

Regional Traffic Operations Program (RTOP)

The Alabama Experience

**Presented by Kerry NeSmith, P.E.
Senior Transportation Engineer--Arcadis
TSITE Summer Meeting, July 27, 2022**

TS – Regional Traffic Operations Programs (RTOP)

Regional Traffic Operations Programs (RTOP) are collaborations of State, regional and local agencies that work to address the design, maintenance, management and operation of traffic signals across multiple jurisdictions. RTOPs may be organized formally or informally and generally adopt an organizational structure and engage in activities that are relevant to the needs of the region to address mobility issues on arterial street networks. A typical activity of RTOPs is planning for and providing funding or technical assistance to coordinate the operation of traffic signals on arterial roadways across jurisdictional boundaries. RTOPs provide for consistency in the management, operations and maintenance of multiple jurisdictions by leveraging regional expertise and facilitating regular forums to discuss technical issues and share good practices. Organizations involved in RTOPs generally receive more funding for capital improvements and ongoing support for operations and maintenance activities aimed at achieving regional objectives. Organizations that work collaboratively to align their goals and objectives with regional planning objectives tend to compete more effectively for limited transportation dollars. Regional collaboration offers significant benefits, and this report focuses on overcoming the barriers that hinder regional traffic signal operations programs. These barriers are not technological but rather institutional, organizational, and budgetary. Diminishing resources both hinder and necessitate the cohesiveness of traffic signal systems. However, specific examples of benefits include:

- Operating agencies increase access to funding by participating in joint funding applications.
- Agencies undertake larger, more technologically advanced projects by leveraging their expertise and resources with other agencies.
- Participating agencies help meet regional goals to reduce delay, fuel consumption, and emissions through coordinated initiatives, such as signal timing programs.
- Partners share communications assets to save resources and raise their collective ability to manage traffic on a regional level.
- Multi-agency collaboration has enabled the creation of joint dispatching that has resulted in decreased response time to requests for field assistance from partnering agencies.

“RTOP is a more detailed, hands-on approach to achieve better operations and maintenance of traffic signals”

Kerry NeSmith, (the NeSmith English version)

- **“RTOP is the most significant thing in traffic operations in 30 years!”**





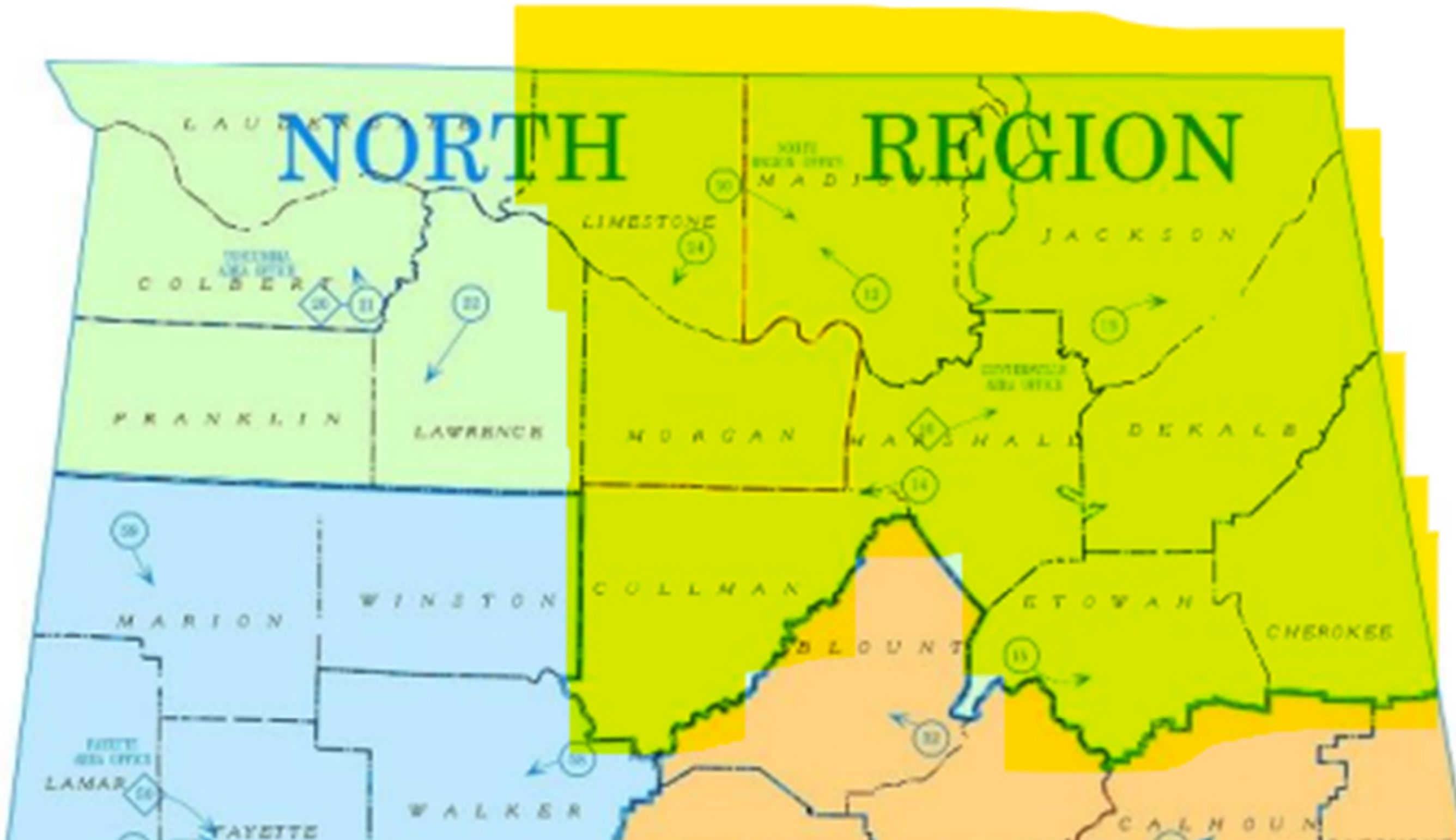


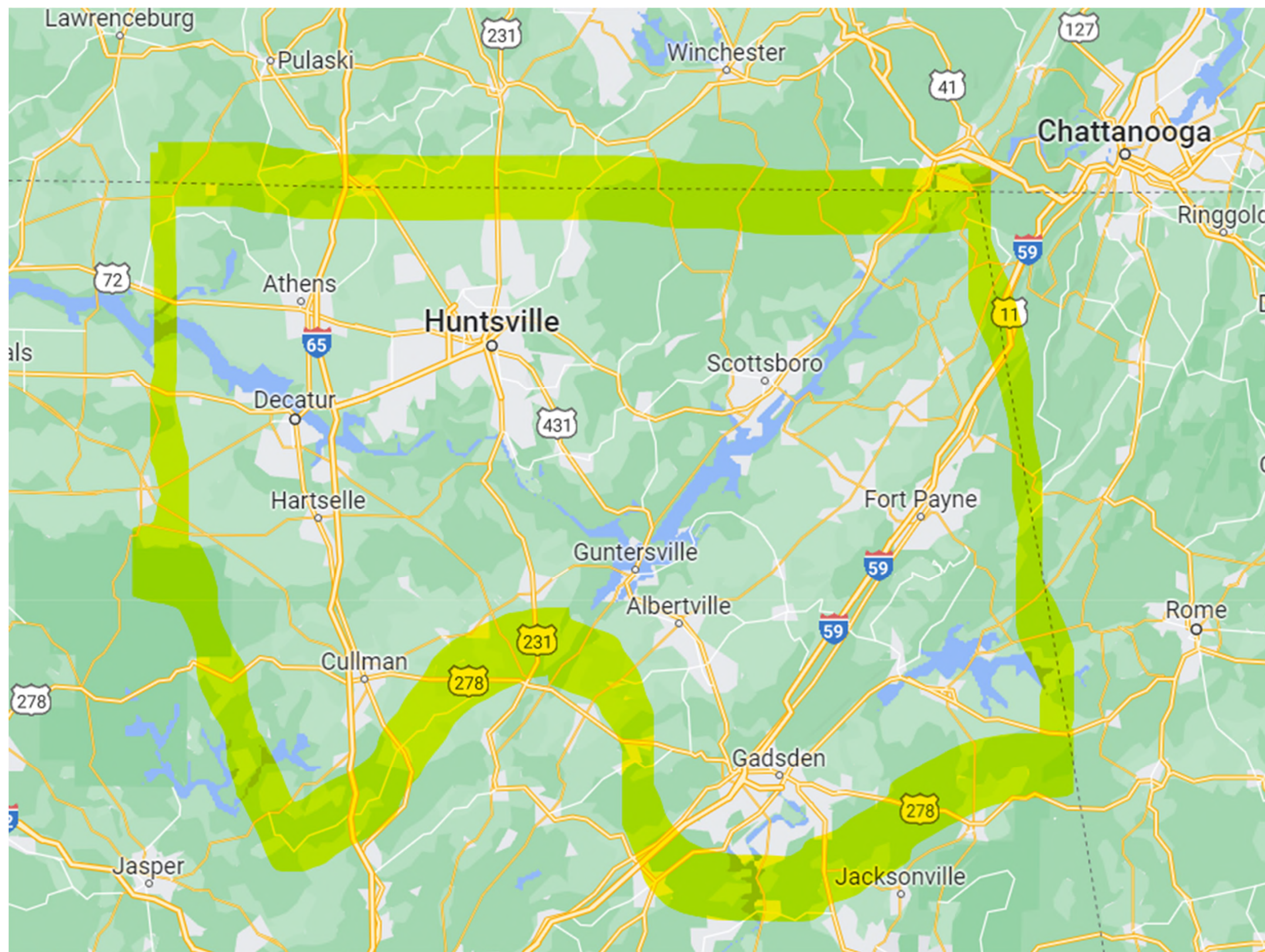
But that's not how we've always done it!!!

- Install signal
- Locals sign maintenance agreement
- Signal goes 'Green, Yellow, Red'....24/7/365
- Everyone's happy
- In event of fire, famine, breakdown, collapse, etc., someone will respond....eventually
- If part of a coordinated system, every 3, 5, 7, XX years we retune our signals.....maybe
- Everyone's happy???

A little bit about me....

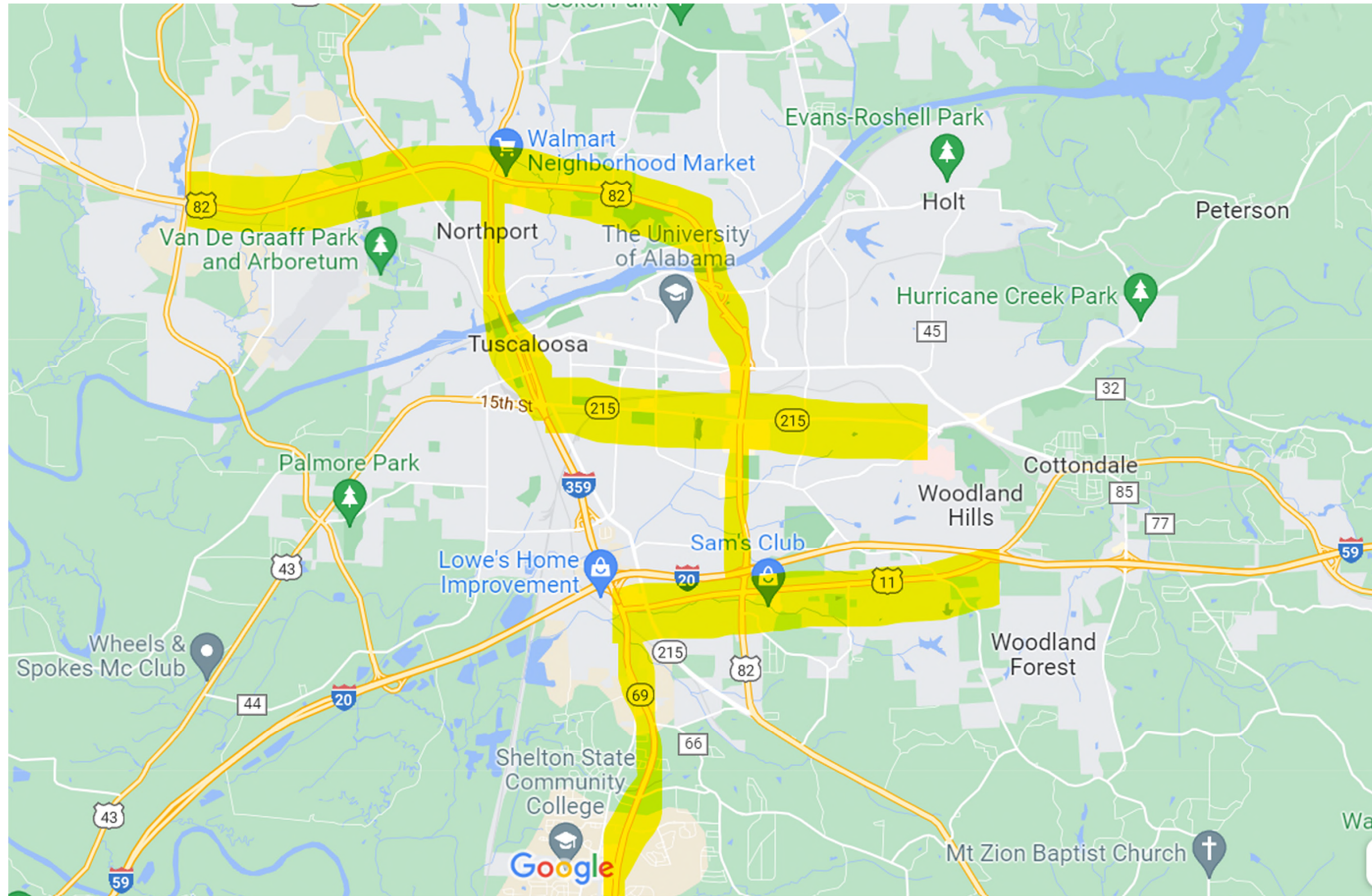
- 3 years municipal work 1988-1991
- Started at ALDOT in 1991
- Promoted to Division Traffic Engineer 1994





RTOP Past

- November 2013: Transitioned to State Traffic Engineer
- 2014 visit from consultant
- 2015 Promotion to Deputy State Maintenance Engineer and creation of TSM&O Section
- 2018 kickoff West Central region
- Consultant onsite May/June 2018
- Immediate results



RTOP in the West Central Region--Tuscaloosa

- Tuscaloosa-Northport US 82 (McFarland Blvd), US 11 (Skyland Blvd), SR 69, 15th Street/University Blvd
- Jasper, Haleyville, Clanton (lite version)
- Fayette, Gordo, Reform, Sumiton, Eutaw, Hamilton, Winfield, Brent, Centreville, Woodstock, Jemison, Thorsby, Greensboro, Moundville, Livingston, York....all online and monitored!!!
- Combined with UA's Automated Traffic Signal Performance Measures to hit a homerun!

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%

That's great...but then what do we do next?

- Approach Deputy Director for Operations
- Request to continue the program.....AND (gasp) seek to expand to other regions!

Which are we going to choose???



RTOP past

2014 visit from consultant

2018 kickoff West Central region

Presentation on 'State of the State of RTOP' at Alabama Road Safety Conference in September 2019, lots of interest and questions about 'how do we make it happen'? No answers then....why?

Limited funding available, struggling to keep West Central program going; BUT that all changed

Meeting with DTA November 12, 2019

'Tuscaloosa epiphany' December 6, 2019 (NOTHING to do with football!!)

Meeting with DTA December 18, 2019

'Green light' for a statewide TSM&O program, RTOP as a KEY component!

ALDOT and the City of Mobile partner to reduce delays along the US-90 corridor in Tillman's Corner

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— MOST POPULAR —

MOBILE, Ala. --The Alabama Department of Transportation (ALDOT) partnered with the City of Mobile on a traffic signal improvement project to reduce delays along US-90 in Tillman's Corner from Swedetown Rd. to just north of Lowe's at the US-90 West Service Rd.

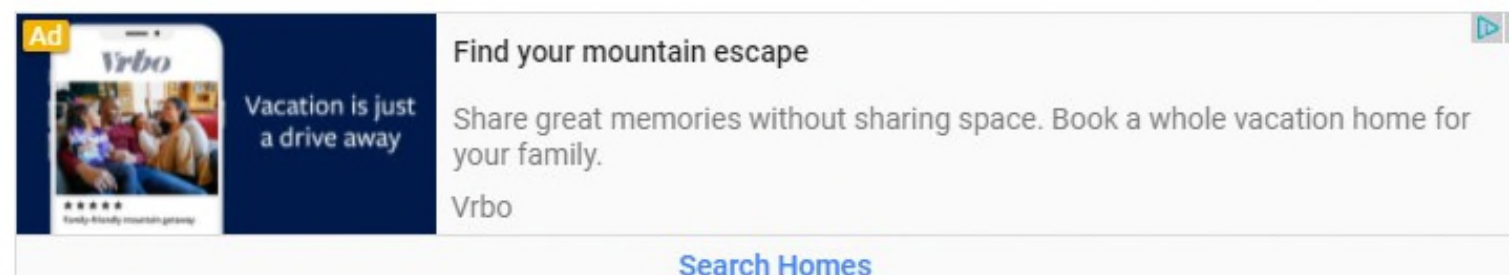
This 4-mile stretch of roadway carries up to roughly 27,000 motorists per day and includes seventeen traffic signals.

Prior to the project, drivers often experienced delays along this corridor year- round.

The City of Mobile, who owns and maintains these signals, worked with ALDOT and the consulting firm Kimley Horn to make the changes and implement new timing plans.

PREV According to ALDOT, the traffic signals are now coordinated together to allow for more signals to be green at the same time.

Although work was recently completed, early indications show that travel times have been reduced anywhere from 15% to as much as 50%, depending on the time of day, over the entire 4-mile segment compared to prior travel times.



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Additionally, early indications also suggest a significant improvement in route reliability. This means motorists can now expect to have similar experiences with travel times throughout the day which aids a motorist in planning their trips.

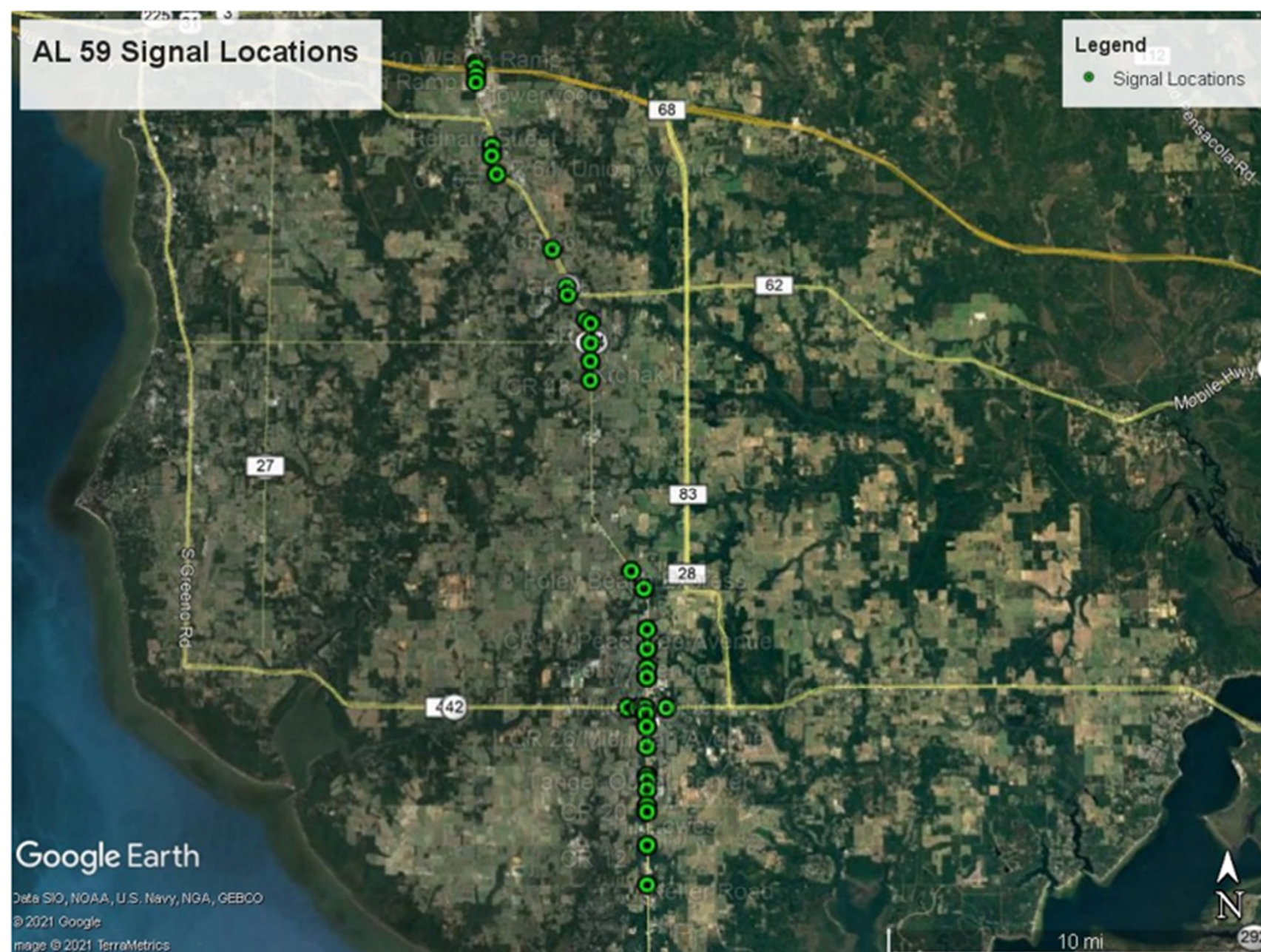
AL 59 – Summer Re-timing Results

- Updated timings implemented at 18 intersections in Foley and 10 locations in Loxley and Robertsdale
- New equipment installed in Foley on **Tuesday May 25th 2021**
- **New Plans:**
 - 120s cycle plans utilized for weekdays
 - 180s cycle plans used as needed during heavy weekends

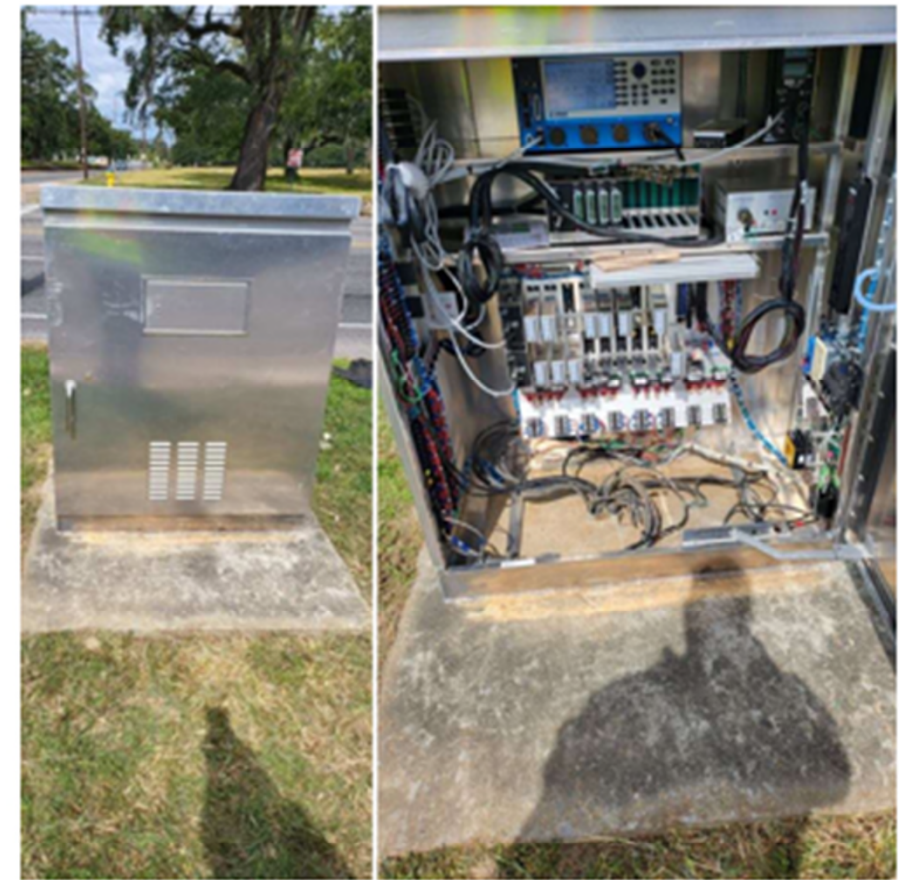
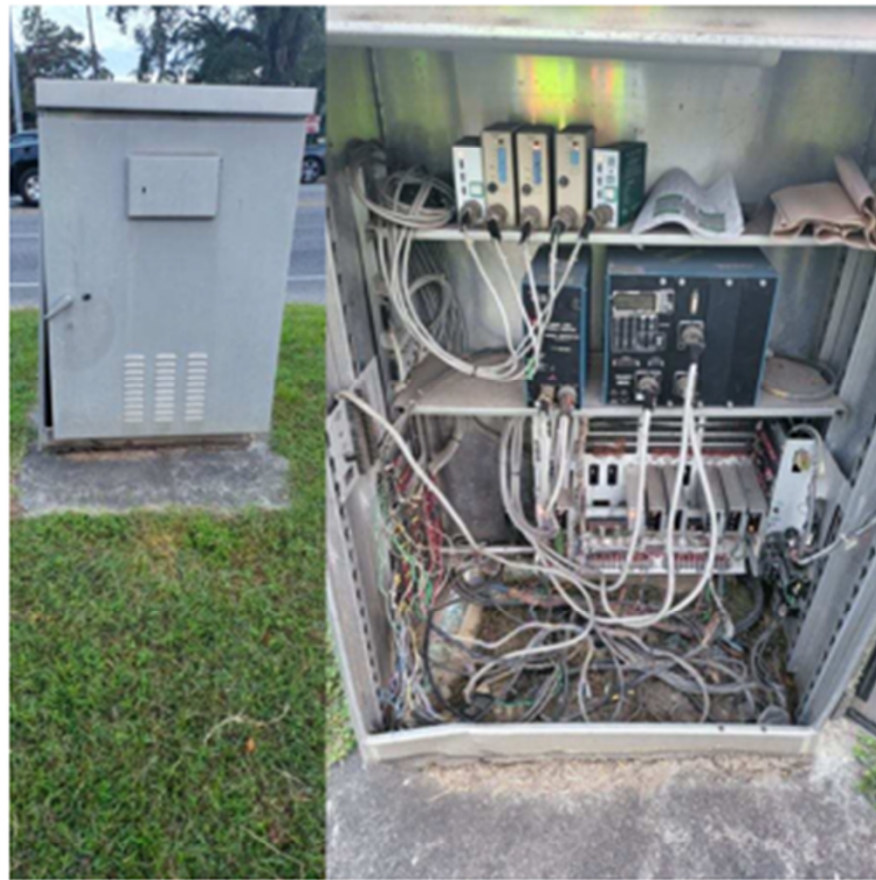
Old



New



New Hardware



So what does it take to have a successful RTOP?

- Local champion (mid-level)
- Support from the top (James Brown.... “I feel good!”)
- Buy-in/agreement/collaboration from external stakeholders
- Someone who’s not on their first rodeo (Gotta win that first one!)









So what does it take to have a successful RTOP?

- Local champion
- Support from the top (James Brown....I feel good)
- Buy-in/agreement/collaboration from external stakeholders
- Someone who's not on their first rodeo
- \$\$.....(How much?)
- Dedicated resources (not an Area/Region/District Traffic Engineer)...Why?
- New positions created!
- Commitment to sustainability

RTOP Cost

Year 1 - \$935,250

- **ARCADIS Contract**
 - \$605,250
- **Signal/Communication Upgrades**
 - \$330,000

Year 2 - \$615,000

- **ARCADIS Contract**
 - \$515,000
- **Signal/Communication Upgrades**
 - \$100,000



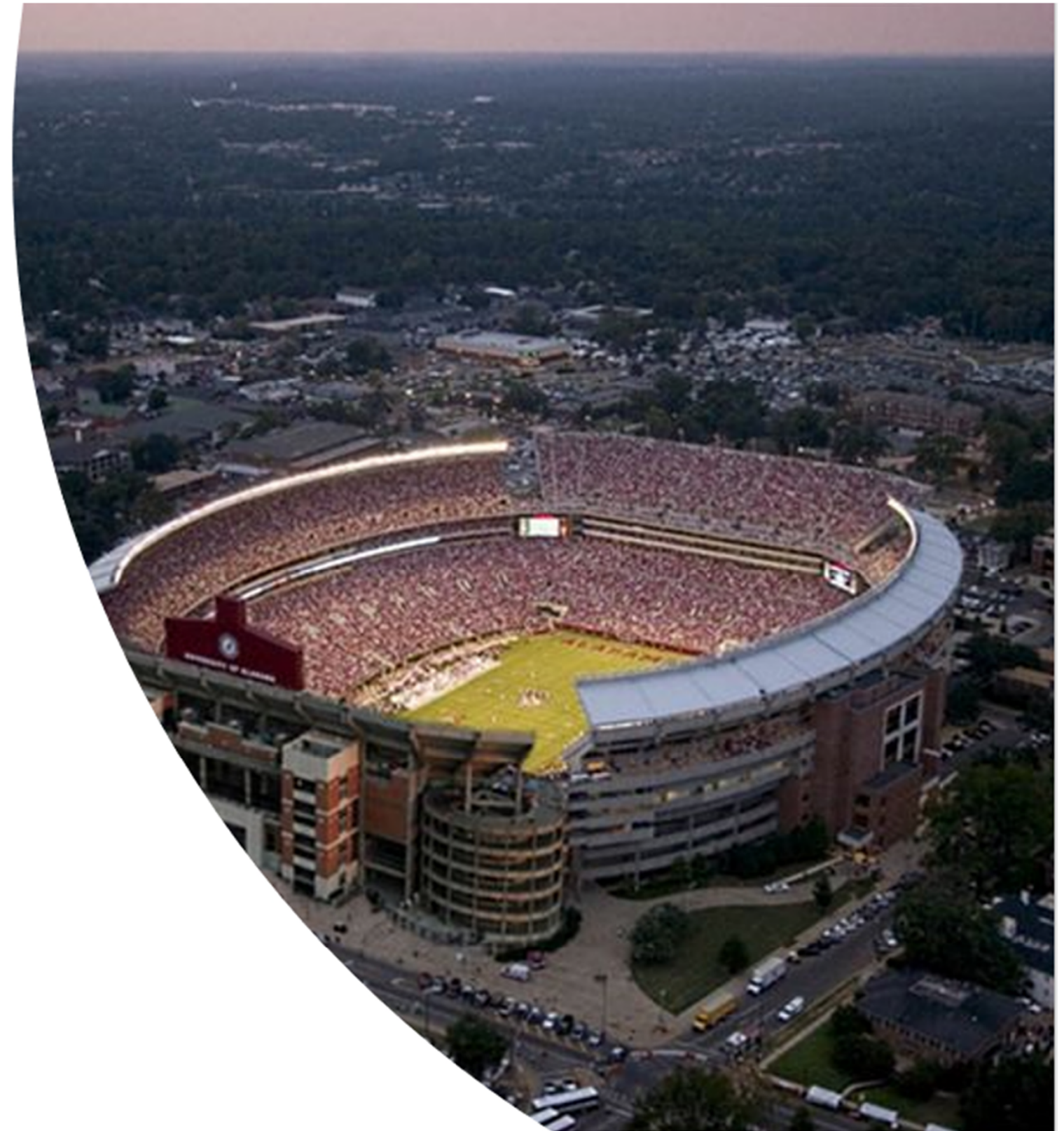
Statewide Expansion

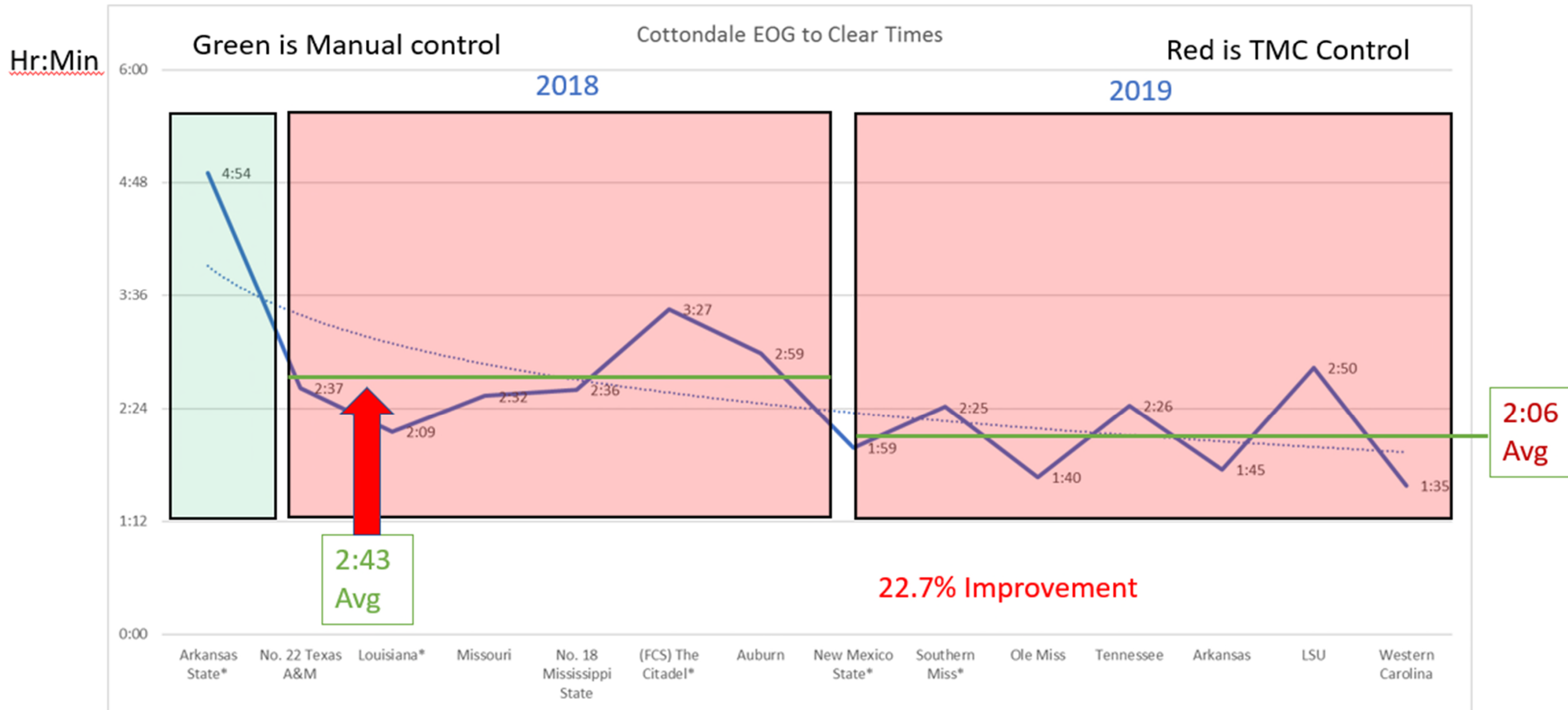
Funding Year	Region	Program Length (years)	# of Signals	Funding Allocated
FY 2021	West Central	2	107	\$ 588,500
	Southeast	5	118	\$ 2,388,320
	Southwest	5	130	\$ 2,631,200
FY 2022	East Central	5	313	\$ 6,335,120
FY 2023	North	5	187	\$ 3,784,880

**Take it to a higher level—Event
Management!!**

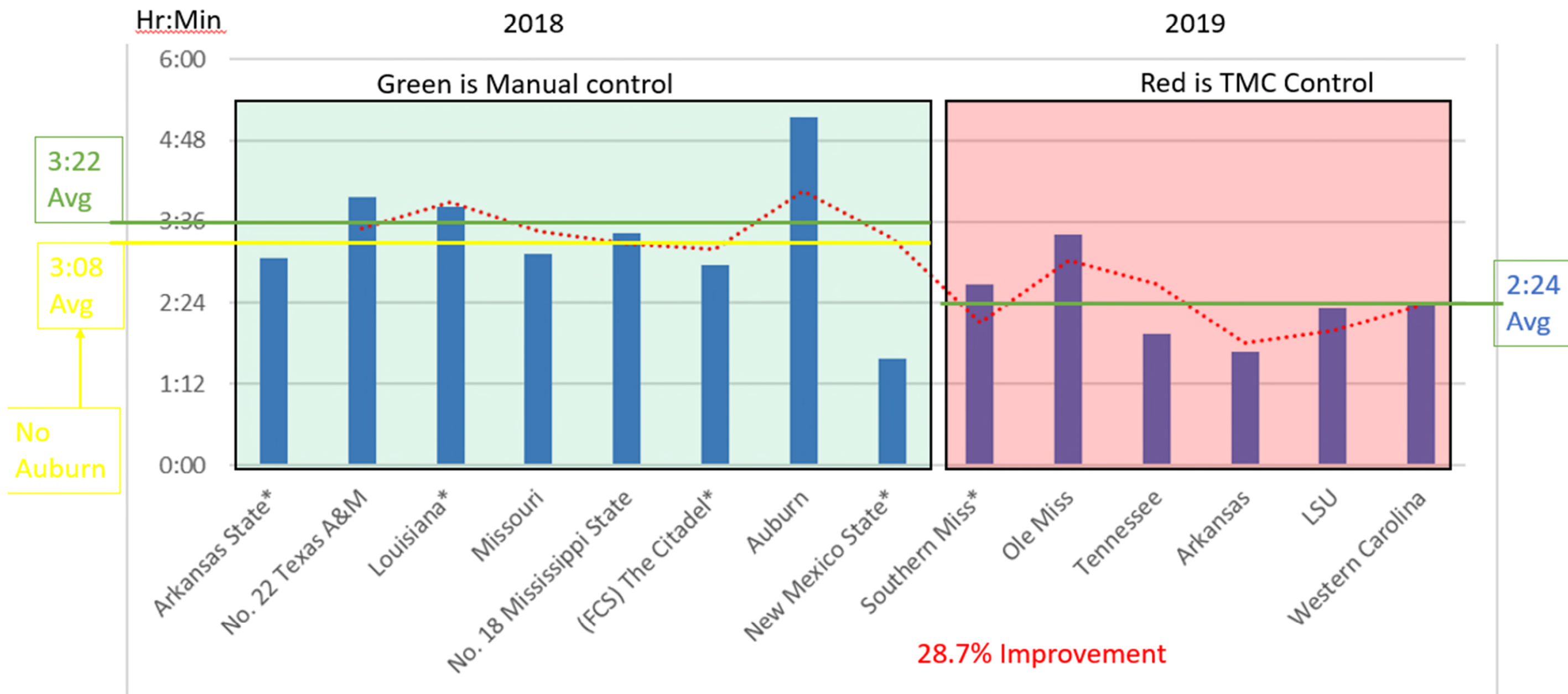
UA Gameday Operations

- 7 - 8 Home Football Games per year
- 101,821 Fans
- Up to 50,000 outside the stadium

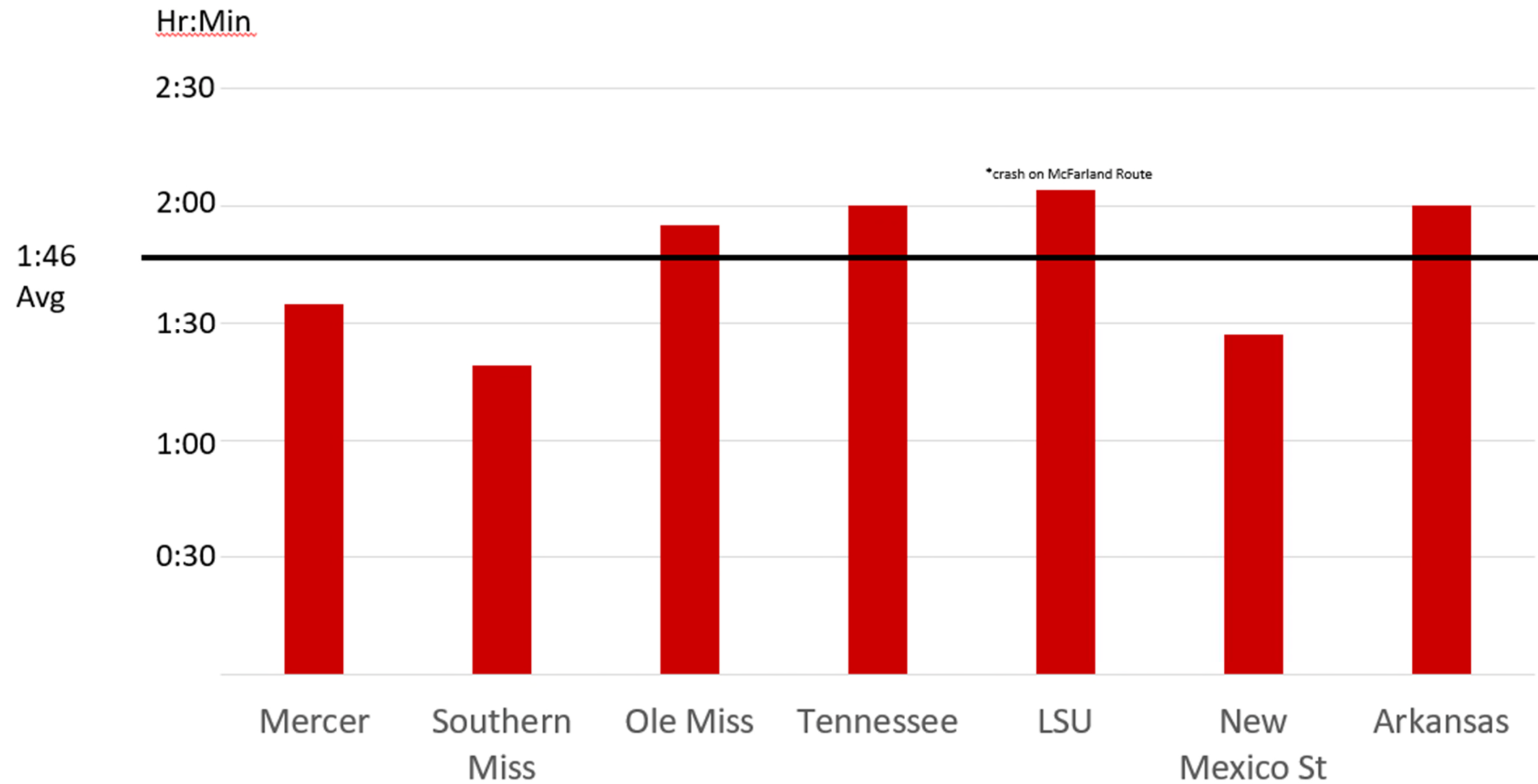




McFarland Route Clearance Times



2021 End of Game to Clear Times



What tasks comprise an RTOP???

Preventive maintenance/inspection and assessment

Develop and implement updated timing plans

Pick the low hanging fruit (new timings; communication/detection, and hardware repairs, installs and upgrades)

Hands-on operation/management

Real-time response to incidents with diversion plan implementation

RTOP future Challenges!!

- Bringing skeptics into the family (Montgomery, Auburn, others)
- Sustaining the program, **don't be like the Braves!!! We're at risk of doing that!** (funding, personnel, culture, continue the wins)
- Central software
- Poor access management practices, bad drivers (left lane, slow response or drag racers; 'accordion driving'; hopefully drivers adapt)
- Details (Timings/settings, **Detection, detection, detection; Helen**)

RTOP future Opportunities

- Expand program to improve quality of life for more road users
- Realize operational benefits and document those
- Realize safety benefits and document those
- Research opportunities on extending pavement life? Does fewer stops mean less wear and damage to pavements therefore can we get extra pavement life before resurfacing???
- Local agencies wanting to join in (Large county interested!)







Contact information



Kerry NeSmith, PE

Senior Transportation Engineer

Kerry.nesmith@arcadis.com

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