**Description**

Signal operation and management are among the most common, convenient, and cost-effective ways to reduce congestion. Signal operation and management can:

- Improve street efficiency.
- Temporarily improve a street during expansion.
- Assist with roadwork or special event transportation.

Two main signal improvement types increase travel speed, reduce stop-and-go traffic, and increase intersection capacity:

- Upgrading signal equipment—newer equipment can be quickly adjusted to reduce congestion.
- Improving signal timing and coordination—giving main traffic flows enough green time when they need it to reduce backups.

Newer signals learn from historical and real-time patterns. They automatically re-time and coordinate themselves to the most efficient plan. Coordinated signals have reduced delay by up to 40 percent and increased traffic volume by up to 60 percent.

**Target Market**

- Local and major streets.
- Major activity centers and downtown areas.
- Roadwork and special events.

**How Will This Help?**

- Reduces congestion by increasing intersection capacity and smoothing traffic flow.
- Has relatively low cost and high benefit return for the investment.
- Improves safety of the intersection, reducing congestion due to crashes.

**Implementation Issues**

Maintaining and upgrading signal timing can be labor intensive and time consuming. Many cities do not allocate the resources or manpower to assess traffic signal timing plans. Signal re-timing is recommended every three to five years, depending on growth. Resources needed for signal re-timing typically include 20 to 30 staff hours and between $3,500 and $4,000 per intersection. When major streets cross agency boundaries, having joint policies for maintaining signal coordination is useful to improve service to travelers.