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

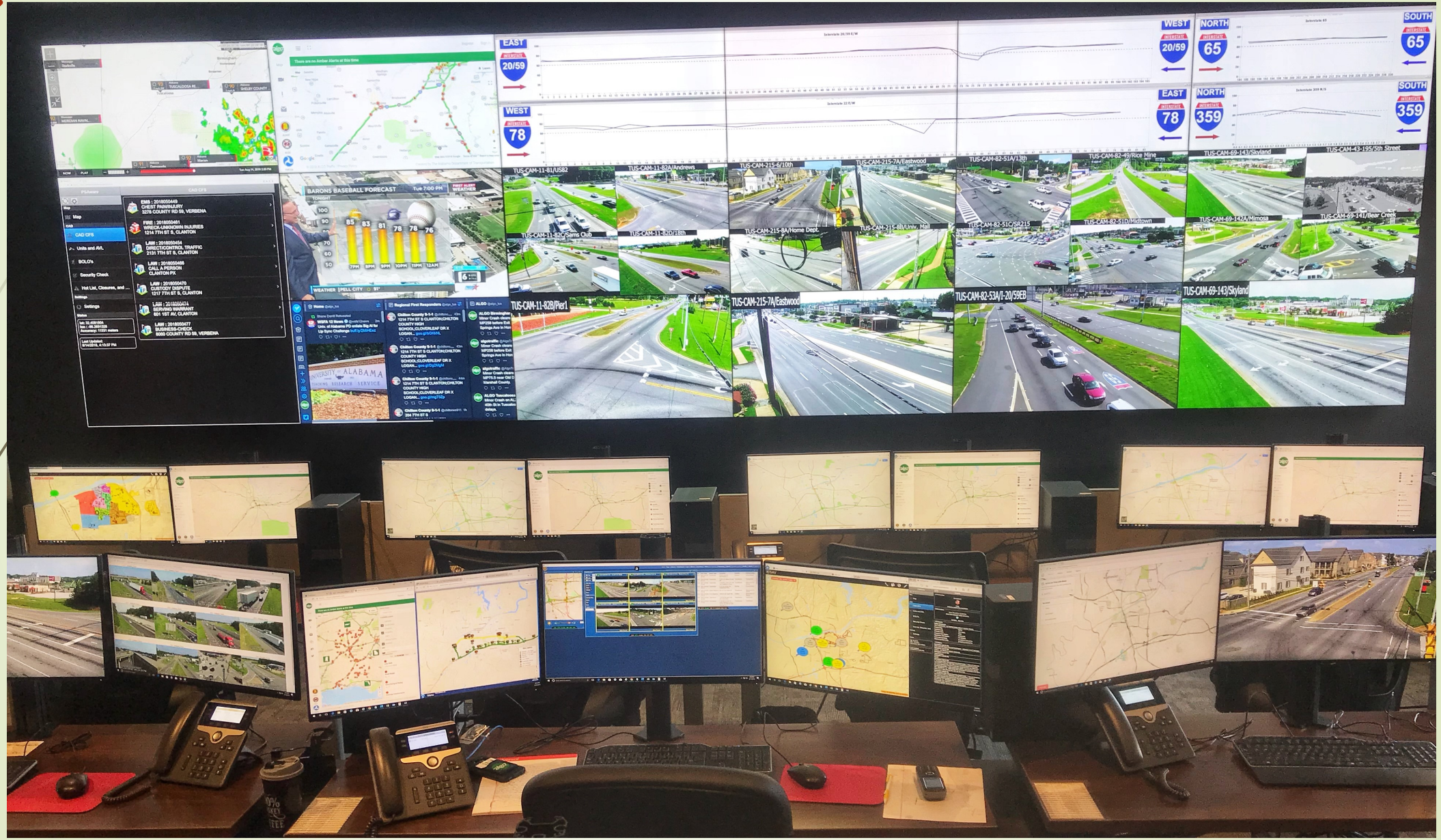
Tuscaloosa Traffic Management Center

- 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



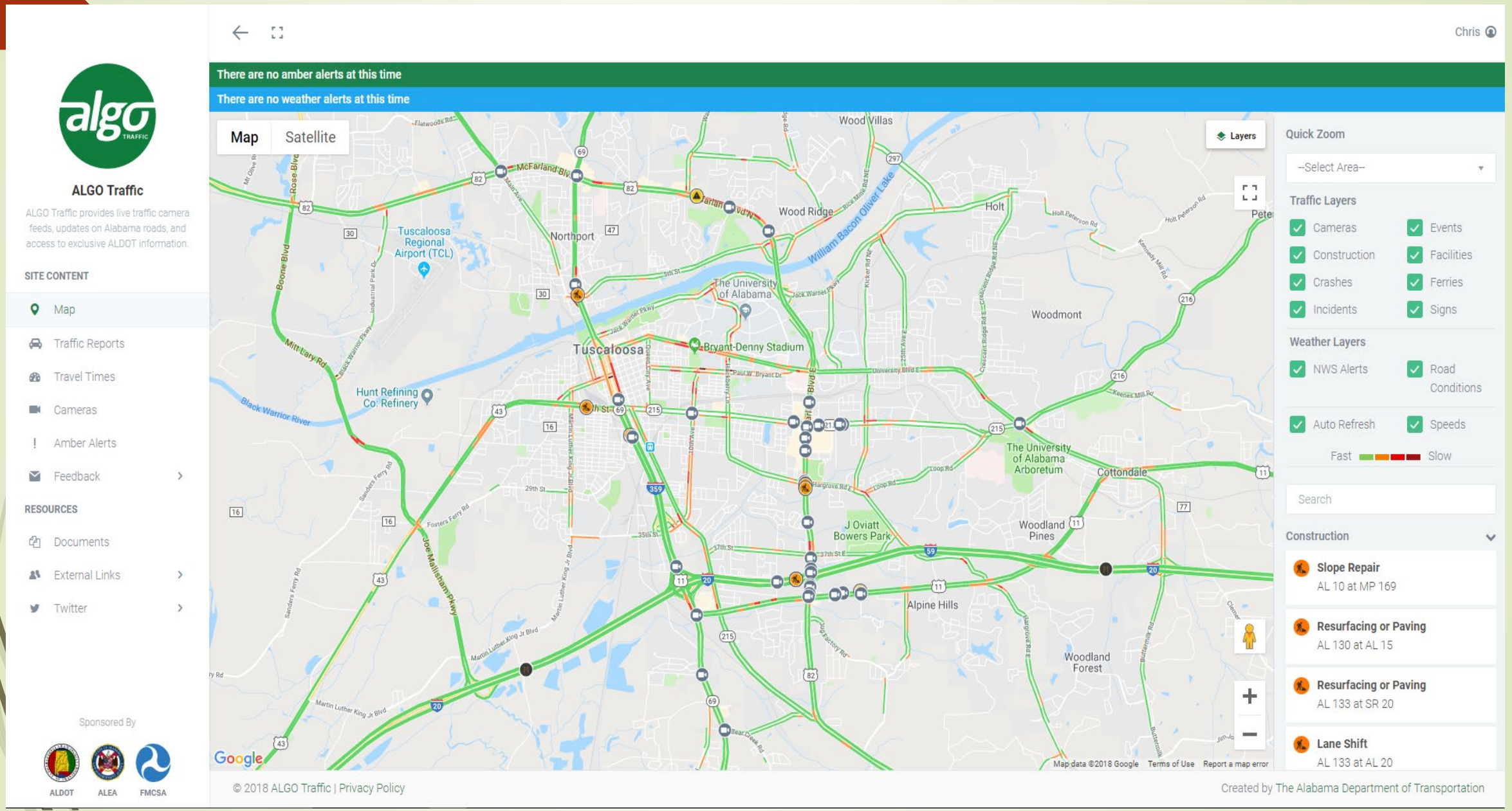
UA Gameday Operations

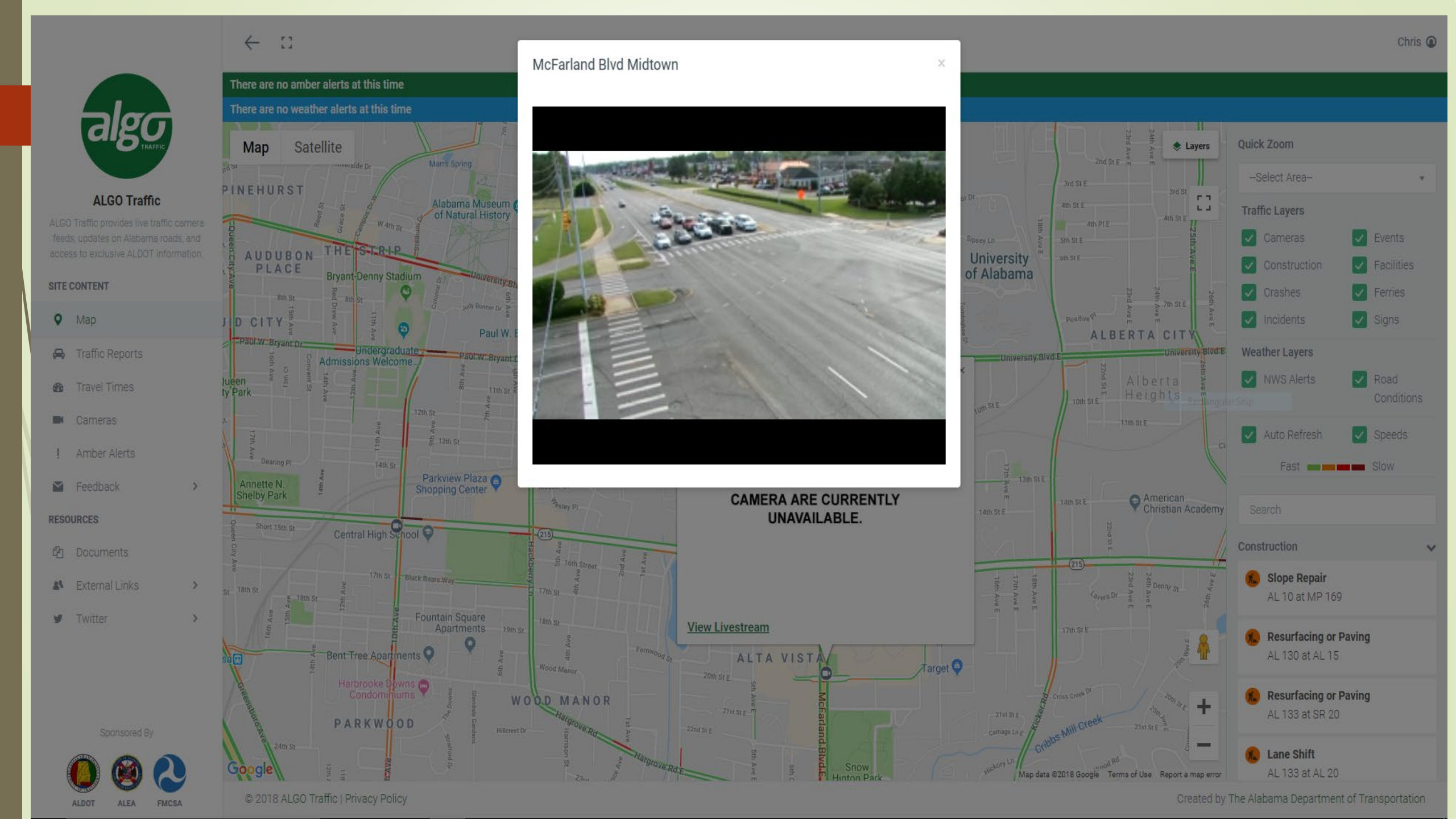
- Pre & Post Game
  - Additional TMC Operators
  - ASAP Truck
- Post Game
  - Bruno Event Team
  - UA Gameday
  - UAPD
  - UA Transportation Services
  - ALDOT

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




McFarland Blvd Midtown
CAMERA ARE CURRENTLY UNAVAILABLE.
View Livestream
ALGO Traffic
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
Events
Construction
Facilities
Crashes
Ferries
Incidents
Signs
Weather Layers
NWS Alerts
Road Conditions
Auto Refresh
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
SITE CONTENT
Map
Traffic Reports
Travel Times
Cameras
Amber Alerts
Feedback
RESOURCES
Documents
External Links
Twitter
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ALEA
FMCSA
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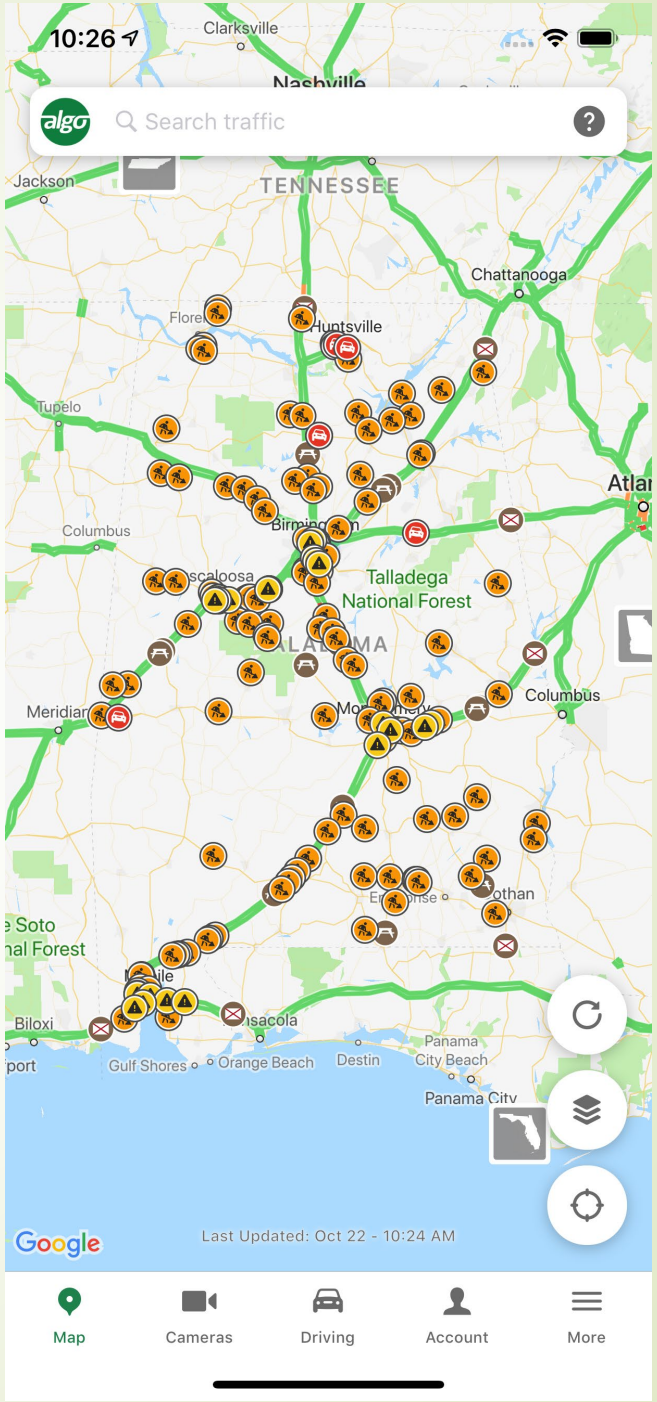
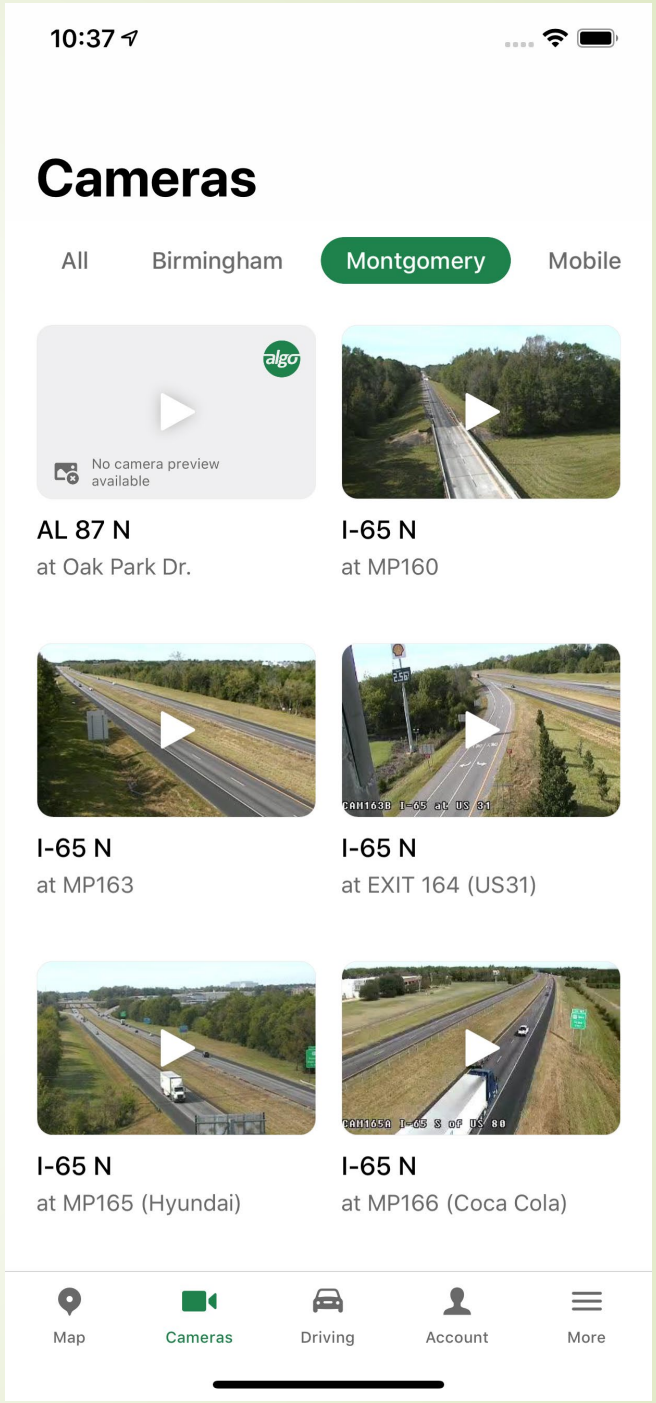
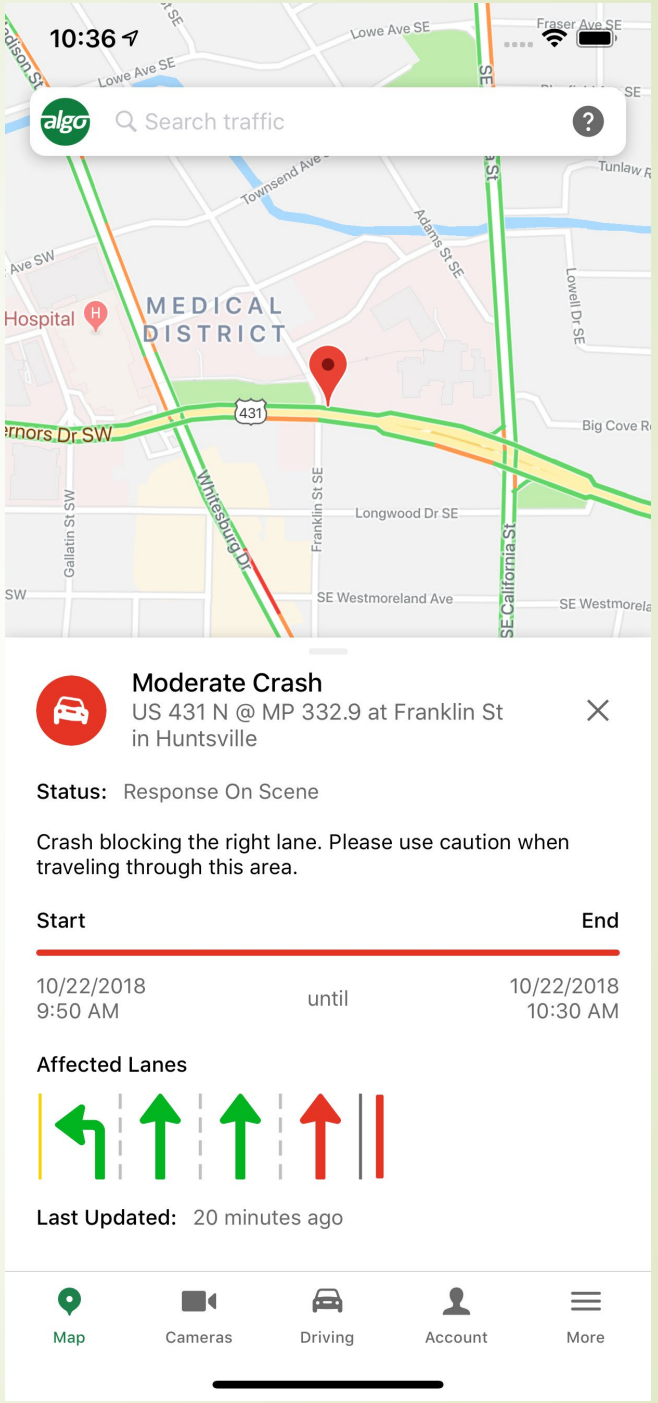
Algo Traffic Mobile App



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

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

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

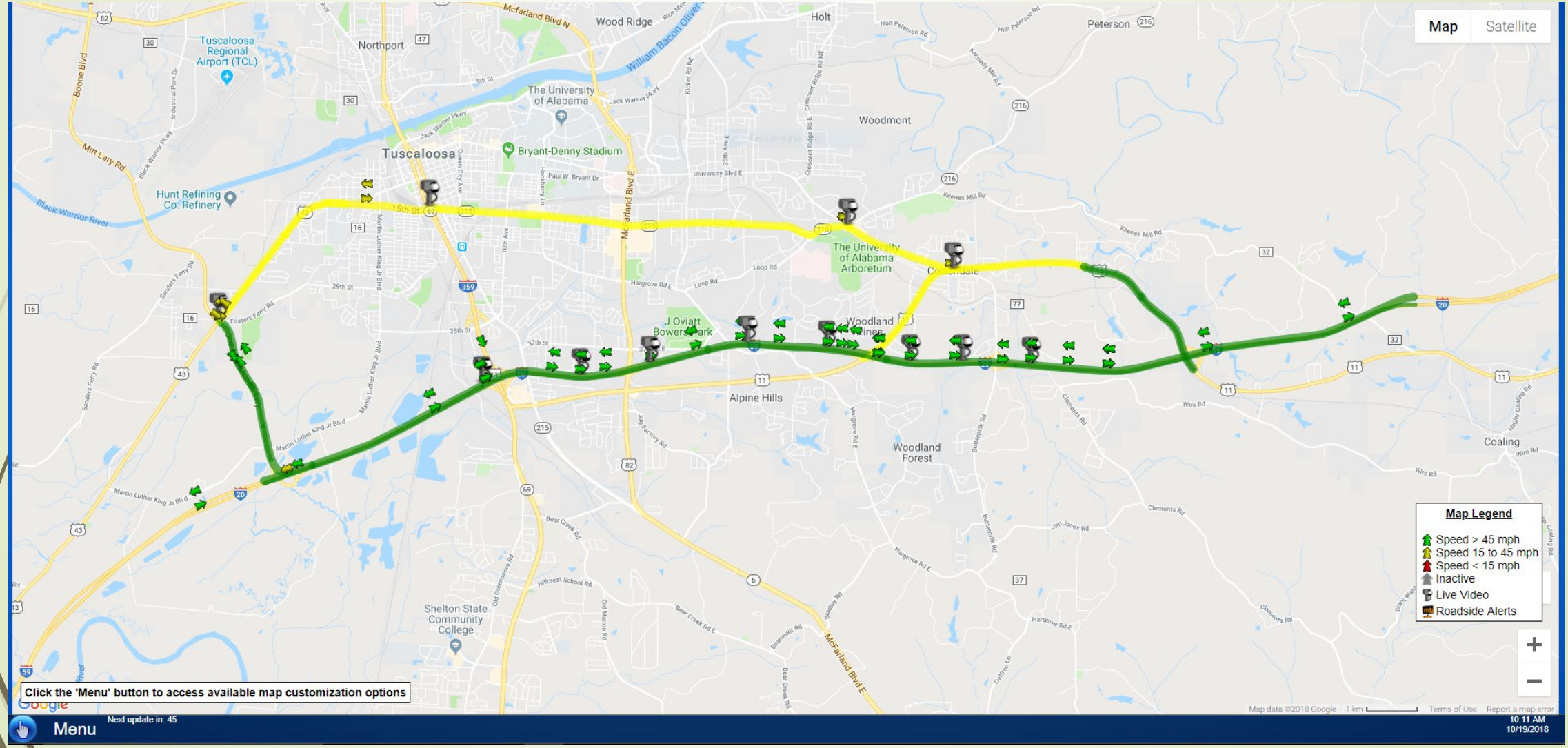
One of the key components of a portable ITS System is to provide real time messages to the traveling public. The results of having real time traffic conditions posted to a message board fleet are:

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

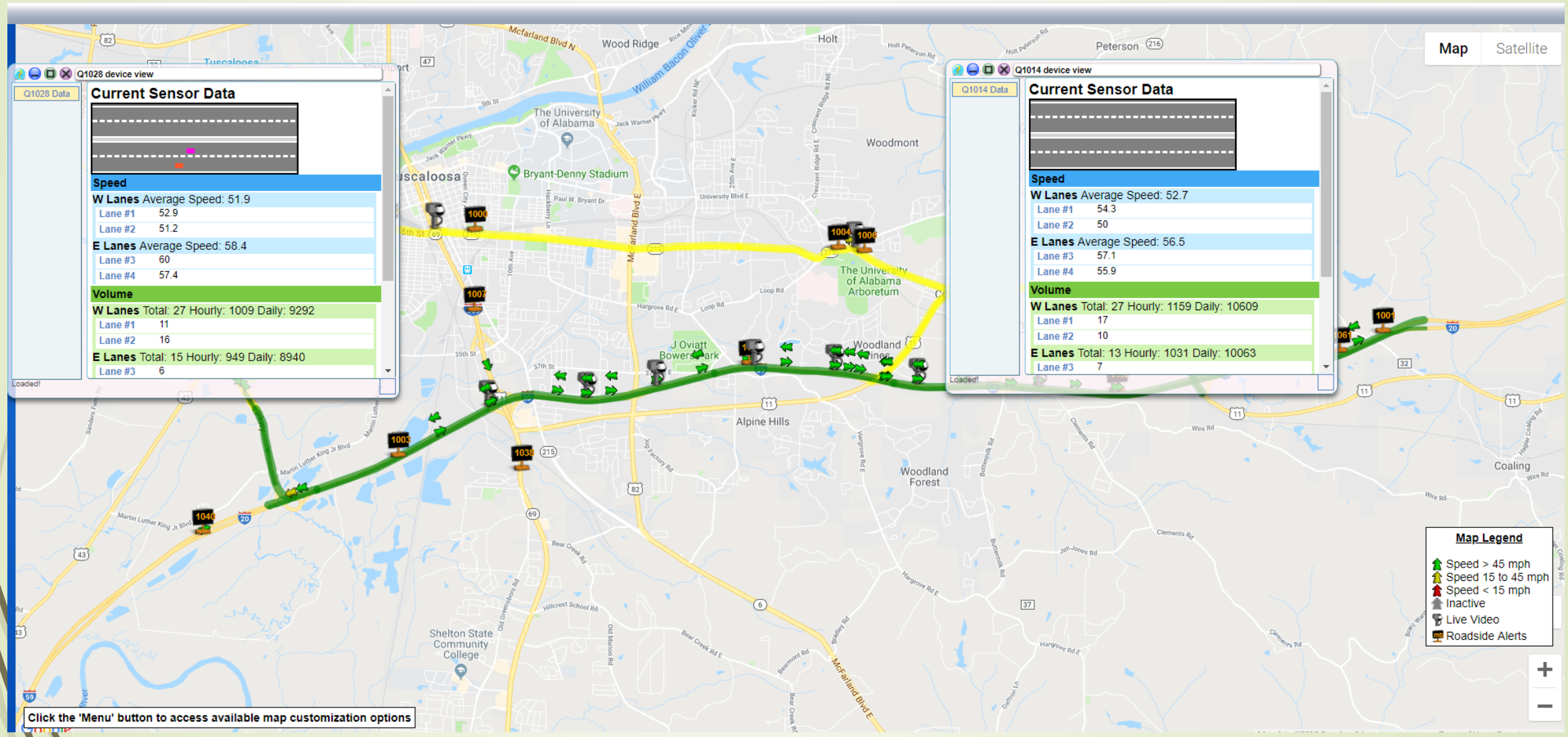
C01 - Alabama_Tusca

C02 - Alabama_Tusca

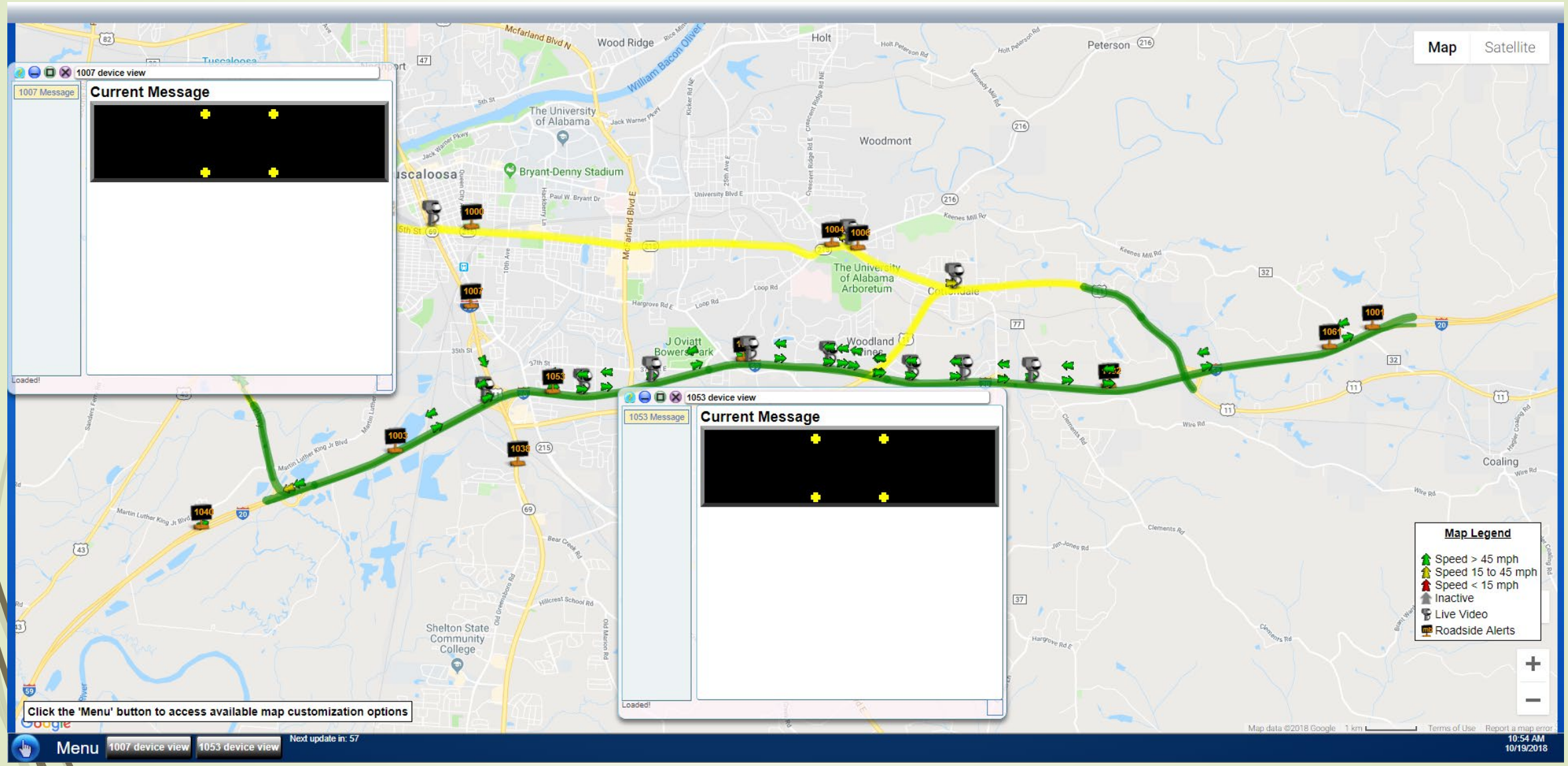
C03 - Alabama_Tusca

C04 - Alabama_Tusca

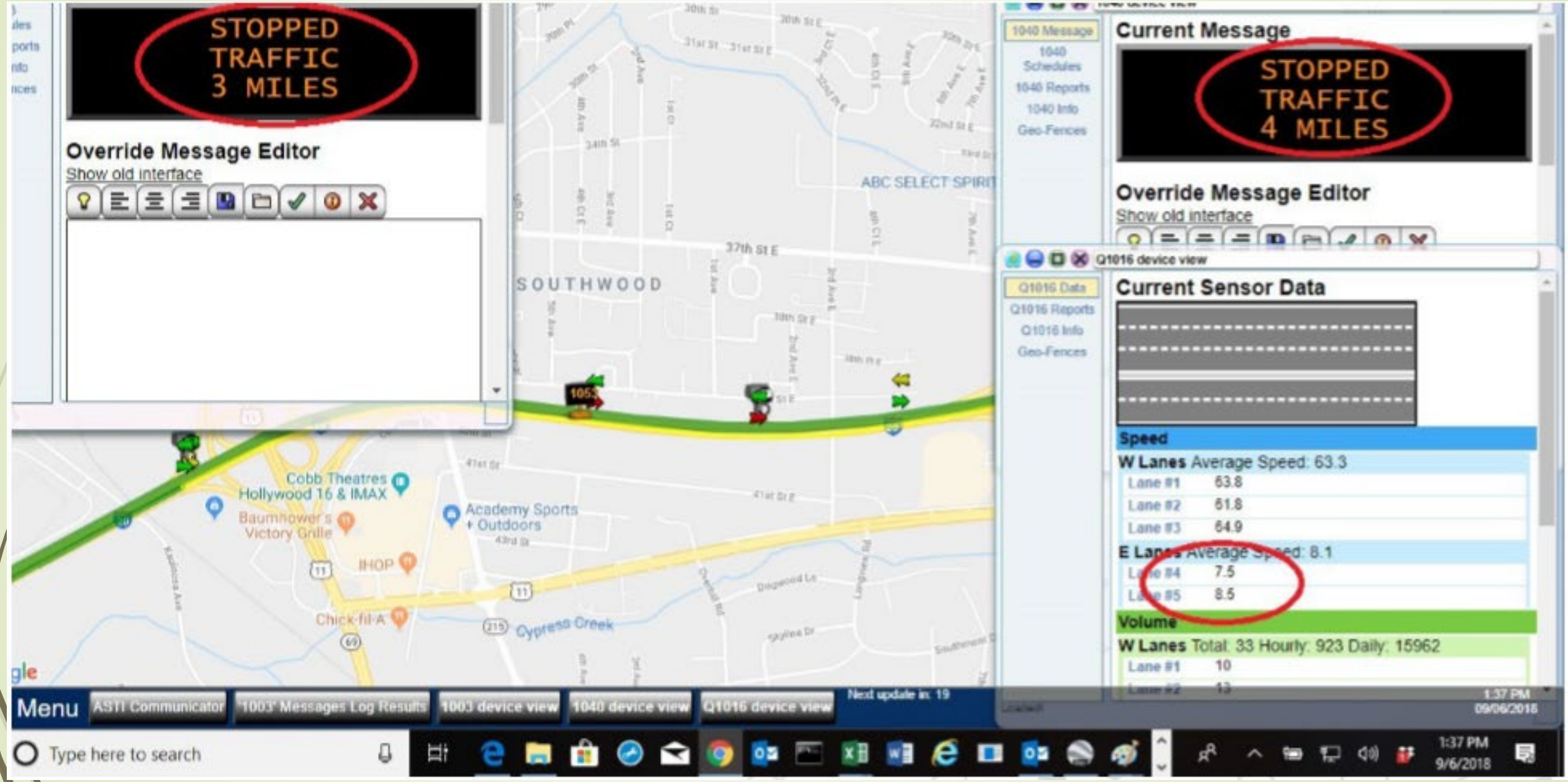
SWZ Components



SWZ Components



SWZ Components



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

	Work Zone		Truck-Involved Work Zone		Pedestrian-Involved Work Zone		Work Zone Worker
Year	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/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