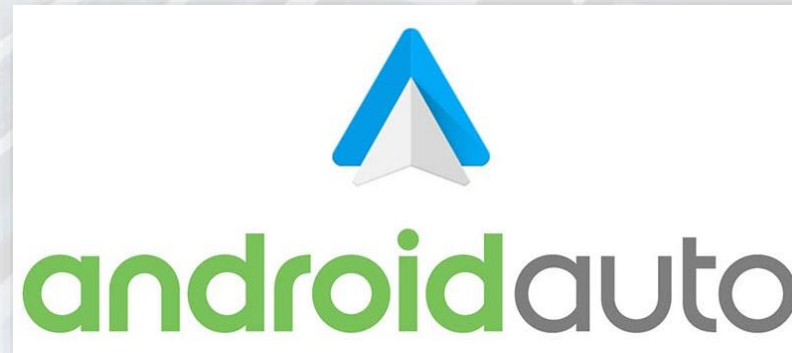
Voice Assistants (Android Auto) and In-Car implementation

Vehicle not listed? For a full list visit:

https://www.android.com/auto/compatibility/

Voice Assistant Skills/Actions – Multiple platforms

Once a Skill/Action is enabled it is available on all devices associated with that brand.
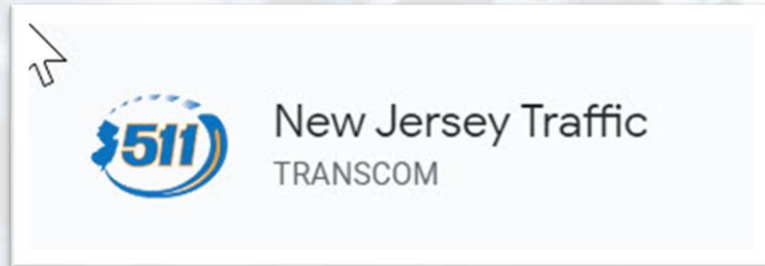
Alexa

Echo Dot
Echo Show
Alexa Echo Auto
Alexa App

Google

Google Nest Mini
Google Home Hub
Google Nest Hub Max
Google Assistant on Smartphone

"Hey Google"

Voice Assistant Development Nuances -- "New Jersey Traffic"
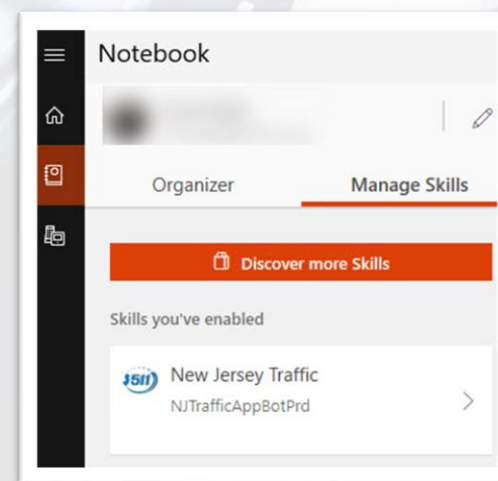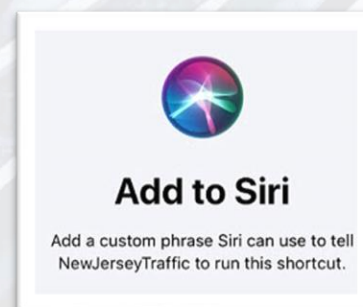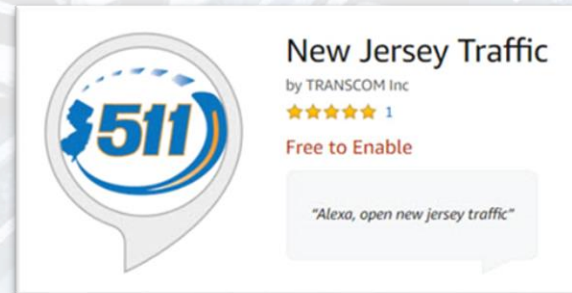
Voice Assistant Development Nuances -- Enable word

Alexa

Google

Siri*

Cortana

"Alexa, open new jersey traffic"

"Hey Google"

"Talk to New Jersey Traffic"

Hey Siri... "New Jersey Traffic"

Hey Cortana... Launch, Ask, Open "New Jersey Traffic"

511NJ Voice Assistant Features

Incidents
Based off the current real-time data available on 511

Travel Times
Based off the Travel Times in the Popular Travel Routes

(*Similar to the IVR in terms of requesting information*)

Floodgate Messages
(up to 3) that get posted to the Severity Alert Message box on 511NJ.org

511NJ Voice Assistant Features

Incidents

Based off the current real-time data available on 511

511NJ Voice Assistant Features

<u>Travel Times</u>

Based off the Travel Times in the Popular Travel Routes

Popular Travel Routes	
Driving times for...	
Interstates	⌄
I-80 Eastbound	⌄
Delaware Water Gap to NJ15 (34mi.)	:33
NJ15 to I-287 (10mi.)	:09
I-287 to GSP (19mi.)	:20
GSP to GW Bridge via Local Lanes (10mi.)	:11
GSP to GW Bridge via Express Lanes (10mi.)	:11

Garden State Parkway North	Garden State Parkway South
New Jersey Turnpike Northbound	New Jersey Turnpike Southbound
Atlantic City Expressway Eastbound	Atlantic City Expressway Westbound
Interstate 80 Eastbound	Interstate 80 Westbound
Interstate 78 Eastbound	Interstate 78 Westbound
Interstate 287 Northbound	Interstate 287 Southbound
Interstate 295 Northbound	Interstate 295 Southbound
Interstate 76 Eastbound	Interstate 76 Westbound
George Washington Bridge Eastbound	George Washington Bridge Westbound
Lincoln Tunnel	Holland Tunnel
Goethals Bridge	Outerbridge Crossing
Bayonne Bridge	Interstate 80 Delaware Water Gap Bridge
Interstate 78 Toll Bridge	Ben Franklin Bridge
Delaware Memorial Bridge	

Travel times *ONLY* give information when a segment of the trip is 50% above the historical travel time for the time that the request is made.

Otherwise, the system will play "Trips along this roadway are normal for this time of the day"

infosenseglobal
concept to completion and beyond

511NJ Voice Assistant Features

Floodgate Messages
(up to 3) that get posted to the
Severity Alert Message box on
511NJ.org

NJDOT Traffic Advisory – NJ Route 27 Northbound in Franklin Twp., Somerset County is closed between Promenade Blvd. and Georgetown-Franklin Tpke. (CR 518). The northbound detour is Promenade Blvd. to US Route 1 North to Finnegan's Lane. Motorists should use alternate routes or follow the posted detour.

Voice Assistant Demonstration

Enabling videos skills/actions videos

Live demonstration of
Alexa and Google Assistant

Voice Assistant Lessons Learned

Develop Something user-friendly
- Don't recreate the wheel (followed the IVR model for interaction)
- Incidents and travel times to start

Standardize structure as much as possible
- Siri and City are close – added City "Name"

Brand across platforms
- Numbers are not allowed with Google

Development Area
- Alexa and Google Assistant allow for a "Development site" before pushing to production. Siri and Cortana do not.

Voice Assistant Lessons Learned

Allow plenty of lead time for code review

- All platforms will review your code, line by line.
- Accept, Reject, or, ask for clarification.

Test, Test, Test

- Call flow testing plan – Follow it
- You can't test enough.

Marketing

- All platforms have guidelines for promoting products.
- Each is different.
- NOT *Virtual* Assistant…. *Voice* Assistant.

Once accepted, soft launch

- Coordinate with your Department front office.

Voice Assistant... Coming soon

Siri and Cortana
- Waiting for NJDOT direction on these applications

Location-based information
- Part of original deployment.
- Each platform addressed location-based information differently.
- Need a deeper dive conversation with NJDOT to determine the best approach for providing the best information

Thank you.

Questions?

Contact information:

Jim Hadden
Email: Jim.Hadden@infosenseglobal.com
Phone (609)226.1722

Emergency Ops: The HELP System State Updates (PA, GA, NJ, MD)

Mary Farrell, *President*
Information Logistics, Inc.

John Farrell, *Vice President of Product Management*
Information Logistics, Inc.

An update for the I-95 Corridor Coalition
June 2020
Philadelphia, PA

Agenda

- Brief Review – What Are HELP Alerts?
  - When could this system be used?

- Updates
  - IPAWS/WEA
  - Usage
  - Lessons Learned

- What's Next
  - Features Update
  - COVID-19 Implications

- Q&A
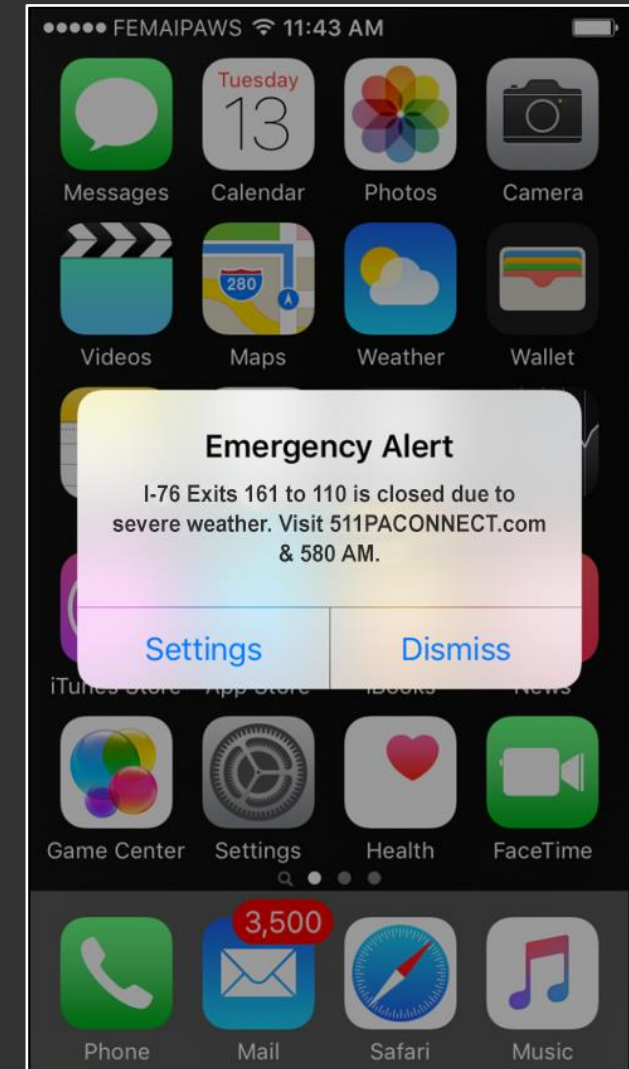
Wireless Emergency Alerts

Two-Way Emergency Communications

No App Needed

Geo-Targeted Alerts

No Preregistration Needed

Web/SMS Text/IVR Communications

Push Official Agency Messages

Clearer Picture of Emergency Scene

Use Cases: Two-Way Communications

- Highway trapped queue situation –with WEA activation

- Possible causes:
  - Crash exacerbated by winter storm.
  - Oil tanker fire causing evacuation of nearby vehicles and highway shutdown.
  - Queue forming behind fatal accident investigation.
  - Any extended road blockage on a section of roadway where it is difficult to re-route traffic.
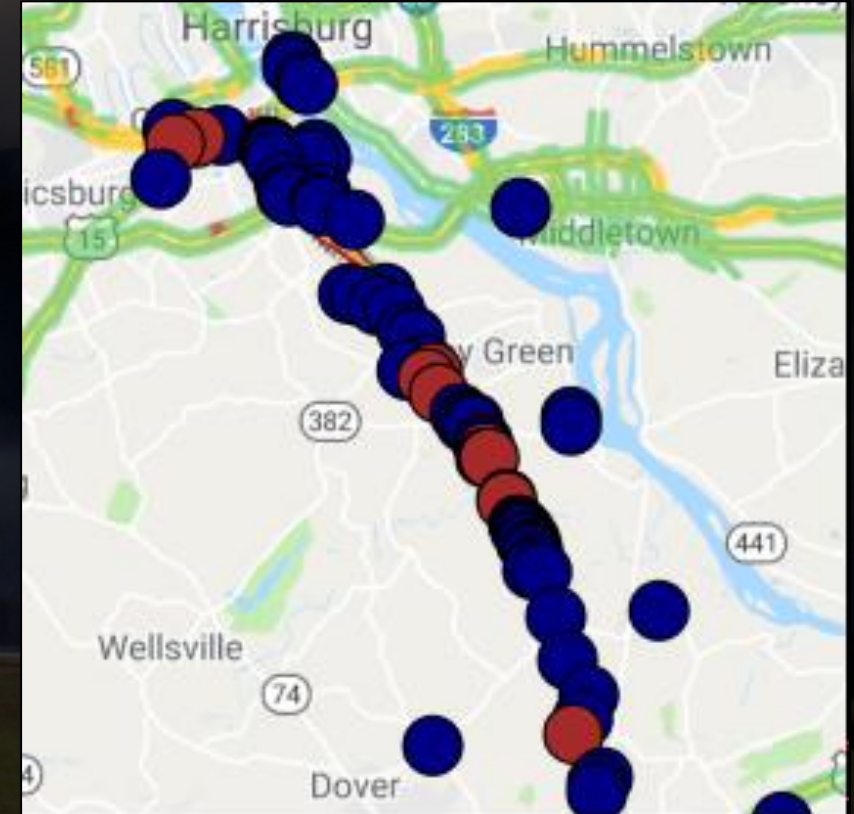
Initial Alert to Travelers

- Please Participate:

- You are (stopped on a road, on a long line, approaching a hazardous area).

- Your cell phone starts to buzz.

- You read the message, and follow instructions:

    VISIT: i2HELPdemo.com
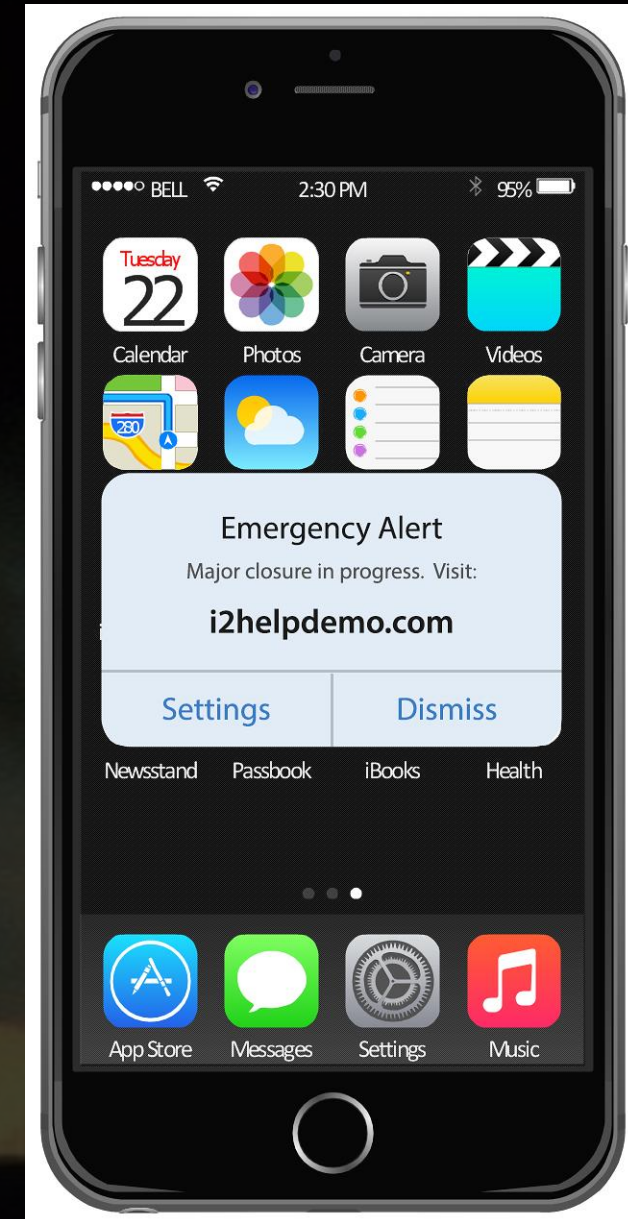
Use Cases: One-Way Alerting

Stopped Traffic!

Warning! Stopped Traffic on I-95 NORTH-BOUND near Milepost 156. Use Extreme Caution if approaching this area.

Settings | Dismiss
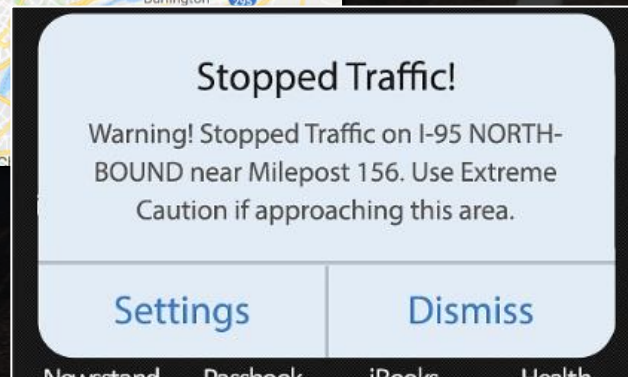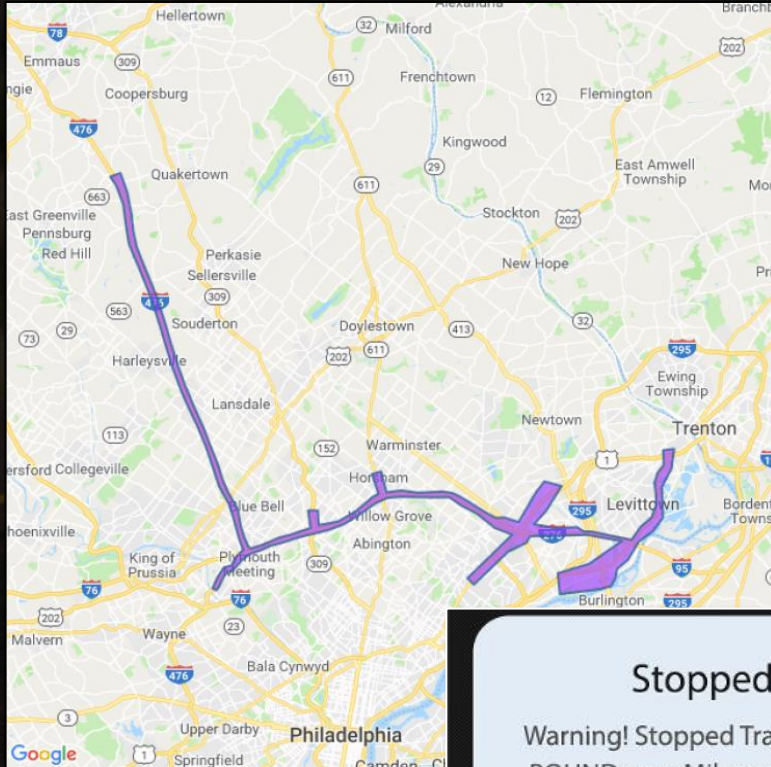
- Send WEA only, no registration

- Possible causes:
  - PA Turnpike – January 2017 bridge closure.
  - Contraflow traffic on highway.
  - Warning of flooded roadway.
  - Warning about dangerous slowdown condition.

Underlying Data from INRIX
Iowa Crash Example

Today you can already understand the congestion levels, amount of time spent in ques and how much time is lost.

With HELP you can now monitor roads in real time and communicate with drivers trapped in and approaching a que.

Probe Data Trajectories – I-35 SB
Full Day February 5, 2018 (CST)
From I-80 (MP 89) to MN State Line (MP 219)

Direction of Travel

24 Hours

MP 89   130 Miles   MP 219

Source: INRIX Internal Tool – "Traffic Trace"

12:30 Crash

South   I-35 @ E Lincoln Way (AMTV08) 02/05/2018 12:33:02
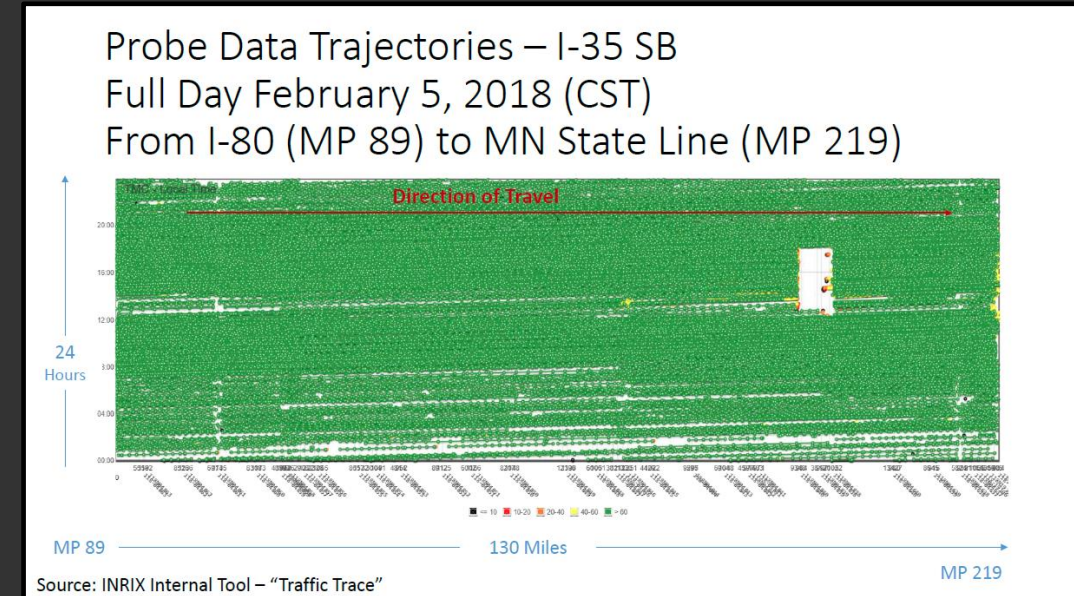
Congestion at 2:09PM
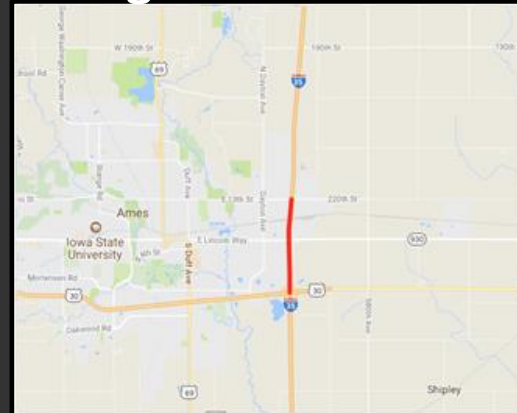
Congestion at 4:16 PM
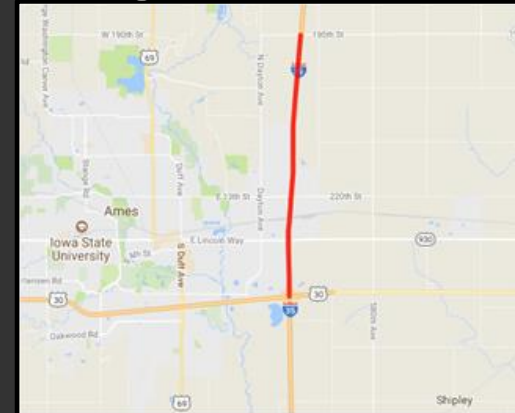
Congestion at 6:18 PM
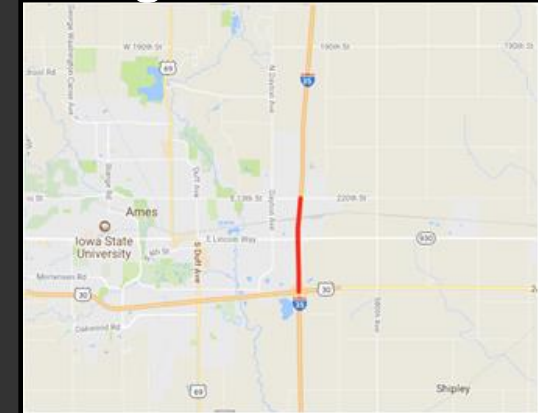
Updates: IPAWS, Usage, Lessons Learned

What is IPAWS/WEA?

"The Wireless Emergency Alert system delivers critical warnings and public safety information to the public on mobile devices."

- FEMA IS-0247.b Integrated Public Alert and Warning System for Alert Originators

- IPAWS = Integrated Public Alert & Warning System

- WEA = Wireless Emergency Alert

- WEA channel of IPAWS can be used for several alert categories, including: Presidential, AMBER, imminent threats, and **public safety**.

Why use WEA?

- Unique ring tone & vibration

- Geo-targeted alerts
  - To within .1 miles

- No subscription needed

- Avoids cell congestion (SMS-Cell Broadcast)

i2HELPdemo.com

511PAConnect Activations by Calendar Month
Dec. 2016 - January 2020
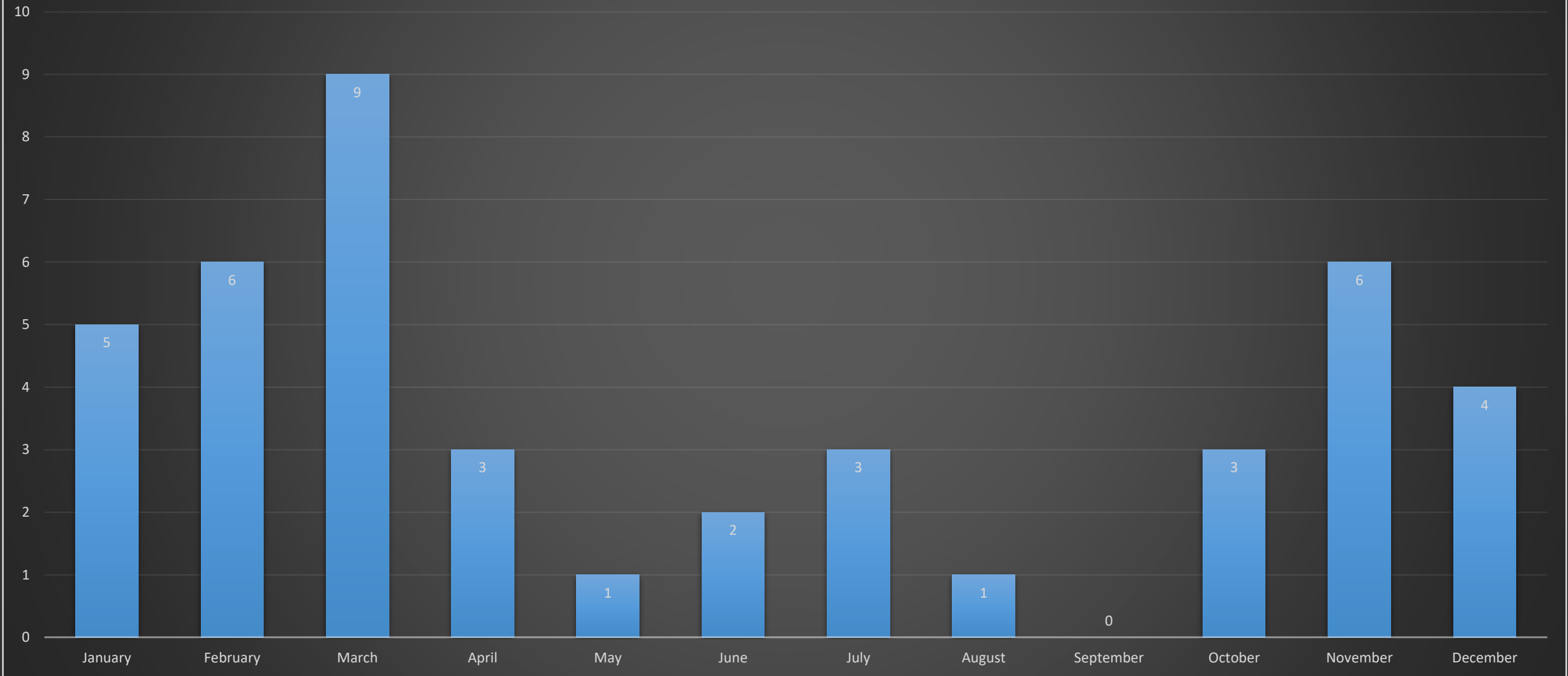
511PAConnect Activations by Location: Dec. 2016 to January 2020
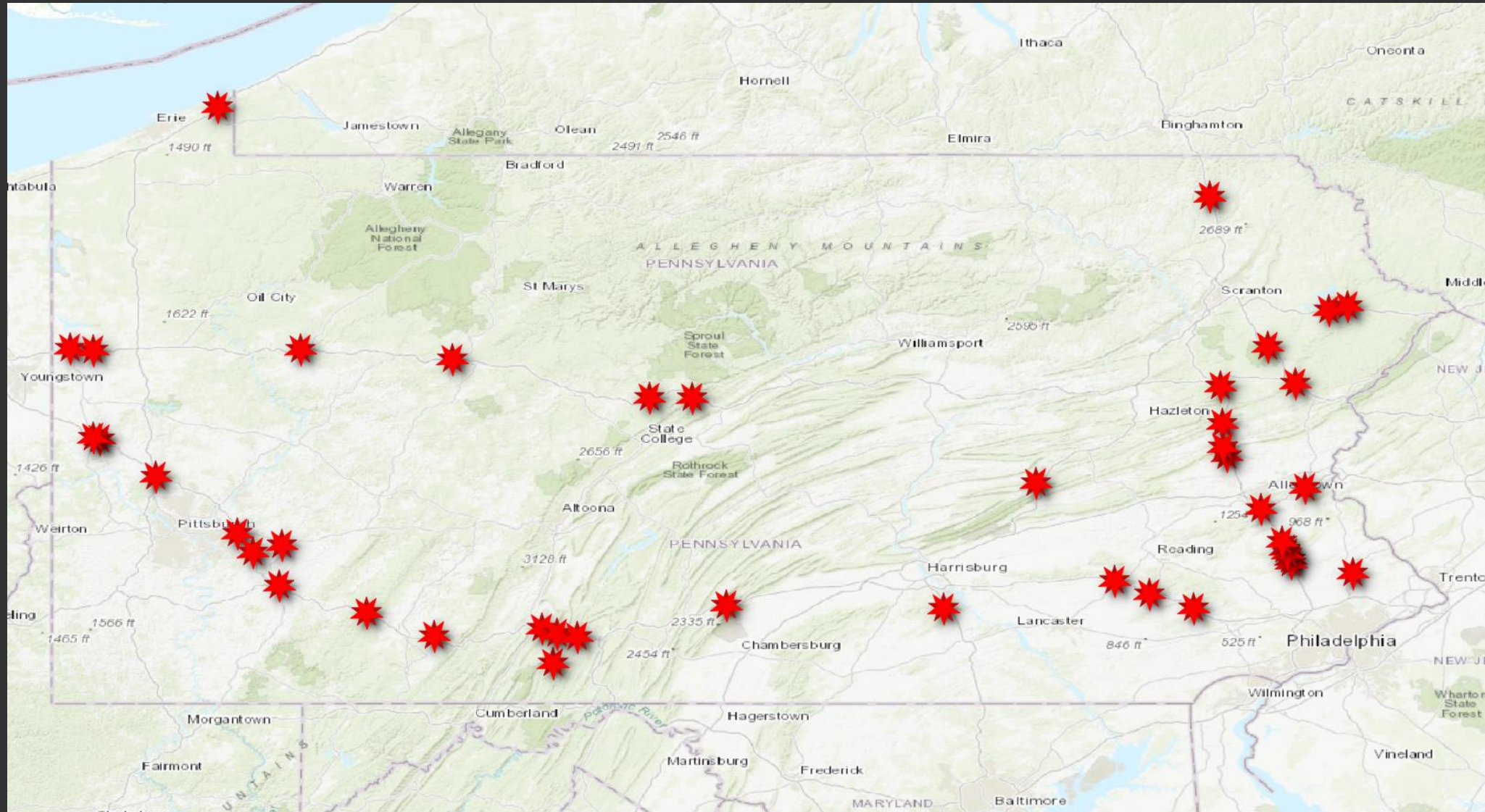
HELP Footprint Update
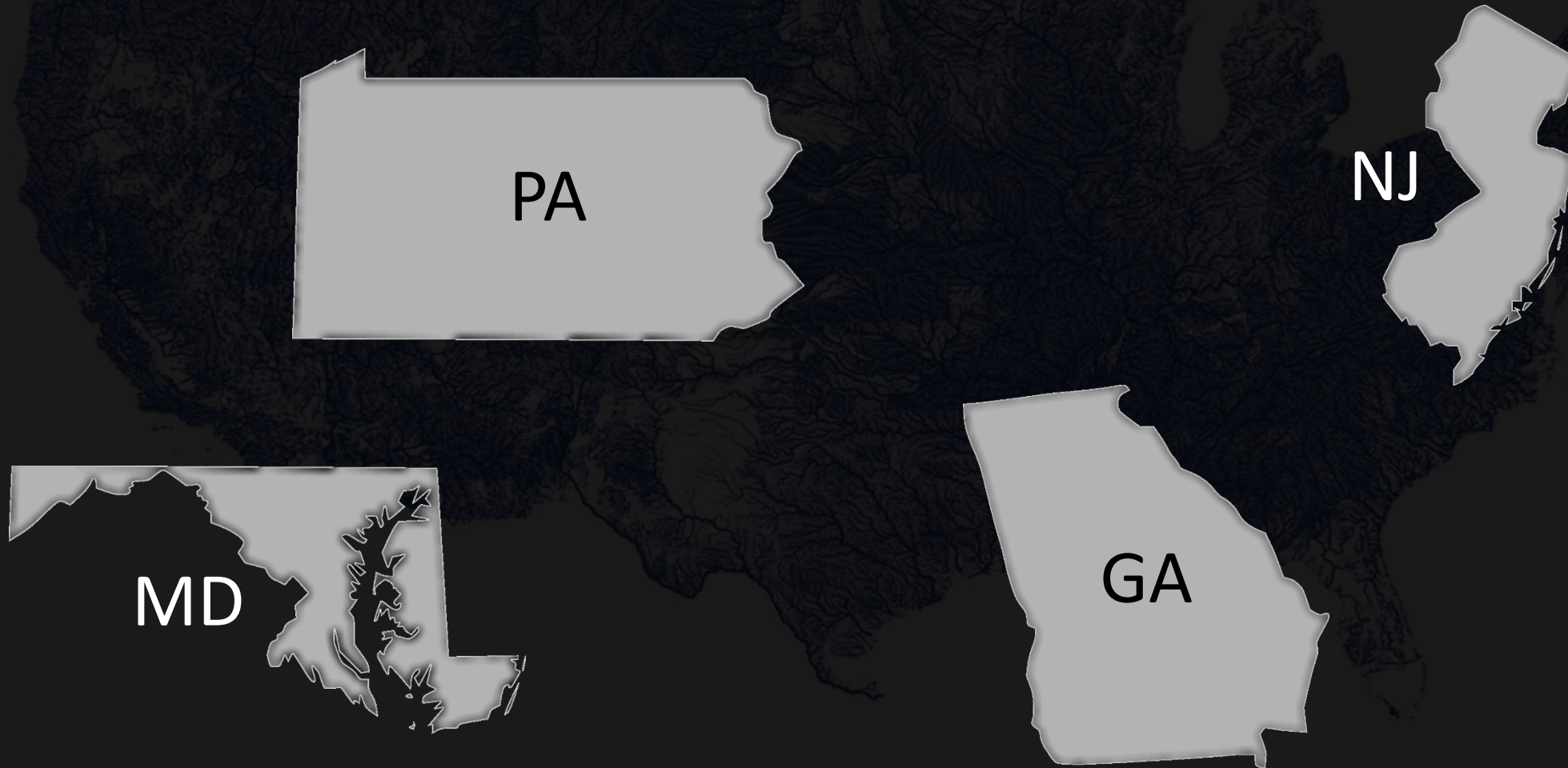
HELP Policy/Procedures Lessons

- Coordination with EMA is critical – and often the longest part of the setup process

- Decide on COG ownership

- Activate sooner than later

- Flexibility is key

- Practice, practice, practice – especially at startup

511PAHelp Commonwealth of PA Emergency Traveler Response System Standard Operating Procedure for Trapped Queued Traffic Events (1)
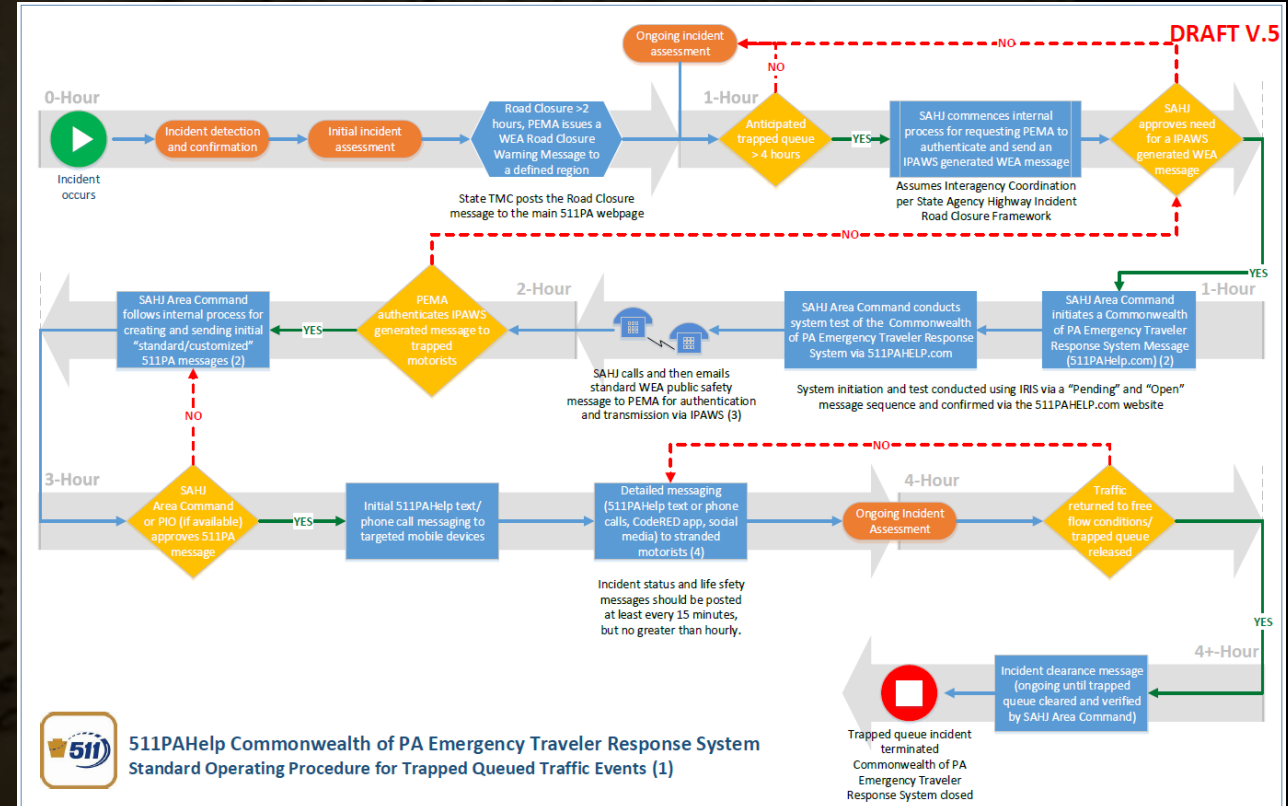
What's Next?

HELP Features Update

- Adaptive layout – easier to use on mobile devices

- Pre-define alert areas – save the trouble spots

- Additional IPAWS data for EMA

- WEA 2.0/3.0 Rollout – Spanish and longer WEA

- Coming soon:
  - Integrated UAV streams
  - AI analysis of traveler responses
  - Training simulator
  - Photo uploads from participants

COVID-19 & WEA

- 249 identified uses by 90 jurisdictions
  - Between 3/14/2020 and 5/12/2020

- Identified uses:
  - Request health care workers
  - Announce stay at home orders
  - Provide information on grocery distribution
  - Information about walk-in/drive-in testing centers

- Other possibilities
  - Announce quarantine areas
  - Traffic impacts near areas supplying vaccines/testing/groceries/PPE

BE HEARD!

The Power of WEA Messages

No app needed, no advertising needed, no public awareness campaigns.
Initiates communications with effected people.

The Power of Two-Way Communications

The agency targets those effected with specific safety information & directions
The agency obtains information from those effected to assist with response.

Enhanced response effectiveness

Thank you! Questions?

Mary Farrell
President
mfarrell@Ilogcorp.com

John Farrell
Vice President, Product Management
johnf@ilogcorp.com
215-262-4709

Commercial Vehicle Safety Alerts

Rick Schuman, *Vice President for Public Sector, Americas*
INRIX

Eugene Conti, PhD, *President,* The Conti Group for Drivewyze

Commercial Vehicle Safety Alerts

Rick Schuman, INRIX

Gene Conti, Drivewyze

Drivewyze® **INRIX**

Road Congestion is a Critical Safety Issue

Reducing congestion reduces dangerous and unanticipated slowdowns – and reduces collisions

Persons injured in large truck crashes (1997-2016)

Record number of injuries
4,600 deaths

Almost 30% of collisions occurred on interstates

Major factors:
traffic congestion
&
poor stopping distance

A fully loaded truck travelling 65 mph takes 66% longer to brake and stop than a passenger car
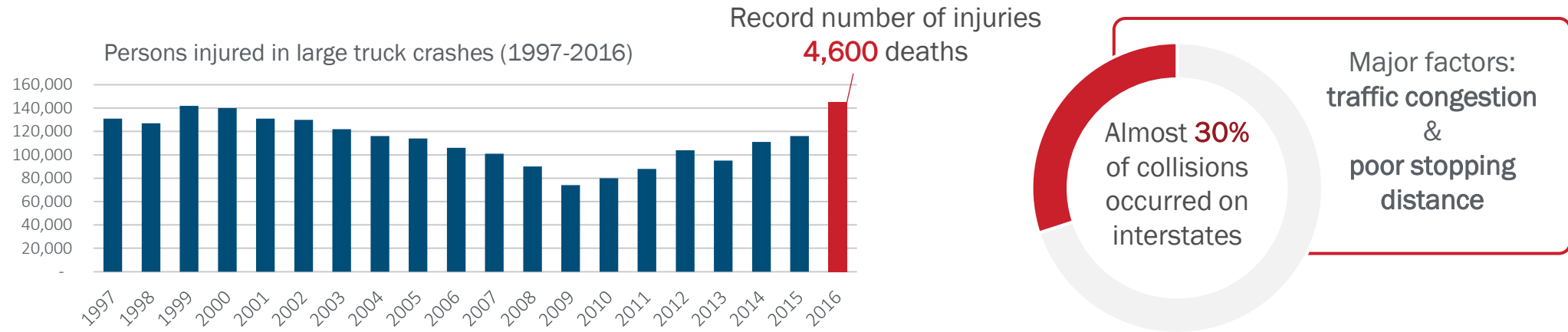
Drivewyze® **INRIX**®

Interstate Fatalities in Indiana, 2012-2014

(from Published TRB Paper 16-1194)

PURDUE UNIVERSITY

Total	Back of Queue	Rear-End	Involved Trucks	Rural Areas	Truck Hitting Queue
230 fatal crashes	30 crashes / 46 fatalities	26 crashes / 42 fatalities	25 crashes / 40 fatalities	18 crashes / 27 fatalities	13 crashes
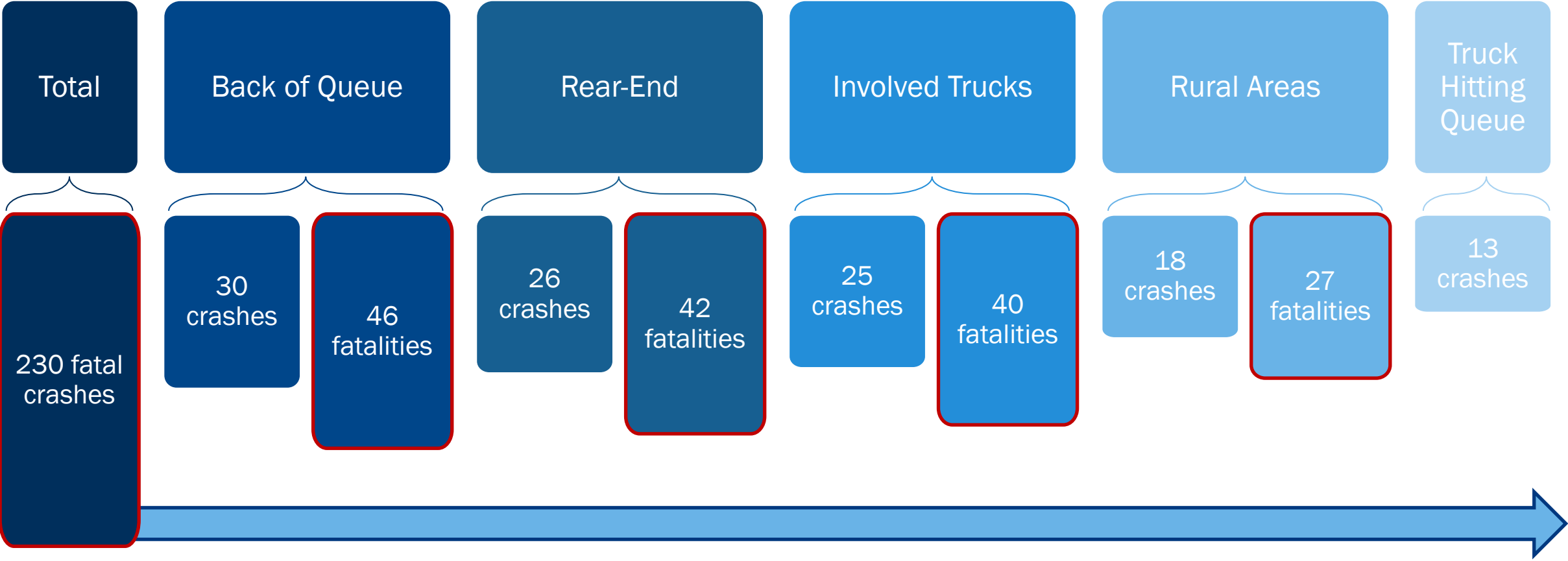
Drivewyze® INRIX

PennDOT Secondary Crash Study

1,233 secondary crashes on the core network in 2018

- **6** fatalities
- **750** injuries

82% occurred **15+ minutes** after initial crash

49% with **60+ minutes** queues present!
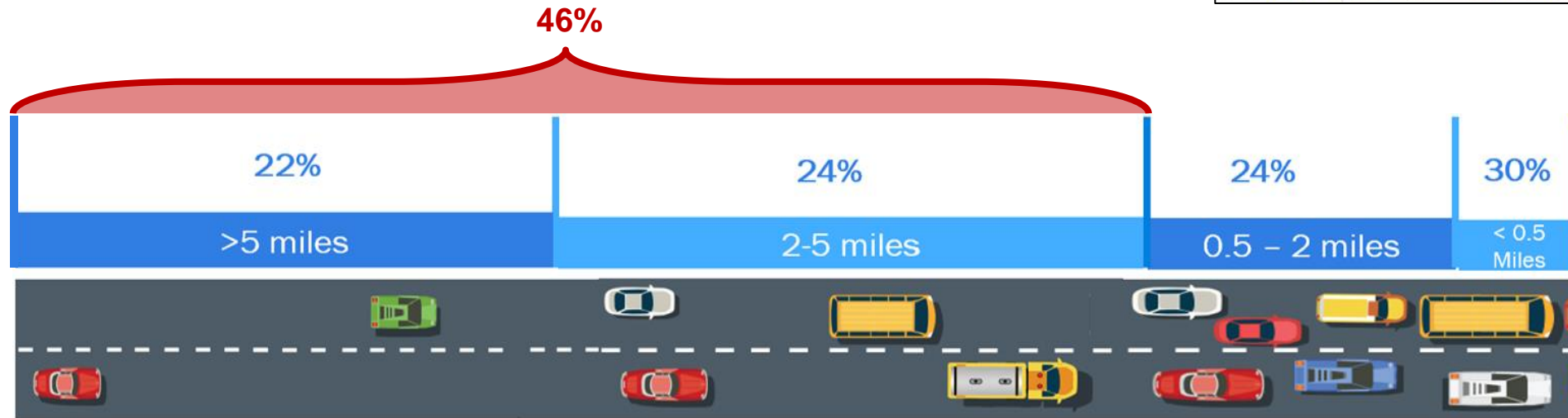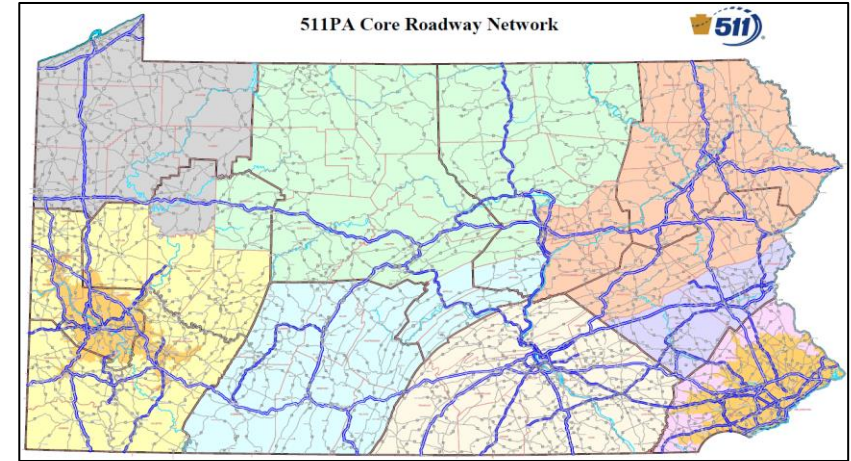
INRIX and Drivewyze Partnering to Reduce Truck Collisions

Unmatched Data, Unmatched Reach...

- Real-time monitoring of nationwide road network
- Detects and characterizes closures, queues, and slowdowns
- Updates every minute, including location and severity

Road Closures

Description	Road closed due to accident on I-95 Southbound between Exits 100,100B-A MD-272 and Exit 93 MD-222-TRUCK.
Where	Southbound I-95 between I-95 Exits 100,100B-A / MD-272 / MD-272 North East Rd and I-95 Exit 93 / MD-222-TRUCK / MD-275
Status	active
When	2020-06-01 3:10 pm - 2020-06-01 4:39 pm

Congestion/Queues

Description	Severe delays of ten minutes and delays increasing on I-90 Westbound in West Brimfield. Average speed 15 mph.
Where	Westbound I-90 between I-90 Exit 9 / I-84 and I-90
Status	active
When	2020-06-01 2:06 pm - 2020-06-01 5:08 pm
Length	3.70 Miles
Delay from Normal	10.00 minutes

Slowdowns

Dangerous Slowdown	
ID	10212266|1386692759
Where	I-85
Severity	High Impact
Delta	47 mph
Speed At	19 mph
Start	2020-06-01 4:26 pm
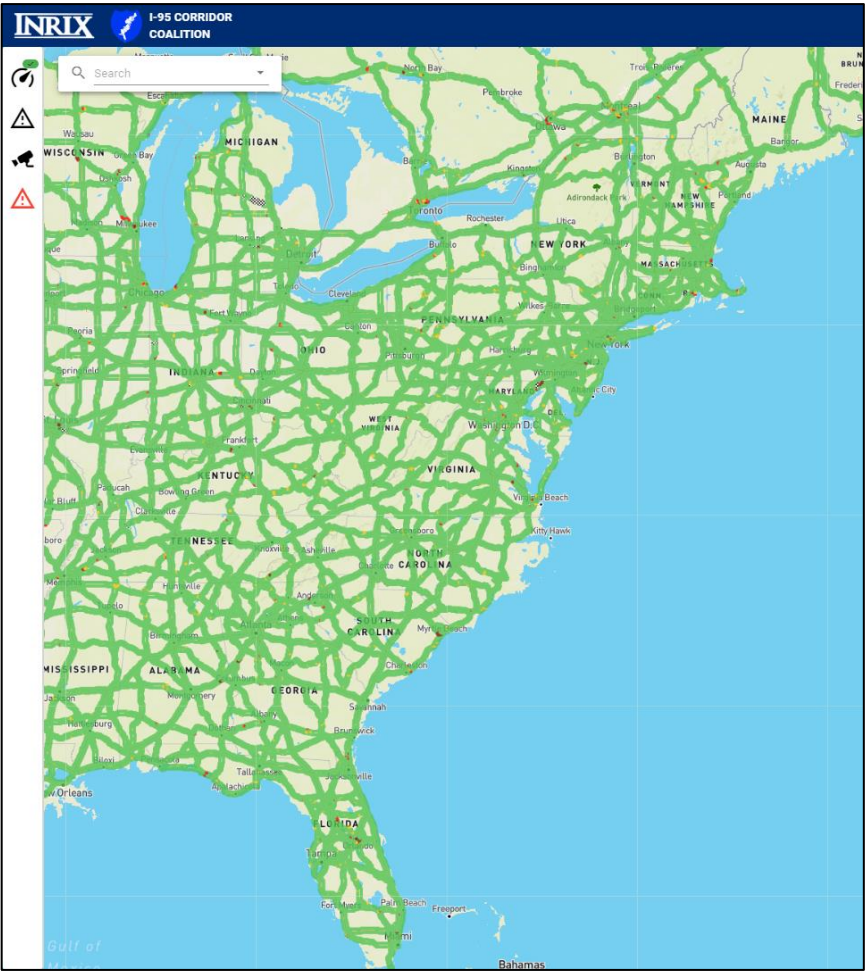
INRIX and Drivewyze Partnering to Reduce Truck Collisions

Unmatched Data, *Unmatched Reach...*

Drivewyze®

North America's Largest...

- Connected Truck Platform
  (2 million, ~25% of large trucks nationwide)
- Weigh station bypass network
  (800+ sites, 46 states)

New: Static safety and Rest Area Notifications

HIGH ROLLOVER

USE LOW GEAR. 35 MPH
6% Grades next 5 miles.

REST AREA OPEN
5 Miles I-70 EB.
Open Spaces: 25

Drivewyze Site

BYPASS
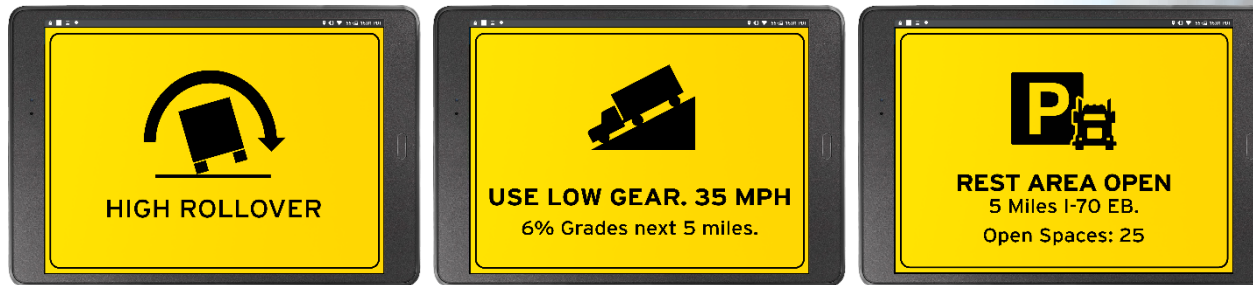
Drivewyze® **INRIX**

Commercial Vehicle Safety Alerts

Partnership of INRIX and Drivewyze

Safety Messages to Trucks in real-time on limited access roads

Alert types:

1. Closures, Slowdowns, and Queues
   (from INRIX, agency defines thresholds)

2. Truck-relevant restrictions/detours (from Agency)

Shown to Drivers through Drivewyze:

1. Drivewyze 'geo-fences' each alert.

2. Alerts are shown on the driver's in-cab device
   (Drivewyze partners with leading ELD operators)

3. All trucks in 'Drivewyze Network' opting-in for
   safety notifications will get message
   (Drivewyze Network is 2 Million trucks & growing)

Traffic Congestion

Desc:	Severe delays of 21 minutes and delays easing on US-58 Eastbound in Rust Hollow. Average speed five mph.
Where:	Eastbound US-58 between I-81 Exit 7 / Old Airport Rd and I-81 Exit 13 / Spring Creek Rd
When:	Sat Dec 7 2019 6:00 PM (EST) to Sat Dec 7 2019 7:57 PM (EST)
Length:	4.34 miles
ID:	122065899
Delay from Normal:	21 minutes
Delay from Free Flow:	21 minutes
Coords:	36.669943,-82.052578

I-95 CORRIDOR COALITION

BE PREPARED TO STOP

HEAVY CONGESTION
2-3 miles. Proceed with Caution

Implementation Model:

- Available as an INRIX VPP Option through July 2022

- Stage 1 available for licensing now
  (Up to 500 centerline miles on 4 interstates)

- **If interested, contact Denise Markow**

Drivewyze® INRIX

Reducing Collisions Through Driver Awareness

CAUTION: DANGEROUS SLOWDOWN AHEAD

Alerts are triggered by real-time INRIX Traffic Data

Proactive Alerts
Safety Notifications that appear on in-cab devices make truck drivers aware of upcoming congestion

Reduced Speed = Reduced Crashes
By warning drivers of congestion in real time, miles ahead, drivers have more time to slow down safely

Driver Connection
Provides direct messaging and safety broadcasts for improved communication with drivers

Drivewyze® **INRIX®** 65

The Value of a Timely Alert

VS

WITHOUT ALERT

Driver, now in a more dangerous scenario, has less time to react

In a more congested scenario the driver has fewer safe options available to them

WITH PROACTIVE/REAL-TIME ALERT

Driver is in a safer scenario and has more time to react

With a proactive alert, the driver has time to adjust while it is still safe to do so

CAUTION: DANGEROUS SLOWDOWN AHEAD
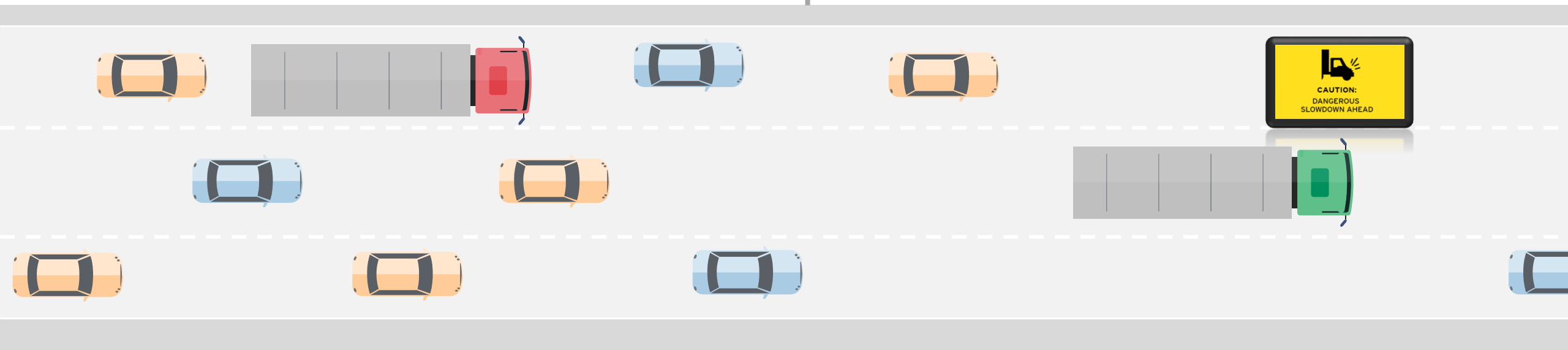
By slowing down, a truck is also slowing down traffic around it

Thank You!

Rick Schuman (rick@inrix.com)

Gene Conti (econti@intelligentimagingsystems.com)

Break (10 minutes)

PennDOT's TSMO Performance Program

Ryan McNary, *Manager of Traffic Systems and Performance*
Pennsylvania Department of Transportation

PennDOT TSMO Performance Program

Eastern Transportation Coalition– 6/17/20

Ryan McNary
Manager, Traffic Systems and Performance

40,000 Miles of Roadway

25,400 Bridges

$10.1 Billion Budget

$2.4+ Billion Annual Construction Contracts Awarded

11,500 Employees 7,400 Maintenance Employees

56 Transit Systems

65 Operating Railroads

pennsylvania DEPARTMENT OF TRANSPORTATION

3 Ports

130 Public Use Airports

10.7 Million Licensed Drivers & ID Holders

11.9 Million Registered Vehicles

102 Billion Annual Vehicle Miles Traveled

2,100 Miles of BicyclePA Routes

LB (5-18)

Analysis Performed on "Core Network"

511PA Core Roadway Network
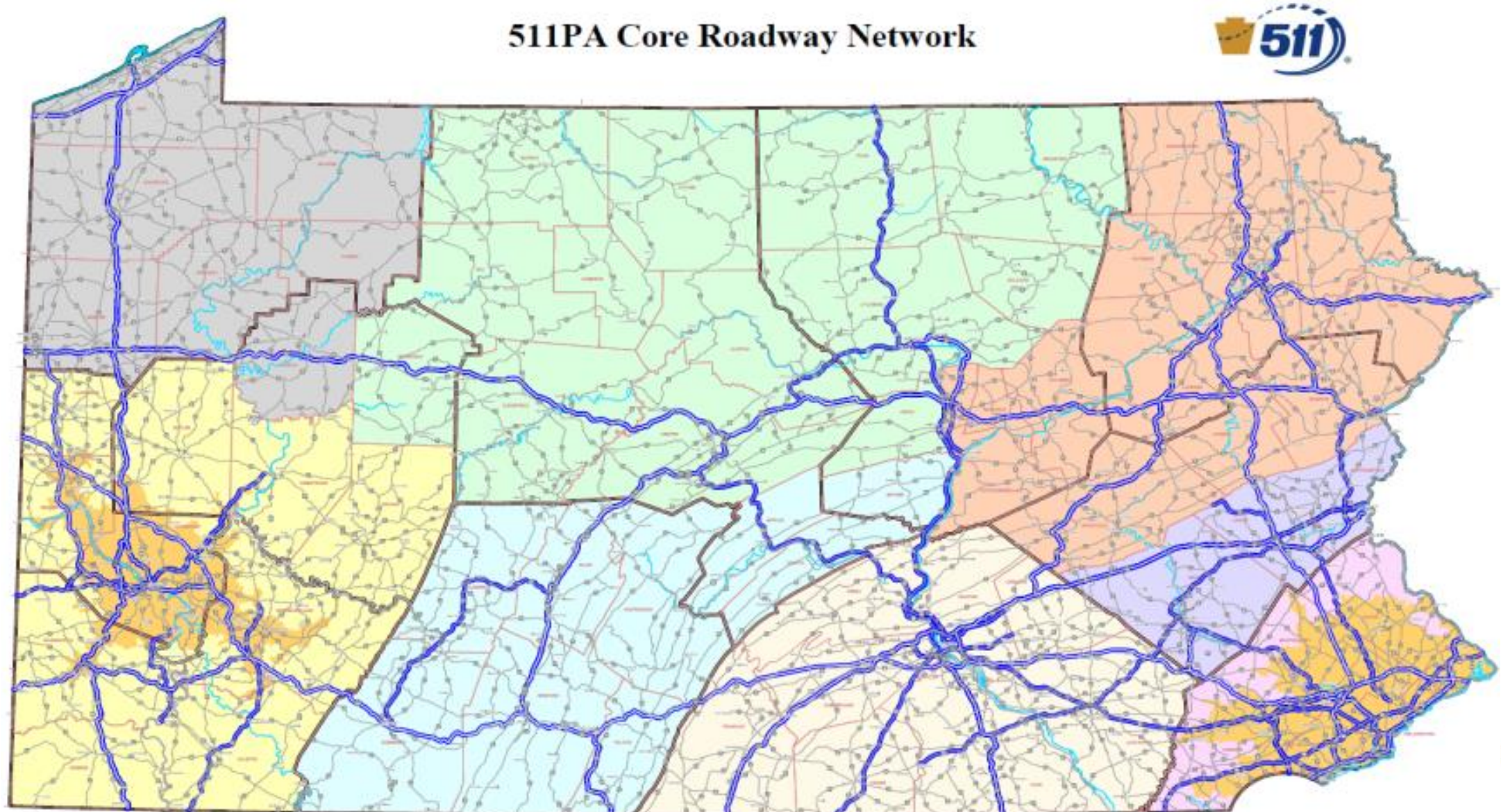
Traffic Data Integration into PennDOT Operations

Highlights

- **Crowd-Sourced Incident Identification – TMC Operations**

- **Pennsylvania Congestion Pie Chart - Planning**

- **COVID-19 Impact Studies – TMC Operations**

- **Queue Protection Messaging/Smart Work Zones – Safety and Traveler Information**

pennsylvania
DEPARTMENT OF TRANSPORTATION

TSMO Analytics Data

1. Crash Records
2. Road Condition Reporting System
3. Weather Stations
4. Maintenance Database
5. Traffic Counter/Weigh in Motion
6. ATMS DMS Message History

Power BI

pennsylvania
DEPARTMENT OF TRANSPORTATION

Validating Crowd-Sourced Data for Traffic Management

- INRIX/Waze combined to detect **86.7%** of all reportable crashes on core network

INRIX	7 minutes
Waze	9 minutes
RCRS	13 minutes

FIRST TO DETECT, HIGH CONGESTION CRASHES

Waze, 27%

INRIX, 49%

Traditional/RCRS, 24%

pennsylvania
DEPARTMENT OF TRANSPORTATION

TRAFFIC ALERTS

Home | Admin | RCRS Dashboard | Traffic Dashboard | Statewide Map | Report

pennsylvania
DEPARTMENT OF TRANSPORTATION

☰ Filter & Legend

Search: Search Filter .Ex. I-81,Major Accident,Active

511 Filter: Yes

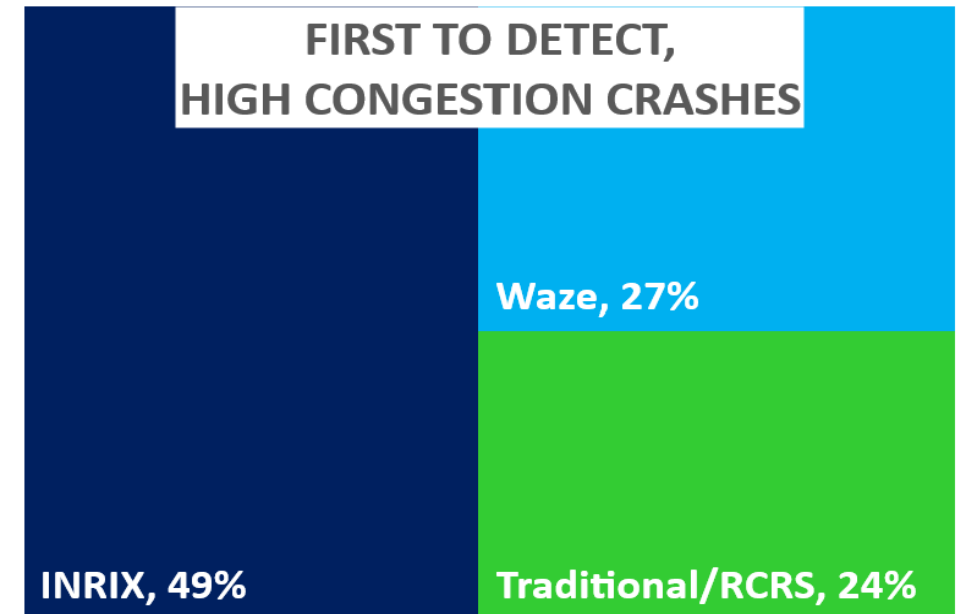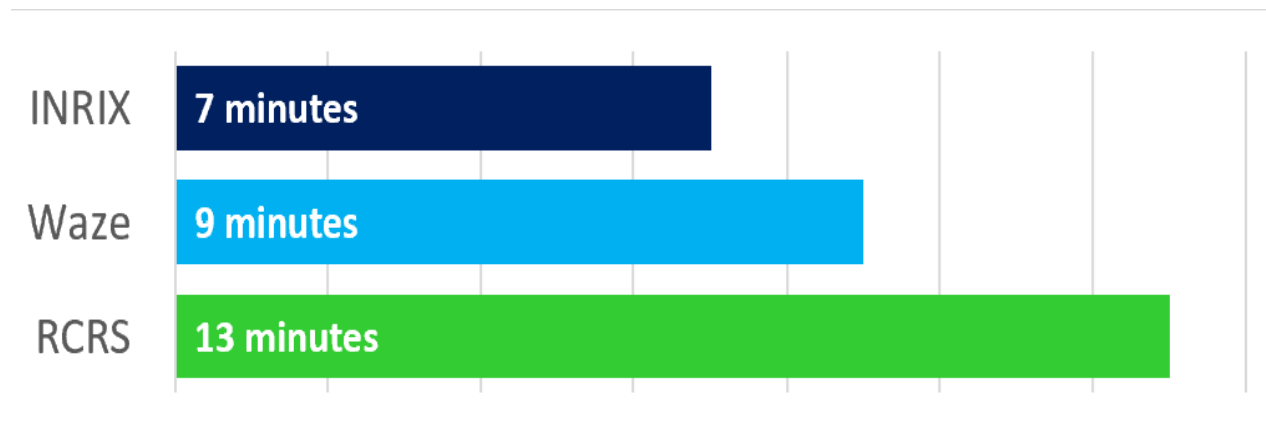| Source	District	Road	Direction	AlertType	Severity	Congestion	Reported Time ▲	Status	Dismiss
Waze/Inrix	D04	I-80	Westbound	Congestion(Inrix)	2-Moderate	2.84 miles	6:07 PM (a minute ago)	active (v.40)	☐
RCRS/Inrix	D05	US-22	Eastbound	Incidents(Inrix)	2-Moderate	1.59 miles	6:04 PM (4 mins ago)	active (v.2)	☐
Waze/RCRS/Inrix	D06	I-76	Eastbound	Congestion(Inrix)	2-Moderate	2.20 miles	6:01 PM (7 mins ago)	active (v.34)	☐
Waze/Inrix	D06	I-95	Southbound	Congestion(Inrix)	2-Moderate	2.56 miles	5:57 PM (11 mins ago)	cleared (v.34)	☐
Waze	D08	US-30	N/A	Minor Accident	1-Low	N/A	5:56 PM (11 mins ago)	active (v.1)	☐
Waze/Inrix	D04	I-81	Northbound	Incidents(Inrix)	3-High	0.00 miles	5:53 PM (15 mins ago)	active (v.11)	☐
Waze/Inrix	D06	I-476	None	Incidents(Inrix)	3-High	0.38 miles	5:51 PM (17 mins ago)	active (v.15)	☐
Waze/Inrix	D04	I-80	Westbound	Incidents(Inrix)	3-High	1.49 miles	5:51 PM (17 mins ago)	active (v.9)	☐
Waze/RCRS/Inrix	D05	US-22	Eastbound	Congestion(Inrix)	2-Moderate	2.41 miles	5:51 PM (17 mins ago)	active (v.4)	☐
Waze/Inrix	D05	US-22	Westbound	Congestion(Inrix)	2-Moderate	1.31 miles	5:43 PM (25 mins ago)	cleared (v.6)	☐
Inrix	D08	US-30	None	Incidents(Inrix)	2-Moderate	0.00 miles	5:38 PM (30 mins ago)	active (v.1)	☐
Waze/Inrix	D04	I-80	Westbound	Congestion(Inrix)	2-Moderate	2.07 miles	4:20 PM (an hour ago)	active (v.34)	☐
Waze/Inrix	D04	I-80	Westbound	Congestion(Inrix)	3-High	3.90 miles	3:36 PM (2 hour ago)	active (v.15)	☐
Inrix	D05	US-222	Northbound	Incidents(Inrix)	3-High	2.03 miles	3:27 PM (2 hour ago)	active (v.1)	☐

Inrix Incident Details

↗ Incident Timeline
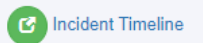
Inrix v40: Delays of three minutes and delays easing on I-80 Westbound in Hetlerville. Average speed 25 mph.
Waze v4: Accident Minor, Hazard On Shoulder Car Stopped reported on this Congestion(Inrix).

InrixID: 130292031
Status: active
Severity: 2-Moderate
Impacting: Yes
Road: I-80
Type: Congestion
Direction: Westbound
Location: between I-80 and I-80
Reported Time: Starts at 6/11/2020 3:34 PM, ends at 6/11/2020 6:45 PM.
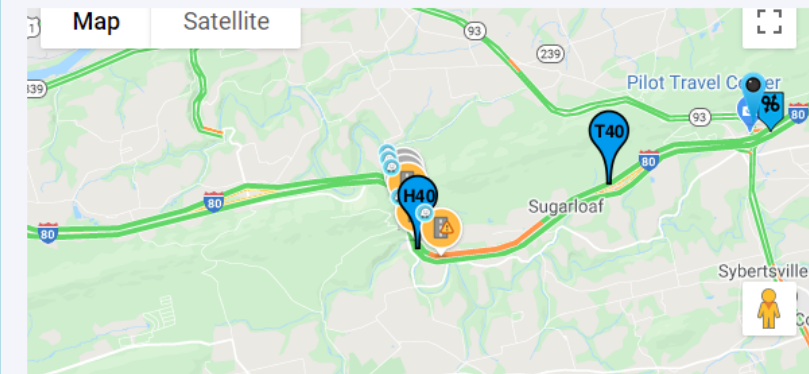
Delay Impact

Delay Minutes: 3.00 mins
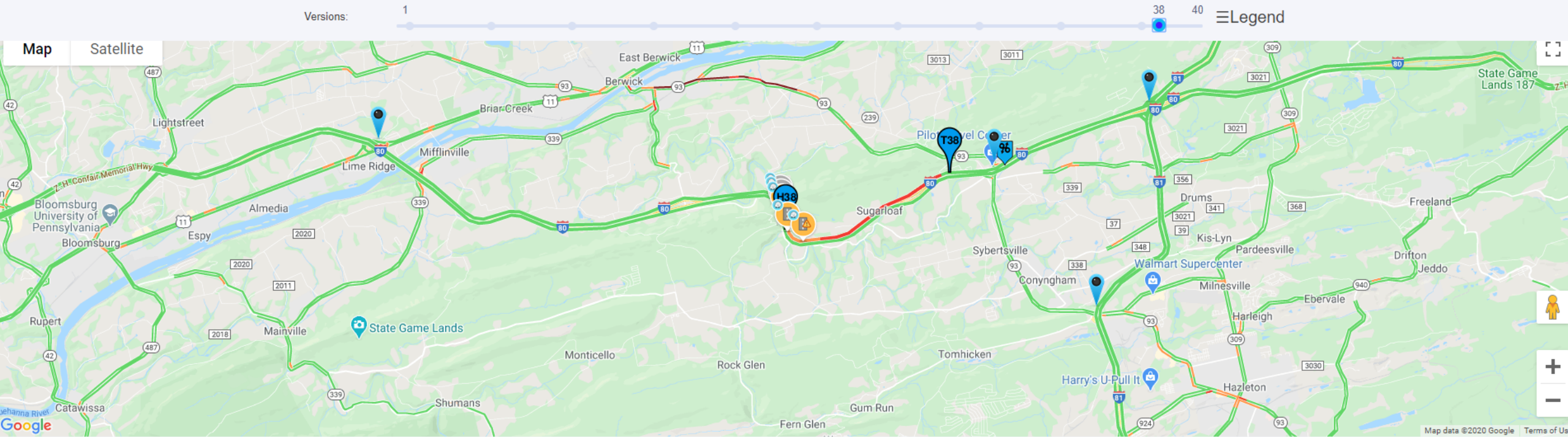Abnormal ⓘ: No
Congestion Length: 2.84 miles

DMS SignBoard

- DMS-04-044 located on Located on right side of roadway..4.8 miles before Rt. 93 Exit 256, and 8.7 miles before I-81/I-80 Interchange..Old #23 is junk and will cut up in 2019

Map | Satellite

https://trafficalertsazdev.penndot.gov/#/tmc dashboard/inrixincident

TRAFFIC ALERTS

pennsylvania DEPARTMENT OF TRANSPORTATION

Versions: 1 ... 38 40 ☰Legend

Map | Satellite

D04 active (V38) : Congestion upto 4.07 miles on I-80 with severity 2-Moderate.

Updated time: Jun 11, 2020 6:01:05 PM (6 mins ago) ⌄

Inrix: Delays of six minutes and delays easing on I-80 Westbound in Hetlerville. Average speed 25 mph.
Waze: Hazard On Shoulder Car Stopped, Accident Minor reported on this Congestion.
RCRS: Open(V8) reported on this .

InrixID:	130292031	**Status:**	active	**Severity:**	2-Moderate	**Impacting:**	Yes	**Road:** I-80 **Type:** Congestion
Direction:	Westbound	**Reported Time:**	Starts at 6/11/2020 3:34 PM, ends at 6/11/2020 6:40 PM.			**Location:**	between I-80 and I-80	
Delay Impact:								
Delay Minutes:	5.00 mins	**Congestion Length:**	4.07 miles	**Abnormal:**	No			

© PennDOT 2019 - Traffic Alerts System | Data provided by Waze App. Learn more at Waze.com | Contact Us

Pennsylvania Congestion Pie Chart

2018 Statewide

Philadelphia Metro

pennsylvania
DEPARTMENT OF TRANSPORTATION
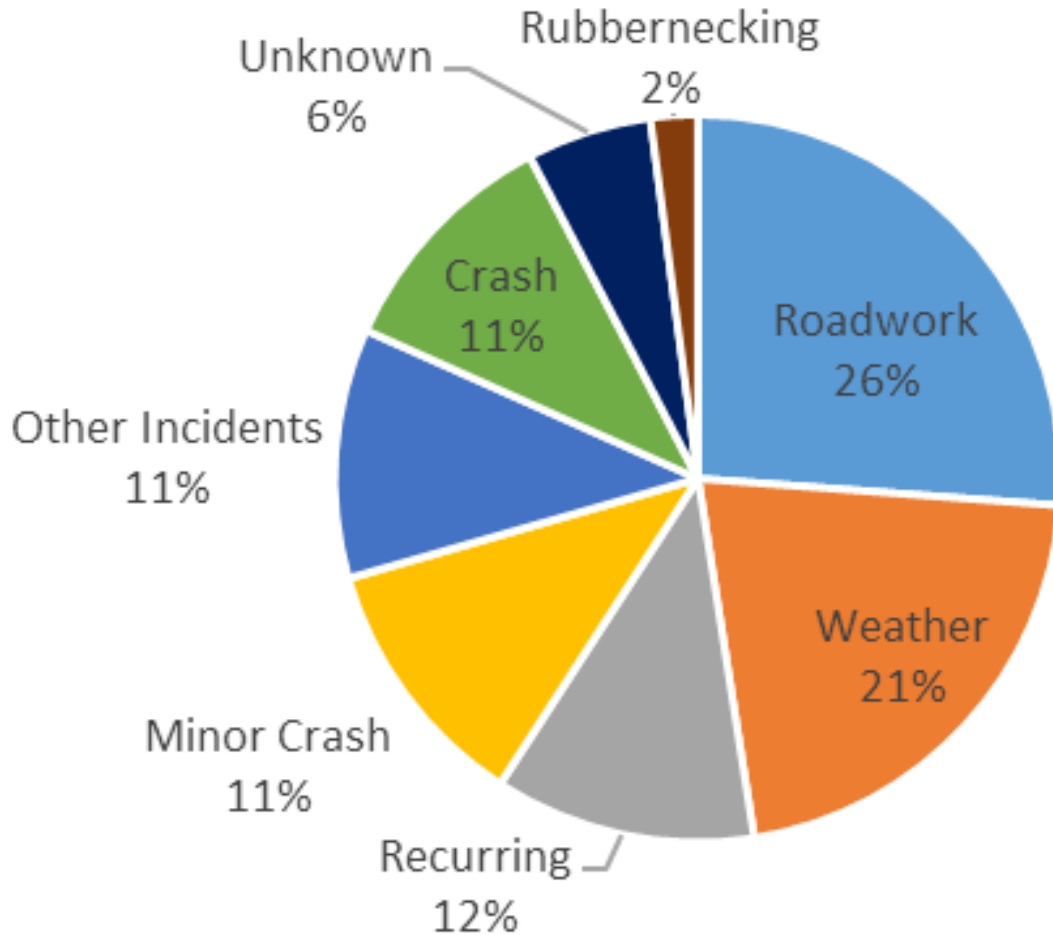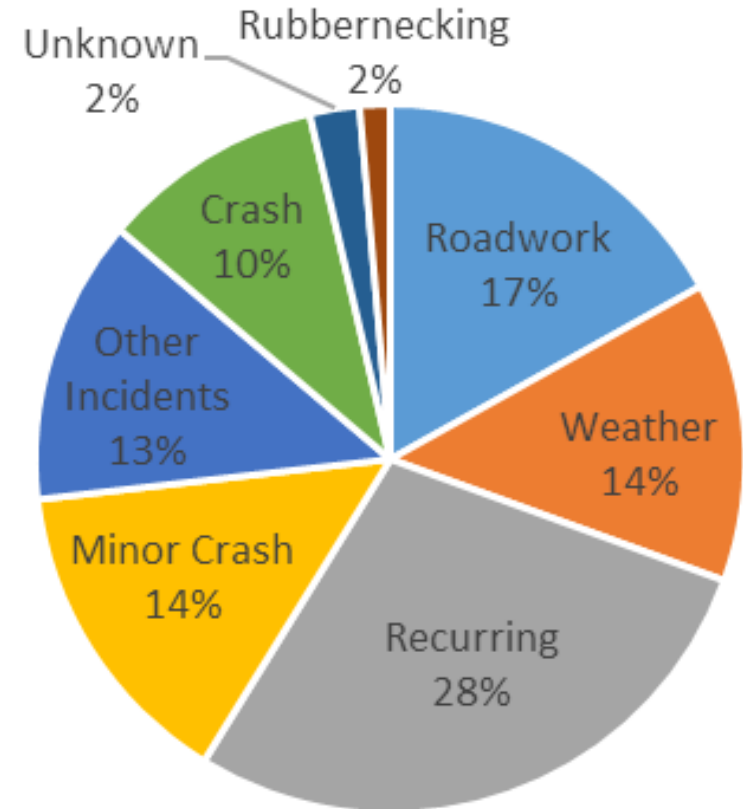
Congestion Pie Chart Data Definitions

- **Roadwork:** RCRS roadwork, Maintenance Database, or Waze Roadwork event

- **Weather:** RWIS Heavy rain, any kind of snow, and/or snow covered, icy, or wet (with temperature below freezing) roads, or Waze weather event

- **Recurring:** Congestion in which the speed drop is not more than 10% greater than the historical average speed drop for that day of week/time of day
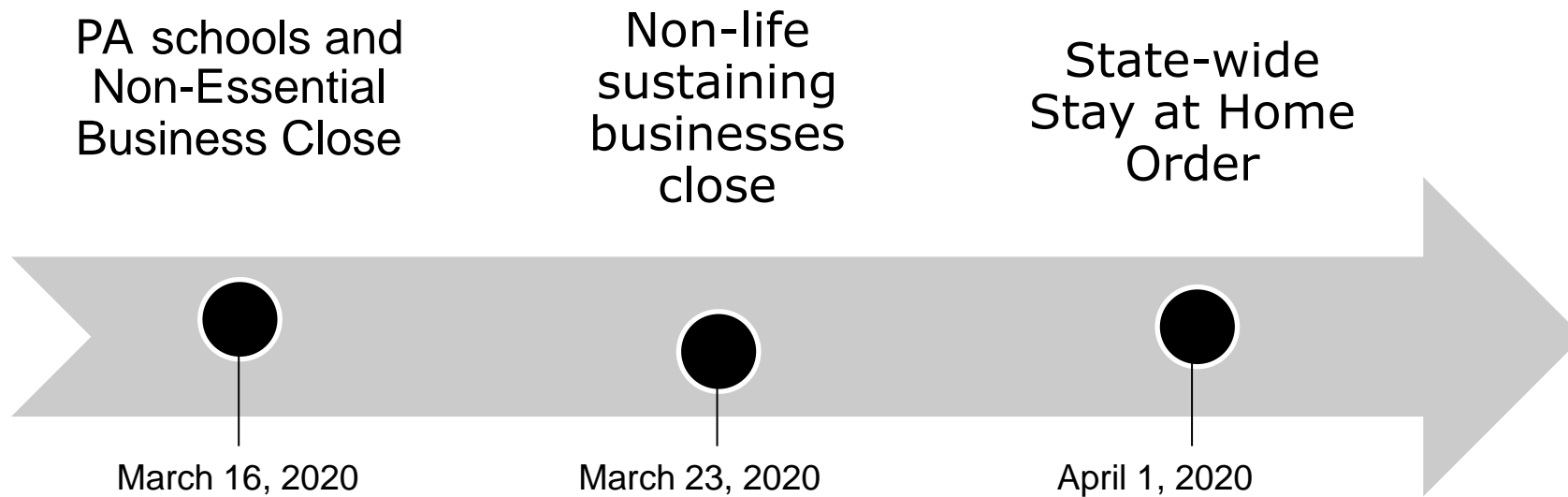
- **Crash:** Reportable crash from the Crash Record System (CRS)

- **Minor crash:** Non-reportable crash from RCRS or Waze

- **Other incident:** Non-crash traffic hazard from Waze (i.e. disabled/car stopped on shoulder, hazard on roadway)

- **Rubbernecking:** Any previously identified congestion pie chart incident cause is linked to one side of the road, and no incident is correlated to the other side of the road in the same area, but still experiences a speed drop above historical norm

pennsylvania
DEPARTMENT OF TRANSPORTATION

Timeline of Key COVID-19 Responses

PA schools and
Non-Essential
Business Close

Non-life
sustaining
businesses
close

State-wide
Stay at Home
Order

March 16, 2020

March 23, 2020

April 1, 2020

pennsylvania
DEPARTMENT OF TRANSPORTATION

Waze Reported Crashes vs Traffic Volume
PA Interstates and Other Major Freeways
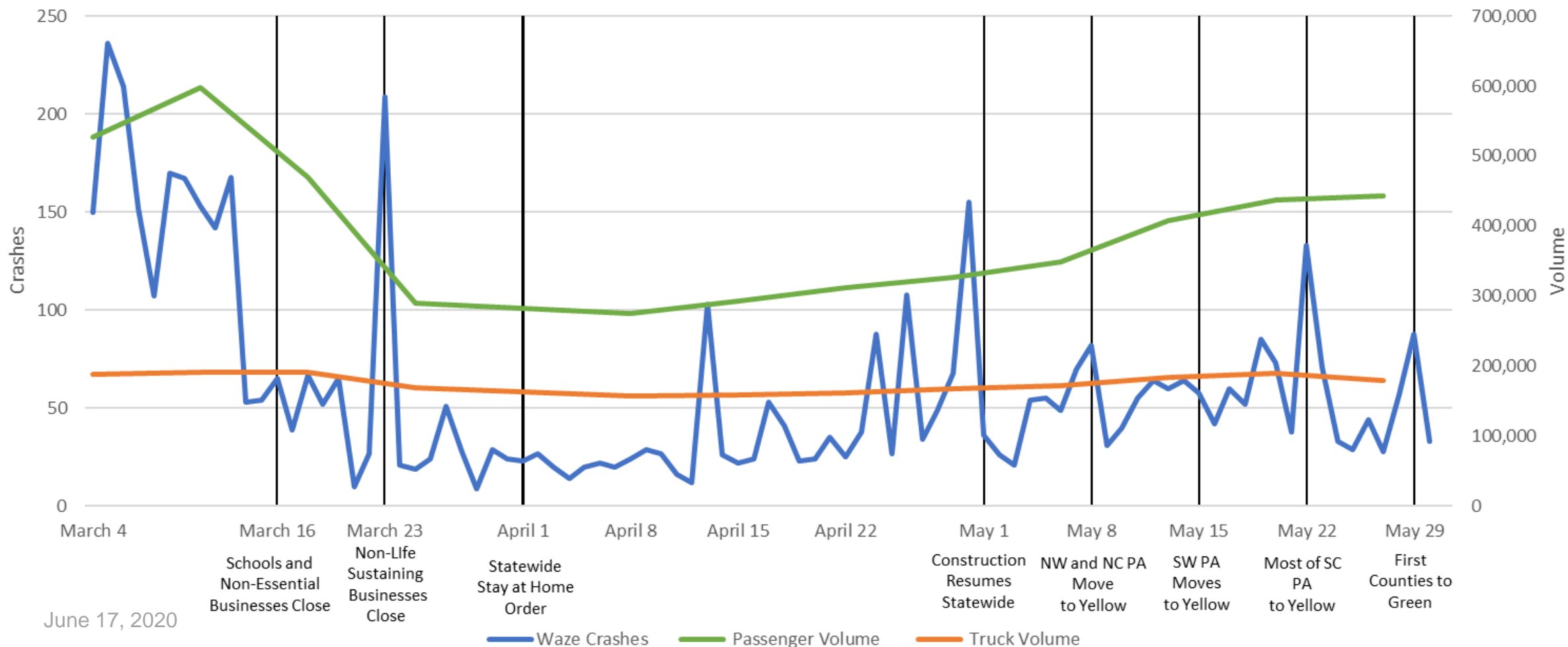
Waze Crash Capture Rates vs RCRS Roadwork

Legend: RCRS to Waze — RCRS Roadwork

Annotations on timeline:
- March 16: Schools and Non-Essential Businesses Close
- March 23: Non-LIfe Sustaining Businesses Close
- April 1: Statewide Stay at Home Order
- May 1: Construction Resumes Statewide
- May 8: NW and NC PA Move to Yellow
- May 15: SW PA Moves to Yellow
- May 22: Most of SC PA Moves to Yellow
- May 29: FIrst Counties Move to Green
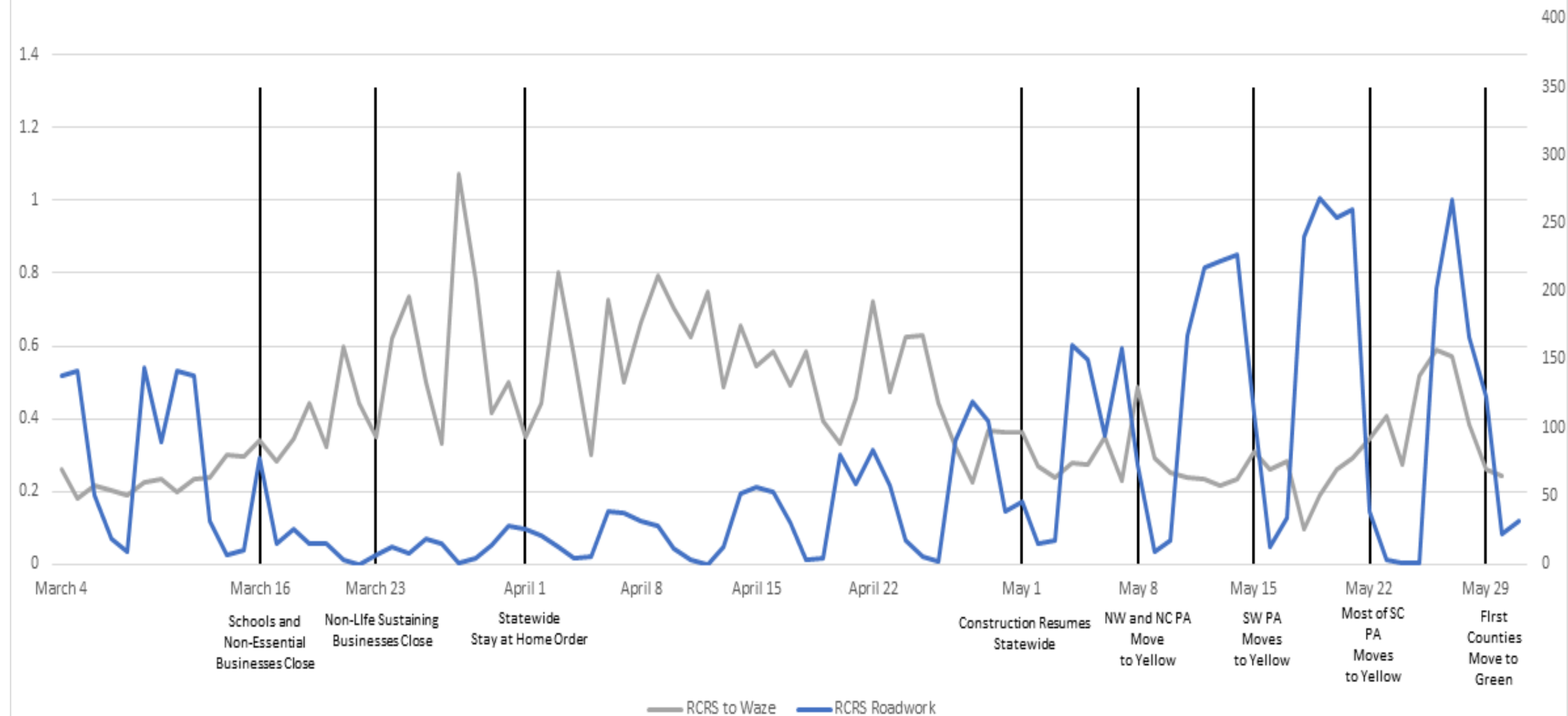
Mobile Roadwork App

- Designing a Mobile App that allows In-Field Entry and Activation of Roadwork
  - Internal and External Partners
  - "Workers On-Scene"
  - Starts the cognitive transition towards lane reservation

- Increase time allowed for Active Traffic Management in TMCs
  - Reactive to Proactive
    - Signals are coming

pennsylvania
DEPARTMENT OF TRANSPORTATION

ATMS Virtual Smart Work Zones Module

- **909** work zone congestion-related crashes in 2018
  - **3** fatalities
  - **702** injuries
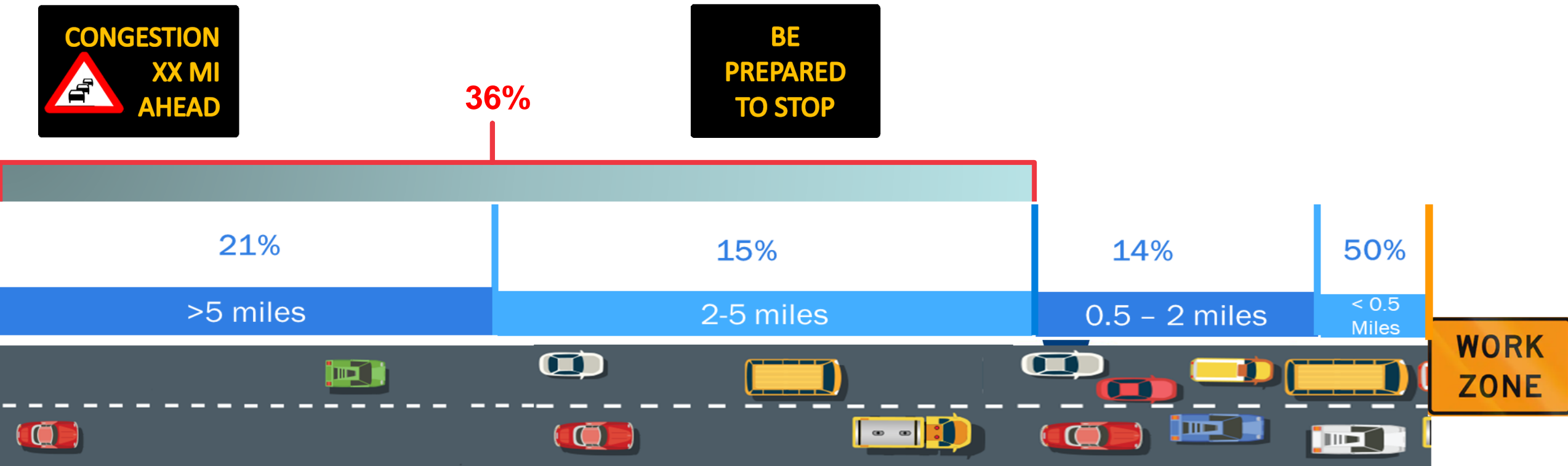
Secondary Crash Study
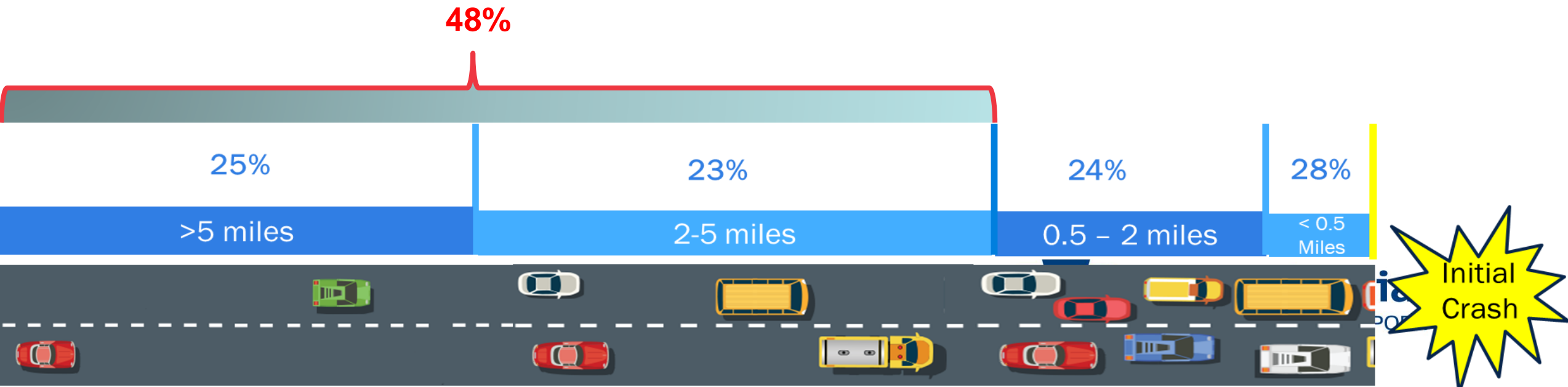
- **1233** secondary crashes on the core network in 2018
    - **6** fatalities
    - **750** injuries

- **49%** with **hour+** queues present!

Modernizing Highway Advisory Radio

- **IVR Prioritization** for Regional Traffic Report
  - HAR Sign Beacon Repurpose
- Geofenced **Push Notifications** with read aloud option
- Geofenced **DriveMode**
- **511PA Website** with Voice
- **511Connect** (HELP) Operations Gap
- Regional Traffic **Internet Radio** Stations

ATMS
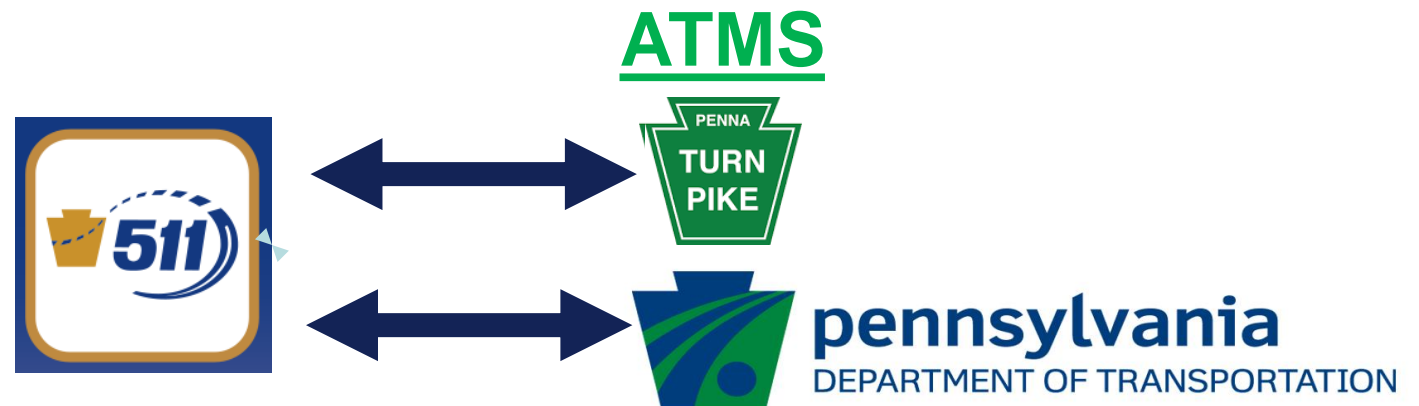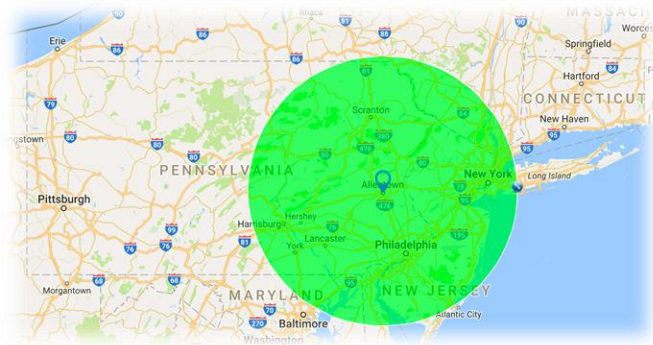
Currently Working On

- Advanced Weather Analysis to Automate Protection Messaging for Adverse Driving Conditions

- Alternative Route Travel Time DMS Message Effectiveness

- Operationally Deficient Metric for Planning

pennsylvania
DEPARTMENT OF TRANSPORTATION

Thank you!

Ryan McNary

Manager, Traffic Systems and Performance

rymcnary@pa.gov

pennsylvania
DEPARTMENT OF TRANSPORTATION

New and Traditional Media in Traveler Information

Kevin Loftus, *Senior Vice President of Operations*
iHeartMedia/Total Traffic & Weather Network

About TTWN

Total Traffic & Weather Network (TTWN) delivers real-time content and traffic data to over 2,600 media outlets (radio, television and digital affiliates) and 10 automotive manufacturers reaching 98% of American commuters monthly.

A subsidiary of iHeartMedia, TTWN is the largest provider of traffic, weather, news and sports content in the U.S., and operates the largest traffic data gathering and distribution network.

- **3 Countries**
- **300+ Markets**
- **800+ Reporters**
- **183 TV Affiliates**
- **2,400+ Radio Affiliates**
- **1,000+ Websites**

In 2011, we combined the resources of Metro Networks, Shadow Traffic and Total Traffic Network to create industry leading **Total Traffic & Weather Network.**

TTWN Traffic Operations Coverage

⭐ 24/7 Major Traffic Operation Hubs

TTWN Atlanta
TTWN Boston
TTWN Charlotte
TTWN Chicago
TTWN Dallas
TTWN Denver
TTWN Detroit
TTWN Los Angeles
TTWN Miami
TTWN New York
TTWN Philadelphia
TTWN Phoenix
TTWN San Francisco
TTWN Seattle
TTWN Tampa
TTWN Washington, DC

★ Traffic Operations Hubs

TTWN Cincinnati
TTWN Cleveland
TTWN Houston
TTWN Kansas City
TTWN Minneapolis
TTWN New Orleans
TTWN Orlando
TTWN Pittsburgh
TTWN St. Louis
TTWN Syracuse

● Regional Operations Spokes

24/7/365 Coverage in Top 50 Markets
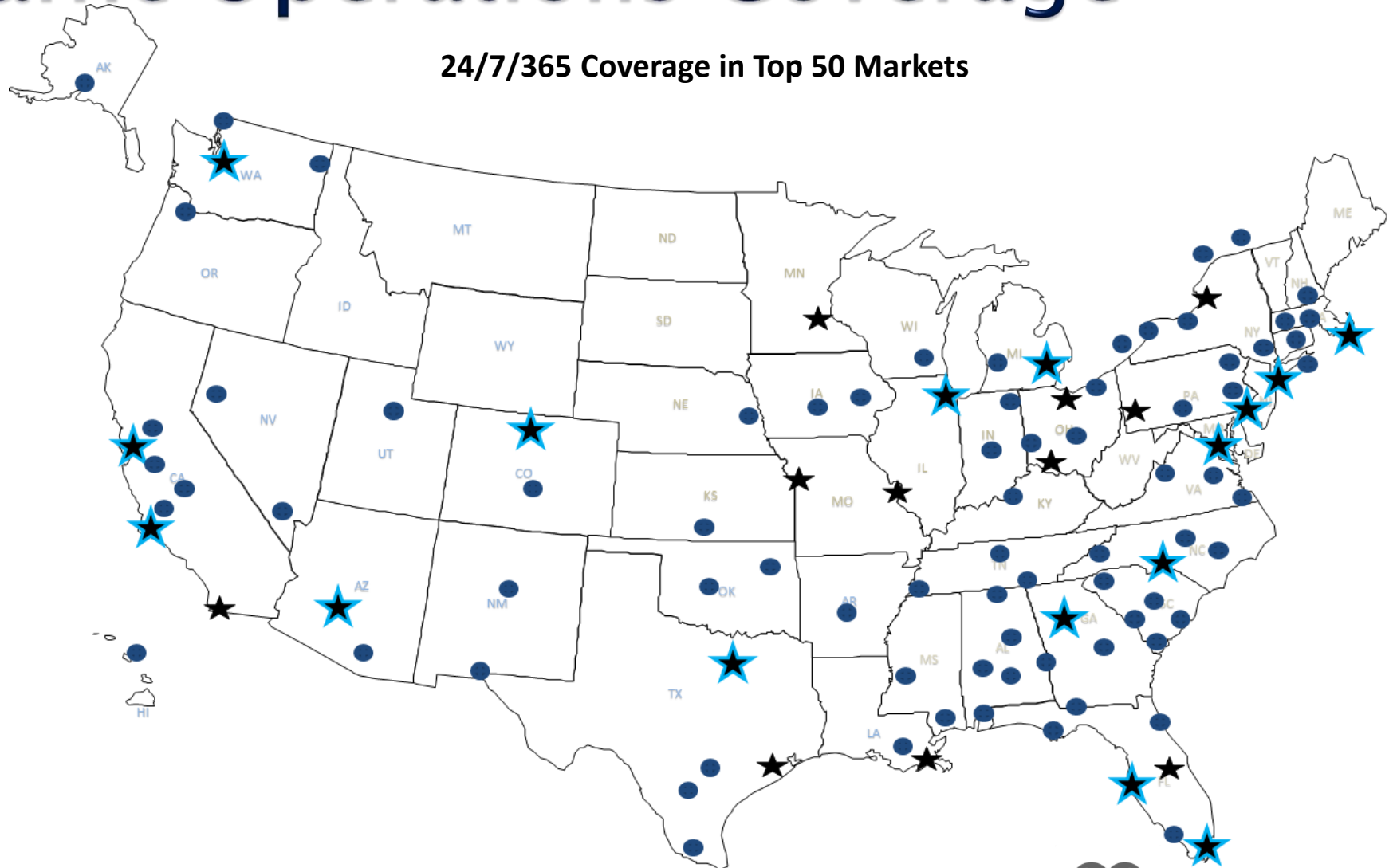
TTWN Local Coverage

- TTWN is the only traffic service in the US that owns and curates its traffic data with producers/editors staffing Operations Centers 24/7

- 2011 expansion from 13 to 26 Hubs

- Co-located personnel in multiple agency facilities

- Investments in technology
  - 3D TV Graphics platform launched in 2015, latest version (V2.1 – 2019) currently live on 55 TV stations
  - CityVU HD Camera network operational 2017, 85 proprietary HD TrafficCams

New York

Washington, DC

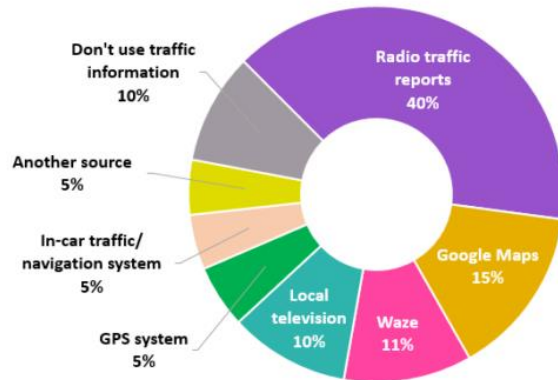
Boston

TTWN Since March 2020

- Evolving traffic reports to include content beyond normal delays
- Tracking COVID19 Testing sites and food banks - conditions surrounding these locations
- Mobility trends and changing traffic patterns
  - Analyzing probe data to understand how people are moving around during lockdowns and after opening
  - Surface streets more congested
  - Time of day travel has changed significantly
- More severe incidents
  - Less congestion equates to people driving faster and more carelessly
  - 12% spike in the amount of severe (multi-injury) incidents during traditionally peak commuting periods

iHeart MEDIA   Total Traffic & Weather Network

Traffic On The Radio

- TTWN produces 120,000 Traffic Reports each week across 120 markets
- Exception-based reporting…"Why is my commute different?"
- Traditional radio still #1 source for traffic information (Jacobs Media TechSurvey 2019)

Radio Traffic Reports Are the Primary Traffic Information Source For Four in Ten Drivers/Passengers

Among Those Who Ever Spend Time in a Vehicle, % Who Use Each Source Most for Traffic Information
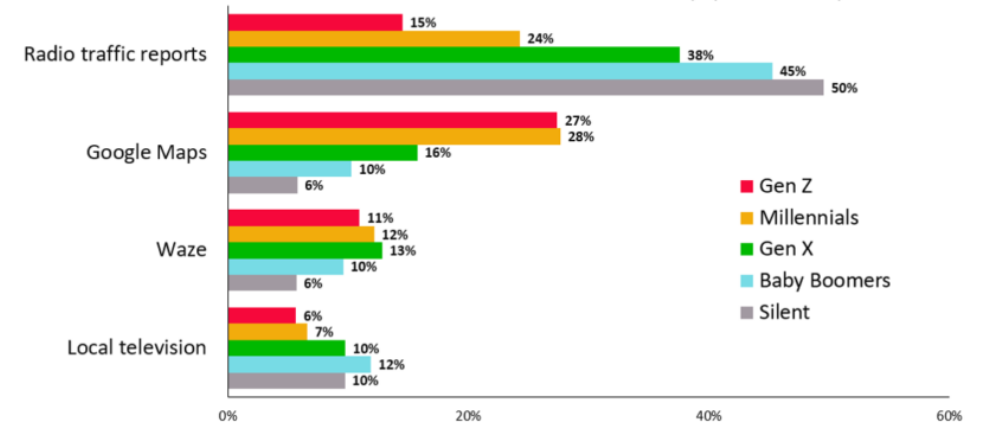
- Radio traffic reports 40%
- Google Maps 15%
- Waze 11%
- Local television 10%
- GPS system 5%
- In-car traffic/navigation system 5%
- Another source 5%
- Don't use traffic information 10%

Radio Traffic Reports Are Relied on by Older Generations, but Millennials and Gen Z Use Google Maps as a Primary Source

Among Those Who Ever Spend Time in a Vehicle, % Who Use Each Source Most for Traffic Information (Top Sources Used)

Source	Gen Z	Millennials	Gen X	Baby Boomers	Silent
Radio traffic reports	15%	24%	38%	45%	50%
Google Maps	27%	28%	16%	10%	6%
Waze	11%	12%	13%	10%	6%
Local television	6%	7%	10%	12%	10%

Florida's Turnpike Pilot Project

- Agency seeking to augment legacy Highway Advisory Radio (HAR) stations with additional distribution
  - Goal is to expand reach of HAR messages to alternate platforms
  - VDOT shut down HAR in Dec. '19 (except Hampton Roads region)
    - https://www.dailypress.com/news/transportation/dp-nw-fzx19-ask-highway-advisory-radio-20191223-wkz3lb7vsbgdrocshhyfwxxu6e-story.html
- Proof-of-Concept
  - TTWN to provide a channel on the iHeartRadio app "Florida Turnpike Traffic"
  - Channel will feature audio from existing HAR messages provided by FL Turnpike Operations
  - TTWN will provide traffic reports generated by TTWN in the FL markets
- Promotion of channel to include signage to enhance awareness
  - iHeartRadio logo on beacon signs
  - Service plaza advertising on wall monitors and gas pumps

Proof of Concept – Daily Traffic

- Begin with one channel for South and East Regions
  - Miami to Ft Pierce ~235 miles
  - AADT ~896,200 vehicles p/day
  - Service Plazas average ~31K+ vehicles p/day

- South Florida Region
  - 3 Existing Beacons
  - 2 Service Plazas

- East Florida Region
  - 3 Existing Beacons
  - 4 Service Plazas

Highway Advisory Radio
1640 AM
- - OR - -
Turnpike Traffic Channel
on iHeartRadio

URGENT MESSAGE WHEN FLASHING

iHeart MEDIA

Total Traffic & Weather Network

Phased Approach

- Phase 1 - Proof of Concept ~3 Months
  - Generate channel & load audio files in real-time
  - Focus on South and East Regions only
  - Evaluate listenership post launch

- Phase 2 - Regional Content ~3 months
  - Break channels into Regions to provide more information of interest
  - Add Orlando Region to system

- Phase 3 - Location based alerting and travel info ~9-12 months
  - Expand coverage into other regions
  - Utilize user location to customize alert content

Future Opportunities

- Emergency Management / Public Safety
  - Severe Weather Updates
  - Evacuation Support
  - Floodgate Messages
    - Regional
    - Statewide
  - Amber Alert / Silver Alert
  - Location Based Alerts/Push Notifications
    - Workzone Safety
    - Dense Fog Advisory
    - Queue Warning

Thank you

Kevin Loftus

404-213-2666
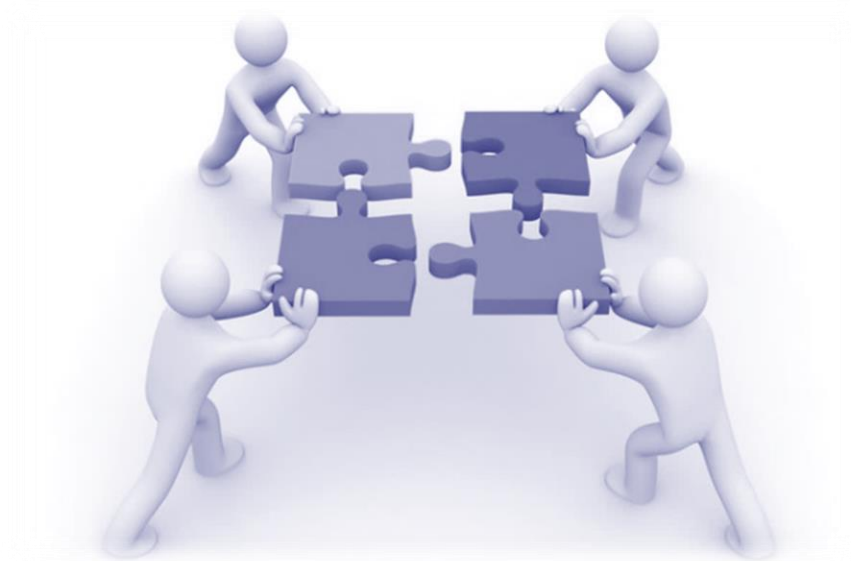
kevinloftus@iheartmedia.com

www.ttwnetwork.com

Questions?

Remaining Questions from the CHAT Box

Wrap Up

Meeting information & presentations will be posted to the I-95 Corridor Coalition website. Participants will receive a link to the presentations after they are posted.

In Closing….

Thank you for joining today

For Additional Information, please contact:

Denise Markow, PE

TSMO Director

I-95 Corridor Coalition (soon to be the Eastern Transportation Coalition)

301-789-9088

dmarkow@i95coalition.org