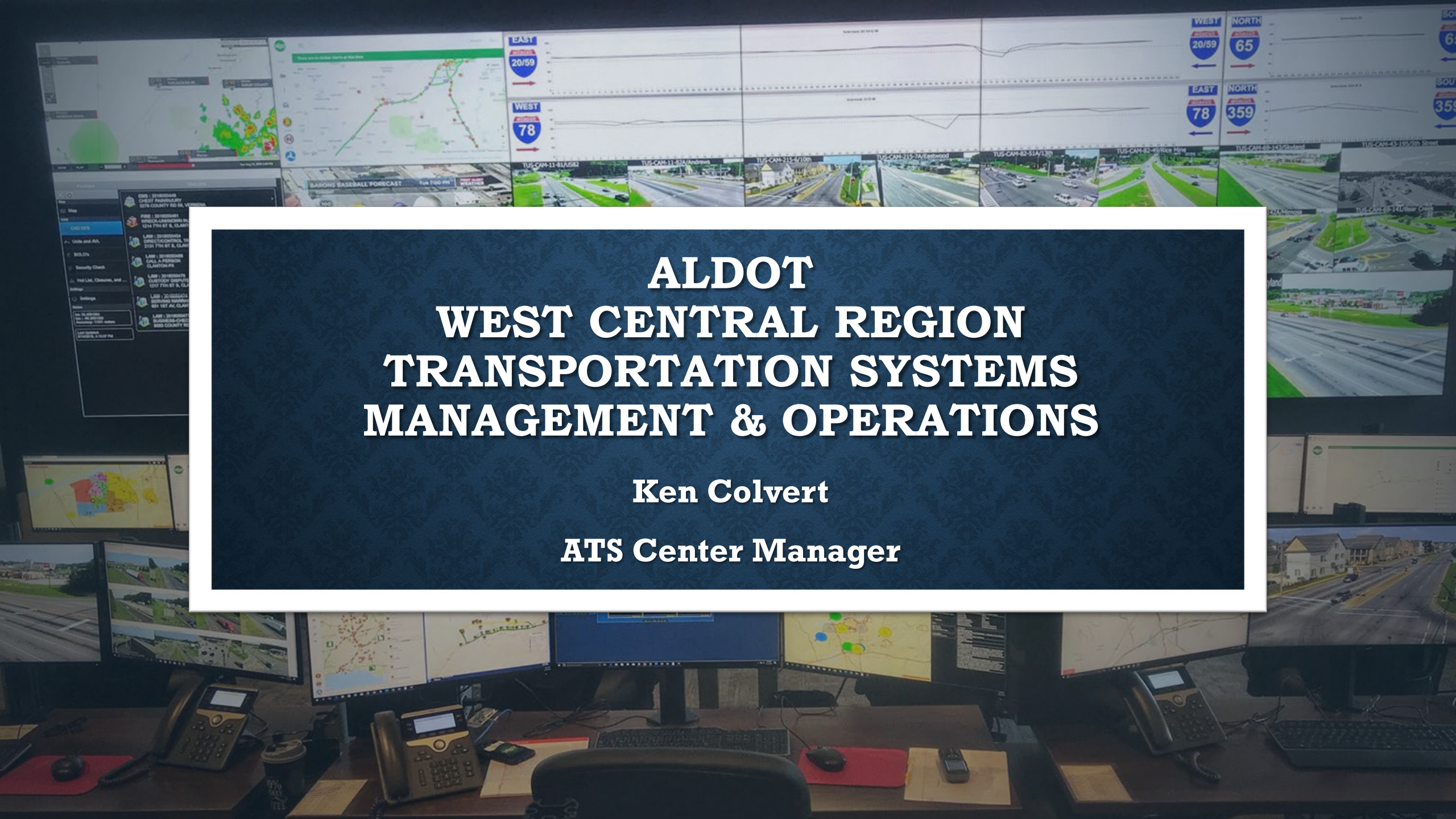


ALDOT
WEST CENTRAL REGION
TRANSPORTATION SYSTEMS MANAGEMENT & OPERATIONS

Ken Colvert

ATS Center Manager

OUTLINE

- Traffic Systems Management and Operations (TSM&O)
- TMC History and Operations
- Alabama Service and Assistance Patrol (ASAP)
- Traffic Incident Management Responder Training
- UA Gameday Operations


Alabama DOT
TSM
Transportation Systems Management & Operations

WHAT IS TSM&O?

TRANSPORTATION SYSTEMS MANAGEMENT AND OPERATIONS

- Transportation Systems Management & Operations is a strategic approach to improve safety and maximize efficiency of the existing transportation system. TSMO focuses on operational improvements that can improve or maintain levels of service without adding capacity. TSMO projects are typically lower cost, faster deployment options than traditional projects such as adding lanes to an existing roadway. Examples of TSMO project benefits include; reduced congestion, improved travel time reliability, improved safety, and reduced emissions.

TRANSPORTATION SYSTEMS MANAGEMENT AND OPERATIONS SERVICE LAYERS

- ITS and Communications
- Traffic Signal Management
- Traffic Management Centers (TMCs)
- Traveler Information
- Traffic Incident Management (TIM)
- Emergency Transportation Operations (ETO)
- Work Zone Management
- Active Transportation Demand Management (ATDM)
- Connected and Autonomous Vehicles

TINKER TOYS
VS
LINCOLN LOGS

Management vs Capacity

IMPACTS OF CONGESTION

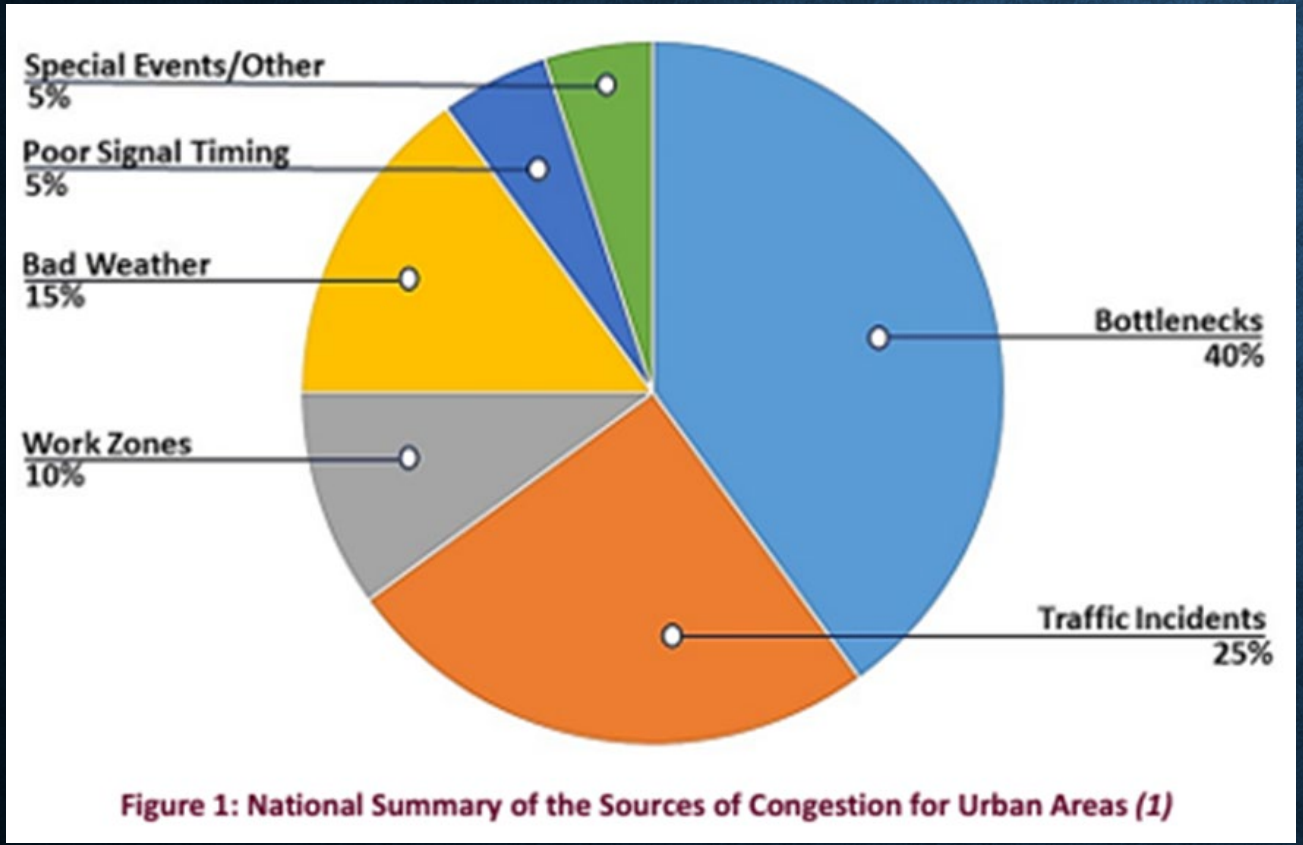
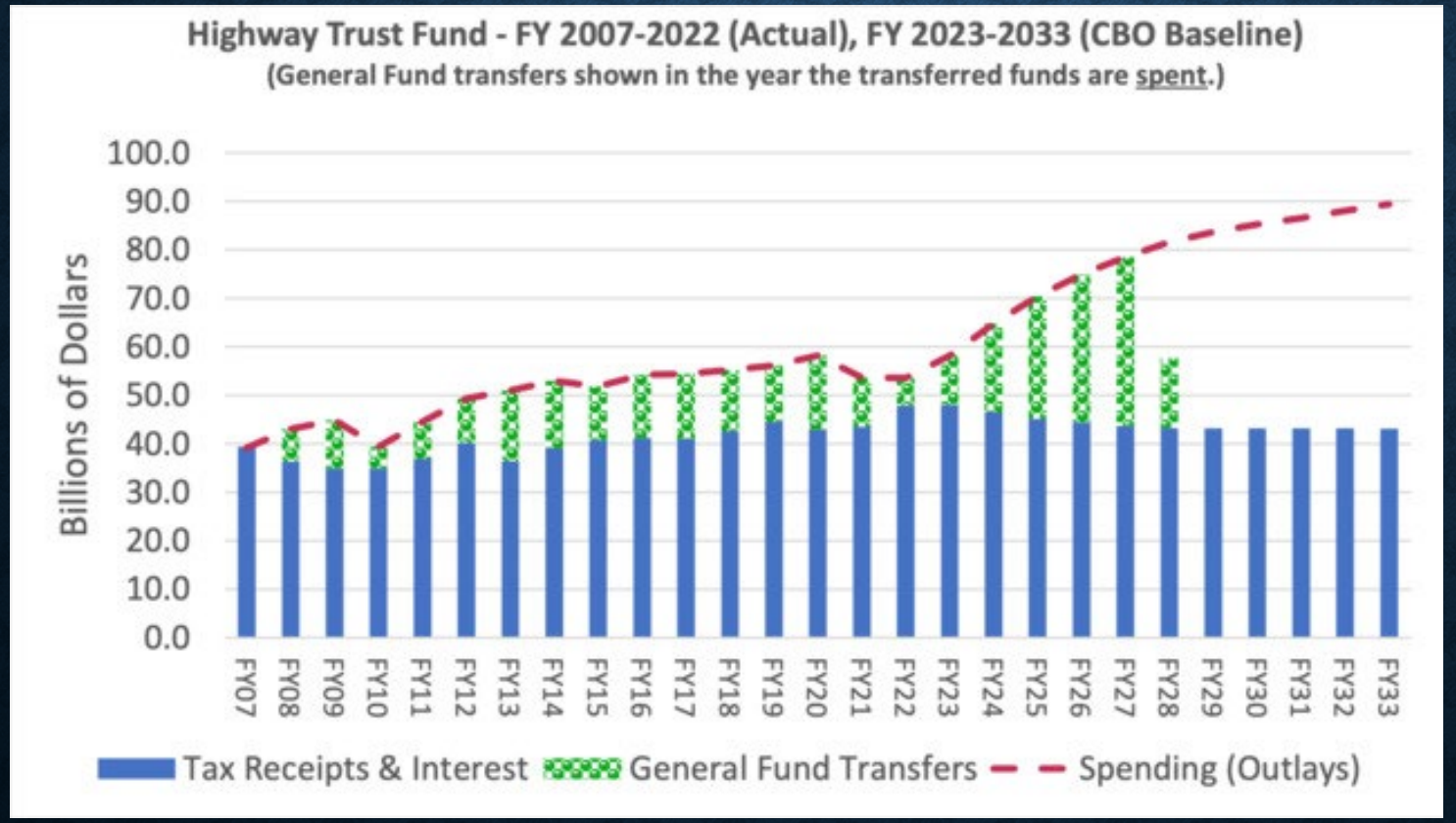


Figure 1: National Summary of the Sources of Congestion for Urban Areas *(1)*

- **Results of Congestion**
  - **Lost time and productivity**
  - **Increased cost of goods and services**
  - **Increased fuel consumption**
  - **Impacts on air quality and the environment**
  - **Negative public image**

CAPACITY NEEDS AND LIMITED FUNDING

- **Capacity projects are becoming less feasible**
  - Costs are going up, but funding is staying level, at best
  - Running out of Right-of-Way



Costs increasing dramatically

Funding staying "level"

INTELLIGENT TRANSPORTATION SYSTEMS (ITS)

ITS refers to the use of communications and information technologies (IT) resources that offer solutions to traffic issues, congestion mitigation, and crash prevention.

EXAMPLES OF ITS DEVICES DEPLOYED

- Adaptive Signal Controls
- Closed Circuit Television (CCTV)
- Connected Vehicles
- Detection Technologies
  - Inductive Loops
  - Video detection
  - Automated Queue Detection for Work Zones
- Dynamic Message Signs (DMS)
- Emergency Vehicle Preemption
- Road Weather Information Stations (RWIS)
- Transit Signal Priority
- Roadway modeling
  - Finding the lowest cost, longest term fix for problem areas

OPERATIONS

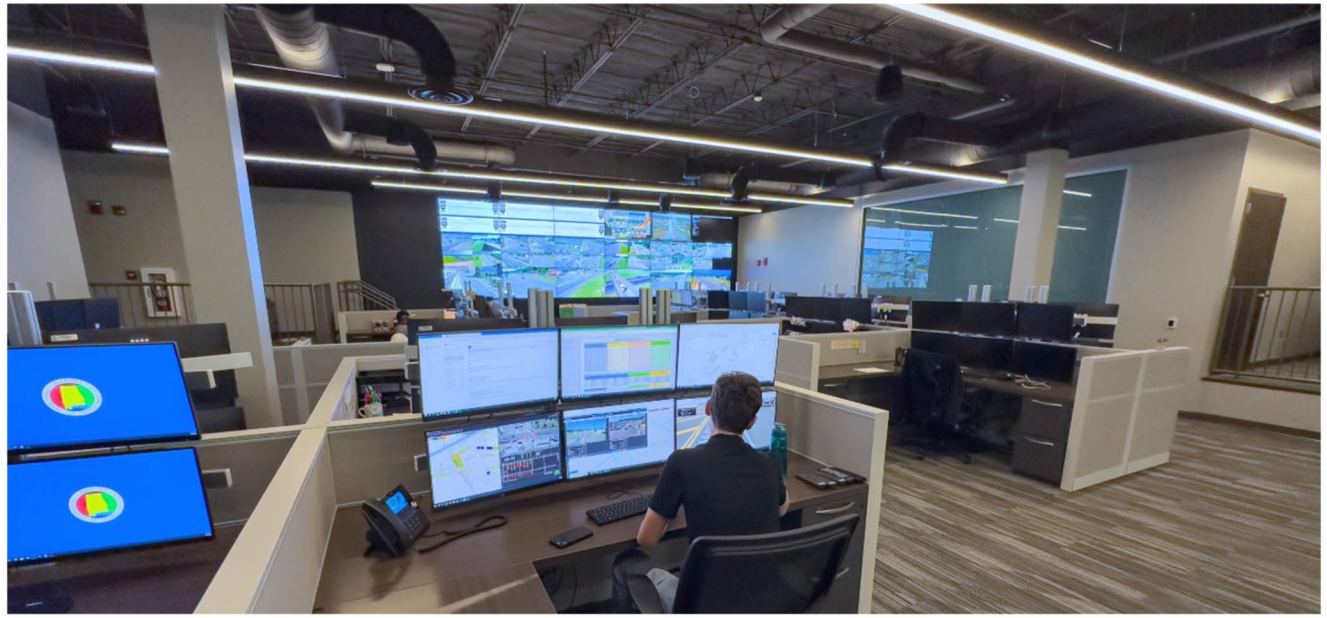
- **Actively Operating 293 signals in the West Central Region**
  - **Tuscaloosa County 188**
  - **All other counties 105**
- Developed New Coord Plans/Updated Basic Timings
- Upgraded Equipment
- Repaired/Upgraded Detection- Ongoing throughout the region
- Signals Online
  - Fiber optics and Cell Modem
- Installed Cameras
- Monitored and Adjusted Timings Daily
- Ability to adjust signal timings in emergencies
  - Major crashes and Interstate Detours

SIGNAL TIMING IMPROVEMENTS

		Northbound/Eastbound Travel Time(min)			Southbound/Westbound Travel Time(min)		
Signalized Corridor	**Peak**	**Before**	**After**	**Change**	**Before**	**After**	**Change**
North McFarland Blvd (US-82)	AM	19	12	**37%**	13	7	**46%**
	PM	13	7	**46%**	22	12	**45%**
South McFarland Blvd (US-82)	AM	11	7	**36%**	6	5	**17%**
	PM	10	8	**20%**	15	7	**53%**
Greensboro Ave	All-Day	3	1.5	**50%**	3	1.5	**50%**
South AL-69	AM	16	6	**63%**	7	6	**14%**
	PM	12	8	**33%**	14	7	**50%**
Skyland Blvd	AM	15	11	**27%**	18	9	**50%**
	PM	12	6	**50%**	16	10	**38%**

RTOP – TUSCALOOSA'S RESULTS

- 4 minutes saved per trip
- 2,350 minutes saved per day
- Representing **$15.8 million** in time and fuel savings per year



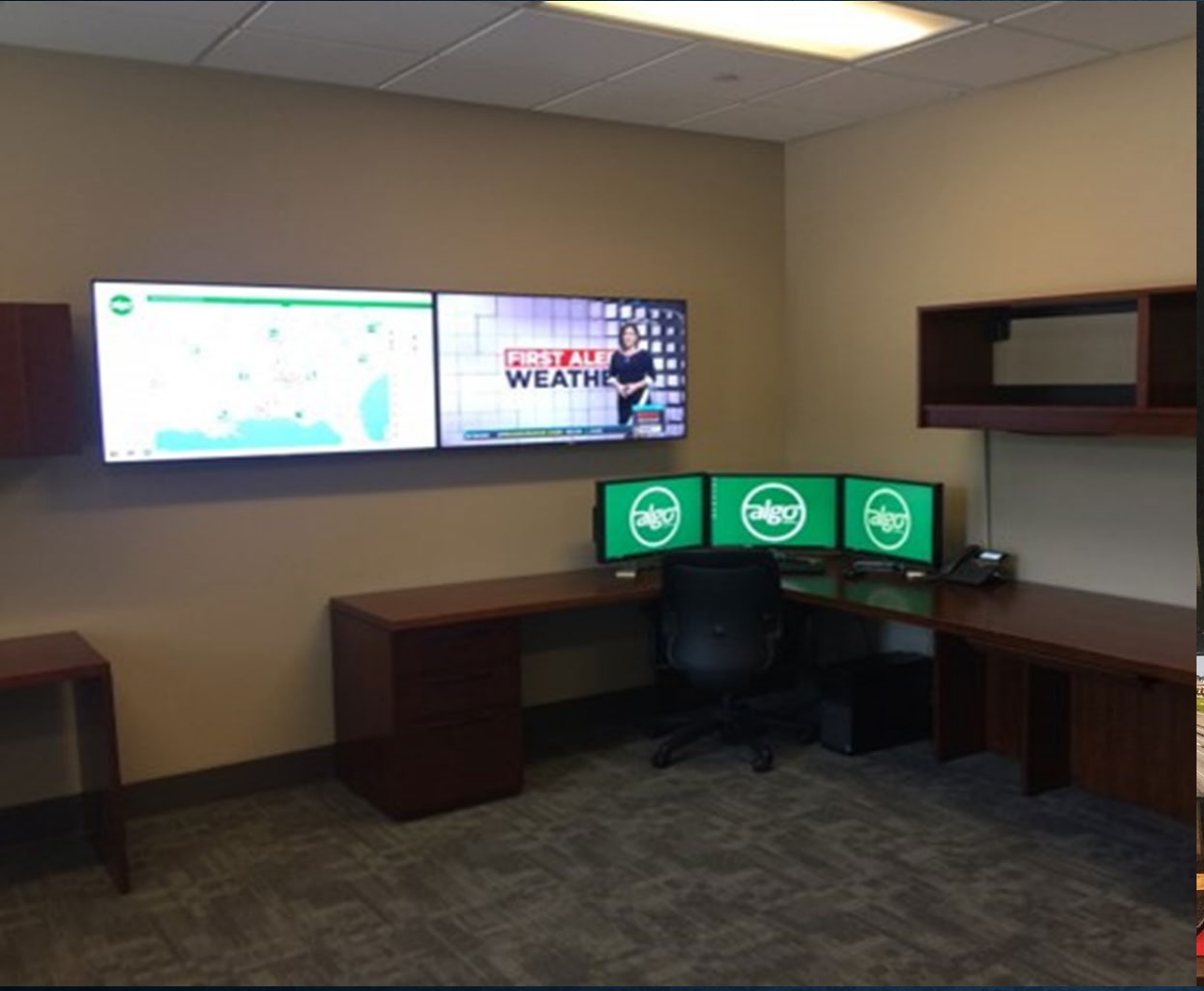
WEST CENTRAL REGION TRAFFIC MANAGEMENT CENTER

WHAT IS THE TUSCALOOSA TMC

- The Tuscaloosa Regional Traffic Management Center is the communications and Operations hub for ALDOT's Intelligent Transportation System
- Tasked by FHWA CFR 511
  - The timeliness for the availability of information related to roadway or lane blocking traffic incident will be 20 minutes or less from the time that the incident is verified for highways outside of Metropolitan Areas and 10 minutes or less from the time that the incident is verified for roadways within Metropolitan areas.

TUSCALOOSA TRAFFIC MANAGEMENT CENTER

- TMC Objectives
  - Identify anything that impedes the flow of traffic
  - Notify motorist within the region of the incident and impact on their travel
  - Signal Operations
- Began Operations June 2017
  - In Cyber Hall
- Expanded to 24/7 365 in January 2018
- January 2024 moved to the Smart Communities and Innovation Building
  - Moved all TSM&O Operations in One Space



June 2017
150 sq ft
2 workstations

2018-2024
600 sq Ft
8 workstations

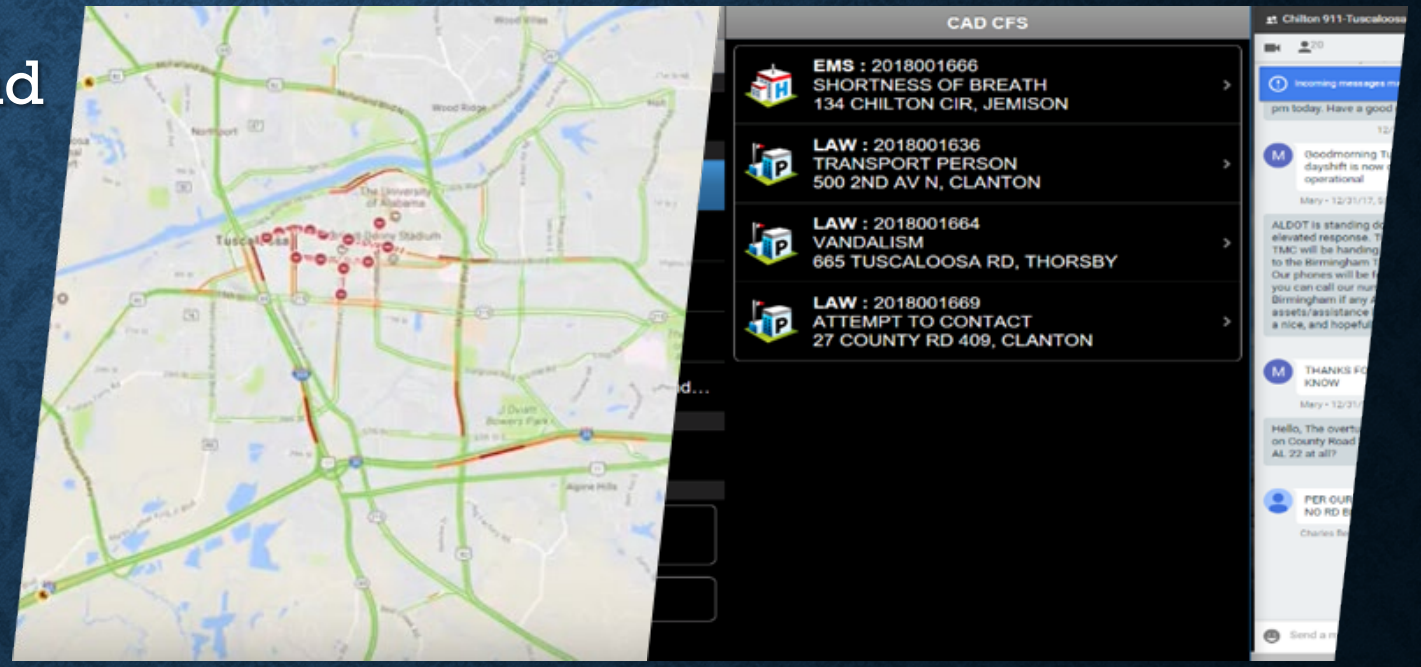

Current
3600 sq ft
17 workstations
2 conference areas

TUSCALOOSA TRAFFIC MANAGEMENT CENTER

- 3 – 4 Operators per shift
- Continuously monitor traffic flow data
  - Cameras
    - 244 cameras currently
      - 192 displayed on Algo Traffic
    - 80 additional by end of 2024
  - Traffic Speed via Roadside Vehicle Detection & HERE data
    - Allows for Origin/Destination Travel Times
  - Law Enforcement and 911 Agency Interaction
    - Computer Aided Dispatch feeds from multiple agencies
    - Dispatch Radio for Tuscaloosa County 911
    - Alabama Law Enforcement Agency Radio

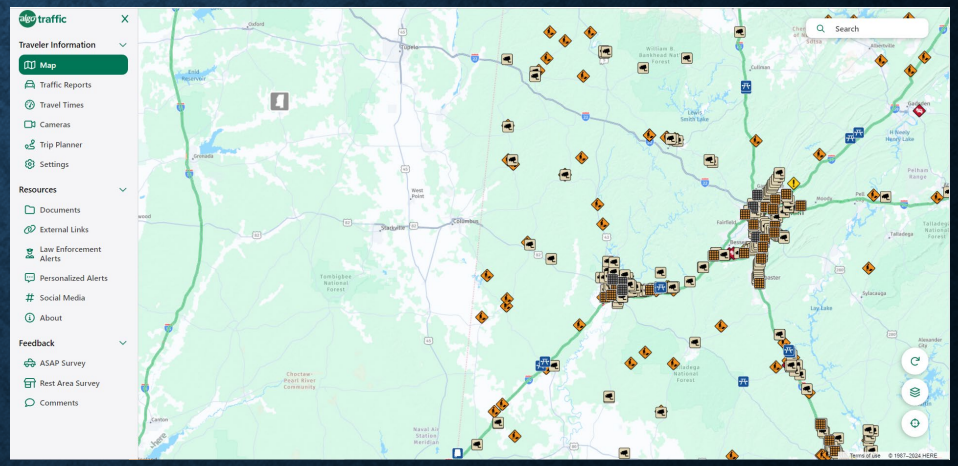
TUSCALOOSA TRAFFIC MANAGEMENT CENTER

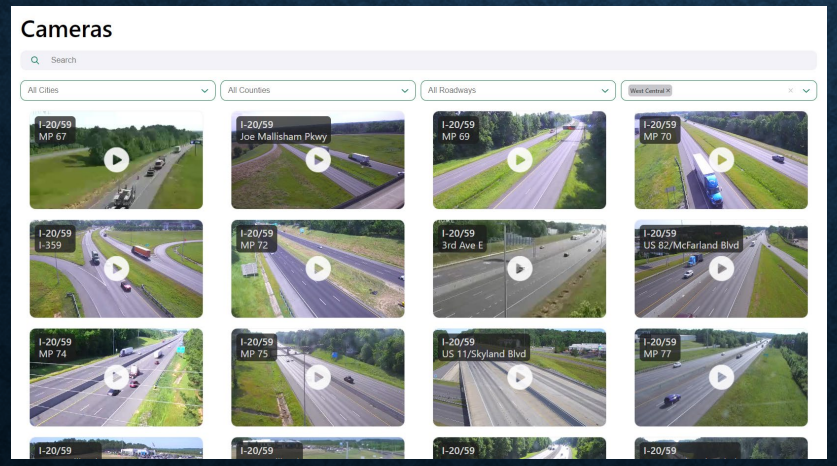
- Other Resources Used to Manage and Monitor Roadways
  - Social Media
  - Media Outlets
  - Crowd-Sourcing Data
  - Speed Data
  - Speed Maps

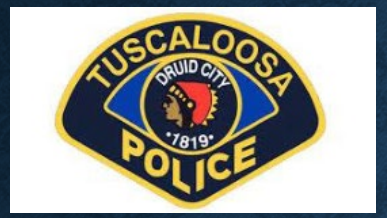


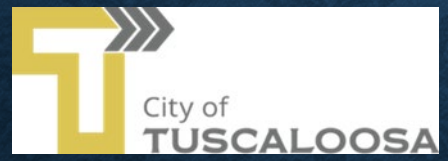
ALGO TRAFFIC

- Developed by UA Center for Advanced Public Safety
- 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
- NWS Alerts
- Travel Times
- Trip Planner









TUSCALOOSA RTMC PARTNERS

ALABAMA SERVICE AND ASSISTANCE PATROL

- Started in Spring 2018 in Tuscaloosa
  - Has been running in Mobile and Birmingham for several years
- Actively patrols Tuscaloosa and Chilton Counties
  - Operating hours
    - Monday thru Friday 6:00 AM to 10:00 PM
  - I-20/59 Mile Post 68-100
  - I-65 Mile Post 200-219

ASAP

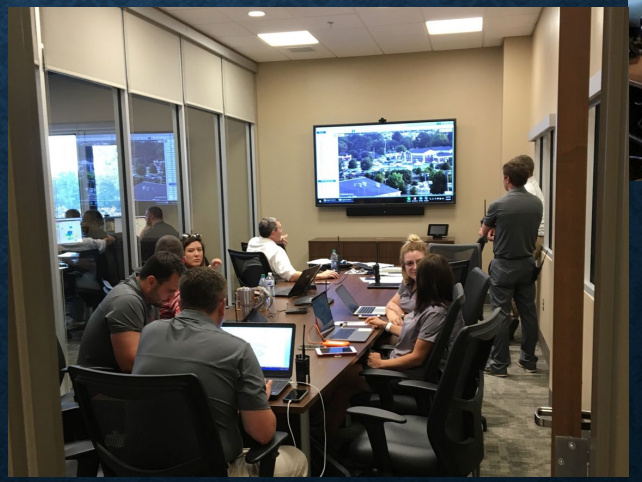
ALABAMA SERVICE AND ASSISTANCE PATROL

- Services offered:
  - Temporary traffic control
    - Wrecks or Disabled Vehicle
  - Flat tires
  - Dead Battery
  - Overheating
  - Out of gas
  - Contacting a Towing Company
  - Minor Mechanical Repairs
  - Ability or relocate vehicles if needed

GAMEDAY OPERATIONS

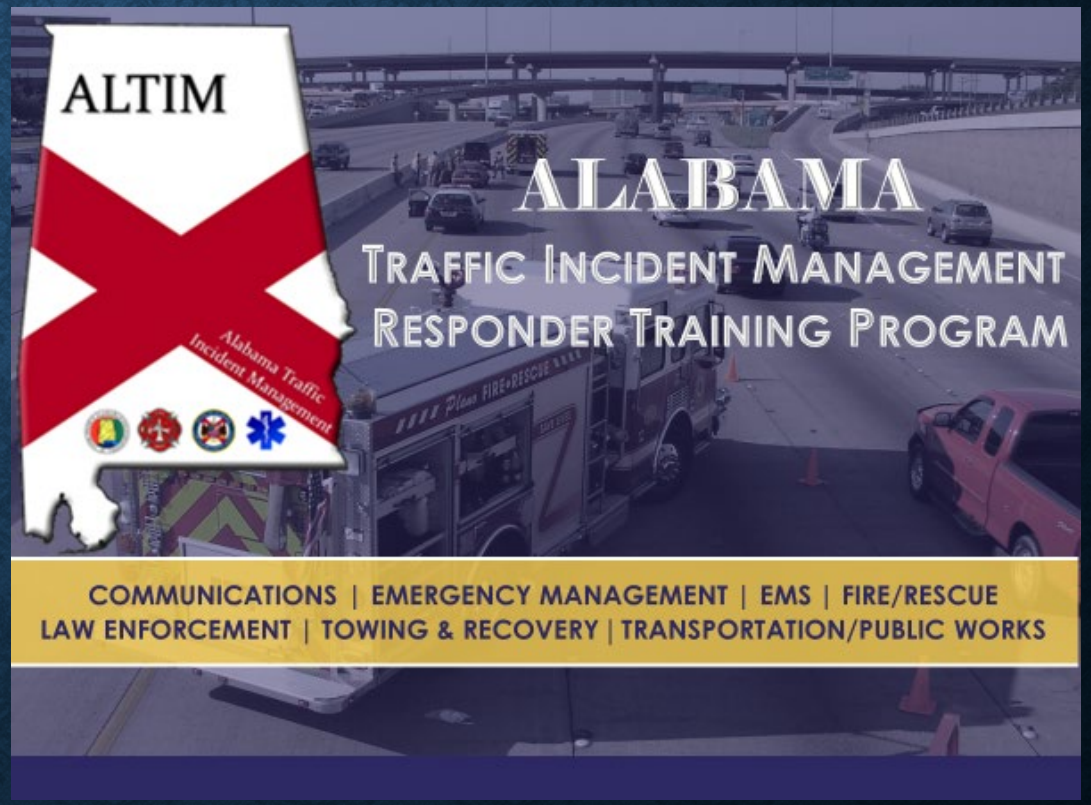
- Begin 4 hours before kickoff for Ingress
  - Signal timings changed
  - DMS Directing Fans to the fastest route
  - Road closures entered Algo Traffic populated
  - Constant Communication with Event Team

- Post Game Operations begin after halftime
  - Signal Timings changed to expedite egress of the stadium
  - All agencies represented for post game
    - ALDOT
    - Tuscaloosa and UA Police
    - UA Parking Staff
    - Eventive Sport Event Management Team
  - Average Egress time 1hr 47 min



TRAFFIC INCIDENT MANAGEMENT RESPONDER TRAINING

- TIM: Consists of a planned and coordinated multidisciplinary process to detect, respond to, and clear traffic incidents so that traffic flow may be restored as safely and quickly as possible
- Effective TIM:
  - Improves the safety of emergency responders, crash victims, and motorists
  - Reduces the duration and impacts of traffic incidents



QUESTIONS/ COMMENTS

For more information:

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