

# Vendor Engagement

Forming Successful Partnerships



# Lessons Learned

- Understand the Data
- Promote Data Standards
- Prepare to Change

# Core Partners Being Utilized

- HERE Traffic
- GeoTab
- Waze
- iCones
- Northrop Grumman
  - TRIMARC
  - Truck Parking
  - RWIS
- KYMesonet
- CoCoRahs
- National Weather Service
- Government Entities
  - Louisville
  - Lexington
  - KY Emergency Management

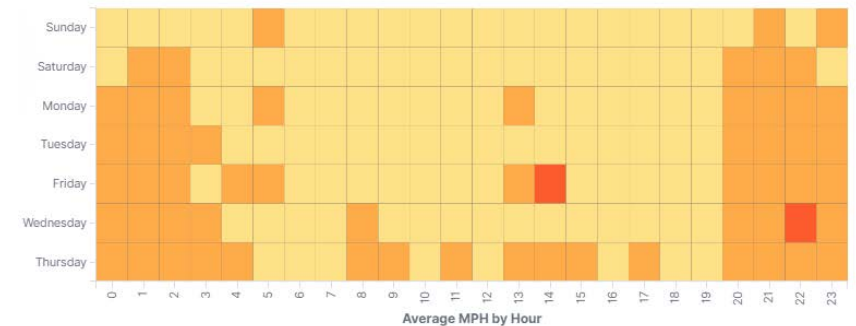
## KYTC “Big Data”

Source	Records per Year
HERE	2.5 billion
Waze Jams	128 million
Waze Incidents	180 million
AVL (Snow Plows)	175 million
All Others	123 million
<b>Total :</b>	<b>3.1 billion unique records</b>

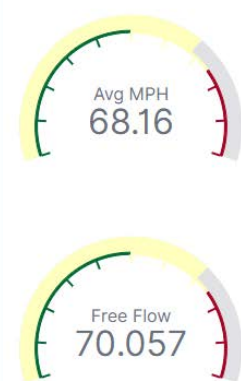
# HERE Traffic

- Licensed
- Competitive Costs
- Allows for Sub-Licensing
- Allows Republishing Derivatives
- Previews of Upcoming Products

TS I-75 Average Speeds per Hour



ITS I-75 Avg Speed vs Free Flow



TS I-75 Most Frequently Congested Locations



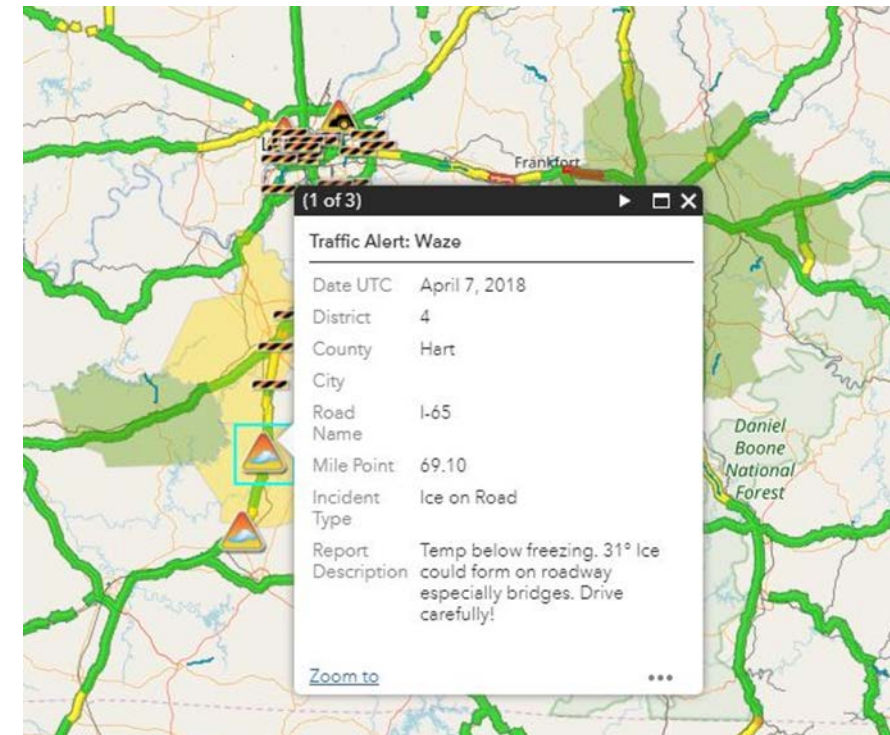
# GeoTab

- Contract
- Data Included at No Additional Cost
- Automatic Vehicle Location
- Licensed Through Ky Fleet



# Waze

- Data Exchange Agreement
- Free Real-Time Data
- Protected from Open Records
- Terms of Service:
  - Attribution
  - Road Closures



# iCones

- Contract
- Provides Smart Work Zone Sensors
- Real-Time Data Feed



THE INSTANT I.T.S. SYSTEM

THE KENTUCKY TRANSPORTATION CABINET



# Northrop Grumman

- Statewide ITS Contract
- Traffic Management Center
- Hardware Services

***NORTHROP GRUMMAN***

The logo for Northrop Grumman, featuring the company name in a bold, italicized, blue sans-serif font. A blue curved line sweeps underneath the text from the left side.

# Incident Detection (2019)



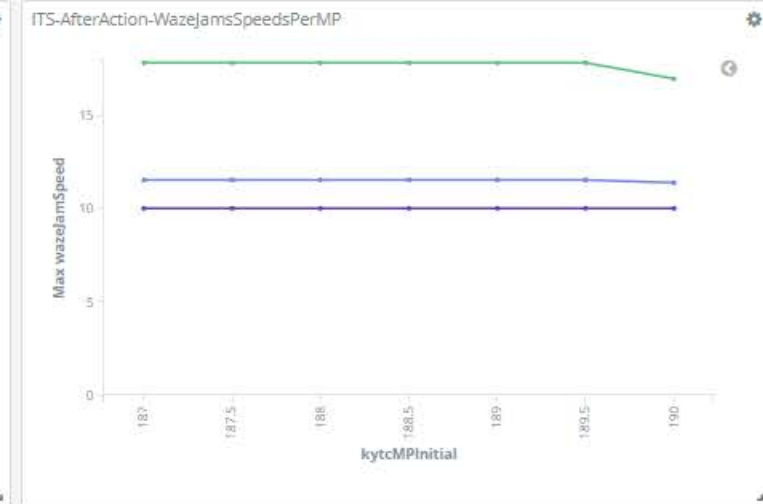
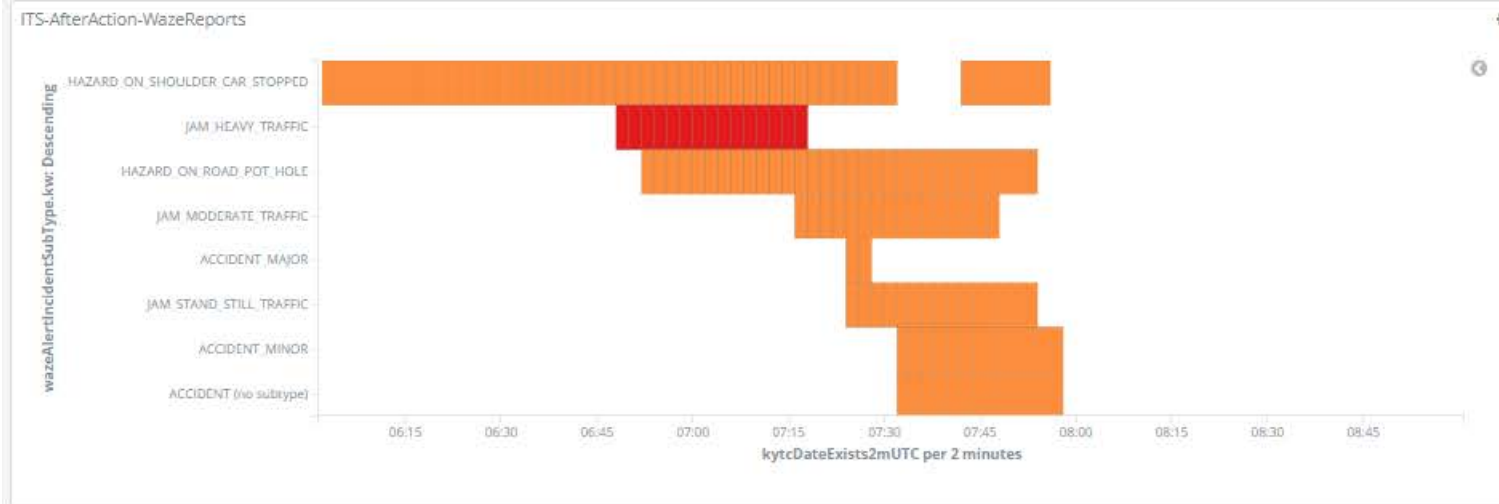
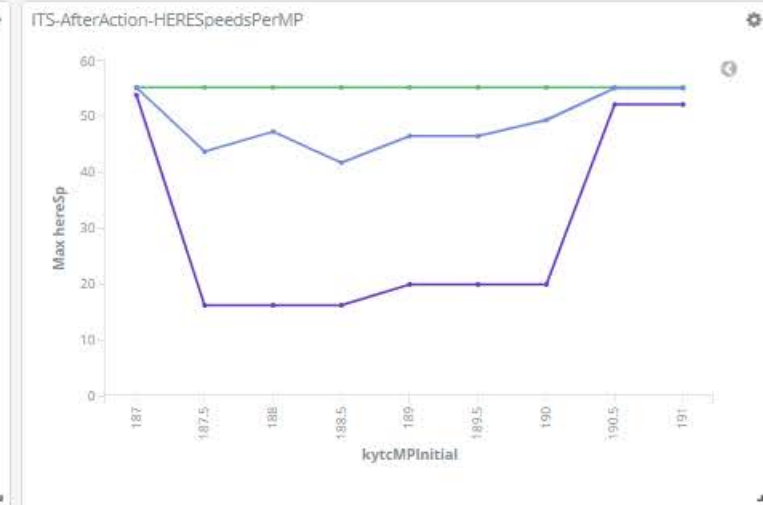
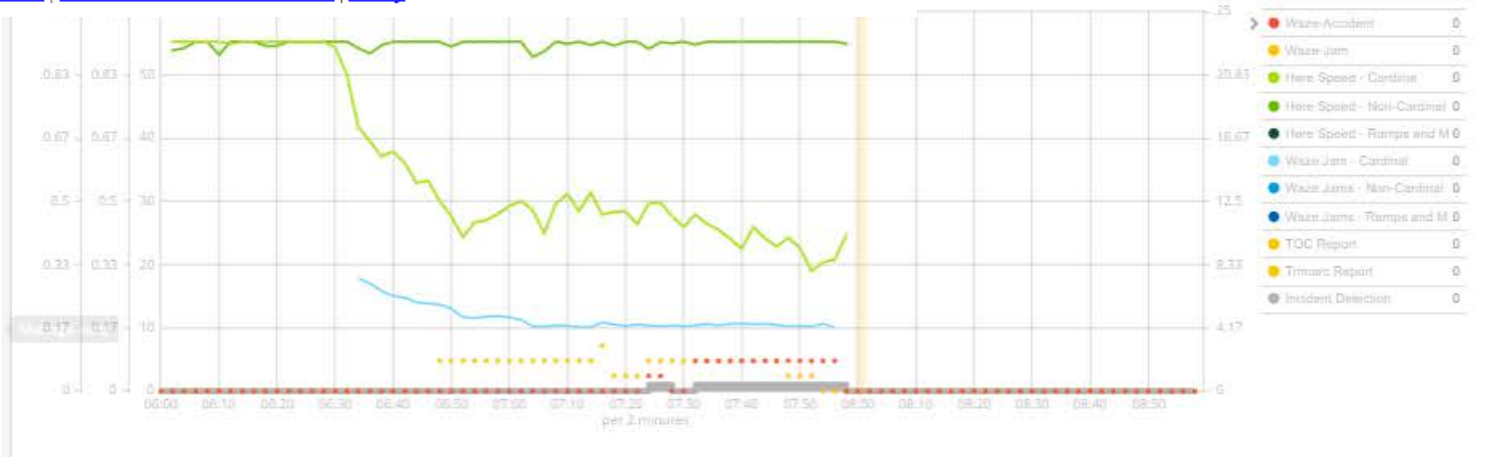
District: 6 -- Kenton -- I-75 -- Northbound -- Milepoint Range: 188.0 to 190.5

A crash has been detected at milepoint 190.2 with an average speed of 28.0 mph and a historic free flow of 54.9 mph.

Maps: [GoKy](#) | [TOC Incident Manager](#) | [Waze](#) | [Google](#) | [Here Traffic](#)

Dashboards: [Real Time View](#) | [After Action View](#)

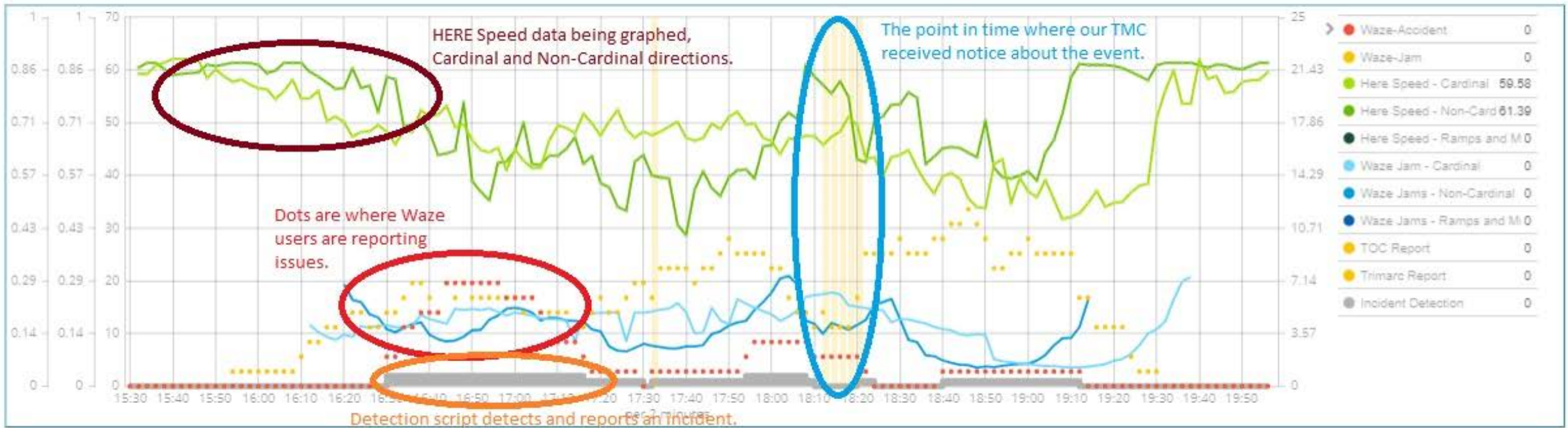
Weather: [National Weather Service](#) | [National Weather Service Details](#) | [Windy](#)



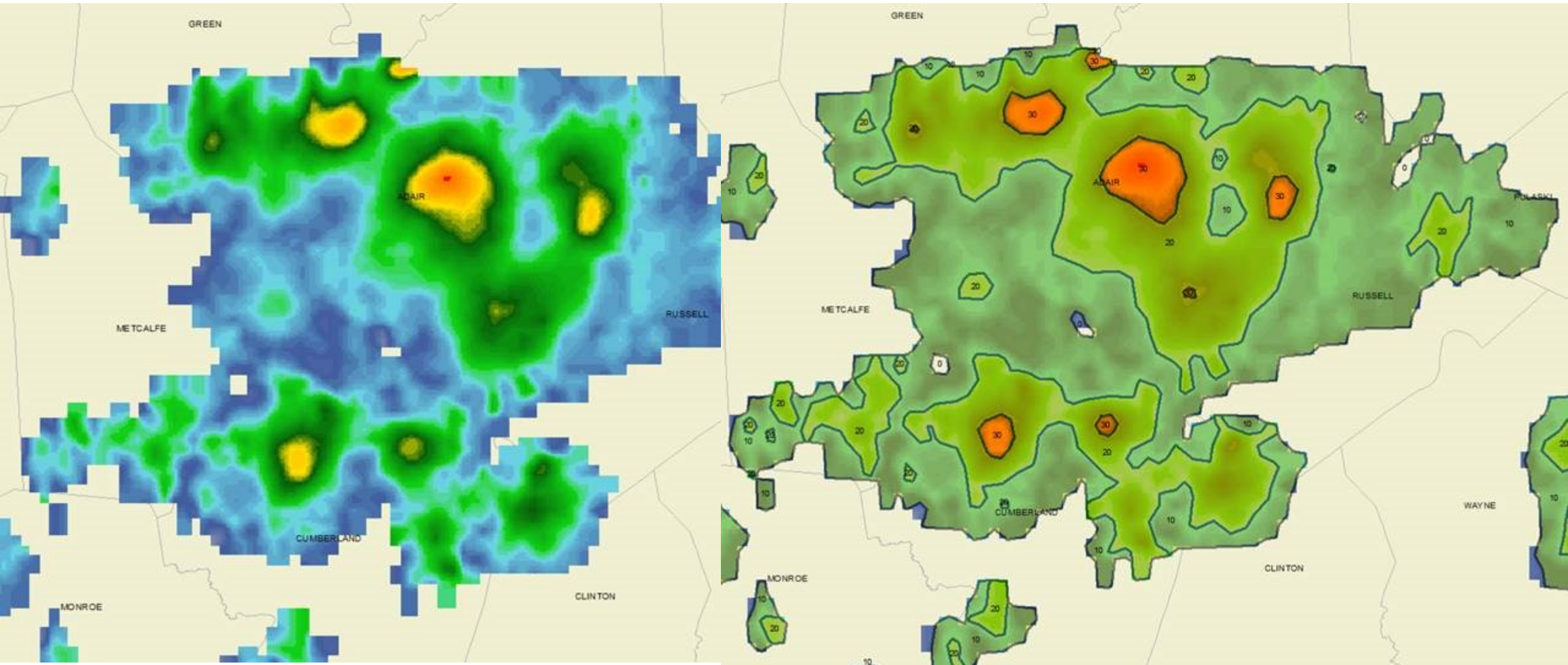
# Incident Detection / After-Action



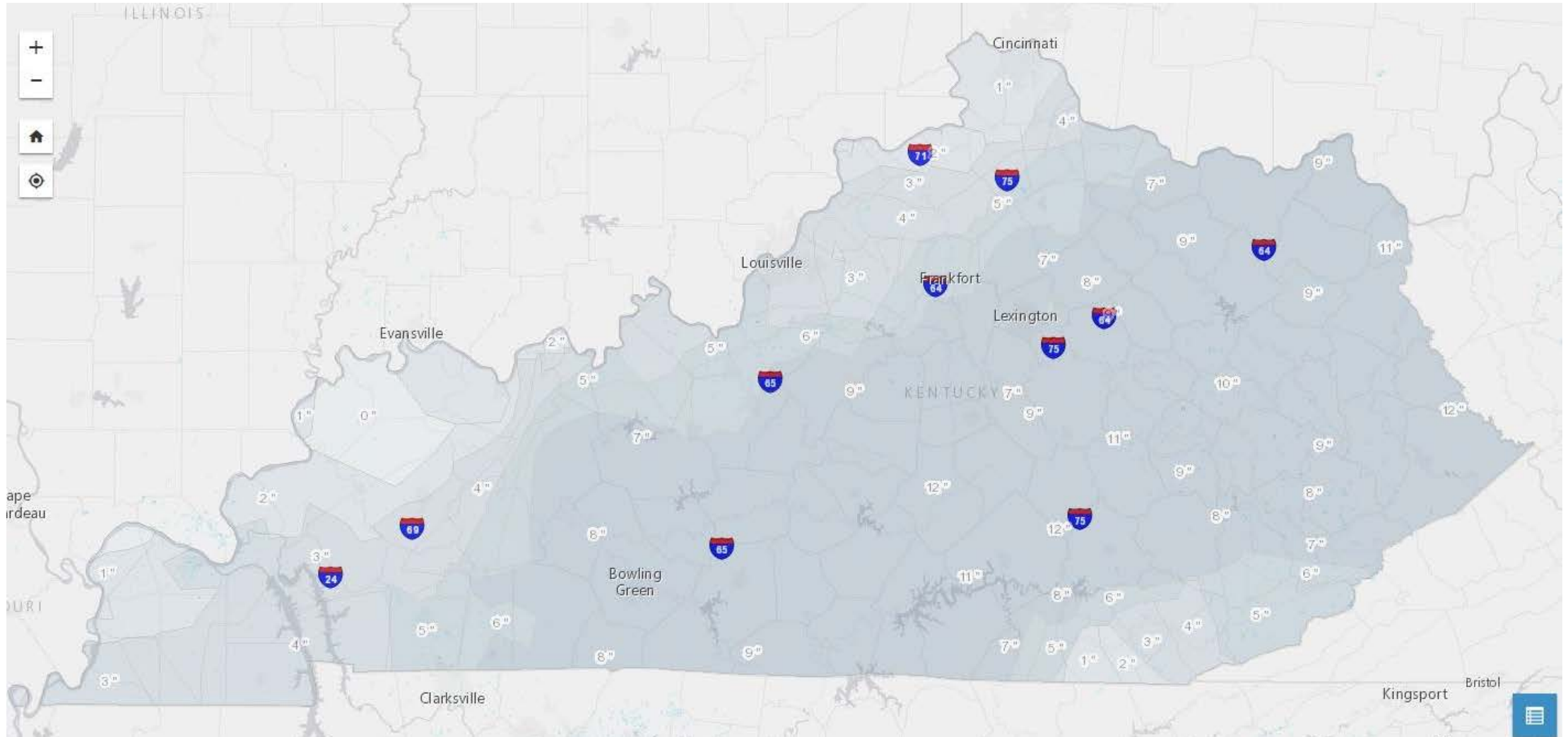
ITS-ChrisTest



# National Weather Service



# CoCoRahs



# Open and Proprietary Products

- Back-End

- Apache Kafka
- Apache Spark
- Apache Hadoop
- Elasticsearch

- User Experience

- Kibana
- ArcGIS Online

- Languages

- Python
- Scala
- Java

# QUESTIONS?

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Chris Lambert  
Intelligent Transportation Systems  
*(Retired from KYTC, Dec 1, 2019)*

New Contact Information:  
chris.lambert@aemcorp.com  
859-619-7757