Maricopa County, Arizona

MARICOPA COUNTY TRAFFIC SIGNAL PROGRAM OVERVIEW

24
traffic signal program champions, one per agency

3,000+
traffic signals

5,216
miles of roadway
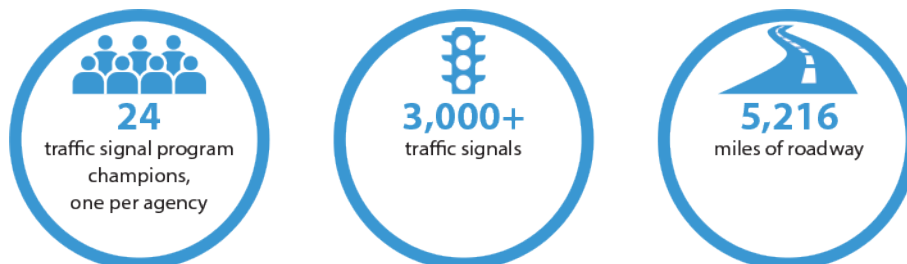
TRAFFIC SIGNAL SYSTEMS CAPABILITY MATURITY SELF ASSESSMENT

	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

Maricopa County plays a leadership role in the 24-member consortium called the AZTech Regional Partnership in Arizona. Members of the partnership represent organizations in the Phoenix metropolitan area and work together under the shared mission of providing seamless transportation across jurisdictional boundaries.
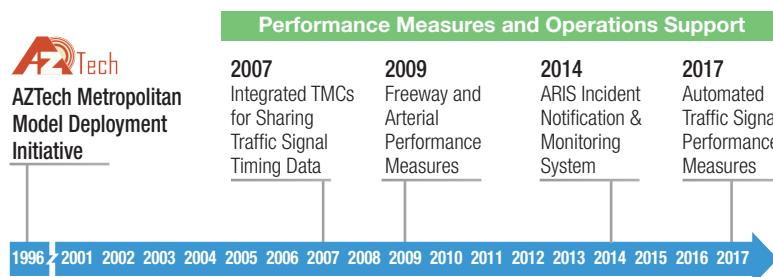
The AZTech Regional Partnership implemented Automated Traffic Signal Performance Measures (ATSPM) in a regional context using Maricopa County's central ATSPM server. The ATSPM server is part of AZTech's Regional Archived Data System (RADS), which is a system for collecting, processing, and archiving intelligent transportation systems (ITS) data from regional and local subsystems and 14 traffic management centers. Maricopa County's deployment approach leverages the existing Maricopa Association of Governments (MAG) Regional Communication Network (RCN) communication infrastructure, minimizing implementation costs and maximizing the availability of the technology for agencies in the region. AZTech ATSPM installations use a simplified detection configuration capable of collecting the following signal performance measures:

- Approach delay
- Approach speed
- Approach volume
- Arrivals on red
- Coordination diagram

- Pedestrian delay
- Phase termination
- Preemption details
- Split failure
- Split monitor

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ATSPM SYSTEM MATURITY

Maricopa County's ATSPM program is part of AZTech's long-term deployment initiative and evolution since the inception of AZTech in 1996. In 2016, Maricopa County launched its regional ATSPM pilot program with 70 signalized intersections (10 signals per jurisdiction). Today, the system integrates 273 signals equipped with high-resolution controllers.

AZTech Metropolitan Model Deployment Initiative

Performance Measures and Operations Support			
2007 Integrated TMCs for Sharing Traffic Signal Timing Data	**2009** Freeway and Arterial Performance Measures	**2014** ARIS Incident Notification & Monitoring System	**2017** Automated Traffic Signal Performance Measures

1996 | 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017

ATSPM IMPLEMENTATION

Jurisdictions that form the Phoenix metropolitan area have pooled resources for ITS collaboration since the creation of AZTech in 1996. AZTech is an operational partnership of regional transportation interests to improve coordination throughout the Phoenix area. The technical expertise of AZTech has enabled ITS deployment across the Phoenix region. Jurisdictions that are home to the AZTech ATSPM systems are responsible for the installation of compatible controllers and detection configuration. AZTech takes responsibility for the consolidation, analysis, and storage of data for its members' ATSPM systems.

Maricopa County has led AZTech in the deployment of ATSPM systems, which are spread across eight jurisdictions. Maricopa County and AZTech used the open source Utah Department of Transportation (UDOT) ATSPM monitoring software to manage information being collected by the ATSPM system. The ATSPM server, which allows ATSPM data signals to communicate to the same server, is linked to AZTech's pooling data from various agencies in the region into one interface. The one-of-a-kind ATSPM system is the outcome of trust and working relationships that have formed and solidified over 22 years of AZTech Regional Partnership collaboration. Furthermore, the Federal Highway Administration (FHWA) ATSPM Peer Exchange provided meaningful learning opportunities for AZTech Regional Partnership partners to gain knowledge about the system.

Photo Credit: Maricopa Co. DOT

"All the agencies involved are impressed that when a citizen complaint arrives, how quickly and easily this tool can help identify the severity of a traffic signal issue, and narrow into its root cause."

– April Wire , PE, PTOE
   ITS Project Manager
   Maricopa County Department of Transportation

Photo Credit: Maricopa Co. DOT

"ATSPM is a helpful tool for getting funding support. Showing good data representations of performance, how specific investments can improve performance, is very convincing to nontechnical audiences."

– Faisal Saleem
   ITS Branch Manager, Maricopa County Department of Transportation

ADDITIONAL RESOURCES

- To learn more, visit http://www.aztech.org/ 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.

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