Algo Traffic and the Tuscaloosa RTMC

Chris Sewell, P.E.
ITS Operations Manager
ALDOT West Central Region
Outline

- Partnerships with the University of Alabama
  - Tuscaloosa Traffic Management Center
  - Algo Traffic
- Alabama Service and Assistance Patrol
  - Incident Management
- Smart Work Zone
  - I-20/59 Widening Project
- Future of Transportation and ITS
Tuscaloosa Traffic Management Center

- Operations started June 2017
  - Monday thru Friday 8:00am to 5:00pm
  - After-hours calls and issues were forwarded to the Birmingham TMC
- 24/7 Operations began January 2018
- Cover the West Central Region
  - Marion, Winston, Fayette, Lamar, Walker, Pickens, Tuscaloosa, Greene, Hale, Sumter, Perry, Bibb, and Chilton
  - I-20/59, I-65, and I-22
    - Average Daily Truck Traffic pushes 45%
    - Upwards of 18,000 Trucks per day on I-20/59
Tuscaloosa Traffic Management Center

- 3 – 4 Operators per shift
- Continuously monitor traffic flow data
  - Cameras
    - 60+ cameras currently
  - Traffic Speed via Bluetooth Vehicle Detection & HERE data
    - Allows for Origin/Destination Travel Timing
  - Law Enforcement Dispatch
    - State Trooper Tuscaloosa Post Radio Dispatch
Tuscaloosa Traffic Management Center
UA Gameday Operations

- Pre & Post Game
  - Additional TMC Operators
  - ASAP Truck
- Post Game
  - Bruno Event Team
  - UA Gameday
  - UAPD
  - UA Transportation Services
  - ALDOT
Algo Traffic

- Desktop and App versions
- Real-time Traffic Data uploaded directly from TMCs
  - Construction Zones
  - Crashes, Incidents, and Disabled Vehicles
  - Traffic Speed
- Access to traffic cameras across the state
- Recently updated to integrate NWS Alerts
- Audible Alerts for upcoming events while driving
- Live message board readouts
Algo Traffic
Algo Traffic Mobile App
Algo Traffic
Mobile App
Algo Traffic Mobile App
Alabama Service and Assistance Patrol
Alabama Service and Assistance Patrol

- Started in Spring 2018 in Tuscaloosa
  - Has been running in Mobile and Birmingham for several years
- Actively patrols I-20/59 from Exit 71 to Exit 89
  - Will take calls out to Exit 100
- Operating hours
  - Monday thru Friday 11:00AM to 7:00PM
Alabama Service and Assistance Patrol

- Services offered:
  - Temporary traffic control
    - Wrecks or Disabled Vehicle
  - Flat tires
  - Dead Battery
  - Overheating
  - Out of gas
  - Contacting a Towing Company
  - Minor Mechanical Repairs
I-20/59 Smart Work Zone

- What is a Smart Work Zone?
  - Components
- Why spend the money on a Smart Work Zone?
  - Accidents
  - Fatalities
SWZ Components

- Bluetooth Vehicle Detection
  - Placed every ½-mile throughout the project
  - Collects average speed, volume for all lanes, and density
SWZ Components

- Mobile Camera Trailer
  - Pan, Tilt, Zoom Cohu Camera
  - Placed every mile on I-20/59 and at other locations along the detour routes
SWZ Components

- Changeable Message Signs
  - Placed at every mile along the interstate and along the detour routes
  - Displays set messages depending on the average speed of traffic

MESSAGE BOARD TRAILERS

One of the key components of a portable ITS System is to provide real-time messages to the traveling public. The results of having real-time traffic conditions posted to a message board fleet are:

Features

- Alternate Routing and Trip Planning
- Reduction in Collisions and Accidents
- Decreased Volume through Work Zone
- Safer Work Zone for Workers
- Safer Experience for Motorists
- Convenient Travel Time Messaging

All SMC Message Board Trailers can be integrated into a portable solution providing the flexibility needed for all roadway conditions.
SWZ Components
SWZ Components
SWZ Components
## Smart Work Zone Total Cost

<table>
<thead>
<tr>
<th>Item</th>
<th>Cost</th>
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<tbody>
<tr>
<td>Portable RDS</td>
<td>$57,917.34</td>
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<tr>
<td>Portable CMS</td>
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<td>Portable CCTV</td>
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<td>Portable BDS</td>
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<td>RDS, Op Month</td>
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<td>CMS, Op Month</td>
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<td>BDS, Op Month</td>
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<tr>
<td>Monitoring, Op Month</td>
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<td>Additional CMS and CCTV</td>
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<td><strong>TOTAL</strong></td>
<td><strong>$1,692,061.15</strong></td>
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Why pay for this?

- Several long duration, 6-10hrs, accidents in the work zone from MP 77 to 81
- Alabama had 13 Work Zone Fatalities in 2016
  - A 15-yr-old girl was killed in December 2015 in a work zone crash on I-20/59 in Tuscaloosa County
What is the value of a human life?

Stanford economists have demonstrated that the average value of a year of quality human life is around $129,000.

Average US life expectancy ~79.8 years

$129,000/year x 79.8 years = $10,294,200

Work Zone Fatalities in Alabama: 13 in 2016

$133,824,600 in Loss of Human Life due to Work Zone Fatalities
Future of Transportation and ITS/TSMO

- Capacity projects are becoming less feasible
  - Costs are going up but Funding is staying level, at best
  - Running out of Right-of-Way
- TSMO is working to make our routes more efficient
  - Signal timings, automated incident detection, etc.
- While all crashes cannot be prevented, secondary crashes in the queue can
  - USDOT statistics show that the probability of a secondary crash increases by 2.8% every minute that the primary incident remains a hazard
  - Every minute a freeway lane is blocked correlates to four minutes of travel delay