

Many communities struggle with transportation congestion issues associated with local and/or regional growth. Such issues are usually depicted in a comprehensive plan as decreases in level of service in busy corridors, but they may also be identified more simply as areas with increasing travel times or other similar features.

Traffic congestion is often a result of poorly integrated transportation and land use planning. Decreased mobility may be the result of inadequately designed facilities and/or growth rates that have exceeded those anticipated in system design. The tools listed in this tech sheet can be used to implement the necessary land use controls and manage the transportation system to achieve a better balance between community growth pressures and system capacity.



Access Management and Coordinated Highway Occupancy Permit (HOP) Processing

Access management hinges on balancing two concepts — vehicular mobility and accessibility to surrounding land uses. An effectively implemented access management program can have a number of positive impacts, including improving public safety and reducing traffic congestion, thereby helping to accommodate growth within the transportation environment. Failure to manage access adequately can lead to an increase in crashes and congestion and detract from a community's quality of life. Roadway incidents are responsible for nearly 25 percent of delays.

Additionally, PennDOT's highway occupancy permit (HOP) process is a critical component of any access management program. Municipalities are encouraged to participate in the review of HOP applications to provide input on mitigation strategies as well as concurrence on Alternative Transportation Plans through the HOP process.

ADVANTAGES

- Improves public safety for vehicles, pedestrians, and bicyclists.
- Reduces traffic congestion.
- Improves safe travel speeds and reduces delay.
- Leads to a more attractive roadway corridor.
- Can help preserve property values.

- Reduces fuel consumption and air emissions.
- Improves roadway efficiency.
- Allows PennDOT standards and municipal issues and concerns to be jointly addressed through the HOP process.
- Provides PennDOT with the municipality's goals for a corridor to enable coordinated planning of future access points.
- Provides for some off-site improvement needs to be addressed through the HOP process.
- Promotes better coordinated and managed access points, especially in congested or growth corridors.



With access management, traffic from shopping plazas on either side of a thoroughfare is channeled into one intersection with traffic signals and turn lanes, improving safety and traffic flow for motorists and shoppers.



Road Design/Roadway Standards

There are numerous aspects of a subdivision and land development ordinance (SALDO) or roadway ordinance regarding site design and roadway standards that can have an impact on overall mobility conditions. For example, establishing safe and context-sensitive roadway and shoulder widths through a SALDO or separate ordinance can help ensure that vehicles, pedestrians, and bicyclists have safe pathways with minimal conflicts to slow traffic movement. In addition, managing construction standards can minimize maintenance issues, such as potholes, that can slow traffic flow.

ADVANTAGES

- Help establish consistent, safe road conditions.
- Can establish standards for managing traffic movement through signage and signalization.
- Can address issues on a wide range of mobility concerns while minimizing maintenance needs through improved design.



In Philadelphia, Torresdale Avenue, which functions as a community collector in an urban area, has 11-foot travel lanes, five-foot bike lanes, eight-foot parking lanes, and six-foot sidewalks.



Zoning for Mixed Uses and Higher Densities

Municipalities with existing mixed-use development or clusters/nodes of higher density residential land and those wishing to accommodate future growth in compact areas with adequate infrastructure should seriously consider this implementation technique. Combined with the additional benefit of reducing the demand for vehicular trips through mixed-use zoning and accommodating a municipality's fair share of development in smaller, higher density areas with multiple transportation options, mixed-use and higher density development can be a significant factor in reducing vehicular trips on major thoroughfares and improving the efficiency of the system over the long term. Innovative zoning techniques such as traditional neighborhood design (TND), transfer of development rights (TDR), and transit-oriented development (TOD) can help improve transportation system mobility and efficiency.

ADVANTAGES

- More concentrated, mixed-use development can reduce the number of access points onto a roadway corridor.
- Mixed-use zoning can provide for a mix of compatible uses within walking or bicycling distance of residential areas and reduces local automobile traffic.
- Mixed-use zoning can accommodate a community's fair share of uses within a smaller footprint, helping to preserve more open space.
- A higher percentage of the neighborhood is walkable.
- Bus transit tends to be efficient.
- Neighborhoods often develop a strong sense of community.
- Mixed-use zoning can be easily linked to adjacent higher-density or urban areas.
- Significant public amenities can be accommodated and maintained.



Carroll Village, a mixed-used development in Carroll Township, York County, offers independent, senior living mixed with various local amenities within walking distance, including healthcare facilities, retail shopping, and worship services. The intersection at Old Gettysburg Road was redesigned from a two-way to a one-way street to improve safety for both cars and pedestrians.



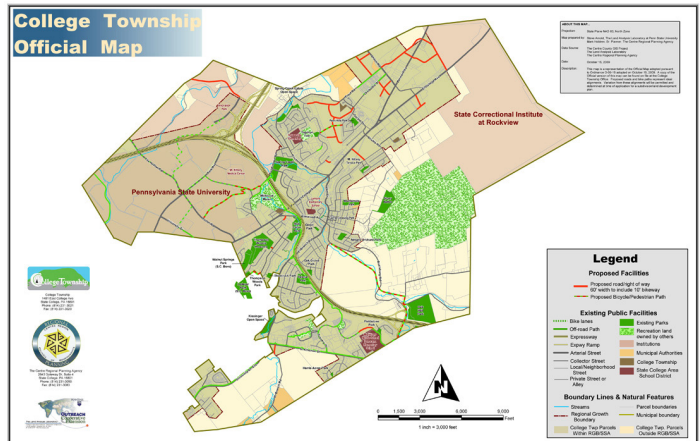


Official Map

An official map, as enabled under Article IV of the Municipalities Planning Code (MPC), is actually the combination of a map and ordinance. It illustrates and regulates areas within a municipality that are projected to be needed eventually for public purposes, such as parks, wellhead protection areas, and new road or road improvements. Official maps can be used to advance a number of public purposes, including accommodating growth within the transportation and natural environments by ensuring that the area needed for system improvements and important natural resources remains available. Areas can be reserved for future roads to address connectivity issues and to provide the opportunity for parallel access routes. Similarly, areas needed to address public park demands or preserve important natural resources can be kept open until they are acquired permanently for public use and enjoyment.

ADVANTAGES

- Official maps may help reserve the lands necessary for public purposes.
- Municipal plans for public improvements can be clearly presented to residents and developers.
- Official maps give municipalities a competitive advantage in securing grants.



This official map shows recreation areas, bike lanes, and proposed road improvements, including 10-foot bikeways in College Township, Centre County.

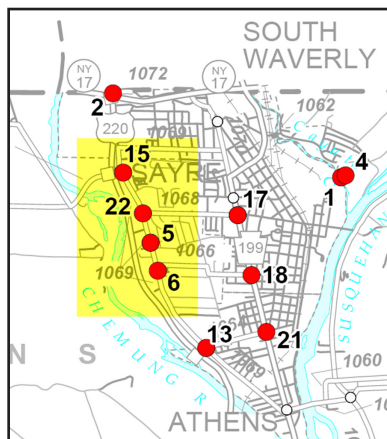


Traffic Operations

One of the most common and cost-effective traffic operations management techniques is traffic signal timing, which provides maximum synchronization among numerous traffic signals along a corridor. Studies have shown that optimizing traffic signals along a congested corridor can produce cost-benefit ratios as high as 40:1.

Traffic incident management is another important traffic operations activity that can be implemented on the local level. It is estimated that traffic accidents cause approximately 25 percent of traffic congestion.

Effective training and coordination activities between various emergency service providers (police, fire, ambulance, etc.) can have a significant impact on the time required to detect, respond to, and remove traffic incidents and restore traffic capacity.



ADVANTAGES

- Signal synchronization, lane management, and similar actions can be significantly less expensive ways of improving system capacity than constructing a new lane.
- Traffic operational improvements can improve safety conditions.
- The “Green Light–Go Program” provides state funds for the operation and maintenance of traffic signals along critical and designated corridors on state highways.

Athens Township, Bradford County, is moving forward with plans to enhance its traffic signal system along SR 1069/Elmira Street, a growing 1.8 mile-long commercial corridor just outside of Sayre Borough. The work involves four traffic signals. Improvements will include interconnection or time-based coordination for the signals, signal pre-emption for emergency vehicles, and pedestrian crossing signals. The improvements came after the township conducted a pedestrian and bicyclist mobility study in 2006. Study goals included improving the safety and capacity of the corridor for both motorists and bicyclists/pedestrians.

