Typical Signal Operations

- Perform existing conditions travel time runs
- Take counts
  - Done while school is in on typical weekday
  - Turning movements at each intersection and tube count to establish progression direction and TOD change points
- Build model
- Develop timings
- Implement timings
- Fine tune timings in the field
- Perform post implementation travel time runs
- See you in 3+ years

Typical Maintenance Operations

- Maintenance agreements
- Varies from location to location
  - In-house
  - Contractor
  - Combination
- More with less
- Little, if any preventative maintenance performed
- Reactive

So....what is RTOP?

RTOP is a multi-jurisdictional cutting edge signal timing program with the goal of improving traffic flow and reducing vehicle emissions through improved signal timing. RTOP also assists local jurisdictions to quickly find and repair problems. RTOP will be able to remotely monitor all corridors which will allow quicker response times to repair signal problems.

— GDOT

RTOP High Level Tasks
- Inventory & Maintenance
- Modeling & Signal Timing
- Lime Support
- Stakeholder Meetings

Collaboration Stakeholders

City of ………
- Traffic Engineering
- IT
- Police

ALDOT
- Traffic Engineering
- Regional Traffic Management Center (RTMC)
- IT
- TSMO / Region Signal Operations Engineer

Central Consultant

How we view the transportation network

- See the network as our customers see it
- A central manager working for the good of the area
- Willing personnel at the blocking and tackling level
- Solving challenges together
So….what are our obstacles?

• Limited connectivity
• Multiple equipment manufacturers
• Age of equipment
• Staffing
• Knowledge (engineering & technical)
• Funding
• Stakeholder fears

So…..what do we do?

RTOP model from Georgia
Pilot the program in an area
Begin instilling a collaborative culture
Illustrate a positive ROI
Expand the footprint
Develop talent

Our Start....

• Tuscaloosa Pilot
  • Special maintenance funds
  • Started April 2018
  • 174 intersections touched
    • 135 Urban (Tuscaloosa/Northport)
    • 39 Rural (Jasper, Clanton, Livingston)
  • CV Pilot

Success in Tuscaloosa

• 4 minutes saved per trip
• 2,350 minutes saved per day
• $45,800 saved in time (average wage) per day
• $17,025 dollars in fuel savings per day
• All representing $15.8 million in time and fuel savings per year

So....how do we get it going?

• TSM&O Capital Program efforts
  • Made available for implementation
  • Tennessee DOT visit to Tuscaloosa 12/6/19
  • Secured hybrid investment 12/18/19
  • Put together SCOM consultant selection interviews held 10/20/2020
  • 3 consultant teams submitted
    • Arcadis, Kimley Horn, Sain, Skipper
    • AECOM: Fage Design, Atkins, CH2M, LRS
    • Gresham Smith: Atkins, Wilbourn,Neal,Schaffer, WSA Lung

Region Selections

• North Region: Arcadis
• West Central: Arcadis
• East Central: Arcadis, Gresham Smith
• Southeast: Arcadis, AECOM
• Southwest: Arcadis, AECOM

State of the Regional Traffic Operations Program in Alabama
So...where are we?
West Central Region / Arcadis
- FY 22 is YR 5, consultant effort ramping down
- Maturing goal is to maintain system reliability
  - Tracking performance measures on ROS
  - Gameday management efforts
  - Plans for interstate detours
  - Continued assistance in preventative maintenance

So...where are we?
East Central Region / Arcadis
- Initial cabinet PM's performed
- Extended coordination on US 280 through Chelsea
- Working timings on US 11 W in Bessemer/Midfield
- Developing new timings for AL 75
- Repair existing (Irondale) and input new (Leeds) coordination US 78 E
- Repaired existing timings US 31 N
  - Buddha Lake/Gardendale
- Awaiting hardware order to arrive

So...where are we?
East Central Region / Gresham Smith
- US 78 W and US 31 S
- Completed stakeholder meetings
- Completed field assessments/some minor repairs
- Recalculated clearance intervals
- Submitted repair needs to local agencies
- Compliant resolution
- Awaiting hardware order to arrive

So...where are we?
Southeast Region / Arcadis
- Wetumpka, Millbrook, Prattville, Hope Hull
  - US 231, AL 14, Cobbs Ford Rd, US 31
- All cabinets have received multiple PM's
- Various controller upgrades
- Various communication installs/updates
- Majority of signals have weekday and weekend timing plans installed
- Assisting in training Region Signal Engineer

So...where are we?
Southeast Region / AECOM
- Montgomery
- 65 intersections, 14 implemented
- Completed equipment inspections
- Completed a feasibility study of SCATS
- Still working with City of Montgomery to get program off the ground.

So...where are we?
Southwest Region / Arcadis
- Baldwin county routes
  - AL 59, 180, 181, US 98
- Updated signal databases
- Submitting documentation
- Responding to citizen complaints as needed adjustments
So...where are we?
Southwest Region / AECOM
- Mobile county routes (281 intersections)
  - 44 implemented as of 2/9/2022
  - US 90, 98, 45, 43, AL 158, 21, 163, 16
- Great collaboration with Mobile City and County
- Improved equipment, improved travel times
- NYS 2021, Mardi Gras 2022

So...where are we?
North Region / Arcadis
- Huntsville, Madison, Boaz, Albertville, Guntersville, Decatur, Athens, Florence, Priceville, Cullman.
- FY 23
- Etowah County (reallocated funds)
- Secured some funds to begin early, identifying routes based on funding now

So...where do we go from here?
- Continue to add municipalities
- Continue to upgrade equipment
- Continue to foster collaborative environments
- Tell our story
  - Traveltime reductions
  - Traveltime reliability
  - Equipment upgrades
- Fill Region Signal Engineer positions and develop them
- Look for opportunities to expand ITS (efficiency)
  - CDL
- Strengthen TM efforts

Summary
- Regions submitted routes for evaluation in customized prioritization tool
- Need for Services advertised and team selections made
- Funding made available through TSM&O capital program
- Work currently underway in Mobile, Montgomery, Birmingham, and Tuscaloosa (inventories, stakeholder meetings, early wins, equipment upgrades)
- Building stakeholder collaboration
- Establishing / expanding communications / building comm resiliency
- Securing a statewide signal software system
- Created Region Signal Operations Engineer positions

Thank You
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