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”

<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</strong></td>
<td><strong>3.1 billion unique records</strong></td>
</tr>
</tbody>
</table>
HERE Traffic

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

• Statewide ITS Contract
• Traffic Management Center
• Hardware Services
Incident Detection (2019)

District: 6 – Kenton – I-75 – Northbound – Milepoint Range: 188.0 to 190.5
A crash has been detected at milepoint 190.3 with an average speed of 28.0 mph and a historic free flow of 54.9 mph.
Maps: Google | TOC Incident Manager | Waze | Google | Here Traffic
Dashboards: Real Time View | After Action View
Weather: National Weather Service | National Weather Service Details | Windy

Traffic Flow Graphs

Incident Types:
- Hazard on Shoulder, Car Stopped
- Jam Heavy Traffic
- Jam Moderate Traffic
- Accident Major
- Jam Slow, Still Traffic
- Accident Minor
- Accident (no vehicles)

Graphs showing traffic flow and incident types.
Incident Detection / After-Action

Here Speed data being graphed, Cardinal and Non-Cardinal directions.

The point in time where our TMC received notice about the event.

Dots are where Waze users are reporting issues.
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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