Georgia Department of Transportation

GDOT TRAFFIC SIGNAL PROGRAM OVERVIEW

88
traffic signal staff and 70 consultants

5,445
traffic signals

17,926
miles of roadway

$65M
annual traffic control program budget

TRAFFIC SIGNAL SYSTEMS CAPABILITY MATURITY SELF ASSESSMENT

	Level 1 Ad-Hoc, High Risk	Level 2 Established, Risk Acknowledged	Level 3 Measured, Managed Risk	Level 4 Managed, Low Risk
Business Processes			✓	
Systems and Technology			✓	
Performance Measurement				✓
Organization and Workforce				✓
Culture				✓
Collaboration				✓

Traffic Signal Systems Capability Maturity Self-Evaluation Tool: https://ops.fhwa.dot.gov/tsmoframeworktool/tool/tssc/

ATSPM CAPABILITY

GDOT partnered with the Utah Department of Transportation to leverage their experience deploying ATSPM. GDOT's ATSPM deployment follows the same basic architecture used in Utah and features a public-facing website (https://traffic.dot.ga.gov/ATSPM/) to make data and analysis readily available. Data collected by the ATSPM system allows GDOT to better manage the operations and maintenance of signals. GDOT's traffic engineers can use data visualizations from the ATSPM system to answer questions like, are green times appropriate, or did a retiming project completed by a consultant team produce a benefit to the system. GDOT also uses ATSPM data when developing alternate routing plans for events and emergencies. For example, ATSPM tools helped to develop routing and adjust signal timing to address the 2017 I-85 bridge collapse in Atlanta.

Publicly available data on the GDOT ATSPM site includes:

- Approach delay
- Approach volume
- Arrivals on red
- Coordination diagram
- Purdue split failure
- Pedestrian delay
- Preemption details
- Phase termination
- Speed
- Split monitor
- Turning movement counts
- Yellow and red actuations

Photo Credit: GDOT

"Having eyes on the entirety of our large system has been pretty much impossible. But with the introduction of ATSPM, we have a snapshot of the health of our entire system and the ability to quickly diagnose and focus resources across the whole system."

Alan Davis
Assistant State Traffic Engineer, GDOT

U.S. Department of Transportation
Federal Highway Administration

ATSPM SYSTEM MATURITY

GDOT shares responsibility with local agencies for the operation of 6,500 of the State's 9,500 signals. Of the GDOT-maintained signals, 3,862 are logging high-resolution data on the ATSPM site. With over 59 percent of signals that GDOT owns or shares operational responsibilities reporting high-quality data, GDOT uses ATSPM as its primary tool to improve operations and manage maintenance

ATSPM IMPLEMENTATION

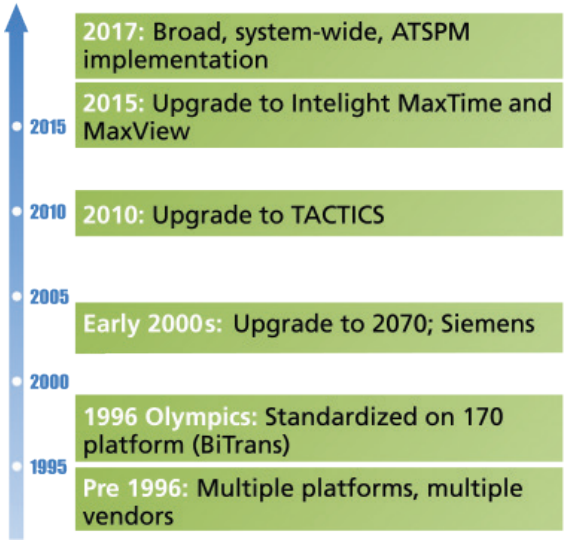
GDOT uses the Open Source ATSPM management software developed by UDOT. GDOT utilized an in-house workforce to install, configure, and monitor the performance data provided by the ATSPM system. To enable ATSPM capabilities on its signals, GDOT upgraded CPUs in the existing 2070 controllers. GDOT also invested in development of documentation to support installation and configuration of the open source software. Upgrading existing technology accelerated deployment and enabled the ATSPM-capable signals to retain the same 2070 architecture that is common to 99 percent of signal controllers in the State. Additional detection equipment was installed at specific intersections to enhance data collection capabilities.

Photo Credit: GDOT

"With ATSPM, we can now aggregate information to a level where we understand how the system is actually behaving."

Sam Harris
Regional Traffic Operations
Program Supervisor, GDOT

ATSPM SYSTEM EVOLUTION



Recent and ongoing efforts include:

- Integration in signal timing manuals and specifications.
- Consultant performance evaluation based on probe and high-resolution data.
- Pro-active and prioritized effort with signal timing.
- Training and engineering support for local agencies.
- Public portal for historic operational data.

ADDITIONAL RESOURCES

- To learn more, visit https://traffic.dot.ga.gov/ATSPM/ and https://ops.fhwa.dot.gov/arterial_mgmt/performance_measures.htm
- More information on Automated Traffic Signal Performance Measures is available on the Every Day Counts website at https://www.fhwa.dot.gov/innovation/everydaycounts/edc_4/atspm.cfm

For additional information please contact:

Eddie Curtis, FHWA Resource Center, 404-562-3920, Eddie.Curtis@dot.gov

Every Day Counts (EDC), a State-based initiative of FHWA's Center for Accelerating Innovation, works with State, local, and private sector partners to encourage the adoption of proven technologies and innovations aimed at shortening and enhancing project delivery.

U.S. Department of Transportation
Federal Highway Administration