



ATSPMs modernize traffic signal management by providing high-resolution data to actively manage performance and improve safety and customer service while cutting congestion and costs.

There are more than 330,000 traffic signals operating in the United States, and highway agencies typically retime these signals on a three- to five-year cycle at a cost of approximately \$4,500 per intersection. For the vast majority of these signals, citizen complaints are the primary measure of performance. Not having performance data drives retiming costs up by requiring software modeling to simulate performance, along with detailed, manually collected traffic data.

When agency professionals and consultants conduct retiming projects, they perform an ad hoc comparison of limited before and after travel-time data to demonstrate the effectiveness of optimization efforts. Typically, no ongoing performance

measurement capability exists, and agencies rely on citizen complaints to reactively detect maintenance or operational deficiencies. This lack of active performance management compromises safety and efficiency and contributes to congestion. It also institutionalizes public dissatisfaction with the operation and maintenance of signalized intersections.

The Federal Highway Administration (FHWA) is promoting automated traffic signal performance measures (ATSPMs) in the fourth round of Every Day Counts (EDC-4) as a means to improve on these traditional retiming processes by providing continuous performance monitoring capability. Signal retiming efforts can be based directly on actual performance without dependence on software modeling or expensive, manually collected data.

ATSPMs consist of a high-resolution data-logging capability added to existing traffic signal infrastructure and data analysis techniques. This provides agency professionals with the information needed to proactively identify and correct deficiencies. They can then manage traffic signal maintenance and operations in support of an agency's safety, livability and mobility goals.

The technology is cost effective, as ATSPMs can be applied to a wide range of signalized intersections and use existing infrastructure to the greatest extent possible. ATSPMs will also support the validation of other technologies and operational strategies, such as adaptive signal control and emerging connected vehicle applications.



ATSPMs make it possible to preserve the best possible traffic signal operation, rather than replacing noticeably failing operation at infrequent intervals.



