Southern Transportation & Air Quality Summit

Intelligent Transportation Systems
Data Challenges: Third Party / KYTC

- HERE Traffic Speeds
- Waze Incident Reports
- Waze Traffic Speeds
- iCones Speeds
- KYMesonet
- CoCoRahs
- Doppler Radar

- TOC Reports
- TRIMARC Reports
- Snow Plows (AVL)
- Roadway Weather Stations
- County Activity Reports
- Dynamic Message Signs
- Truck Parking
- Twitter
When you say “Big Data”?  

<table>
<thead>
<tr>
<th>Source</th>
<th>Records per Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>HERE</td>
<td>2.5 billion</td>
</tr>
<tr>
<td>Waze Jams</td>
<td>128 million</td>
</tr>
<tr>
<td>Waze Incidents</td>
<td>180 million</td>
</tr>
<tr>
<td>AVL (Snow Plows)</td>
<td>175 million</td>
</tr>
<tr>
<td>All Others</td>
<td>123 million</td>
</tr>
<tr>
<td><strong>Total Records and Storage:</strong></td>
<td><strong>3.1 billion and 3TB(x3)</strong></td>
</tr>
</tbody>
</table>
General Data Workflow

Data Source → Apache Kafka® → Apache Spark™ → elasticsearch → kibana → esri ArcGIS Online
Public Information
Work Zone: US-25
Congestion: US-25 Work Days
Roadway Weather: Snow and Ice

KYTC: Snow and Ice Decision Support System

- Temperature: 32°F
- Pavement Temperature: 37°F
- Active Trucks: 0

Select a Tab:
- District
- County
- HERE
- Waze
- Trucks
- TRIMARC
- TOC Points
- TOC Lines
Roadway Weather: Snow and Ice
Roadway Weather: Interpolated Areas
Roadway Weather: Correlations
Roadway Weather: Machine Learning
What About Weather or Air Quality?!

- Air Temperatures
- Pavement Temperatures
- Wind Speeds
- Dew Point
- Forecasted Precipitation
- Observed Precipitation
- KYTC Doppler Index
- KYTC Severity Index
Roadway Weather: Doppler
QUESTIONS?

Jeremy Gould, jeremy.gould@ky.gov
Randi Feltner, randi.feltner@ky.gov
Chris Lambert, chris.lambert@ky.gov

Twitter: @KYTC
Facebook: /kytc120