



Algo Traffic and the Tuscaloosa RTMC

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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

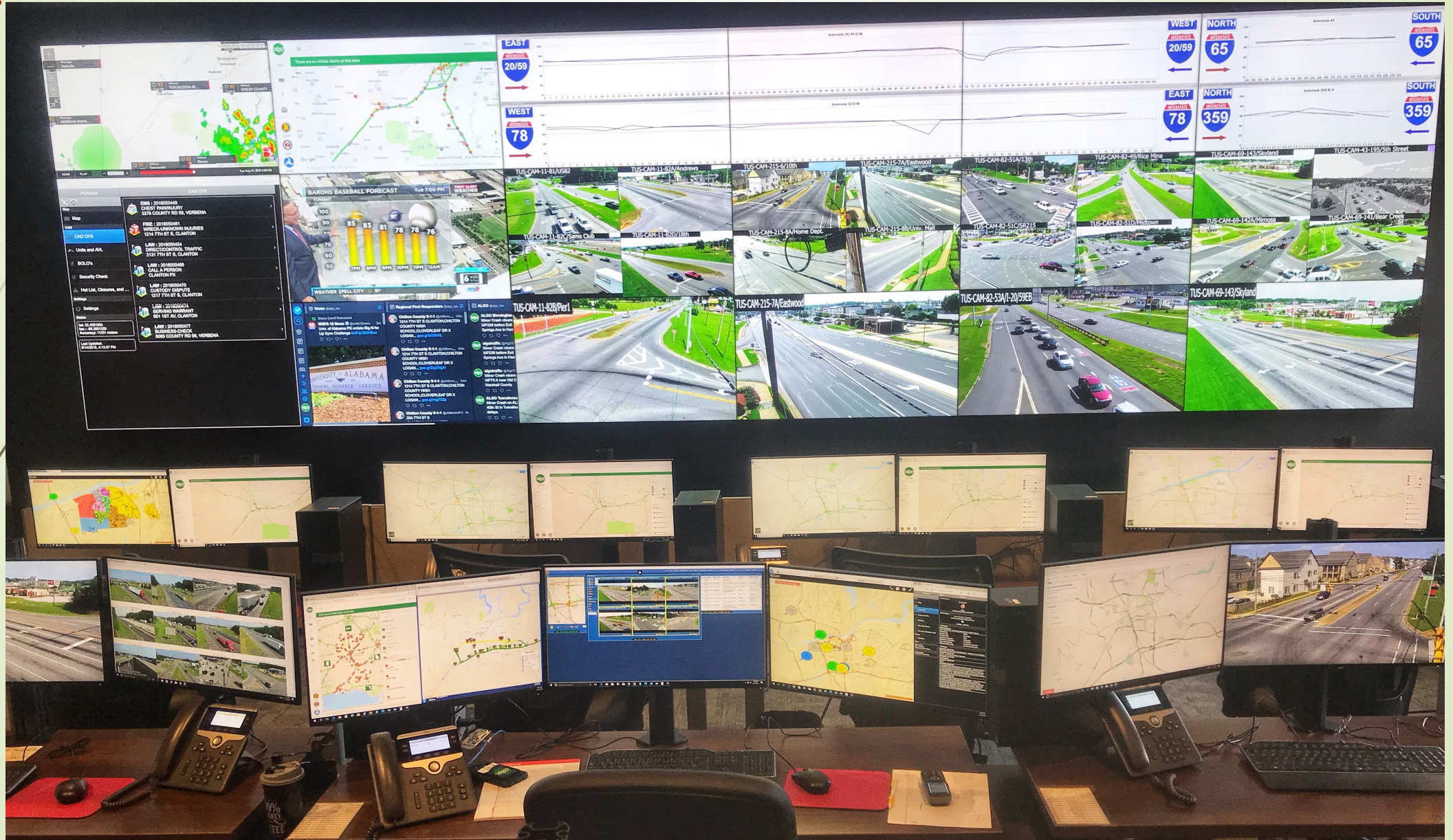
- ▶ Operations started June 2017
 - ▶ Monday thru Friday 8:00am to 5:00pm
 - ▶ After-hours calls and issues were forwarded to the Birmingham TMC
- ▶ 24/7 Operations began January 2018
- ▶ Cover the West Central Region
 - ▶ Marion, Winston, Fayette, Lamar, Walker, Pickens, Tuscaloosa, Greene, Hale, Sumter, 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

ALGO Traffic provides live traffic camera feeds, updates on Alabama roads, and access to exclusive ALDOT information.

SITE CONTENT

- Map
- Traffic Reports
- Travel Times
- Cameras
- Amber Alerts
- Feedback

RESOURCES

- Documents
- External Links
- Twitter

Sponsored By



Chris

There are no amber alerts at this time

There are no weather alerts at this time

Map Satellite

Layers

Quick Zoom

--Select Area--

Traffic Layers

- Cameras
- Construction
- Crashes
- Incidents
- Events
- Facilities
- Ferries
- Signs

Weather Layers

- NWS Alerts
- Auto Refresh
- Road Conditions
- Speeds

Fast Slow

Search

Construction

- Slope Repair**
AL 10 at MP 169
- Resurfacing or Paving**
AL 130 at AL 15
- Resurfacing or Paving**
AL 133 at SR 20
- Lane Shift**
AL 133 at AL 20

Map data ©2018 Google Terms of Use Report a map error



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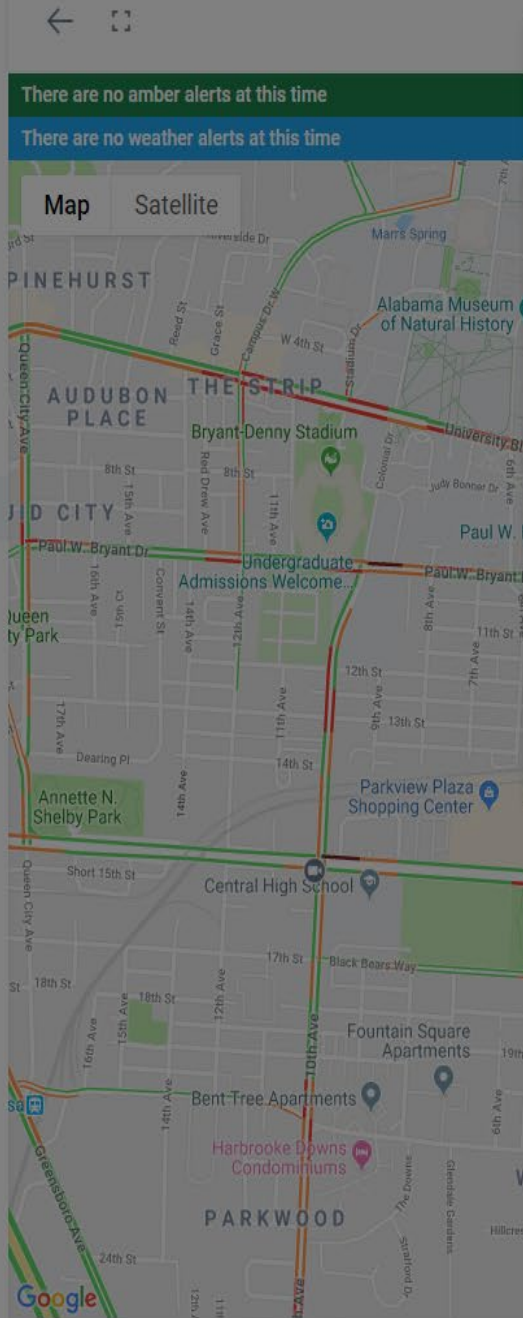
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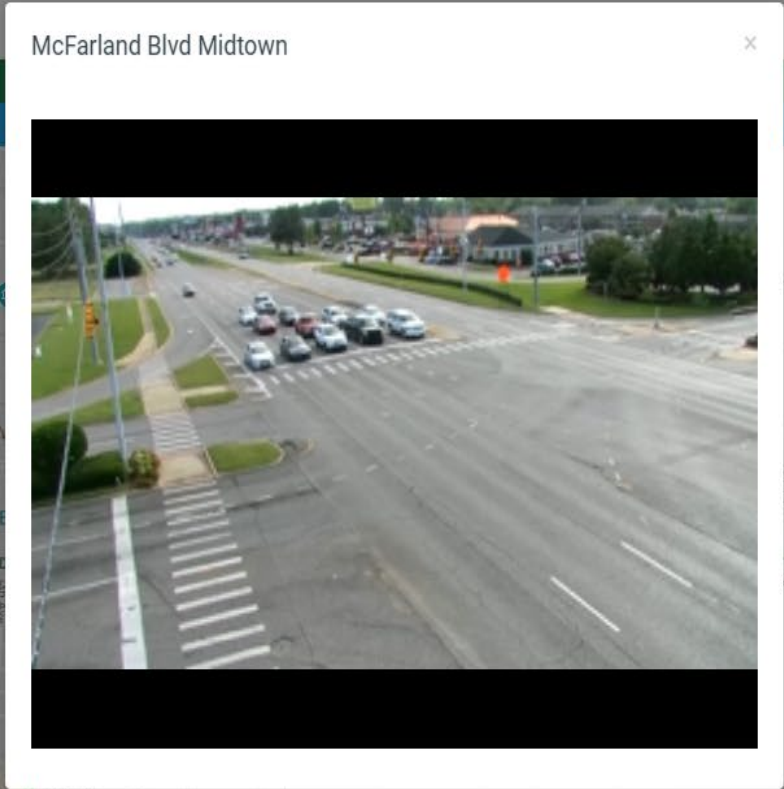
Sponsored By



There are no amber alerts at this time

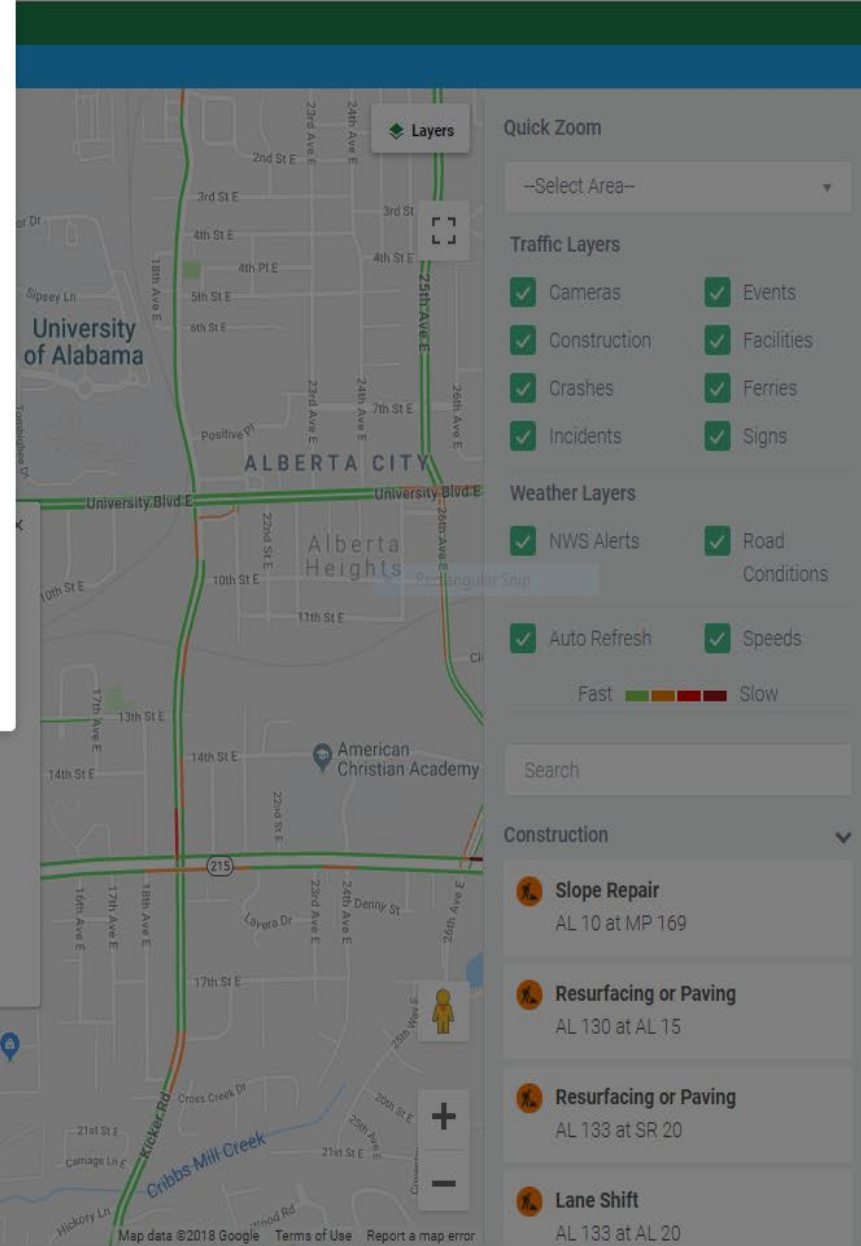
There are no weather alerts at this time

Map Satellite



CAMERA ARE CURRENTLY UNAVAILABLE.

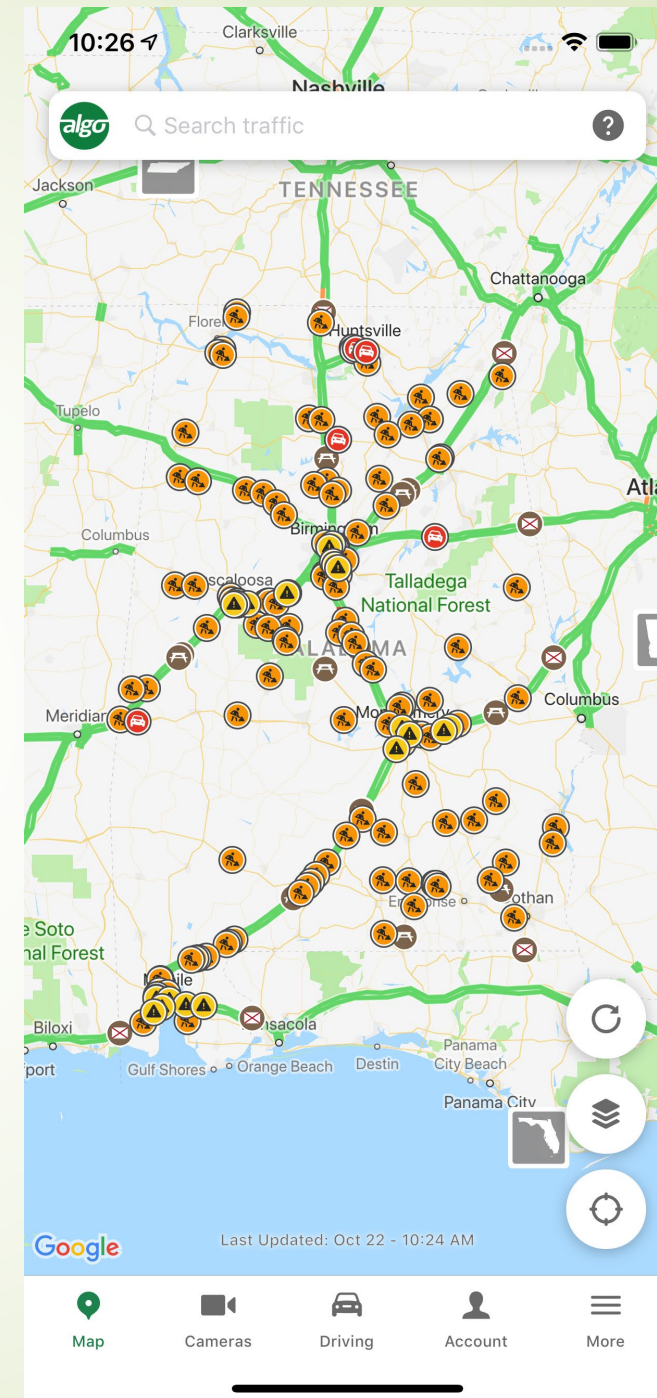
[View Livestream](#)



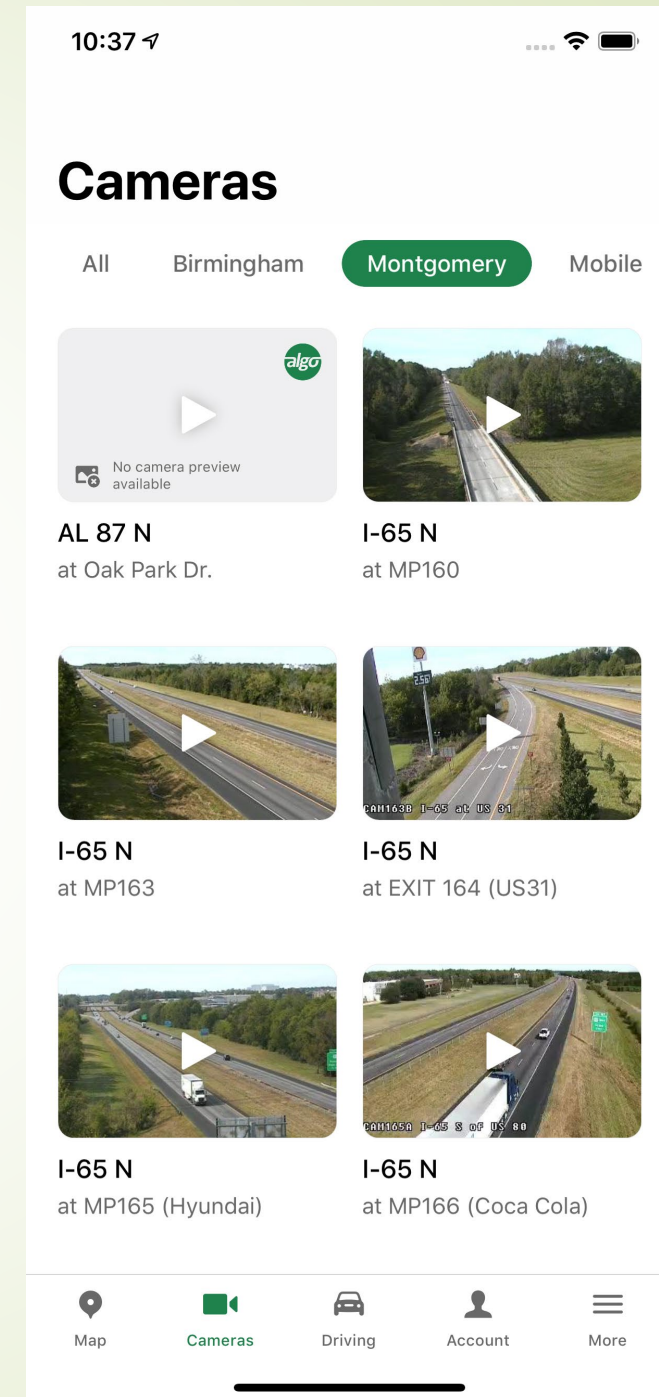
- Layers
- Quick Zoom
- Select Area--
- Traffic Layers**
- Cameras
 - Construction
 - Crashes
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AL 10 at MP 169
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AL 133 at AL 20

Algo Traffic Mobile App



Algo Traffic Mobile App



Algo Traffic Mobile App



10:36

Search traffic

MEDICAL DISTRICT

Moderate Crash
US 431 N @ MP 332.9 at Franklin St
in Huntsville

Status: Response On Scene

Crash blocking the right lane. Please use caution when traveling through this area.

Start	End
10/22/2018 9:50 AM	10/22/2018 10:30 AM

Affected Lanes

Last Updated: 20 minutes ago

Map Cameras Driving Account More

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

Queue Trailer-Mounted Queue Detection



The Queue Trailer is a portable trailer that provides a versatile and lightweight platform with a small footprint to mount a microwave radar unit to detect speed, volume and occupancy for up to 22 lanes of traffic. When equipped with ASTI's communication package, the Queue Trailer can provide data remotely to a variety of information-gathering components.

Features

- Industrial-grade trailer to give years of dependable service
- Reports speed, volume, density and classification for all traffic
- Adjustable solar array for maximum exposure to sun
- Optional digital cellular communications
- Accurately detects lane changing vehicles
- Available as a portable unit or permanent mount
- Removable tongue
- Battery bank sized for 30-day autonomy
- Detects up to 22 lanes of traffic or 250'
- Optional Wavetronix HD sensor available
- Detects multi-direction traffic with a single sensor



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

MVT Mobile Video Trailer



The MVT provides a portable, self-contained all-weather, trailer-mounted equipment platform. Through the use of wireless communication, the MVT provides the end user a rapidly deployable real-time video system viewable from a remote location. The MVT can be used as a stand-alone camera system or tied into a larger existing CCTV system.



Features

- Can use virtually any camera
- Additional mast heights available
- Day/Night, Adjustable
- Pan/Tilt/Zoom IP addressable cameras
- 32-ft extendable mast with 360-degree lockable rotation
- Capable of providing streaming or snapshot video
- Optional electric hoist available for rapid deployment
- Battery bank sized for 30-day autonomy
- Industrial-grade trailer to give years of dependable service
- Microwave and digital cellular communications available
- 360-degree adjustable solar array for maximum exposure to sun
- Custom options are available and can include a Wavetronix sensor for traffic detection



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:



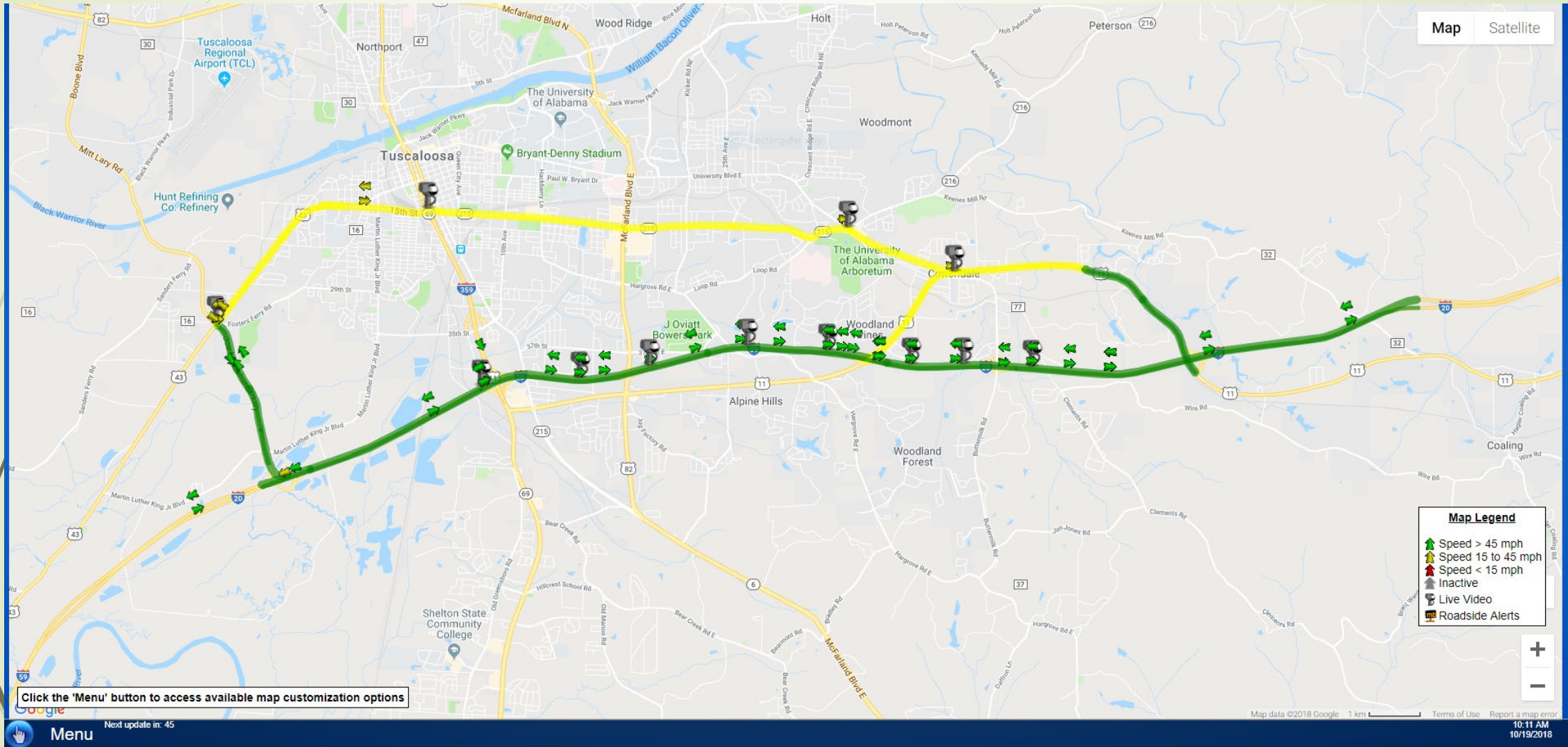
Features

- 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

1022 - Alabama_Tusca



1010 - Alabama_Tusca



1009 - Alabama_Tusca



1008 - Alabama_Tusca



1037 - Alabama_Tusca



1036 - Alabama_Tusca



1021 - Alabama_Tusca



1020 - Alabama_Tusca



C01 - Alabama_Tusca



C02 - Alabama_Tusca



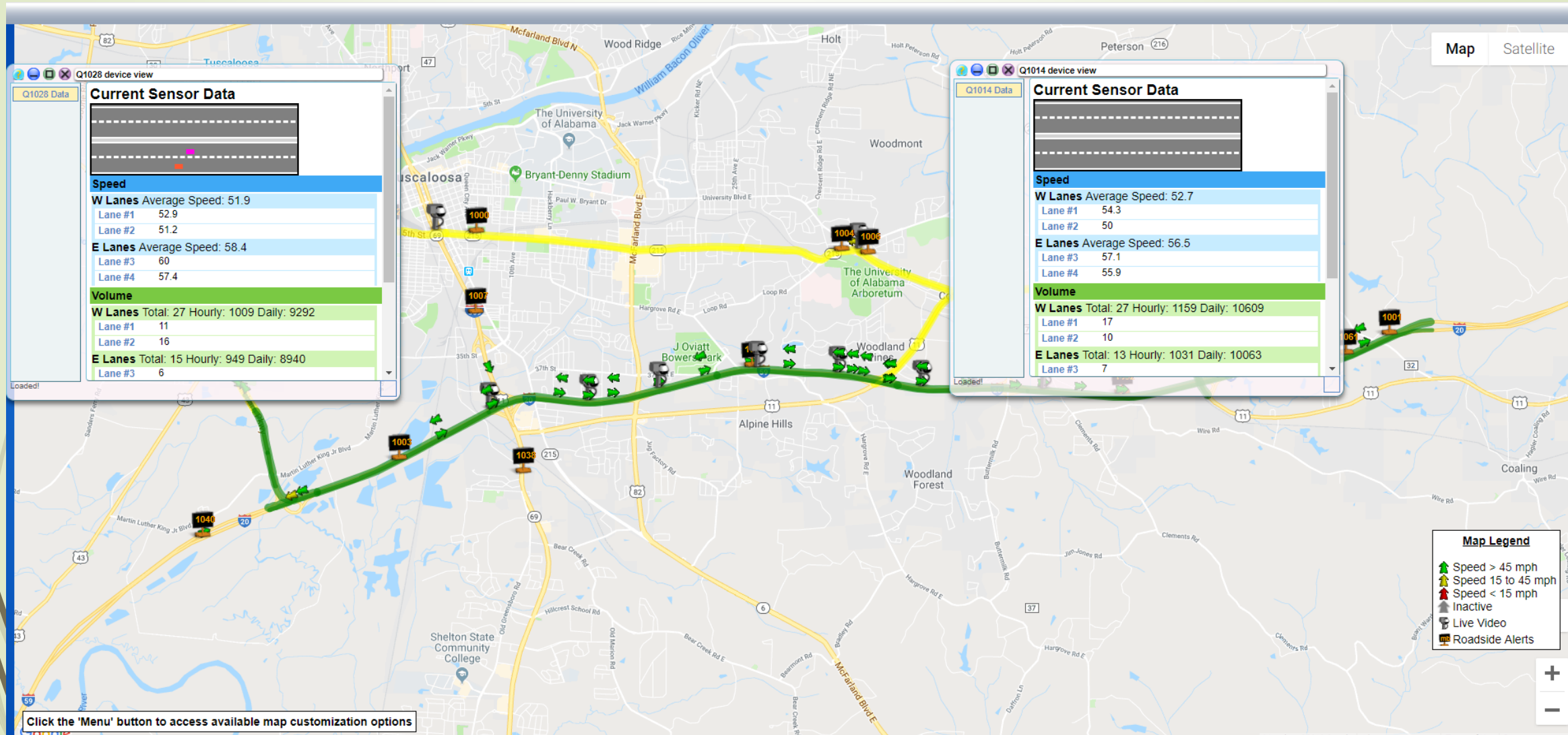
C03 - Alabama_Tusca



C04 - Alabama_Tusca



SWZ Components



SWZ Components

The screenshot displays a traffic monitoring application interface. The main map shows a route through Tuscaloosa, Alabama, with vehicle tracks in yellow and green. Two device view windows are open, each showing a 'Current Message' field with a black background and yellow plus signs. A legend in the bottom right corner defines the symbols used on the map: green arrows for speed > 45 mph, yellow arrows for speed 15 to 45 mph, red arrows for speed < 15 mph, a grey car icon for inactive vehicles, a camera icon for live video, and a yellow sign icon for roadside alerts. The interface includes a 'Menu' button at the bottom left, device view buttons for '1007 device view' and '1053 device view', and a 'Next update in: 57' indicator. The bottom right corner shows the date and time: '10:54 AM 10/19/2018'.

Map Legend

- Speed > 45 mph
- Speed 15 to 45 mph
- Speed < 15 mph
- Inactive
- Live Video
- Roadside Alerts

Click the 'Menu' button to access available map customization options

1007 device view

1007 Message

Current Message

1053 device view

1053 Message

Current Message

Menu 1007 device view 1053 device view Next update in: 57

Map data ©2018 Google 1 km Terms Use Report a map error 10:54 AM 10/19/2018

SWZ Components

The screenshot displays a traffic management software interface with a central map of Southwood. The map shows traffic flow with green and yellow overlays. Two message editors are visible, both with red circles around their text: "STOPPED TRAFFIC 3 MILES" and "STOPPED TRAFFIC 4 MILES". The "Current Sensor Data" panel on the right shows speed and volume data for West and East lanes, with a red circle around the East Lane Average Speed of 8.1 and Lane #5 speed of 8.5.

STOPPED TRAFFIC 3 MILES

STOPPED TRAFFIC 4 MILES

Override Message Editor
Show old interface

Current Message

Override Message Editor
Show old interface

Q1016 device view

Q1016 Data
Q1016 Reports
Q1016 Info
Geo-Fences

Current Sensor Data

Speed	
W Lanes Average Speed:	63.3
Lane #1	63.8
Lane #2	61.8
Lane #3	64.9
E Lanes Average Speed:	8.1
Lane #4	7.5
Lane #5	8.5

Volume

W Lanes Total:	33 Hourly; 923 Daily; 15962
Lane #1	10
Lane #2	13

Menu | ASTI Communicator | 1003 Messages Log Results | 1003 device view | 1040 device view | Q1016 device view | Next update in: 19

Type here to search

1:37 PM 9/6/2018



Smart Work Zone Total Cost


Portable RDS	\$ 57,917.34
Portable CMS	\$ 48,264.45
Portable CCTV	\$ 25,741.04
Portable BDS	\$ 475,885.08
RDS, Op Month	\$ 449,448.38
CMS, Op Month	\$ 262,558.88
BDS, Op Month	\$ 229,010.40
Monitoring, Op Month	\$ 85,000.00
Additional CMS and CCTV	\$ 58,235.58
TOTAL	\$ 1,692,061.15

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

Year	Work Zone		Truck-Involved Work Zone		Pedestrian-Involved Work Zone		Work Zone Worker
	Fatal Crashes	Fatalities	Fatal Crashes	Fatalities	Fatal Crashes	Fatalities	Fatalities
2007	32	35	9	10	1	1	0
2008	11	12	1	1	2	2	0
2009	7	8	0	0	0	0	0
2010	9	9	2	2	2	2	4
2011	8	9	1	1	1	1	2
2012	8	9	1	2	3	3	1
2013	10	12	4	5	3	3	4
2014	12	12	4	4	1	1	5
2015	23	24	3	4	4	4	5
2016	12	13	4	4	5	5	8

Source: Crash data shown here are from the 50 states, the District of Columbia, and Puerto Rico, and comes from the Fatality Analysis Reporting System, National Highway Traffic Safety Administration, U.S. Department of Transportation. Worker fatality data come from the Bureau of Labor Statistics, U.S. Department of Labor.



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

$\$129,000/\text{year} \times 79.8 \text{ years} = \$10,294,200$

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