INTRODUCTION

Traffic signals help to ensure an orderly flow of traffic along corridors and onto side-streets. Some traffic signals were installed as isolated signals along a corridor while other signals are installed as linked system. Traffic signals, whether isolated or linked systems, need to be maintained and managed over time. Signals need to be re-timed to reflect the traffic patterns within a community or along a given corridor and signals will need to be upgraded as technology behind them progresses.

Signal management can take many forms, but generally it's in the form of a policy or planning procedure that or organization or municipalities undergoes. According to the Federal Highway Administration (FHWA): "Traffic signal program management involves organizing for the planning, maintenance, design, and operation of signalized intersections and traffic signal systems." A traffic signal management plan can help to prioritize and organize signal maintenance and operations for communities, which is similar to how comprehensive planning helps to guide community development.

Research has shown that in effective traffic signal programs there is a strong connection between doing what's most import in the context of limited resources and the extent to which its activities are planned ahead to achieve specific objectives. Traffic Signal Management Plans can form the foundational piece of a signal management program. Signal management is primarily about establishing goals and objectives for traffic operations and working towards being more proactive about managing signals.

BENEFITS

- Can optimize limited funding and resources to meet performance goals
- Greater effectiveness of signalized intersections and/or corridors
- Implementing roundabouts can help to reduce long-term operating costs and can improve traffic safety and flow
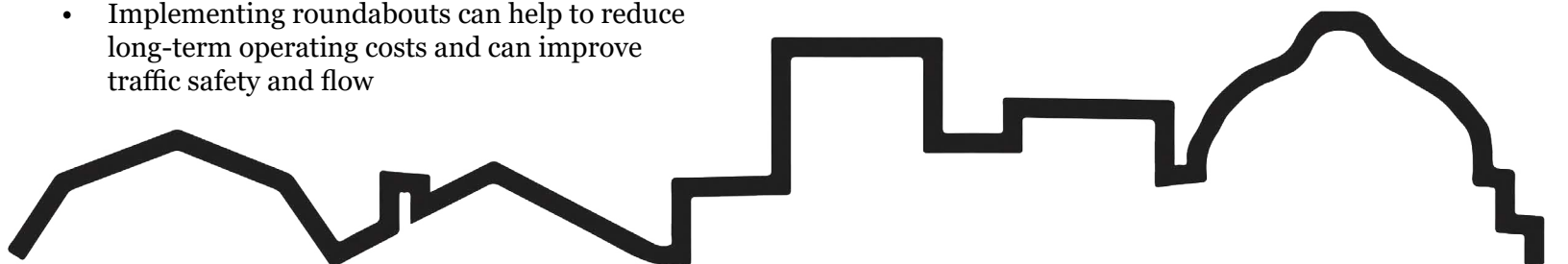
Alternatively, municipalities can implement roundabouts in certain locations instead of upgrading traffic signals. A roundabout helps to reduce the number of signals therefore saving a community long-term expenses, and can be extremely advantageous to traffic flow and safety. According to the Pennsylvania Department of Transportation, there are numerous benefits to roundabout implementation:

- 90 percent reduction in fatal crashes
- 75 percent reduction in injury crashes
- 30-40 percent reduction in pedestrian crashes
- 10 percent reduction in bicycle crashes
- Reduced congestion and approximately 30 percent increase in traffic flow
- During off-peak hours roundabouts cause no delay on roadways, unlike signalized intersections

There are multiple funding opportunities for maintaining signals within the Commonwealth of Pennsylvania. There is Green Light Go (GLG), which helps to provide funding for signal maintained and Automated Red Light Enforcement (ARLE) which is more focused on enforcement of the traffic signal and reducing running red lights.

DRAWBACKS

- Municipalities with a limited number of traffic signals may not find a significant benefit to a traffic signals management program
- Establishing a traffic signal management program may require additional investment
- Roundabouts are only practical in certain applications

PRACTICAL TIPS

- Contact your local PennDOT District for additional resources
- Contact the staff at TCRPC for technical support.

RESOURCES

- **Federal Highway Administration, Traffic Signal Management Plans Guidance (2015)**
- **Federal Highway Administration, Improving Traffic Signal Management and Operations: A Basic Service Model (2009)**
- **Federal Highway Administration, Traffic Signal Operations and Maintenance Staffing Guidelines (2009)**
- **Pennsylvania Department of Transportation, Automated Red Light Enforcement (ARLE)**
- **Pennsylvania Department of Transportation, Green Light Go (GLG)**
- **Pennsylvania Department of Transportation, Roundabouts**
- **Oregon Department of Transportation, Traffic Signal Management Plan (2020)**
- **Utah Department of Transportation, Traffic Signal Management Plan (2016)**

RELATED TOOLKIT FACT SHEETS

- **Access Management**
- **Complete Streets**
- **Traffic Calming**
- **Walkability**