



Adaptive Signal Control



For weekdays, ASCT in Phoenix, AZ saved **\$9,500 to \$25,900 in operations costs** and **20 to 51 percent savings in travel time.**

Source: [NOCoE \(2020\)](#)

ASCT at Maine's busiest intersection was estimated to **reduce intersection delays by 20 percent.**

Source: [NOCoE \(2019\)](#)

Adaptive signal control technologies (ASCT) help manage throughput and improve average travel time, control delay, emissions, and fuel consumption. ASCT is particularly effective on arterials with variable traffic demand.

Types of ASCT

Adaptive Control Software Lite (ACSLite) is just one example of ASCT which was developed through a public-private partnership with the FHWA. With this type of technology, traffic sensors collect and evaluate data to implement signal timing updates every few minutes. Traditional signal retiming technology may update every 3-5 years via manually collected traffic data ([FHWA, EDC-1](#)), so the adaptive system can be a massive improvement, as shown in the benefits highlighted on the left.

ASCT Facts ([FHWA, EDC-1](#))

- In the United States, ASCT are used on less than 1% of all signalized intersections.
- Barriers can include cost, complexity, uncertainty about benefits, and overhead associated with traffic detection and communications between traffic signal system components.
- Some systems provide an entire system solution evaluated on a second-by-second basis; other systems evaluate and optimize each individual signal on a cyclic basis.

Highlighted ITS Benefits

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