Improving the Land Use – Transportation Connection Through Local Implementation Tools
This handbook is intended as a resource for Pennsylvania’s county and municipal leaders who seek practical guidance in better integrating land use and transportation in their comprehensive plan efforts.

To appropriately reflect the diversity of Pennsylvania municipalities, this handbook was developed through the collaboration of several different organizations: the Pennsylvania Department of Community and Economic Development, Cumberland County, Monroe County, the Pennsylvania State Association of Boroughs, the Pennsylvania State Association of Township Supervisors, the Pennsylvania Chapter of the American Planning Association, the Pennsylvania League of Cities and Municipalities, the Pennsylvania Department of Conservation and Natural Resources, and the Pennsylvania Department of Transportation. Representatives from each organization formed the backbone of a steering committee which partnered to encourage stronger comprehensive planning. The logos on this page provide links to the Web sites of these agencies and organizations.

As Pennsylvania’s varied government entities work together to better understand and more effectively plan to improve the integration of land use and transportation, we are supporting our individual missions as well as advancing shared goals—strengthening communities, conserving resources, and making the most of infrastructure investments.

For full functionality this document is best viewed in Adobe Acrobat Reader version 9.

http://get.adobe.com/reader
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Chapter 1: Introduction

Points of Emphasis

PennDOT recognizes its role as a partner in the continuing development of great communities throughout Pennsylvania. As such, PennDOT has been working to ensure that transportation improvement projects are born out of a sound planning process that truly links transportation planning decisions with community land use decisions.

This handbook is one in a series of technical support documents prepared by PennDOT to enhance the partnerships between state, county, and municipal officials with the aim of enhancing the linkage between transportation and land use. It is the second handbook in the series intended to be used as a fully digital document. The file includes numerous hyperlinks (appearing as underlined blue text) as well as graphics linked to other documents and resources. The other handbooks in this series include:

- **Sound Land Use Planning for Your Community: Model Ordinance Language for Addressing Traffic Noise**
- **Access Management – Model Ordinances for Pennsylvania Municipalities Handbook**
- **Transportation Impact Fees – A Handbook for Pennsylvania Municipalities**
- **Integrating Transportation and Land Use in Comprehensive Plans – A Handbook for Pennsylvania Municipalities**
- **Smart Transportation Guidebook – Planning and Designing Highways and Streets that Support Sustainable and Livable Communities**

This handbook follows up on **Integrating Transportation and Land Use in Comprehensive Plans** by providing guidance on a series of planning implementation tools available to Pennsylvania municipalities after an integrated comprehensive plan has been adopted. Effective implementation of planning at the local level helps strengthen the partnership between municipalities and PennDOT in establishing a sustainable transportation/land use environment for the future. These tools also help to maximize the linkages between comprehensive plans and the implementation measures outlined in the long-range transportation plans (LRTPs) completed by the
state’s metropolitan and rural planning organizations (MPOs and RPOs). As such, this document will support municipalities in making the best possible decisions for the future of their communities.

This handbook is intended to be applicable for all levels of local government—municipal, multimunicipal, or county—working to implement their comprehensive plan. The approaches and tools outlined are flexible to adapt to a wide range of budgetary conditions and types of municipalities, whether experiencing slow, moderate, or rapid growth.

- The handbook is organized around a series of community goals that are not only common in a number of comprehensive plans, but are also consistent with Commonwealth goals and objectives as expressed in such documents as the Pennsylvania Mobility Plan, Smart Transportation Handbook, and Integrating Transportation and Land Use in Comprehensive Plans. It is designed in this manner so municipalities can identify those goals that are most applicable to their comprehensive planning efforts and easily identify a series of implementation tools that may be well suited to their municipality. Many tools are repeated under more than one goal heading as they can be tailored to produce a number of different outcomes.

- Embracing the implementation tools in this handbook can help achieve many positive outcomes for municipalities and the Commonwealth. Effective comprehensive plan implementation—most specifically within integrated transportation/land use elements—can enhance the function of the overall transportation system by promoting multimodal travel and minimizing the demand for single occupancy trips that congest our system at peak travel times. This can counter the long-term trend toward ever-increasing vehicle miles traveled, thereby reducing congestion and increasing the safety for all modes of travel. Further, by embracing the concept of “complete streets,” municipalities can offer a full range of transportation options and enhance a community’s sense of place—and even strengthen neighborhood ties. Lastly, targeting growth and development to those areas where transportation and other infrastructure are most able to accommodate the impacts of growth can reduce the overall costs of development and help preserve Pennsylvania’s natural infrastructure.

Municipalities using this guidance are strongly encouraged to take advantage of its digital format and suggest additional examples of implementation tools and available resources. Ongoing input will make this a “living document” that can provide an ever-increasing number of tools to Pennsylvania municipalities. To
Chapter 1: Introduction

provide PennDOT with resources and examples of effective implementation tools for inclusion in future versions of this handbook, please contact the Program Center at 717-787-2862 or RA-PennDOTLRTP@state.pa.us, and/or the PennDOT Bureau of Municipal Services at 717-783-2446 or PENNDOT boms@state.pa.us, and reference this handbook.
Chapter 2: Importance of Comprehensive Planning

Points of Emphasis

Municipal, multimunicipal, and county comprehensive plans provide the necessary framework for Pennsylvania communities to effectively plan for future transportation and land use patterns. Having broadly accepted goals, objectives, and policies in place can even have the effect of lessening political pressure during the subdivision and land development process. Furthermore, the coordination of municipal, multimunicipal, and county comprehensive plans with long-range transportation plans is also important to support appropriate growth and development throughout a region.

The Pennsylvania Municipalities Planning Code (MPC), Act 247 of 1968 as reenacted and amended, requires that all counties in Pennsylvania have a comprehensive plan (Section 301.4) and that the plans be updated at least every 10 years (Section 302.d). Municipal or multimunicipal comprehensive plans, while not mandated, are also required to be reviewed at least every 10 years (Section 301.c).

Whether or not a comprehensive plan is specifically mandated, recent legislation (Acts 67 and 68 of 2000) requires in certain instances that all state agencies shall consider and may rely upon comprehensive plans—and zoning ordinances—when making infrastructure decisions that impact land use. These decisions may include providing funding to address important community needs or issuing permits for improvement projects. This legislation formally recognizes the need for infrastructure investments that can be spurred by land use decisions. The relationship between land use and infrastructure needs is increasingly recognized as critical, with funding resources continuing to fall short of infrastructure maintenance and improvement needs.

There are many reasons for developing and implementing comprehensive plans that address municipal goals and objectives. The implementation phase of a planning effort is critical so that all participants can see the value of planning as put into place in their neighborhood and larger community. This handbook is designed to provide the support necessary to strengthen the implementation phase, thereby supporting municipal and county officials in their efforts to integrate transportation and land use and improve the overall sense of place of Pennsylvania’s many communities.
Chapter 3: Improving Safety

Introduction

Improving safety conditions associated with the transportation system—whether vehicular, bicycle, pedestrian, or other modes—is a very common goal in municipal and county comprehensive plans. Areas of concern are often identified through coordination with PennDOT, public outreach, and/or outreach to various emergency service providers. Many conditions causing existing safety concerns may have to be addressed through the design and construction of improvements such as the elimination of sight distance limitations, improved access conditions, etc. However, existing safety concerns can also be addressed and future safety concerns minimized through a preventative approach that is focused on the management of land use, access, and transportation system design through a corridor. The first step in addressing transportation safety in the comprehensive plan is the identification of key issues and the likely causes behind any accidents. Planners, engineers, and municipal officials can then identify the range of construction projects and preventative measures that will most effectively address the causes of the safety concerns.

The most effective approach to addressing safety concerns will likely involve a combination of physical improvements and preventative measures. Such approaches are also likely to be the most cost-effective by sharing the expense for safety improvements between PennDOT, the municipality, and developers. The tools listed below can help address safety concerns by providing design standards for new facilities, managing access to the transportation system, and managing land use patterns and traffic patterns through various zoning techniques. The ideal approach is to adopt integrated land use management and safe design standards that both serve to address existing and anticipated safety concerns.

Applicable Tools

Access Management Regulations and Coordinated HOP Processing

Access management hinges on balancing two concepts—mobility and accessibility. While both aspects are critical, failure to manage access adequately can lead to an increase in crashes and congestion, thereby detracting from a community’s quality of life. Without applying access management techniques, studies show that corridors experience:

- Diminished roadway capacity, resulting in greater congestion.
- An increase in the number of crashes with other vehicles, as well as with pedestrians and cyclists.
Reduced character.
An unfriendly environment for those who walk or bike.

An effectively implemented access management program can improve public safety and reduce traffic congestion. Studies show that as the number of access points increases, crash rates increase. In addition to fatalities and injuries, roadway incidents are responsible for nearly 25 percent of delays.

Extensive guidance on access management regulation, including model access management ordinance language or subdivision and land development ordinance (SALDO) access management provisions are found in PennDOT Publication 574, *Access Management – Model Ordinances For Pennsylvania Municipalities Handbook*.

PennDOT’s Highway Occupancy Permit (HOP) process is a critical component of any access management program. According to the Department’s *Policies and Procedures for Transportation Impact Studies Related to Highway Occupancy Permits*, municipalities are invited and encouraged to participate in the review of HOP applications within their jurisdictions. Municipalities are given the opportunity to provide input on mitigation strategies as well as concurrence on Alternative Transportation Plans through the HOP process. PennDOT recommends that municipalities coordinate their SALDO review and approval process with their District Permit Office as indicated on the following graphic. Driveway access onto local roads is regulated at the municipal level through local driveway permits and standards.

The table following the graphic lists many of the reasons for implementing access management regulations and having a coordinated HOP program to improve safety, including a listing of the advantages and disadvantages of this approach.
Linking the Land Development Process with the Highway Occupancy Permit Process

Highway Occupancy Permit Process

START

TIS/HOP Scoping Submittal

TIS/HOP Scoping Meeting

Prepare TIS

Mitigation Plan/Alternative Transportation Plan Submitted

TIS and Mitigation Plan/Alternative Transportation Plan Review Period

TIS and Mitigation Plan/Alternative Transportation Plan Approved

Prepare Construction Plans

Construction Plan Review Period

Construction Plans Approved

HOP Approved

Sketch Plan Submitted

Sketch Plan Public Meetings

Preliminary Land Development Submission

Professional Review Period

Preliminary Land Development Public Meetings

Professional/Public Review Period

Preliminary Land Development Approval

Prepare and Submit Final Land Development Plan

Land Development Plan Review Period

Final Land Development Approval

Zoning/Building Permit Issued

END

Note: Statutory and regulatory review durations are established; preparation and review times vary
## Chapter 3: Improving Safety

### When to consider access management regulations and coordinated HOP processing:

- When the comprehensive plan identifies corridors with congestion issues and/or significant growth is anticipated.
- When roadway sections are identified as having high accident rates relating to vehicles entering or exiting the roadway.
- If roadways with high traffic volumes also have heavy bicycle and/or pedestrian usage.
- When preserving a corridor for regional or through traffic is a concern.
- When there are significant proposed access changes on State roadways (coordinate with the PennDOT District Office).
- When the municipality is considering adopting an access management ordinance that affects state-owned roads.
- If a municipality plans to adopt transportation impact fees.

### Advantages:

- Improves public safety for vehicles, pedestrians, and bicyclists.
- Reduces traffic congestion.
- Improves safe travel speeds/reduces delay.
- Leads to a more attractive roadway corridor.
- Can help preserve property values.
- Reduced fuel consumption and air emissions.
- Improves roadway efficiency.
- Inexpensive solution for improving roadway capacity and safety.
- PennDOT standards and municipal issues/concerns can be jointly addressed through the HOP process.
- Provides PennDOT with the municipality’s corridor goals to enable coordinated planning of future access points.
- Some off-site improvement needs may be addressed through the HOP process.
- Access points can be better coordinated and managed, especially in congested or growth corridors.

### Disadvantages:

- Can be controversial when businesses feel there are negative economic impacts from restricted access.
- Limited ability to retrofit existing driveways.
- May require additional coordination effort during the time-constrained subdivision/land development process.
- Does not help address desired uses/density, only access design and construction.
More information on access management and coordinated HOP processing, including examples that are applicable in Pennsylvania, are available by clicking here or on the hyperlinked title to this section.

**Site Design and Roadway Standards**

Site design and roadway standards are almost always regulated in Pennsylvania through a county or municipal SALDO which is enabled through the Municipalities Planning Code (MPC) Article V. However, some municipalities have been known to adopt a separate ordinance for roadway/street design standards and other similar infrastructure systems. In cases where municipalities do not adopt a SALDO, but the county has an adopted SALDO, the county regulations apply to subdivision and land development activity in the municipality. Regardless of the source of the SALDO regulations, these ordinances can provide a very effective tool for improving and maintaining safe conditions throughout the transportation system.

![Image](Subdivision for the Design of Local Roads and Streets Publication 718 - December 2009 Edition)

There are numerous aspects of a SALDO or roadway ordinance that can impact safety conditions. For instance, managing stormwater through a SALDO or separate ordinance can minimize flooding issues that can cause drivers to lose control. Safety can also be improved by requiring design elements such as rumble strips on the edges of the travel lanes or between lanes with conflicting directions, and ensuring adequate sight and stopping distances. Additionally, traffic calming measures can be incorporated into the site design and roadway standards such as curb extensions, raised median islands, on-street parking, etc. Further safety improvements can be made by incorporating standards for bicycle and pedestrian facilities in the ordinance such as requirements for improved shoulders, dedicated bicycle lanes, and sidewalks.

The table below lists many of the reasons for implementing site design and roadway standards to improve safety, including a listing of the advantages and disadvantages of this approach.

<table>
<thead>
<tr>
<th>When to consider site design and roadway standards:</th>
<th></th>
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<tbody>
<tr>
<td>• When issues relating to inconsistent or inadequate roadway conditions or standards are identified in the comprehensive plan.</td>
<td></td>
</tr>
<tr>
<td>• If the comprehensive plan identifies needs relating to bicycle and/or pedestrian facilities.</td>
<td></td>
</tr>
<tr>
<td>• When safety issues relating to the existing transportation system are identified in the comprehensive plan.</td>
<td></td>
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</tbody>
</table>
Chapter 3: Improving Safety

- If roadway standards in the municipal ordinances have not been updated to current standards.

Advantages:
- Helps establish consistent, safe road conditions.
- Typically minimizes problems associated with storm water flooding on roadways and bicycle/pedestrian facilities.
- Requirements can address issues relating to a wide range of safety concerns and minimize maintenance needs through improved design.

Disadvantages:
- Improvements required of a developer can only be implemented on-site for new development; not applicable to retrofitting without development.
- Standards need to be tailored to the transportation system and specific needs in the municipality.

Traffic Operations

The traffic operations category includes a wide range of potential municipal actions to address transportation safety concerns identified in the comprehensive plan, especially when accident clusters are known to be closely associated with congested traffic conditions. One of the most common and cost-effective techniques in this category is to manage traffic signal timing, providing for maximum synchronization between numbers of signals along a corridor. Studies have shown that optimizing traffic signals along a congested corridor can produce cost-benefit ratios as high as 40 to 1 and significantly reduce rear end-type accidents associated with unexpected stops in traffic. A good resource for understanding the importance of signal synchronization and the technical aspects of implementing this tool can be found in the Federal Highway Administration’s (FHWA’s) Traffic Signal Timing.

Access management as discussed throughout this handbook is another technique for managing traffic operations at the local level that can greatly reduce accidents associated with vehicles entering and leaving the roadway. Extensive guidance on access management regulation, including model access management ordinance language or SALDO access management provisions, are found in PennDOT Publication 574, Access Management – Model Ordinances For Pennsylvania Municipalities Handbook.

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. There are several guidance documents available to assist in the development of effective traffic incident management programs, including those available through FHWA and the American Association of State Highway and Transportation Officials (AASHTO).

The table below lists many of the reasons for managing traffic operations to improve safety, including a listing of the advantages and disadvantages of the various tools within this approach.

| When to consider traffic operations: | When the comprehensive plan identifies congestion/capacity issues along existing corridors.  
|  | When there are a series of traffic signals in a corridor with projected poor level of service.
| Advantages: | Signal synchronization, lane management, and similar actions can be significantly less expensive ways of improving system capacity than lane addition.  
|  | Traffic operational improvements can improve safety conditions.
| Disadvantages: | Operational improvements may not provide adequate capacity improvement in rapidly growing areas.

More information on managing traffic operations, including examples that are applicable in Pennsylvania, are available by clicking [here](#) or on the hyperlinked title to this section.

### Zoning for Mixed Uses and to Accommodate Higher Densities

While not traditionally considered as a safety improvement measure, 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 can have a significant effect on safety conditions over the long term.

Examples of innovative zoning techniques that can affect transportation safety include:

- **Transit-Oriented Development (TOD)** – When effectively coordinated with transit system providers, this higher-density technique can accommodate a significant amount of a municipality’s future growth without the single occupancy vehicle generation rates expected with more conventional approaches. Mixed uses are also typically incorporated into TOD projects,
thereby having the potential to further reduce vehicular volumes and encouraging bicycle and/or pedestrian movement. Including appropriate safety provisions into an ordinance can therefore accommodate significant growth while improving overall safety conditions.

- **Transfer of Development Rights (TDR)** – Much like TOD, this higher-density tool can focus development in smaller areas that are better served with transportation system access and may accommodate greater transit service. Increases in bicycle/pedestrian activity may also be realized, thereby reducing vehicular traffic generation rates. The lower traffic generation rates, combined with a focused development pattern that can be better served with transportation and other infrastructure, can contribute to improved safety conditions.

- **Mixed-Use/Form-Based Zoning** – These zoning approaches, which are not necessarily mutually exclusive, can be implemented in a way to address safety concerns in design, while providing for a mix of use types. Providing for residential development in close proximity to office and lower-intensity commercial uses, and providing pedestrian accommodations, can significantly reduce vehicular traffic generation and thereby improve safety. Form-based codes can be used specifically to incorporate safety into site design while providing for a mix of uses that most closely address the local market.

The table below lists many of the reasons for implementing zoning for mixed uses and to accommodate higher densities to improve safety, including a listing of the advantages and disadvantages of this approach.

**When to consider zoning for mixed uses and to accommodate higher densities:**

- When the comprehensive plan calls for areas for high-density residential, whether traditional or clustered.
- If the comprehensive plan and the community support the concept of mixed-use development.
- When there is a community desire to accommodate its fair share of development in a smaller portion of the municipality, preserving more open space for the future.
- If there is a willingness to accept less traditional zoning approaches or control over specific uses, focusing more on the form of future development.
- When there is a desire to facilitate transit access for future development.
- When the comprehensive plan identifies portions of the municipality for high-density development and other areas for open space preservation.
Chapter 3: Improving Safety

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

### Disadvantages:
- Areas of higher density or mixed uses can be controversial in existing low-density communities.
- Residential development in areas zoned for mixed uses may only support neighborhood commercial uses (not regional).
- Densities may be too low to overcome overall pattern of sprawl.
- Requires relatively large areas to support a mix of uses.

More information on mixed use and higher-density zoning techniques, including examples that are applicable in Pennsylvania, are available by clicking here or on the hyperlinked title to this section.

**Zoning Overlays**

Section 605 of the MPC provides for transportation-based zoning overlay districts, specifically stating, “Where zoning districts are created, all provisions shall be uniform for each class of uses or structures, within each district, except that additional classifications may be made within any district...for the regulation, restriction, or prohibition of uses and structures at, along, or near major thoroughfares, their intersections and interchanges, transportation arteries, and rail or transit terminals....”
In cases where a comprehensive plan identifies a corridor or corridors with specific safety concerns, zoning overlay districts are one of the tools available as a preventative measure to help ensure that safety conditions do not significantly deteriorate. Provisions can be incorporated into the overlay district to regulate the type and intensity of allowable uses, lot sizes, and setbacks in order to manage the traffic generation characteristics of new uses and the relative density of access points along the corridor. Additional access management provisions can also be incorporated into the ordinance such as requirements for shared use driveways, parallel access roads, and similar controls to potentially improve safety conditions throughout a corridor.

The table below lists many of the reasons for implementing zoning overlays to improve safety, including a listing of the advantages and disadvantages of this approach.

<table>
<thead>
<tr>
<th>When to consider zoning overlays:</th>
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<tbody>
<tr>
<td>• When the comprehensive plan specifically calls for a zoning overlay approach for corridors, floodplains, environmentally-sensitive areas, or other similar features requiring specific regulation.</td>
</tr>
<tr>
<td>• If a transportation corridor is identified with unique characteristics or needs that could be addressed at least in part through zoning regulation.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Advantages:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Greater flexibility in where the zoning provisions can be applied than with conventional zoning districts.</td>
</tr>
<tr>
<td>• Can be very effective in addressing site-specific conditions along corridors, in floodplains, steeply-sloped areas, etc.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Disadvantages:</th>
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</thead>
<tbody>
<tr>
<td>• Overlays may complicate the administration of the zoning ordinance.</td>
</tr>
<tr>
<td>• Can be difficult to determine all applicable requirements between underlying zone and overlay.</td>
</tr>
</tbody>
</table>

More information on zoning overlays, including examples that are applicable in Pennsylvania, are available by clicking here or on the hyperlinked title to this section.
Chapter 4: Maintaining or Improving Community Character

Introduction

Many communities struggle with issues associated with maintaining local character and sense of place as development pressures, out-migration, or other factors threaten to change residents’ perceptions of their neighborhood and/or municipality. Effective land use management and infrastructure planning are both critical components in maintaining or improving a community’s sense of place as defined through a comprehensive planning process.

Once the desired sense(s) of place are established through a comprehensive plan, the land use controls presented in this section can be used to maintain or improve the desired character through specific actions such as: reducing the potential for adjacent but conflicting use types, providing for transitions in lot sizes or development density, and/or generating neighborhood identity for new development. Furthermore, the infrastructure management tools listed below can help ensure that excess capacity is not created as transportation and other infrastructure is constructed with new development, thereby increasing development pressure and leading to unforeseen secondary impacts. The ideal approach is to adopt integrated land use and infrastructure management controls that both serve to maintain the desired sense of place.

Applicable Tools

Adaptive Reuse of Land and Buildings

Perhaps more commonly thought of in Pennsylvania’s boroughs and cities, all types of municipalities can have underutilized property that may detract from local aesthetics, community character, and overall positive sense of place. Such properties may affect local safety, decrease property values, and/or simply detract from the visual appeal of an area.

Underutilized property is often addressed in cooperation with economic development entities including the Department of Community and Economic Development, chambers of commerce, and/or county or regional redevelopment or industrial development authorities. The role of the comprehensive plan in this process is to identify such properties and establish the most desirable development scenarios.
The implementation program should then seek to identify key partners and funding opportunities such as those identified as examples here.

The table below lists many of the reasons for implementing adaptive reuse programs to maintain or improve community character, including a listing of the advantages and disadvantages of this approach.

| When to consider Adaptive Reuse of Land and Buildings: | • When the comprehensive plan identifies vacant or underutilized properties.  
• When downtown or neighborhood revitalization is identified as a key community goal in the comprehensive plan.  
• When the comprehensive plan identifies “brownfield” opportunities in the municipality. |
| --- | --- |
| Advantages: | • Can reduce the development pressure on “greenfield” areas.  
• Can increase tax revenues in communities with vacant or underutilized properties.  
• Can enhance and improve the economic conditions of blighted communities. |
| Disadvantages: | • May require the use of financial or regulatory incentives. |

More information on site adaptive reuse programs, including examples that are applicable in Pennsylvania, are available by clicking here or on the hyperlinked title to this section.

**Multimunicipal Zoning and Intergovernmental Cooperative Planning and Implementation Agreements**

Article VIII-A of the MPC addresses joint municipal zoning in Pennsylvania by enabling municipalities which cooperatively plan for their future to also regulate future growth and change cooperatively. Joint zoning ordinances must be based upon a joint municipal comprehensive plan and be prepared by a joint municipal planning commission established in accordance with the MPC. It is important to note that enactment of a joint municipal zoning ordinance in an area subject to county or municipal zoning constitutes an immediate repeal of the county or municipal zoning ordinance in the subject municipalities. While joint zoning ordinances must be prepared through a joint municipal planning commission, the participating municipalities have the option of implementing the ordinance through a joint or individual zoning hearing boards.

Intergovernmental cooperative planning and implementation agreements (ICPIA) are enabled through Article XI of the MPC. ICPIAs may be entered into between the
governing bodies of counties or any area within a county or counties. They may also include agreements between municipalities/counties and authorities, special districts, and school districts. ICPIAs shall establish the following:

- The process whereby the participating municipalities achieve general consistency between plans and implementing ordinances and a mechanism for resolving disputes over the interpretation of the plans and ordinances.
- The process for review and approval of developments of regional significance.
- The roles and responsibilities of the participating municipalities with respect to the implementation of the regional plan including provision of public infrastructure, affordable housing, and purchase of property for rights-of-way and easements.
- The process for preparing annual reports and any other duties of the participants.

An ICPIA may also designate growth areas, future growth areas and rural resource areas within the plan. This may include a process for redefining these areas periodically.

Multimunicipal zoning and ICPIAs can both be highly-effective tools for maintaining and improving community character by facilitating regional approaches to growth and development pressures, provision of infrastructure, and increased efficiency in providing necessary services. Municipalities using these planning tools can accommodate their fair share of land use types across municipal boundaries and can work toward more effective preservation of important resources.

The table below lists many of the reasons for implementing multimunicipal zoning and ICPIAs to maintain or improve community character, including a listing of the advantages and disadvantages of this approach.
### When to consider multimunicipal zoning and Intergovernmental Cooperative Agreements:

- When multimunicipal comprehensive plans identify land use management or other issues that can be implemented most effectively on an intergovernmental basis.
- When municipalities are seeking cost savings through cooperative action.
- If multimunicipal comprehensive planning indicates that fair share of development types is best shared on a regional basis.

### Advantages:

- Significant cost savings can be realized through sharing of services, joint purchase of materials, etc.
- All reasonable land use types need not be accommodated within a single municipality when multimunicipal zoning is implemented.

### Disadvantages:

- Cooperative agreements may be controversial.
- Long-term implementation of multimunicipal zoning or intergovernmental cooperative agreements can prove to be challenging.
- Enforcement across municipal boundaries may be difficult.

More information on urban multimunicipal zoning and ICPIAs, including examples that are applicable in Pennsylvania, are available by clicking here or on the hyperlinked title to this section.

## Parking Considerations

Providing adequate parking reduces conflicts between traveling and parked vehicles and provides a safe means for pedestrians to access homes and businesses. However, many municipalities tend to require significantly more parking than is truly needed, leading to impacts such as encouraging greenfield development where land cost is less, encouraging single occupancy travel, diminishing aesthetics associated with large areas of asphalt, and creating water quality and quantity issues relating to parking lot runoff.

The pricing of parking can actually be very regional in nature based on a number of factors, including availability of transit, adequacy of bicycle and pedestrian facilities, and overall density and extent of mixed-use development. Therefore, while standards available through the Urban Land Institute (ULI) and Institute of Transportation Engineers (ITE) provide good estimates of parking demand for various uses, localized customization of parking prices is recommended.

One of the primary means of managing parking to maintain or improve community character is through the establishment of maximum—as opposed to minimum—
parking requirements. The strategy may be combined with related strategies including establishing remote, often shared parking, and considerations for reserve parking where developers construct the majority of required parking (approximately 75 percent) initially, and are then required to install the remainder of the parking if it is actually needed. Municipalities may want to evaluate parking usage in existing facilities to determine whether current parking requirements are excessive for particular uses. If done in a way to provide an adequate parking supply while reducing the area dedicated to parking, aesthetics can be greatly improved and negative impacts associated with increased stormwater runoff can be greatly decreased.

Another parking strategy to maintain or improve community character in many municipalities is to reduce extensive setback requirements and otherwise encourage parking to be located to the rear of the building. This approach may be best suited to boroughs, cities, and other areas where buildings are traditionally close to the street. Such requirements provide for new development that blends well with existing development and reduces aesthetic impacts associated with large areas of parking located between the street and storefronts. There are a number of other possible strategies that may be considered. For example, single vehicle occupancy (SOV) commuting can be discouraged by implementing zoned parking during commuting times and/or limiting the duration of parking at certain locations. Excluding on-street parking during certain times can open a lane for travel flow.

The following table lists many of the reasons for managing parking to maintain or improve community character, along with the advantages and disadvantages of this approach.

| When to consider parking system management: | • When the comprehensive plan identifies areas with either excessive or inadequate parking.  
• When available lands are limited in size, but the comprehensive plan emphasizes redevelopment/infill.  
• When a municipality desires to emphasize bicycle/pedestrian or transit opportunities. |
| Advantages: | • Reducing parking requirements in areas with excessive facilities can lead to more efficient development patterns.  
• May facilitate the use of brownfield-type areas as less expensive options than large greenfield sites.  
• Can encourage the use of transit and/or bike-ped travel.  
• Smaller parking areas can lead to greatly reduced stormwater management issues. |
| Disadvantages: | • Reducing parking requirements in areas with already inadequate supplies can lead to congestion and other problems.  
• Inadequate parking may limit the profitability of commercial/industrial/office facilities and lead to difficulty in attracting new businesses. |
More information on parking system management, including examples that are applicable in Pennsylvania, is available by clicking [here](#) or on the hyperlinked title to this section.

**Site Design and Roadway Standards**

Site design and roadway standards can clearly have a very direct role in maintaining and improving community character through the regulation of many very visible factors including roadway design, bicycle/pedestrian facilities, parking, and other related facilities and utilities. Such standards are almost always regulated in Pennsylvania through a county or municipal SALDO, which is enabled through MPC Article V. However, some municipalities have been known to adopt a separate ordinance for roadway/street design standards and other similar infrastructure systems. In cases where municipalities do not adopt a SALDO, but the county has an adopted SALDO, the county regulations apply to subdivision and land development activity in the municipality. Other related techniques include aesthetic regulation through historic district ordinances and building/property codes. Regardless of the source of the regulations, these ordinances can provide a very effective tool for improving community character through specific design standards.

Effective site design and roadway standards can have unexpected effects relating to community character by providing safe, non-motorized access to residences, public facilities, and employment/shopping opportunities. Such design features—part of the “complete streets” concept—can help residents feel more connected to neighbors and businesses, thereby improving their overall quality of life. Similarly, safe, non-motorized routes to schools can also help parents feel more secure in their choice of residence location, contributing further to a feeling of community well-being. Additionally, site design standards that can positively affect community character include requirements for a wide variety of features such as street trees, parking lot landscaping, screening, berms, etc.

Municipalities may want to consider flexible roadway design standards to closely match the land use and transportation context of an area as it currently exists. PennDOT's *Smart Transportation Guidebook* contains easy to follow guidance to help a municipality establish the existing context for land use and the transportation system. The guidebook then goes on to provide recommended design standards for transportation facilities, specifically intended to match future transportation system components to the desired context. Model ordinance language is not included in the guidebook, but the standards can be incorporated into SALDO regulations fairly easily.
The table below lists many of the reasons for implementing site design and roadway standards to maintain or improve community character, including a listing of the advantages and disadvantages of this approach.

<table>
<thead>
<tr>
<th>When to consider site design and roadway standards:</th>
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<tbody>
<tr>
<td>• When issues relating to inconsistent or inadequate roadway conditions or standards are identified in the comprehensive plan.</td>
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<tr>
<td>• If the comprehensive plan identifies needs relating to bicycle and/or pedestrian facilities.</td>
<td></td>
</tr>
<tr>
<td>• When parts of the existing transportation system are identified as being out of character for the land use setting in the comprehensive plan.</td>
<td></td>
</tr>
<tr>
<td>• If roadway standards in the municipal ordinances have not been updated to current standards.</td>
<td></td>
</tr>
<tr>
<td>• When the comprehensive plan calls for taking a context-sensitive approach to maintaining or improving the character of the municipality, including that of the transportation system.</td>
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<table>
<thead>
<tr>
<th>Advantages:</th>
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<tbody>
<tr>
<td>• Helps establish consistent, safe road conditions.</td>
<td></td>
</tr>
<tr>
<td>• Typically minimizes problems associated with storm water flooding on roadways and bicycle/pedestrian facilities.</td>
<td></td>
</tr>
<tr>
<td>• Requirements can provide for uniform standards in residential and commercial settings and minimize visually-unappealing maintenance issues through improved design.</td>
<td></td>
</tr>
<tr>
<td>• Can provide for transportation system design standards that are matched closely to land use context.</td>
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<table>
<thead>
<tr>
<th>Disadvantages:</th>
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<tbody>
<tr>
<td>• Improvements required of a developer can only be implemented on-site for new development; not applicable to retrofitting without development.</td>
<td></td>
</tr>
<tr>
<td>• Standards need to be tailored to the transportation system and specific needs in the municipality.</td>
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<tr>
<td>• Flexible standards may require a specialized planning effort to determine land use and transportation contexts, not simply ordinance adoption.</td>
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More information on site design and roadway standards, including examples that are applicable in Pennsylvania, are available by clicking here or on the hyperlinked title to this section.
Traditional Neighborhood Development (TND)

TND, as enabled through Section 708-A of the MPC, can be implemented as an individual or overlay district in a zoning ordinance. This tool provides for a range of residential densities and a mix of residential and non-residential uses, often within the same building. When appropriately developed, TND can be a very effective means of connecting new developments with areas of existing mixed use development; providing for urban infill; and creating new development in a condensed area that encourages walking, bicycling, and other non-motorized travel. As such, TND regulations can help a municipality maintain a sense of place by requiring that new development be consistent with traditional development patterns that may already be in place. Also, TND regulations can have the additional benefit of potentially reducing vehicle trips and transportation system demands by providing for employment and residential opportunities in close proximity.

The table below lists many of the reasons for implementing TND to maintain or improve community character, including a listing of the advantages and disadvantages of this approach.

When to consider TND:

- When the municipal Comprehensive Plan identifies TND as a potential implementation measure.
- When the Comprehensive Plan calls for areas of higher densities and supports the mixed-use concept.
- If there are existing areas of the municipality with mixed uses and higher densities that would be compatible with TND.
- When larger parcels are available adjacent to arterial roadways.
- When transit services exist or may be made available in areas where TND is being considered.
- When larger vacant parcels have access to public sewer and water service.

Advantages:

- High percentage of the neighborhood is walkable.
- Bus transit tends to be efficient.
- Center typically not bisected by major thoroughfare, improving its social integrity.
- Growth may be accommodated in smaller areas than contemporary development patterns.
Neighborhoods often develop strong sense of community. Can be easily linked to adjacent higher density or urban areas. Significant public amenities can be accommodated and maintained.

Disadvantages:
- Residential development in the TND may only support neighborhood commercial uses.
- Densities may be too low to overcome overall pattern of sprawl.
- Requires relatively large areas to support a mix of uses.

More information on TND, including examples that are applicable in Pennsylvania, is available by clicking here or on the hyperlinked title to this section.

Urban Growth Areas/Rural Preservation

Many municipalities in Pennsylvania struggle with development pressures that are focused in rural areas, leading to a loss of important agricultural or forested resources and altering the rural character of the municipality. Such growth is often in areas reliant on on-site wastewater systems and water supplies, thereby having potentially undesirable environmental impacts. Establishing urban growth areas (UGAs) to define growth areas and preserve rural character can be an important component of a comprehensive plan. It is important to note that UGAs are not typically regulatory in nature, needing to be enforced through modifications to a zoning ordinance, effective water and sewer service boundary management, and similar measures. However, if effectively implemented and regularly reviewed and updated, the UGA technique can result in the economic development opportunities in areas well suited for urbanized uses while preserving significant amounts of rural lands. This approach can thereby enhance both the urban and rural environments and help to improve or maintain the existing character of a community.

Article XI of the MPC, which deals with intergovernmental cooperative planning and implementation agreements, specifically provides for the designation of growth areas where orderly and efficient residential, mixed-use, commercial, institutional and industrial uses can be accommodated and where public services to provide for such growth are provided or planned for.

The table below lists many of the reasons for implementing UGA/rural preservation to maintain or improve community character, including a listing of the advantages and disadvantages of this approach.
Chapter 4: Maintaining or Improving Community Character

When to consider Urban Growth Areas/Rural Preservation:

- When the comprehensive plan identifies sprawl as a significant concern.
- When agricultural, forest land, or open space preservation is identified as a goal in the comprehensive plan.
- If a municipality identifies loss of rural character as a concern in the comprehensive plan.

Advantages:

- Incorporating UGAs in a comprehensive plan can help guide the establishment of zoning district boundaries and planning for public sewer and water service.
- Can encourage higher densities and walkable communities and minimize the need for new roads.

Disadvantages:

- Requires consistent zoning and public water and sewer management for effective implementation.
- UGAs may be best suited for multimunicipal applications.
- Should be regularly reevaluated.

More information on UGBs/rural preservation, including examples that are applicable in Pennsylvania, is available by clicking here or on the hyperlinked title to this section.

Zoning for Mixed Uses and to Accommodate Higher Densities

The applicability of zoning for mixed uses and to accommodate higher densities in maintaining or improving community character is highly dependent on the future land use component of the municipal comprehensive plan. Municipalities with existing mixed-use development or clusters/nodes of higher-density residential land, and municipalities wishing to accommodate future growth in compact areas with adequate infrastructure, should seriously consider this implementation technique. Many of the specific tools falling under this implementation category can result in highly desirable development types that can provide a range of residential, retail, and employment opportunities. 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 maintaining or enhancing community character over the long-term.

Examples of innovative zoning techniques that can help maintain or improve community character as emphasized in a comprehensive plan include:

- Transit-Oriented Development (TOD) – When effectively coordinated with transit system providers, this higher-density, typically mixed-use
technique can accommodate a significant amount of a municipality’s future growth without the single occupancy vehicle generation rates expected with more conventional approaches. TOD can be used to expand existing nodes of development to make them more amenable to existing transit routes or to create new areas where transit service can be made available. The end result can be a fairly compact area of relatively high density but compatible development types that have the feel of traditional neighborhoods.

- **Transfer of Development Rights (TDR)** – Much like TOD, this higher-density tool can focus development in smaller areas that are better served with transportation system access and may accommodate greater transit service. The resulting clustered development pattern may have greater neighborhood identity and can result in the preservation of significant amounts of open space. Increases in bicycle/pedestrian activity may also be realized, further contributing to neighborhood cohesiveness and identity, thereby reducing vehicular traffic generation rates. The combination of these factors can have a substantial positive impact on community character.

- **Traditional Neighborhood Development (TND)** – This tool provides for a range of residential densities and a mix of residential and non-residential uses, often within the same building. When appropriately developed, TND can be a very effective means of connecting new developments with areas of existing mixed-use development; providing for urban infill; creating new development in a condensed area that encourages walking, bicycling, and other non-motorized travel. As such, TND regulations can help a municipality maintain a sense of place by requiring that new development be consistent with traditional development patterns that may already be established.

- **Mixed-Use/Form-Based Zoning** – These zoning approaches, which are not necessarily mutually exclusive, can be implemented in a way to have a significant impact on the character of new development. Mixed-use zoning, which provides for residential development in close proximity to office and lower-intensity commercial uses and incorporates pedestrian accommodations, can lead to the development of identifiable neighborhoods with a strong degree of community cohesion. Form-based codes, which focus on physical form rather than the separation of uses, are intended to address the relationship
between the residents of an area and building facades and intensity of use. Such codes are well suited to achieving a community vision as taken from a well-conceived and detailed comprehensive plan. These codes not only designate areas where different building form standards apply, but often incorporate architectural, landscaping, signage, and environmental resource standards, thereby clearly having the potential to have a significant impact on community character.

The table below lists many of the reasons for implementing zoning for mixed uses and to accommodate higher densities to maintain or improve community character, including a listing of the advantages and disadvantages of the various tools within this approach.

<table>
<thead>
<tr>
<th>When to consider zoning for mixed uses and to accommodate higher densities:</th>
<th>Advantages:</th>
</tr>
</thead>
<tbody>
<tr>
<td>When the comprehensive plan calls for areas for high-density residential, whether traditional or clustered.</td>
<td>More concentrated, mixed-use development can reduce the number of access points onto a roadway corridor.</td>
</tr>
<tr>
<td>If the comprehensive plan and the community support the concept of mixed-use development.</td>
<td>Can provide for a mix of compatible uses within walking or bicycling distance from residences and reduce local automobile traffic.</td>
</tr>
<tr>
<td>When there is a community desire to accommodate its fair share of development in a smaller portion of the municipality, preserving more open space for the future.</td>
<td>Can accommodate a community’s fair share of uses within a smaller footprint, helping to preserve more open space.</td>
</tr>
<tr>
<td>If there is a willingness to accept less traditional zoning approaches or control over specific uses, focusing more on the form of future development.</td>
<td>High percentage of the neighborhood is walkable.</td>
</tr>
<tr>
<td>When there is a desire to facilitate transit access for future development.</td>
<td>Bus transit tends to be efficient.</td>
</tr>
<tr>
<td>When the comprehensive plan identifies portions of the municipality for high-density development and other areas for open space preservation.</td>
<td>Neighborhoods often develop strong sense of community.</td>
</tr>
<tr>
<td>Can be easily linked to adjacent higher-density or urban areas.</td>
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</table>
• Significant public amenities can be accommodated and maintained.

Disadvantages:
• Areas of higher-density or mixed uses can be controversial in existing low-density communities.
• Residential development in areas zoned for mixed uses may only support neighborhood commercial uses (not regional).
• Densities may be too low to overcome overall pattern of sprawl.
• Requires relatively large areas to support a mix of uses.

More information on mixed use and higher density zoning techniques, including examples that are applicable in Pennsylvania, are available by clicking here or on the hyperlinked title to this section.
Chapter 5: Funding the Maintenance of the Existing Transportation System

Introduction

The difficulty of funding Pennsylvania’s transportation system is a growing concern for PennDOT, local governments, and transit agencies. The ability to maintain, improve, and provide the infrastructure and services needed to meet Pennsylvania’s mobility needs is growing, and the Commonwealth continues to focus on developing solutions to bridge the gap between transportation revenue and needed transportation infrastructure and services.

In Pennsylvania, local government has responsibility for local highways and bridges as well as public transportation. Municipalities often do not have adequate resources to address local highway, bridge, and transit needs. However, there is potential in the future for municipalities to play an even larger role in overall mobility within a region and locale through the levy of local option taxes.

There are a number of “traditional” means whereby local governments have funded transportation system improvements. The Liquid Fuels Act provides counties with an annual fund from which construction, maintenance, and repair of local roads and bridges may be completed. Counties may also allocate to their municipalities for these purposes and the Act also provides for funding directly to municipalities based on a formula that includes eligible road mileage and population.

The other traditional means of maintaining and making needed improvements to state roadways is through the Transportation Improvement Program (TIP) process that is facilitated through Pennsylvania’s Metropolitan and Rural Planning Organizations (MPOs/RPOs). Eligible projects are funded on an 80 percent federal/20 percent state basis. Municipalities who feel improvements are needed on state roadways should contact their MPO/RPO to initiate discussion regarding inclusion of the improvement in the long-range transportation plan of the MPO/RPO, the first step in having the project placed on the TIP.

There are also several other tools available to provide an opportunity for Pennsylvania’s municipalities to explore what may be new funding options for their jurisdiction. While no single tool is likely to generate all of the necessary revenue, combinations of these tools may help supplement more traditional funding mechanisms, thereby helping to implement or expedite needed transportation system improvements. Many of the tools that are available to Pennsylvania counties and municipalities are described below.
Applicable Tools

**Capital Improvement Programming (CIP)**

Pennsylvania’s Department of Community and Economic Development’s (DCED’s) *The Comprehensive Plan in Pennsylvania* defines a capital improvement plan (CIP) as “a schedule or list of projects for which public funds are to be used.” The CIP should include all proposed improvements in the comprehensive plan for which there is an identifiable cost. Inflationary factors should be used for those improvements not planned to be implemented until the later years of the plan. Anticipated sources of funding should also be identified for each improvement. The primary advantage of developing and maintaining a CIP is that it enables municipalities to better prioritize projects and program their available funds over periods greater than one year.

Due to the wide variety in possible funding sources, close coordination with those responsible for processing or reviewing funding applications is highly recommended. This coordination may include outreach to the private development community, the MPO/RPO, the county planning commission, PennDOT, and others. Discussions should include a review of the eligibility of the proposed improvement under a given program(s) and the amount of funding that may be reasonably received through the funding source.

The table below lists many of the reasons for considering the use of capital improvement programming to assist in the funding of the maintenance of the existing transportation system, including a listing of the advantages and disadvantages of this approach.

<table>
<thead>
<tr>
<th>When to consider capital improvement programming:</th>
<th>Advantages:</th>
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<tr>
<td>• When preparing a comprehensive plan, capital improvement programming can help ensure that the improvements included in the plan could be reasonably implemented from a fiscal perspective.</td>
<td>• A CIP brings together a full range of funding options for evaluation, going beyond what is eligible for federal funding through the MPO/RPO TIP and the STIP. These options include:</td>
</tr>
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</table>
| • Required for municipalities wishing to levy transportation impact fees. |   o Private contributions or funding  
   o Transportation impact fees levied in accordance with the Transportation Impact Fee Handbook  
   o Bond issuance  
   o Transit Revitalization Investment Districts (TRID)  
   o Borrowing through the Pennsylvania Infrastructure Bank (PIB) or other entities |
Grants through programs such as the Safe Routes to School Program (SRTS)
- Tax Increment Financing (TIF)
- Other funding tools applicable to the municipality.

Disadvantages:
- Requires close coordination to monitor applications and improvements receiving funding from multiple sources.

More information on this tool, including examples of some innovative applications of capital improvement programming that are being implemented in Pennsylvania, are available by clicking [here](#) or on the hyperlinked title to this section.

**Developer Negotiation**

Many municipalities find that negotiating with developers over the cost of off-site improvement—whose need is generated, at least in part, by their proposed development—can be a very effective means of implementing improvements to the transportation system and other infrastructure. Such negotiations are acceptable if conducted in accordance with the MPC and current case law. Municipalities should conduct all developer negotiations under advice of their solicitor to ensure that all applicable guidelines are followed. A general rule is that municipalities cannot predicate approval of a subdivision or land development proposal on the developer’s willingness to pay for off-site improvements, making joint acceptance of any negotiations necessary. Also, the ability to negotiate for off-site transportation system improvements is lost when a municipality has adopted Transportation Impact Fees in accordance with the procedures outlined above and in PennDOT Publication 639.

Municipalities should always seek to tie any developer negotiation to identifiable public needs and costs. Such public needs and planning level costs should be part of the adopted comprehensive plan and/or MPO/RPO Long-Range Transportation Plan when possible. Cost estimates should also be incorporated into a regularly updated capital improvements program. Comprehensive plans that clearly identify anticipated needs such as transportation system improvements, recreational facilities, public water and sewer system capacity, and others, provide all participants involved in the negotiations with an understanding of the needs generated by new development. This understanding can provide a firm basis for the negotiations.

Current Pennsylvania law does not provide for formal Public Private Partnership (PPP) agreements. However, municipalities who are able to effectively negotiate off-site improvements to the transportation system with developers whose projects impact the operation of the system are, in effect, entering into partnerships with the private sector to improve public facilities. As such, these negotiations should be conducted under the advisement of legal counsel and in accordance with all applicable laws as stated above.
The table below lists many of the reasons for considering the use of developer negotiations for funding the maintenance of the existing transportation system, including a listing of the advantages and disadvantages of this approach.

**When to consider developer negotiation:**
- When a comprehensive plan or other public plan identifies anticipated off-site public facility/service needs associated with anticipated development.
- When a mutually acceptable conclusion regarding contributions to off-site improvements is anticipated to be reached between a developer and the municipality.

**Advantages:**
- Encourages private investment in transportation infrastructure.
- Links development with municipal and MPO/RPO plans.

**Disadvantages:**
- May not be productive if there is weak demand for development.
- Ineffective negotiations can result in the loss of a desirable development project.
- Development approval cannot be predicated on a developer's willingness to contribute to off-site improvements.

More information on this tool, including examples of some effective uses of developer negotiations that are being implemented in Pennsylvania, are available by clicking here or on the hyperlinked title to this section.

**Loan and Funding Reimbursement Programs**

There are several funding reimbursement and loan programs that are available for funding transportation projects within the Commonwealth. These range from providing safety improvements around schools with funding from the Safe Routes to School Program (SRTS) to various types of project financing through loan programs including the Pennsylvania Infrastructure Bank (PIB).

The PIB was established in 1998 and allows PennDOT to administer, through the bank, low interest loans for eligible transportation improvement projects. The repayments on the loan go to a revolving account allowing for new project loans to be administered. There are four separate accounts to cover highway/bridge, transit, aviation, and rail freight projects. Loan terms are up to 10 years, and construction projects receive the highest priority. Several PIB loans have involved Public-Private Partnerships (PPPs), which have expanded opportunities for innovative financing.

Since the inception of the Federal SRTS program in 2005, PennDOT has committed nearly $20 million to 70 projects that will enable and encourage children to safely walk or bicycle to school. These projects, which are currently being implemented
across the Commonwealth, utilize funding allocated to Pennsylvania through the nation’s federal transportation bill, the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU). The grants are 100 percent federally-funded and require no local match.

SRTS funds are provided to schools and municipalities for infrastructure and non-infrastructure projects. In Pennsylvania, 10 percent of funds are required to be spent on non-infrastructure activities—actions that do not involve construction, but that serve to educate, encourage, or otherwise enable students to walk or bike to school. The remaining 90 percent of funds are to be spent on more traditional infrastructure projects (sidewalks, crosswalks, signs, etc.).

Building on the success of the first round of the Pennsylvania Community Transportation Initiative (PCTI), PennDOT has set aside $24 million in the first two years of the 2011-2014 Transportation Improvement Program (TIP) for potential projects that display Smart Transportation principles. PennDOT has developed an automated application process that allows project sponsors to clearly show their transportation-related challenges and problems and how they could be solved using Smart Transportation principles. The PCTI application guidebook clarifies some of the transportation processes that local municipal officials might not be familiar with and walks them through each section of the application. Round 2 PCTI-eligible construction projects should be ready to be delivered within two years of award.

Planning funds are also available through the Department of Conservation and Natural Resources (DCNR) to develop county and local open space, recreation, and greenway plans. County plans identify a greenway network, highlight opportunities for connections beyond county borders, and provide a context for more local greenway planning at the multi-municipal or municipal level. Improving bicycle and pedestrian opportunities through trail/sidewalk/bike networks is often a work element. Funding multi-municipal greenway/trail planning is a DCNR priority. Information on current funding opportunities is available through the DCNR Web site. Plans completed through this process are also available through the DCNR Web site.

Another funding opportunity available to municipalities is the ability to enter into bonding agreements for infrastructure improvements, including transportation. The bond revenue can be used to complete the transportation system improvement, with the bond repaid through tax or other municipal revenues. Such bonding actions are in effect loans that can be used for transportation system improvements.

The table below lists many of the reasons for considering the use of Funding program funds for maintaining various components of the transportation system, including a listing of the advantages and disadvantages of this approach.
### When to consider grant and loan programs:

- When looking to address an identified transportation improvement need, but funding from traditional state or local sources is not available.

### Advantages:

- Borrowing may allow for advancing of projects that would otherwise take years for enough funding to become available.
- PIB is established, successful, and supported by local elected officials.
- SRTS projects are 100 percent federally-funded and do not require a local match.
- PCTI projects are 100 percent federally-funded and do not require a local match.

### Disadvantages:

- The PIB requires a long-term, dedicated revenue source to avoid depleting resources for ongoing maintenance and other existing programs.
- The PIB has limited capacity and a very large number of loans.
- SRTS funding is competitive and not able to meet all needs at all schools.
- SRTS projects are funded on a cost reimbursement basis only. This means that no funds are provided upfront; sponsors are reimbursed for eligible project costs incurred.
- An array of state and federal regulations and procedures must be followed in order for the SRTS projects to be implemented.
- New SRTS program funding is currently on hold in Pennsylvania until new federal legislation is passed.

More information on this tool, including examples of some effective uses of loan and funding reimbursement tools that are being implemented in Pennsylvania, are available by clicking [here](#) or on the hyperlinked title to this section.

### Tax Increment Financing (TIF)

A useful tool for advancing projects in redevelopment areas is tax increment financing. TIFs allow for municipalities to borrow against anticipated property value increases in the area that are in part due to the transportation improvements being completed. In order to calculate the possible revenue increase that may occur after completion of a project, current property tax revenues within the TIF boundaries are used as a baseline. A percent of future increases in tax ratables are dedicated to the TIF and used to pay the project costs or repay the bonds or other obligations that helped finance the project. Typically a TIF is a localized area which anticipates...
growth and will need supporting improvements, however, the concept can be applied more broadly.

The table below lists many of the reasons for considering the use of tax increment financing for funding the maintenance of the existing transportation system, including a listing of the advantages and disadvantages of this approach.

| When to consider TIF: | • When a transportation project is identified in an area where property values will increase due in part to the completion of that project and the project is unlikely to be funded by other means.  
• The governing body of the municipality is in support to designate and approve the improvement site. |
|-----------------------|----------------------------------------------------------------------------------------------------------|
| Advantages:           | • Tax increases with rising property values help to keep pace with inflation.  
• May help to stimulate economy in a blighted area. |
| Disadvantages:        | • Not a direct transit capital investment revenue source.  
• Potentially high administrative costs, in that new revenue collection mechanisms would likely need to be formed. |

More information on this tool, including examples of tax increment funding that are being implemented in Pennsylvania, are available by clicking here or on the hyperlinked title to this section.

**Transit Revitalization Investment Districts (TRID)**

Pennsylvania enacted Act 238 of 2004 to authorize the creation of Transit Revitalization Investment Districts (TRIDs) to enable the financing of public improvements within one-half mile of transit stop of station. TRID boundaries coincide with a value capture area similar to a TIF that enables local jurisdictions and the transit agency to share the tax revenues generated by real estate investment for the needed infrastructure improvements. The creation of a TRID requires the formation of a partnership among local governments, transit agencies, and the private sector.

The table below lists many of the reasons for considering the use of TRID funds for maintaining various components of the transportation system, including a listing of the advantages and disadvantages of this approach.
When to consider TRID:

- When an area is identified in a comprehensive plan as having the potential for TOD development and a need for community revitalization/redevelopment, and there is cooperation among agencies for this common goal.

Advantages:

- Helps to facilitate better cooperation among state, local, transit, and private entities in order to advance TOD development.
- TRID Act directs state agencies to give local governments access to other state-administered programs and capital resources.
- TRID locations, with close proximity to transit stations, are intended to support ridership and encourage denser and more walkable communities.
- Can support investment on underutilized areas with transit access.
- TRID development can create transit villages by stimulating PPPs, establishing value capture areas, and encouraging private sector investment.

Disadvantages:

- No implementation experience in Pennsylvania.
- Potentially high administrative costs.
- TRIDS represent a new, potentially uneasy role for transit agencies, which would be placed in partnerships with developers and local municipalities.

More information on this tool, including examples of the studies necessary to implement a TRID program that were completed in Pennsylvania, are available by clicking here or on the hyperlinked title to this section.

Transportation Impact Fees

Act 209 of 1990 enables a fee to be imposed on developers for the provision of transportation infrastructure improvements. This law attempts to distribute some of the cost of off-site, but development-related transportation improvements to those who are responsible for and profiting from the development. Local governments can therefore charge a one-time fee to cover some of the cost of transportation system improvements made necessary by development, but which are located off-site and are therefore not mandated through locally-mandated site design standards. PennDOT’s Publication 639 provides detailed guidance for the implementation of...
transportation impact fees.
The table below lists many of the reasons for considering the use of impact fees for funding the maintenance of the existing transportation system, including a listing of the advantages and disadvantages of this approach.

| When to consider transportation impact fees: | • When new development is going to have an impact on transportation in the area around the development (i.e., would cause roadway level of service to decrease) • Works best in areas where there is a demand for development (see Pub 639). |
| Advantages: | • Revenues from impact fees are typically dedicated to a certain road or transit improvement that would serve the new development. • Revenues can be used for off-site improvements that can otherwise not be mandated by a municipality. |
| Disadvantages: | • Current law makes funding state projects difficult. • Impact fees are only applicable to new development. • Revenues are highly dependent on development opportunities in the area where implemented. • Uneven risks between municipality and developer. • Prerequisite studies may be perceived to be time-consuming and expensive. |

More information on this tool, including examples of some transportation impact fees that are being implemented in Pennsylvania, are available by clicking here or on the hyperlinked title to this section.

**Transportation Partnerships**

Formal transportation partnerships involve the development and adoption of Transportation Development Districts (TDD) pursuant to Act 47 of 1985 as amended by Act 75 of 1986, commonly known as the Transportation Partnership Act. There are a number of types of informal partnerships, such as the developer negotiations discussed earlier in this handbook. Formal partnerships are a transportation improvement financing tool whereby “fair and reasonable” assessments are imposed on each property within the TDD or on all business properties within the TDD. Any TDD tax must be imposed only within the TDD and its proceeds spent within the TDD. Prior to assessing such a tax or assessment, the following steps must be followed:
Chapter 5: Funding the Maintenance of the Existing Transportation System

- A comprehensive study is required that identifies the improvements needed, all properties to be benefitted, and the formula for establishing cost allocations.

- A multiyear transportation improvement plan (TIP) and financial plan must be developed.

- The comprehensive study and TIP must be submitted to county and regional planning agencies and/or PennDOT for review and approval for inclusion in the Metropolitan Planning Organization (MPO) or Rural Planning Organization (RPO) TIP and PennDOT 12-Year Program as appropriate.

The table below lists many of the reasons for considering the use formal transportation partnerships for improving or maintaining various components of the transportation system, including a listing of the advantages and disadvantages of this approach.

| When to consider transportation partnerships: | • When an area is identified in a comprehensive plan as being in need of transportation improvements for which adequate public funding is not available. |
| Advantages: | • Helps to facilitate better cooperation among state, local, transit, and private entities in order to advance transportation improvements. |
| | • Cost for improvements is assessed to those properties specifically benefitting. |
| Disadvantages: | • Limited implementation experience in Pennsylvania. |
| | • Assessments must be made on both existing and new businesses or properties within the TDD, generating potential opposition from existing property owners. |

More information on this tool, including examples of some transportation impact fees that are being implemented in Pennsylvania, is available by clicking here or on the hyperlinked title to this section.
Chapter 6: Improving Mobility and Efficiency

Introduction

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 may also be identified more simply as areas with increasing travel times or other similar features. Decreased mobility may be the result of inadequately designed facilities and/or growth rates that have exceeded those anticipated in system design.

Traffic congestion is often a result of poorly integrated transportation and land use planning. Guidance on effective techniques for combining these two important planning components can be found in PennDOT Publication 688, *Integrating Transportation and Land Use in Comprehensive Plans*. The tools listed below can then be used to implement the necessary land use controls and manage the transportation system in such a way to achieve the best balance possible between growth pressures and the capacity of the transportation system. These tools can also be used to help ensure that excess capacity is not created as transportation and other infrastructure is constructed with new development, thereby increasing development pressure and leading to unforeseen secondary impacts. As stated above, the ideal approach is to adopt integrated land use and infrastructure management controls that both serve to maintain an efficient transportation system.

Applicable Tools

**Access Management Regulations and Coordinated HOP Processing**

Access management hinges on balancing two concepts—mobility and accessibility. While both aspects are critical, failure to manage access adequately can lead to an increase in crashes and congestion, thereby detracting from a community’s quality of life. Without applying access management techniques, studies show that corridors experience:

- Diminished roadway capacity, resulting in greater congestion.
- An increase in the number of crashes with other vehicles, as well as pedestrians and cyclists.
- Reduced character.
- An unfriendly environment for those who walk or bike.
An effectively implemented access management program can improve public safety and reduce traffic congestion. Studies show that as the number of access points increases, crash rates increase. In addition to fatalities and injuries, roadway incidents are responsible for nearly 25 percent of delays.

Extensive guidance on access management regulation, including model access management ordinance language or SALDO access management provisions are found in PennDOT Publication 574, *Access Management — Model Ordinances For Pennsylvania Municipalities Handbook*.

PennDOT’s HOP process is a critical component of any access management program. According to the Department’s *Policies and Procedures for Transportation Impact Studies Related to Highway Occupancy Permits*, municipalities are invited and encouraged to participate in the review of HOP applications within their jurisdictions. Municipalities are given the opportunity to provide input on mitigation strategies as well as concurrence on Alternative Transportation Plans through the HOP process. PennDOT recommends that municipalities coordinate their SALDO review and approval process with their District Permit Office as indicated earlier in this handbook under the “Improving Safety” goal. Driveway access onto local roads is regulated at the municipal level through local driveway permits and standards.

The table below lists many of the reasons for implementing access management regulations and having a coordinated HOP program to improve mobility and efficiency, including a listing of the advantages and disadvantages of this approach.

| When to consider access management regulations and coordinated HOP processing: | • When the comprehensive plan identifies corridors with congestion issues and/or significant growth anticipated. |
| | • When roadway sections are identified as having high accident rates relating to vehicles entering or exiting the roadway. |
| | • If roadways with high traffic volumes also have heavy bicycle and/or pedestrian usage. |
| | • When preserving a corridor for regional or through traffic is a concern. |
| | • Municipalities should coordinate closely with the PennDOT District Office for all proposed access points and significant access changes on State roadways. |
| | • If the municipality adopts an access management ordinance that affects state-owned roads. |
| | • If a municipality plans to adopt transportation impact fees. |

| Advantages: | • Improves public safety for vehicles, pedestrians, and bicyclists. |
Chapter 6: Improving Mobility and Efficiency

- Reduces traffic congestion.
- Improves safe travel speeds/reduces delay.
- More attractive roadway corridor.
- Can help preserve property values.
- Reduces fuel consumption and air emissions.
- Improves roadway efficiency.
- Inexpensive solution for improving roadway capacity and safety.
- PennDOT standards and municipal issues/concerns can 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.
- Some off-site improvement needs may be addressed through the HOP process.
- Access points can be better coordinated and managed, especially in congested or growth corridors.

**Disadvantages:**
- Can be controversial when businesses feel there are negative economic impacts from restricted access.
- Limited ability to retrofit existing driveways.
- May require additional coordination effort during the time-constrained subdivision/land development process.
- Does not help address desired uses/density, only access design and construction.

More information on access management and coordinated HOP processing, including examples that are applicable in Pennsylvania, are available by clicking [here](#) or on the hyperlinked title to this section.

**Official Map**

An official map should not be confused with a municipal base map, zoning map, or a map from the comprehensive plan. An official map, as enabled under Article IV of the MPC, is actually the combination of a map and ordinance that 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 roadways or for roadway improvements. They are therefore

![Official Map](image-url)
used to complement zoning and help implement the comprehensive plan and a capital improvement program.

Municipal officials may use aerial photography, photogrammetric mapping, or other similar methods to depict the areas projected for future use and must then adopt the associated ordinance to demonstrate the municipal interest in acquiring properties for public purposes in the future. The acquisition then occurs either through negotiations with the property owner or eminent domain. Should a landowner submit a plan indicating an intent to build, the municipality has one year to acquire the property or begin condemnation proceedings.

Official maps can be used to advance a number of public purposes, including improving mobility and transportation system efficiency by ensuring that the area needed for system improvements remains available. Similarly, areas can be reserved for roadways to address connectivity issues and to provide the opportunity for parallel access routes. Such improvements can minimize the congestion pressure on major roadways, thereby improving overall mobility and efficiency.

The table below lists many of the reasons for adopting an official map to improve mobility and efficiency, including a listing of the advantages and disadvantages of this approach.

| When to consider an official map: | • When the comprehensive plan identifies significant areas the municipality will eventually need for public purposes (i.e., public parks, transportation system improvements, utility rights-of-way, etc.).
• When the anticipated development activity in the comprehensive plan future land use map may limit the areas available for public infrastructure and facilities. |
|---|---|
| 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. |
| Disadvantages: | • May be controversial, especially in cases where eminent domain is necessary for property acquisition.
• Unless the designated improvements are made part of a subdivision/land development, municipalities may still need the funding for property acquisition and improvement construction.
• The municipality is limited to one year to acquire property once an owner submits written notice of intentions to develop the land. |
More information on official maps, including examples that are applicable in Pennsylvania, are available by clicking here or on the hyperlinked title to this section.

**Site Design/Roadway Standards**

Site design and roadway standards are almost always regulated in Pennsylvania through a county or municipal subdivision and land development ordinance (SALDO), which is enabled through the Municipalities Planning Code (MPC) Article V. However, some municipalities have been known to adopt a separate ordinance for roadway/street design standards and other similar infrastructure systems. In cases where municipalities do not adopt a SALDO, but the county has an adopted SALDO, the county regulations apply to subdivision and land development activity in the municipality. Regardless of the source of the SALDO regulations, these ordinances can provide a very effective tool for improving mobility and efficiency throughout the transportation system.

There are numerous aspects of a SALDO or roadway ordinance that can impact overall mobility conditions. For instance, establishing safe and context-sensitive roadway and shoulder widths through a SALDO or separate ordinance can help ensure that vehicles, pedestrians, and bicyclists each have safe pathways with minimal conflicts to slow traffic movement. Managing construction standards can minimize maintenance issues such as potholes that can slow traffic flow. Also, these ordinances also help establish standards for traffic controls such as signage and signals, thereby further improving mobility and efficiency.

The table below lists many of the reasons for implementing site design and roadway standards to improve mobility and efficiency, including a listing of the advantages and disadvantages of this approach.

<table>
<thead>
<tr>
<th>When to consider site design and roadway standards:</th>
</tr>
</thead>
<tbody>
<tr>
<td>- When issues relating to inconsistent or inadequate roadway conditions or standards are identified in the comprehensive plan.</td>
</tr>
<tr>
<td>- If the comprehensive plan identifies needs relating to conflicts between vehicular traffic, bicycles, and/or pedestrians.</td>
</tr>
<tr>
<td>- When congestion issues relating to the existing transportation system are identified in the comprehensive plan.</td>
</tr>
<tr>
<td>- If roadway standards in the municipal ordinances have not been updated to current standards.</td>
</tr>
</tbody>
</table>
**Advantages:**
- Helps establish consistent, safe road conditions.
- Can establish standards for managing traffic movement through signage and signalization.
- Requirements can address issues relating to a wide range of mobility concerns and minimize maintenance needs through improved design.

**Disadvantages:**
- Improvements required of a developer can only be implemented on-site for new development; not applicable to retrofitting without development.
- Standards need to be tailored to the transportation system and specific needs in the municipality.

More information on site design and roadway standards, including examples that are applicable in Pennsylvania, are available by clicking [here](#) or on the hyperlinked title to this section.

**Traffic Operations**

The traffic operations category includes a wide range of potential municipal actions to improve congestion and related mobility issues identified in the comprehensive plan. One of the most common and cost-effective techniques in this category is to manage traffic signal timing, providing for maximum synchronization between numbers of signals along a corridor. Studies have shown that optimizing traffic signals along a congested corridor can produce cost-benefit ratios as high as 40 to 1. A good resource for understanding the importance of signal synchronization and the technical aspects of implementing this tool can be found in FHWA’s [Traffic Signal Timing](#).

Access management as discussed throughout this handbook is another technique for managing traffic operations at the local level. Extensive guidance on access management regulation, including model access management ordinance language or SALDO access management provisions are found in PennDOT Publication 574, *Access Management – Model Ordinances For Pennsylvania Municipalities Handbook*.

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. There are several guidance...
documents available to assist in the development of effective traffic incident management programs, including those available through FHWA and AASHTO.

The table below lists many of the reasons for managing traffic operations to maintain or improve mobility and transportation system efficiency, including a listing of the advantages and disadvantages of the various tools within this approach.

| When to consider traffic operations: | • When the comprehensive plan identifies congestion/capacity issues along existing corridors.  
| | • When there are a series of traffic signals in a corridor with projected poor level of service. |
| Advantages: | • Signal synchronization, lane management, and similar actions can be significantly less expensive ways of improving system capacity than lane addition.  
| | • Traffic operational improvements can improve safety conditions. |
| Disadvantages: | • Operational improvements may not provide adequate capacity improvement in rapidly-growing areas. |

More information on managing traffic operations, including examples that are applicable in Pennsylvania, are available by clicking here or on the hyperlinked title to this section.

**Zoning for Mixed Uses and to Accommodate Higher Densities**

The applicability of zoning for mixed uses and to accommodate higher densities in maintaining or improving mobility and efficiency is highly dependent on the future land use component of the municipal comprehensive plan. Municipalities with existing mixed-use development or clusters/nodes of higher-density residential land, and municipalities wishing to accommodate future growth in compact areas with adequate infrastructure, should seriously consider this implementation technique. Many of the specific tools falling under this implementation category can result in development types that can provide a range of residential, retail, and employment opportunities. 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 can be a significant factor in reducing vehicular trips on major thoroughfares and improving the efficiency of the system over the long term.

Examples of innovative zoning techniques that can help improve transportation system mobility and efficiency as emphasized in a comprehensive plan include:
• Transit-Oriented Development (TOD) – When effectively coordinated with transit system providers, this higher-density, typically mixed-use technique can accommodate a significant amount of a municipality’s future growth without the single occupancy vehicle generation rates expected with more traditional approaches. TOD can be used to expand existing nodes of development to make them more amenable to existing transit routes or to create new areas where transit service can be made available. The end result can be a fairly compact area of relatively high density with overall system efficiency maintained by accommodating trip demands through transit, bicycle, and pedestrian access.

• Transfer of Development Rights (TDR) – Much like TOD, this higher-density tool can focus development in smaller areas that are better served with transportation system access and may accommodate greater transit service. The resulting clustered development pattern may also have greater neighborhood identity and can result in the preservation of significant amounts of open space. Increases in bicycle/pedestrian activity may also be realized, further contributing to overall system efficiency by reducing vehicular traffic generation rates. The combination of these factors can have a substantial positive impact on system mobility and efficiency.

• Traditional Neighborhood Development (TND) – This tool provides for a range of residential densities and a mix of residential and non-residential uses, often within the same building. When appropriately developed, TND can be a very effective means of connecting new developments with areas of existing mixed-use development; providing for urban infill; and creating new development in a condensed area that encourages walking, bicycling, and other non-motorized travel. As such, TND regulations can help a municipality maintain existing mobility levels and system efficiency.

The table below lists many of the reasons for implementing zoning for mixed uses and to accommodate higher densities to maintain or improve mobility and transportation system efficiency, including a listing of the advantages and disadvantages of the various tools within this approach.
**Chapter 6: Improving Mobility and Efficiency**

<table>
<thead>
<tr>
<th>When to consider zoning for mixed uses and to accommodate higher densities:</th>
</tr>
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<tbody>
<tr>
<td>• When the comprehensive plan calls for areas for high-density residential, whether traditional or clustered.</td>
</tr>
<tr>
<td>• If the comprehensive plan and the community support the concept of mixed-use development.</td>
</tr>
<tr>
<td>• When there is a community desire to accommodate its fair share of development in a smaller portion of the municipality, preserving more open space for the future.</td>
</tr>
<tr>
<td>• If there is a willingness to accept less traditional zoning approaches or control over specific uses, focusing more on the form of future development.</td>
</tr>
<tr>
<td>• When there is a desire to facilitate transit access for future development.</td>
</tr>
<tr>
<td>• When the comprehensive plan identifies portions of the municipality for high-density development and other areas for open space preservation.</td>
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</tbody>
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<table>
<thead>
<tr>
<th>Advantages:</th>
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</thead>
<tbody>
<tr>
<td>• More concentrated, mixed-use development can reduce the number of access points onto a roadway corridor.</td>
</tr>
<tr>
<td>• Can provide for a mix of compatible uses within walking or bicycling distance from residential uses and reduce local automobile traffic.</td>
</tr>
<tr>
<td>• Can accommodate a community’s fair share of uses within a smaller footprint, helping to preserve more open space.</td>
</tr>
<tr>
<td>• High percentage of the neighborhood is walkable.</td>
</tr>
<tr>
<td>• Bus transit tends to be efficient.</td>
</tr>
<tr>
<td>• Neighborhoods often develop strong sense of community.</td>
</tr>
<tr>
<td>• Can be easily linked to adjacent higher-density or urban areas.</td>
</tr>
<tr>
<td>• Significant public amenities can be accommodated and maintained.</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Disadvantages:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Areas of higher density or mixed uses can be controversial in existing low-density communities.</td>
</tr>
<tr>
<td>• Residential development in areas zoned for mixed uses may only support neighborhood commercial uses (not regional).</td>
</tr>
<tr>
<td>• Densities may be too low to overcome overall pattern of sprawl.</td>
</tr>
<tr>
<td>• Requires relatively large areas to support a mix of uses.</td>
</tr>
</tbody>
</table>

More information on zoning for mixed uses and to accommodate higher densities, including examples that are applicable in Pennsylvania, are available by clicking here or on the hyperlinked title to this section.
Chapter 7: Encouraging Multimodal Transportation

Introduction

A truly effective transportation system accommodates all anticipated modes efficiently. Many comprehensive plans identify issues including conflicts between bicycle/pedestrian/buggy and vehicular traffic, land use patterns that are not conducive to transit service, and other similar situations. These conditions can, in turn, lead to safety concerns and congestion. There are a wide range of tools available to minimize modal conflicts and provide for transit usage that can reduce single occupant vehicular traffic, thereby improving safety and reducing congestion. These measures may also have the additional benefit of helping to improve community identification and sense of place through mixed-use developments, bicycle/pedestrian facilities, and a mix of allowable density.

Applicable Tools

Parking Considerations

Providing adequate parking reduces conflicts between traveling and parked vehicles and provides a safe means for pedestrians to access homes and businesses. However, many municipalities tend to require significantly more parking than is truly needed, leading to impacts such as encouraging greenfield development where land cost is less, encouraging single occupancy travel, diminishing aesthetics associated with large areas of asphalt, and producing water quality and quantity issues relating to parking lot runoff.

Parking rates can actually be very regional in nature based on a number of factors including availability of transit, adequacy of bicycle and pedestrian facilities, and overall density and extent of mixed use development. Therefore, while standards available through the Urban Land Institute (ULI) and Institute of Transportation Engineers (ITE) provide good estimates of parking demand for various uses, localized customization of parking rates is recommended.

One of the primary means of managing parking to encourage multimodal transportation is through establishing maximum, as opposed to minimum, parking requirements. The strategy may be combined with related strategies, including establishing remote, often shared parking and considerations for reserve parking where developers construct the majority of required parking (approximately 75 percent) initially, and are then required to install the remainder.
of the parking if it is actually needed. Municipalities may want to evaluate parking usage in existing facilities to determine whether current parking requirements are excessive for particular uses. If done in a way to provide an adequate parking supply while reducing the area dedicated to parking, aesthetics can be greatly improved and negative impacts associated with increased stormwater runoff can be greatly decreased.

There are a number of other parking strategies that municipalities can use to encourage multimodal transportation. For instance, variable parking pricing—which increases during peak hours and locations with higher demand—may encourage increased transit or usage or pedestrian activity. Municipalities may also provide for remotely located shared parking facilities. With that scenario on-site parking is reduced in lieu of shared facilities at a remote location where transit service or bicycle/pedestrian facilities are readily available. The municipal parking facilities may even be funded by in-lieu fees paid by developers opting not to build as much on-site parking.

The table below lists many of the reasons for managing parking to encourage multimodal transportation, including a listing of the advantages and disadvantages of this approach.

| When to consider parking system management: | • When the comprehensive plan identifies areas with either excessive or inadequate parking.  
| | • When available lands are limited in size, but the comprehensive plan emphasizes redevelopment/infill.  
| | • When a municipality desires to emphasize bicycle/pedestrian or transit opportunities.  
| Advantages: | • Reducing parking requirements in areas with excessive facilities can lead to more efficient development patterns.  
| | • May facilitate the use of brownfield-type areas as options rather than large greenfield sites.  
| | • Can encourage the use of transit and/or bike-ped travel.  
| | • Smaller parking areas can lead to greatly reduced stormwater management issues.  
| Disadvantages: | • Reducing parking requirements in areas with already inadequate supplies can lead to congestion and related problems.  
| | • Inadequate parking may limit the profitability of commercial/industrial/office facilities and lead to difficulty in attracting new businesses. |
More information on parking system management, including examples that are applicable in Pennsylvania, are available by clicking here or on the hyperlinked title to this section.

**Site Design and Roadway Standards**

Site design and roadway standards are almost always regulated in Pennsylvania through a county or municipal subdivision and land development ordinance (SALDO), which is enabled through the Municipalities Planning Code (MPC) Article V. However, some municipalities have been known to adopt a separate ordinance for roadway/street design standards and other similar infrastructure systems. In cases where municipalities do not adopt a SALDO, but the county has an adopted SALDO, the county regulations apply to subdivision and land development activity in the municipality. Regardless of the source of the SALDO regulations, these ordinances can supplement other implementation tools in facilitating alternatives to traditional single occupancy vehicle travel choices.

There are numerous aspects of a SALDO or roadway ordinance that can affect multimodal travel opportunities. For instance, standards for bicycle and pedestrian facilities such as requirements for improved shoulders, dedicated bicycle lanes, crosswalks, and sidewalks are typically incorporated into a SALDO. Similarly, establishing the standards whereby traffic control signs and signals can also improve safety for bicycles, pedestrians, and other non-motorized means of transportation.

The table below lists many of the reasons for implementing site design and roadway standards to improve facilitate multimodal transportation, including a listing of the advantages and disadvantages of this approach.

<table>
<thead>
<tr>
<th>When to consider site design and roadway standards:</th>
<th></th>
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<tbody>
<tr>
<td>• If the comprehensive plan identifies needs relating to bicycle and/or pedestrian facilities.</td>
<td></td>
</tr>
<tr>
<td>• When issues relating to inconsistent or inadequate roadway conditions or standards are identified in the comprehensive plan.</td>
<td></td>
</tr>
<tr>
<td>• If roadway standards in the municipal ordinances have not been updated to current standards.</td>
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</table>

<table>
<thead>
<tr>
<th>Advantages:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>• Helps establish consistent, safe road conditions.</td>
<td></td>
</tr>
<tr>
<td>• Typically minimizes problems associated with storm water flooding on roadways and bicycle/pedestrian facilities.</td>
<td></td>
</tr>
<tr>
<td>• Requirements can address issues relating to a wide range of safety concerns and potential conflicts between vehicular traffic and other modes of transportation.</td>
<td></td>
</tr>
</tbody>
</table>
Disadvantages:

- Improvements required of a developer can only be implemented on-site for new development; not applicable to retrofitting without development.
- Standards need to be tailored to the transportation system and specific needs in the municipality.

More information on implementing site design and roadway standards, including examples that are applicable in Pennsylvania, are available by clicking here or on the hyperlinked title to this section.

**Transit Revitalization Investment Districts (TRID)**

Pennsylvania enacted Act 238 of 2004 to authorize the creation of Transit Revitalization Investment Districts (TRIDs) to enable the financing of public improvements within one-half mile of transit stop of station. TRID boundaries coincide with a value capture area similar to a TIF that enables local jurisdictions and the transit agency to share the tax revenues generated by real estate investment for the needed infrastructure improvements. The creation of a TRID requires the formation of a partnership among local governments, transit agencies, and the private sector. TRIDs may be a useful tool to facilitate and implement TOD’s in communities which have identified public transit, redevelopment and community revitalization objectives within their comprehensive plan.

The table below lists many of the reasons for considering the use of TRID funds for maintaining various components of the transportation system, including a listing of the advantages and disadvantages of this approach.

<table>
<thead>
<tr>
<th>When to consider TRID:</th>
<th>When an area is identified in a comprehensive plan as having the potential for TOD development and a need for community revitalization/ redevelopment, and there is cooperation among agencies for this common goal.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advantages:</td>
<td>Helps to facilitate better cooperation among state, local, transit, and private entities in order to advance TOD development.</td>
</tr>
<tr>
<td></td>
<td>TRID Act directs state agencies to give local governments access to other state-administered programs and capital resources.</td>
</tr>
<tr>
<td></td>
<td>TRID locations, with close proximity to transit stations,</td>
</tr>
</tbody>
</table>
are intended to support ridership and encourage denser and more walkable communities.

- Can support investment on underutilized areas with transit access.
- TRID development can create transit villages by stimulating PPPs, establishing value capture areas, and encouraging private sector investment.

**Disadvantages:**

- No implementation experience in Pennsylvania.
- Potentially high administrative costs.
- TRIDS represent a new, potentially uneasy role for transit agencies, which would be placed in partnerships with developers and local municipalities.

More information on this tool, including examples of the studies necessary to implement a TRID program that were completed in Pennsylvania, are available by clicking here or on the hyperlinked title to this section.

**Zoning for Mixed Uses and to Accommodate Higher Densities**

The applicability of zoning for mixed uses and to accommodate higher densities in encouraging multimodal transportation is highly dependent on the future land use component of the municipal comprehensive plan. Municipalities with existing mixed-use development or clusters/nodes of higher density residential land, and municipalities wishing to accommodate future growth in compact areas with adequate infrastructure, should seriously consider this implementation technique. Many of the specific tools falling under this implementation category can result in highly desirable development types that can provide a range of residential, retail, and employment opportunities. Mixed-use zoning and accommodating a municipality’s fair share of development in smaller, higher-density areas with multiple transportation options can be a significant factor in facilitating transit and multimodal transportation over the long term. An added benefit is reducing the demand for vehicular trips through the area.

Examples of innovative zoning techniques that can help facilitate multimodal transportation as emphasized in a comprehensive plan include:

- Transit-Oriented Development (TOD) – When effectively coordinated with transit system providers, this higher density, typically mixed-use technique can accommodate a significant amount of a municipality’s future growth without the single occupancy vehicle generation rates expected with more traditional approaches. TOD can be used to expand existing nodes of development to make them more amenable to existing transit routes or to create new areas where transit service can be made available. The end result can be a fairly compact area of
relatively high density but compatible development types that have the feel of traditional neighborhoods.

- **Transfer of Development Rights (TDR)** – Much like TOD, this higher-density tool can focus development in smaller areas that are better served with transportation system access and may accommodate greater transit service. The resulting clustered development pattern may have greater neighborhood identity and can result in the preservation of significant amounts of open space. Increases in bicycle/pedestrian activity may also be realized, further contributing to neighborhood cohesiveness and identity, thereby reducing vehicular traffic generation rates. The combination of these factors can have a substantial positive impact on facilitating numerous alternative transportation modes.

- **Traditional Neighborhood Development (TND)** – This tool provides for a range of residential densities and a mix of residential and non-residential uses, often within the same building. When appropriately developed, TND can be a very effective means of connecting new developments with areas of existing mixed-use development; providing for urban infill; and creating new development in a condensed area that encourages walking, bicycling, and other non-motorized travel. As such, TND regulations can help a municipality facilitate non-vehicular travel choices.

The following table lists many of the reasons for implementing zoning for mixed uses and to accommodate higher densities to facilitate multimodal transportation choices, including a listing of the advantages and disadvantages of the various tools within this approach.

### When to consider zoning for mixed uses and to accommodate higher densities:

- When the comprehensive plan calls for areas for high-density residential, whether traditional or clustered.
- If the comprehensive plan and the community support the concept of mixed-use development.
- When there is a community desire to accommodate its fair share of development in a smaller portion of the municipality, preserving more open space for the future.
- If there is a willingness to accept less traditional zoning approaches or control over specific uses, focusing more on the form of future development.
- When there is a desire to facilitate transit access for future development.
- When the comprehensive plan identifies portions of the municipality for high-density development and other areas for open space preservation.
Chapter 7: Encouraging Multimodal Transportation

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

Disadvantages:
- Areas of higher density or mixed uses can be controversial in existing low-density communities.
- Residential development in areas zoned for mixed uses may only support neighborhood commercial uses (not regional).
- Densities may be too low to overcome overall pattern of sprawl.
- Requires relatively large areas to support a mix of uses.

More information on zoning for mixed uses and to accommodate higher densities, including examples that are applicable in Pennsylvania, are available by clicking here or on the hyperlinked title to this section.
Chapter 8: Accommodating Growth within the Transportation and Natural Environments

Introduction

Many counties and municipalities are facing growth pressures that are putting undue strain on not only transportation and other public infrastructure, but also on natural and cultural resources that are an integral part of a community’s identity. As indicated earlier, PennDOT has provided guidance on effective techniques for coordinating land use and transportation planning in Publication 688, *Integrating Transportation and Land Use in Comprehensive Plans*. Many of the techniques outlined in this publication can also be used to integrate natural resource planning with the transportation and land use elements of comprehensive plans.

Fully integrated comprehensive plans can be used to identify the critical limiting factors that affect a municipality’s ability to accommodate growth. Failure to identify and plan within such limiting factors leads is likely to lead to congestion, public sewer and/or water capacity issues, unwanted environmental impacts, and a loss of a municipality’s character and sense of place. The land use and transportation system controls presented in this section can be used to maintain adequate infrastructure and protect environmental resources by: accommodating growth pressures in more compact areas; managing access to the transportation system; preserving key corridors; encouraging infill and reuse of existing buildings; acting regionally; and reducing sprawl. Furthermore, implementing a balanced land use – transportation approach can help ensure that excess capacity is not created as transportation and other infrastructure is constructed with new development, thereby increasing development pressure and leading to unforeseen secondary impacts.

Applicable Tools

**Access Management Regulations and Coordinated HOP Processing**

Access management hinges on balancing two concepts—mobility and accessibility. While both aspects are critical, failure to manage access adequately can lead to an increase in crashes and congestion, thereby detracting from a community’s quality of life. Without applying access management techniques, studies show that corridors experience:

- Diminished roadway capacity, resulting in greater congestion.
- An increase in the number of crashes with other vehicles, as well as pedestrians and cyclists.
- Reduced character.
- An unfriendly environment for those who walk or bike.
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. Studies have shown that roadway incidents are responsible for nearly 25 percent of delays. Effective access management controls can accommodate additional driveways and cross streets, providing for economic development opportunities, while helping to maintain acceptable levels of service and safety conditions.

Extensive guidance on access management regulation, including model access management ordinance language or SALDO access management provisions are found in PennDOT Publication 574, *Access Management – Model Ordinances For Pennsylvania Municipalities Handbook*.

PennDOT’s HOP process is a critical component of any access management program. According to the Department’s *Policies and Procedures for Transportation Impact Studies Related to Highway Occupancy Permits*, municipalities are invited and encouraged to participate in the review of HOP applications within their jurisdictions. Municipalities are given the opportunity to provide input on mitigation strategies as well as concurrence on Alternative Transportation Plans through the HOP process. PennDOT recommends that municipalities coordinate their SALDO review and approval process with their District Permit Office as indicated earlier in this handbook under the “Improving Safety” goal. Driveway access onto local roads is regulated at the municipal level through local driveway permits and standards.

The table following the graphic lists many of the reasons for implementing access management regulations and having a coordinated HOP program to improve safety, including a listing of the advantages and disadvantages of this approach.

### When to consider access management regulations and coordinated HOP processing:

- When the comprehensive plan identifies corridors with congestion issues and/or significant growth is anticipated.
- When roadway sections are identified as having high accident rates relating to vehicles entering or exiting the roadway.
- If roadways with high traffic volumes also have heavy bicycle and/or pedestrian usage.
- When preserving a corridor for regional or through traffic is a concern.
- When there are significant proposed access changes on State roadways (coordinate with the PennDOT District...
Chapter 8: Accommodating Growth within the Transportation and Natural Environments

Office).
  - If the municipality adopts an access management ordinance that affects state-owned roads.
  - If a municipality plans to adopt transportation impact fees.

<table>
<thead>
<tr>
<th>Advantages:</th>
<th>Improves public safety for vehicles, pedestrians, and bicyclists.</th>
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<tr>
<td></td>
<td>Reduces traffic congestion.</td>
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<td></td>
<td>Improves safe travel speeds/reduces delay.</td>
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<td></td>
<td>More attractive roadway corridor.</td>
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<td></td>
<td>Can help preserve property values.</td>
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<td></td>
<td>Reduced fuel consumption and air emissions.</td>
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<td></td>
<td>Improves roadway efficiency.</td>
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<tr>
<td></td>
<td>Inexpensive solution for improving roadway capacity and safety.</td>
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<tr>
<td></td>
<td>PennDOT standards and municipal issues/concerns can be jointly addressed through the HOP process.</td>
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<tr>
<td></td>
<td>Provides PennDOT with the municipality’s goals for a corridor to enable coordinated planning of future access points.</td>
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<tr>
<td></td>
<td>Some off-site improvement needs may be addressed through the HOP process.</td>
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<td></td>
<td>Access points can be better coordinated and managed, especially in congested or growth corridors.</td>
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<tr>
<th>Disadvantages:</th>
<th>Can be controversial when businesses feel there are negative economic impacts from restricted access.</th>
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<tr>
<td></td>
<td>Limited ability to retrofit existing driveways.</td>
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<td></td>
<td>May require additional coordination effort during the time constrained subdivision/land development process.</td>
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<td></td>
<td>Does not help address desired uses/density, only access design and construction.</td>
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More information on access management and coordinated HOP processing, including examples that are applicable in Pennsylvania, are available by clicking [here](#) or on the hyperlinked title to this section.

**Adaptive Reuse of Land and Buildings**

Perhaps more commonly thought of in Pennsylvania’s boroughs and cities, all types of municipalities can have underutilized property that may distract from an overall
positive sense of place. Such properties may affect local safety, decrease property values, and/or simply detract from the visual appeal of an area.

Underutilized property is often addressed in cooperation with economic development entities including the Department of Community and Economic Development, chambers of commerce, and/or county or regional redevelopment or industrial development authorities. The role of the comprehensive plan in this process is to identify such properties and establish the most desirable development scenarios. The implementation program should then seek to identify key partners and funding opportunities such as those identified as examples here.

Reusing land and buildings can be a key in municipal goals for infill and economic development, especially in communities without ample open space and those wishing to preserve open space for other uses. Redevelopment can also focus development where transportation and other infrastructure is already in place to accommodate growth. Providing for a smaller development footprint, successful redevelopment activities can also help a municipality to achieve goals for preserving natural resources.

The table below lists many of the reasons for implementing adaptive reuse programs to maintain or improve community character, including a listing of the advantages and disadvantages of this approach.

| When to consider Adaptive Reuse of Land and Buildings: | • When the comprehensive plan identifies vacant or underutilized properties.  
  • When downtown or neighborhood revitalization is identified as a key community goal in the comprehensive plan.  
  • When the comprehensive plan identifies “brownfield” opportunities in the municipality. |
| --- | --- |
| Advantages: | • Can reduce the development pressure on “greenfield” areas.  
  • Can increase tax revenues in communities with vacant or underutilized properties.  
  • Can enhance and improve the economic conditions of blighted communities. |
| Disadvantages: | • May require the use of financial or regulatory incentives. |
More information on the adaptive reuse of land and buildings, including examples that are applicable in Pennsylvania, are available by clicking here or on the hyperlinked title to this section.

**Multimunicipal Zoning and Intergovernmental Cooperative Agreements**

Article VIII-A of the MPC addresses joint municipal zoning in Pennsylvania by enabling municipalities which cooperatively plan for their future to also regulate future growth and change cooperatively. Joint zoning ordinances must be based upon a joint municipal comprehensive plan and be prepared by a joint municipal planning commission established in accordance with the MPC. It is important to note that enactment of a joint municipal zoning ordinance in an area subject to county or municipal zoning constitutes an immediate repeal of the county or municipal zoning ordinance in the subject municipalities. While joint zoning ordinances must be prepared through a joint municipal planning commission, the participating municipalities have the option of implementing the ordinance through a joint or individual zoning hearing boards.

Intergovernmental cooperative planning and implementation agreements are enabled through Article XI of the MPC. ICPIA may be entered into between the governing bodies of counties or any area within a county or counties. They may also include agreements between municipalities/counties and authorities, special districts, and school districts. ICPIAs shall establish the following:

- The process the participating municipalities will use to achieve general consistency between plans and implementing ordinances and a mechanism for resolving disputes over the interpretation of the plans and ordinances.
- The process for review and approval of developments of regional significance.
- The roles and responsibilities of the participating municipalities with respect to the implementation of the regional plan including provision of public infrastructure, affordable housing, and purchase of property for rights-of-way and easements.
- The process for preparing annual reports and any other duties of the participants.
An ICPIA may also designate growth areas, future growth areas and rural resource areas within the plan. This may include a process for redefining these areas periodically.

Multimunicipal zoning and ICPIAs can both be highly-effective tools for accommodating growth within the transportation and natural environments by facilitating regional approaches to growth and development pressures, provision of infrastructure, and increased efficiency in providing necessary services. Municipalities using these planning tools can accommodate their fair share of land use types across municipal boundaries and can work toward more effective preservation of important resources. Growth can also be accommodated where transportation and other infrastructure is best able to provide for the impacts of the development activity.

The table below lists many of the reasons for implementing multimunicipal zoning and ICPIAs to accommodate growth within the transportation and natural environments, including a listing of the advantages and disadvantages of this approach.

**When to consider multimunicipal zoning and Intergovernmental Cooperative Agreements:**
- When multimunicipal comprehensive plans identify land use management or other issues that can be implemented most effectively on an intergovernmental basis.
- When municipalities are seeking cost savings through cooperative action.
- If multimunicipal comprehensive planning indicates that fair share of development types is best shared on a regional basis.

**Advantages:**
- Significant cost savings can be realized through sharing of services, joint purchase of materials, etc.
- All reasonable land use types need not be accommodated within a single municipality when multimunicipal zoning is implemented.

**Disadvantages:**
- Cooperative agreements may be controversial.
- Long-term implementation of multimunicipal zoning or intergovernmental cooperative agreements can prove to be challenging.
- Enforcement across municipal boundaries may be difficult.
More information on multimunicipal zoning and intergovernmental cooperative agreements, including examples that are applicable in Pennsylvania, are available by clicking here or on the hyperlinked title to this section.

**Official Map**

An official map should not be confused with a municipal base map, zoning map, or a map from the comprehensive plan. An official map, as enabled under Article IV of the MPC, is actually the combination of a map and ordinance that 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 roadways or for roadway improvements. They are therefore used to complement zoning and help implement the comprehensive plan and a capital improvement program.

Municipal officials may use aerial photography, photogrammetric mapping, or other similar methods to depict the areas projected for future use and must then adopt the associated ordinance to demonstrate the municipal interest in acquiring properties for public purposes in the future. The acquisition then occurs either through friendly negotiation or eminent domain. Should a landowner submit a plan indicating an intent to build, the municipality has one year to acquire the property or begin condemnation proceedings.

Official maps can be used to advance a number of public purposes, including the accommodation of growth within the transportation and natural environments by ensuring that the area needed for system improvements and important natural resources remains available. For instance, areas can be reserved for roadways to address connectivity issues and to provide the opportunity for parallel access routes. Such improvements can minimize the congestion pressure on major roadways, thereby improving overall mobility and efficiency. Similarly, areas needed to address public park demands or preserve important natural resources can be kept open until they can be acquired permanently for public use and enjoyment.

The table below lists many of the reasons for adopting an official map to improve mobility and efficiency, including a listing of the advantages and disadvantages of this approach.
When to consider an official map:

- When the comprehensive plan identifies significant areas that the municipality will eventually need for public purposes (i.e. public parks, transportation system improvements, utility rights-of-way, etc.).
- When the anticipated development activity in the comprehensive plan future land use map may limit the areas available for public infrastructure and facilities.

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.

Disadvantages:

- May be controversial, especially in cases where eminent domain is necessary for property acquisition.
- Unless the designated improvements are made part of a subdivision/land development, municipalities may still need the funding for property acquisition and improvement construction.
- The municipality is limited to one year to acquire property once an owner submits written notice of intentions to develop the land.

More information on official maps, including examples that are applicable in Pennsylvania, are available by clicking [here](#) or on the hyperlinked title to this section.

**Transit Revitalization Investment Districts (TRID)**

In order to enable local governments, counties, and transit authorities to facilitate and implement Transit-Oriented Developments (TODs), Pennsylvania enacted Act 238 of 2004. This allowed for the creation of Transit Revitalization Investment Districts (TRIDs) as areas that are typically within one-eighth of a mile to one-half mile of a railroad, transit, light rail, busway, or other similar transit stop or station. TRID boundaries coincide with a value capture area that enables local jurisdictions and the transit agency to share the tax revenues generated by real estate investment for the needed infrastructure improvements. This program is administered by the Pennsylvania DCED. A TRID can help a municipality accommodate growth within the transportation environment by encouraging transit usage and enabling the development of higher density areas that are also more amenable to bicycle and
pedestrian travel. This can have a significant impact in reducing single occupancy vehicle travel and thereby lessen congestion on roadways. TRID development, when coupled with other actions to protect open spaces with important natural resources, can also help a municipality accommodate their fair share of growth within a smaller footprint and protect important environmental features.

The table below lists many of the reasons for considering the use of TRID funds for accommodating growth within the transportation and natural environments, including a listing of the advantages and disadvantages of this approach.

<table>
<thead>
<tr>
<th>When to consider TRID:</th>
<th>• When an area is identified in a comprehensive plan as having the potential for TOD development and there is cooperation among agencies for this common goal.</th>
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</thead>
<tbody>
<tr>
<td>Advantages:</td>
<td>• Helps to facilitate better cooperation among state, local, transit, and private entities in order to advance TOD development.</td>
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<tr>
<td></td>
<td>• TRID Act directs state agencies to give local governments access to other state-administered programs and capital resources.</td>
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<td>• TRID locations, with close proximity to transit stations, are intended to support ridership and encourage denser and more walkable communities.</td>
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<td>• Can support investment on underutilized areas with transit access.</td>
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<td></td>
<td>• TRID development can create transit villages by stimulating PPPs, establishing value capture areas, and encouraging private sector investment.</td>
</tr>
<tr>
<td>Disadvantages:</td>
<td>• Limited experience in Pennsylvania.</td>
</tr>
<tr>
<td></td>
<td>• Potentially high administrative costs.</td>
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<tr>
<td></td>
<td>• TRIDS represent a new, potentially uneasy role for transit agencies, which would be placed in partnerships with developers and local municipalities.</td>
</tr>
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</table>

More information on this tool, including examples of the studies necessary to implement a TRID program that were completed in Pennsylvania, are available by clicking here or on the hyperlinked title to this section.

**Urban Growth Areas/Rural Preservation**

Many municipalities in Pennsylvania struggle with development pressures that are focused in rural areas, leading to a loss of important agricultural or forested resources and altering the rural character of the municipality. Such growth is often
in areas reliant on on-site wastewater systems and water supplies, thereby having potentially undesirable environmental impacts. Establishing urban growth areas (UGAs) to define growth areas and preserve rural character can be an important component of a comprehensive plan. It is important to note that UGAs are not typically regulatory in nature, needing to be enforced through modifications to a zoning ordinance, effective water and sewer service boundary management, and similar measures. However, if effectively implemented and regularly reviewed and updated, the UGA technique can result in the economic development opportunities in areas well suited for urbanized uses while preserving significant amounts of rural lands. This approach can thereby enhance both the urban and rural environments and accommodate growth in areas with adequate infrastructure and lacking important natural resources.

Article XI of the MPC, which deals with intergovernmental cooperative planning and implementation agreements, specifically provides for the designation of growth areas where orderly and efficient residential, mixed use, commercial, institutional, and industrial uses can be accommodated and where public services to provide for such growth are provided or planned.

The table below lists many of the reasons for implementing UGAs/rural preservation to accommodate growth within the transportation and natural environments, including a listing of the advantages and disadvantages of this approach.

| When to consider Urban Growth Areas/Rural Preservation: | • When the comprehensive plan identifies sprawl as a significant concern.  
• When agricultural, forest land, or open space preservation is identified as a goal in the comprehensive plan.  
• If a municipality identifies loss of rural character as a concern in the comprehensive plan. |
|-----------------|------------------------------------------------------------------------------------------------|
| Advantages:     | • Incorporating UGBs in a comprehensive plan can help guide the establishment of zoning district boundaries and planning for public sewer and water service.  
• Can encourage higher densities and walkable communities and minimize the need for new roads. |
| Disadvantages:  | • Requires consistent zoning and public water and sewer management for effective implementation.  
• UGBs may be best suited for multi-municipal applications.  
• Should be regularly reevaluated. |
More information on UGBs/rural preservation, including examples that are applicable in Pennsylvania, are available by clicking here or on the hyperlinked title to this section.

**Zoning for Mixed Uses and to Accommodate Higher Densities**

The applicability of zoning for mixed uses and to accommodate higher densities within the transportation and natural environments is highly dependent on the future land use component of the municipal comprehensive plan. Municipalities with existing mixed-use development or clusters/nodes of higher density residential land and municipalities wishing to accommodate future growth in compact areas with adequate infrastructure should seriously consider this implementation technique. Many of the specific tools falling under this implementation category can result in highly desirable development types that can provide a range of residential, retail, and employment opportunities. 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 accommodating growth within the transportation and natural environments over the long-term.

Examples of innovative zoning techniques that can help accommodate growth within the capacities of the existing environment as emphasized in a comprehensive plan include:

- **Transit-Oriented Development (TOD)** – When effectively coordinated with transit system providers, this higher density, typically mixed-use technique can accommodate a significant amount of a municipality’s future growth without the single occupancy vehicle generation rates expected with more traditional approaches. TOD can be used to expand existing nodes of development to make them more amenable to existing transit routes or to create new areas where transit service can be made available. The end result can be a fairly compact area of relatively high density but compatible development types that have the feel of traditional neighborhoods.

- **Transfer of Development Rights (TDR)** – Much like TOD, this higher-density tool can focus development in smaller areas that are better served with transportation system access, may accommodate greater transit service, and can minimize impacts on important natural resources. The resulting clustered development pattern may also have greater neighborhood identity and can result in the preservation of significant amounts of open space. Increases in bicycle/pedestrian activity may also be realized, further contributing to neighborhood cohesiveness and identity, thereby reducing vehicular traffic.
generation rates. The combination of these factors can have a substantial positive impact on the transportation and natural environments.

- Traditional Neighborhood Development (TND) – This tool provides for a range of residential densities and a mix of residential and non-residential uses, often within the same building. When appropriately developed, TND can be a very effective means of connecting new developments with areas of existing mixed use development; providing for urban infill; and creating new development in a condensed area that encourages walking, bicycling, and other non-motorized travel. As such, TND regulations can help a municipality maintain a sense of place by requiring that new development be consistent with traditional development patterns that may already be in place.

The table below lists many of the reasons for implementing zoning for mixed uses and to accommodate higher densities within the transportation and natural environments, including a listing of the advantages and disadvantages of the various tools within this approach.

<table>
<thead>
<tr>
<th>When to consider zoning for mixed uses and to accommodate higher densities:</th>
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<tbody>
<tr>
<td>• When the comprehensive plan calls for areas for high-density residential, whether traditional or clustered.</td>
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<tr>
<td>• If the comprehensive plan and the community support the concept of mixed-use development.</td>
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<tr>
<td>• When there is a community desire to accommodate its fair share of development in a smaller portion of the municipality, preserving more open space for the future.</td>
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<tr>
<td>• If there is a willingness to accept less traditional zoning approaches or control over specific uses, focusing more on the form of future development.</td>
<td></td>
</tr>
<tr>
<td>• When there is a desire to facilitate transit access for future development.</td>
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<tr>
<td>• When the comprehensive plan identifies portions of the municipality for high-density development and other areas for open space preservation.</td>
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<table>
<thead>
<tr>
<th>Advantages:</th>
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<tbody>
<tr>
<td>• More concentrated, mixed-use development can reduce the number of access points onto a roadway corridor.</td>
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</tr>
<tr>
<td>• Can provide for a mix of compatible uses within walking or bicycling distance from residential uses and reduce local automobile traffic.</td>
<td></td>
</tr>
<tr>
<td>• Can accommodate a community’s fair share of uses within a smaller footprint, helping to preserve more open space.</td>
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Chapter 8: Accommodating Growth within the Transportation and Natural Environments

- High percentage of the neighborhood is walkable.
- Bus transit tends to be efficient.
- Neighborhoods often develop strong sense of community.
- Can be easily linked to adjacent higher density or urban areas.
- Significant public amenities can be accommodated and maintained.

**Disadvantages:**

- Areas of higher density or mixed uses can be controversial in existing low-density communities.
- Residential development in areas zoned for mixed uses may only support neighborhood commercial uses (not regional).
- Densities may be too low to overcome overall pattern of sprawl.
- Requires relatively large areas to support a mix of uses.

More information on zoning for mixed uses and to accommodate higher densities, including examples that are applicable in Pennsylvania, are available by clicking [here](#) or on the hyperlinked title to this section.

**Zoning Overlays**

Section 605 of the MPC provides for transportation-based zoning overlay districts, specifically stating, “Where zoning districts are created, all provisions shall be uniform for each class of uses or structures, within each district, except that additional classifications may be made within any district...for the regulation, restriction, or prohibition of uses and structures at, along or near major thoroughfares, their intersections and interchanges, transportation arteries, and rail or transit terminals....”

In cases where a comprehensive plan identifies a corridor or corridors with specific future improvement needs, zoning overlay districts are one of the tools available as a preventative measure to help ensure areas projected for future rights-of-way remain available. Provisions can also be incorporated into the overlay district to regulate the type and intensity of allowable uses, lot sizes, and setbacks in order to manage the traffic generation characteristics of
new uses and the relative density of access points along the corridor.

Zoning overlays can also be used to protect important natural resources including floodplains, steeply sloping lands, and similar sensitive resources. These areas are then subject to specific regulation/protection when identified on properties during the subdivision or land development process.

The table below lists many of the reasons for implementing zoning overlays to improve safety, including a listing of the advantages and disadvantages of this approach.

| When to consider zoning overlays: | • When the comprehensive plan specifically calls for a zoning overlay approach for corridors, floodplains, environmentally-sensitive areas, or other similar features requiring specific regulation.  
• If a transportation corridor is identified with unique characteristics or needs that could be addressed at least in part through zoning regulation. |
| --- | --- |
| Advantages: | • Greater flexibility in where the zoning provisions can be applied than with conventional zoning districts.  
• Can be very effective in addressing site specific conditions along corridors, in floodplains, steeply-sloped areas, etc. |
| Disadvantages: | • Overlays may complicate the administration of the zoning ordinance.  
• Can be difficult to determine all applicable requirements between underlying zone and overlay. |

More information on the use of zoning overlays, including examples that are applicable in Pennsylvania, are available by clicking [here](#) or on the hyperlinked title to this section.
Appendix 1: Planning Tools

Access Management Regulations & Coordinated HOP Processing

Description

Access management hinges on the need to balance regional mobility and local accessibility on a community’s transportation network. Access management seeks to limit and consolidate access points along major transportation corridors, while promoting a supporting local street system and unified access and circulation systems for new development. A successful access management program and ordinance will improve safety and efficiency of the transportation network by reducing traffic conflicts and thereby helping to reduce congestion and improve a community’s quality of life.

Property owners are required to obtain a Highway Occupancy Permit (HOP) from PennDOT for driveway access onto a State Route. The review of these permit requests may result in on-site and/or off-site roadway improvements. In addition to working with property owners, PennDOT encourages municipalities to participate in the review of HOP applications within their jurisdictions. Municipalities are given the opportunity to provide input on mitigation strategies as well as concurrence on flexible mitigation options and Alternative Transportation Plans through the HOP process. Early coordination between municipalities and PennDOT is strongly encouraged to improve access management opportunities along a corridor and/or throughout the community. Driveway access onto local roads is regulated at the municipal level through local driveway permits and standards that are available through individual municipalities.

Resources

- Access Management – Model Ordinances for Pennsylvania Municipalities Handbook
- TRB Access Management Manual
- Lancaster County Smart Growth Toolbox: Access Management
- Pennsylvania Code Chapter 441 – Access to and Occupancy of Highways by Driveways and Local Roads
- PennDOT Publication 282 – PennDOT Highway Occupancy Permit Guidelines
Pennsylvania Examples

**US 322 Corridor, Lancaster County** – The Lancaster County Planning Commission addressed traffic operations and access management concerns along US 322 from US 222 to the Chester County line. Traffic operations, safety concerns, and existing land uses and municipal access regulations were assessed as a basis for proposing improvements. A comprehensive model access management ordinance is included, and is recommended to be adopted by corridor municipalities.

For more information, contact: Lancaster County Planning Commission, (717) 299-8333.

**Lebanon County** – The county has adopted access management regulations based on PennDOT’s model ordinances within their county subdivision and land development ordinance.

For more information, contact: Lebanon County Planning Commission at (717)274-2801 x 2325.

**East Pennsboro Township, Cumberland County** – The township revised their Land Development Ordinance in 2007 to apply access management standards to specified roads throughout the township. The ordinance supports the township’s comprehensive plan goals to integrate the former Borough of West Fairview into the township and provide an efficient land use/transportation corridor along US 11/15. The East Pennsboro Township Access Management section is found in the Land Development Ordinance as Exhibit 22-5-2 under the link provided herein.

For more information, contact: East Pennsboro Township Zoning Officer at (717) 909-5621.

### Adaptive Reuse of Land and Buildings

**Description**

Underutilized parcels of land and structures can negatively impact a community’s character and may lead to blighted conditions in older cities and boroughs. These properties vary in the level of effort and costs required for rehabilitation and reuse. Properties containing historic buildings or abandoned industrial sites (brownfields) may require special attention and incur additional costs to return the parcel to a productive use. Bringing appropriate uses to vacant structures and underutilized properties can provide a sustainable
and smart growth approach to new development in existing communities while reinvigorating declining neighborhoods and enhancing the quality of life for residents.

**Resources**

- [Delaware County Planning Commission - Adaptive Reuse Guidelines](#)
- [Preservation Pennsylvania](#)

**Pennsylvania Examples**

*Mansfield Armory, Mansfield Borough, Tioga County* – An historic National Guard Armory, originally built in 1938 and placed on the National Register of Historic Places in 1991, is being converted into a YMCA Recreation Center.

For more information, contact: Mansfield Borough Manager (570) 662-2315.

*Armstrong World Industries, City of Lancaster, Lancaster County* – This 47-acre urban brownfield is a decommissioned 100-year-old flooring manufacturing complex containing approximately 50 industrial buildings totaling over 2 million square feet. It was demolished to create collegiate athletic facilities for Franklin & Marshall College as well as Health Services for Lancaster General Health.

For more information, contact: Lancaster Chief City Planner (717) 291-4754.

*Watt and Shand Building, City of Lancaster, Lancaster County* – Façade preservation of the former Watt and Shand Department Store. Anchoring the southeast corner of Penn Square is one of Lancaster's most significant examples of commercial architecture, with four imposing stories of buff brick with elaborate terra cotta and marble ornamentation. The oldest section of this Beaux Arts building, fronting on East King Street, dates from 1898 and was designed by C. Emlen Urban. The new facility, developed in private/public partnership, now contains a hotel and convention center.

For more information, contact: Lancaster Chief City Planner (717) 291-4754.

*Lewisburg Borough/Bucknell University, Union County* – An historic building on the northwest corner of Fourth and Market streets in Lewisburg that once housed a hardware store has been rehabilitated into a 29,000-square-foot University bookstore managed and operated by Barnes & Noble College Booksellers.

For more information, contact: Lewisburg Borough Manager (717) 523-3614.
Media Armory, Media Borough, Delaware County – The historical armory built in 1908 for the Pennsylvania National Guard was originally used for training and the storage of arms and ammunition. The building has been converted for use into a commercial grocery store and the Pennsylvania Veterans Museum.

For more information, contact Media Borough Manager (610) 566-5210.

City of Chester, Chester County – Adaptive reuse of a former PECO Energy Generating Plant, constructed in 1916. The restoration program commenced in the fall of 2002 and completed in the fall of 2003 and included complete façade repair/restoration. The building which is now used as office space has been nominated for National Register status. The site offers waterfront reinvestment and a trail.

For more information, contact: City of Chester (610) 447-7811.

Multi-municipal Zoning and Intergovernmental Cooperative Agreements

Description

Multi-municipal planning and intergovernmental implementation agreements, as authorized by Article XI of the MPC, support cooperation and coordination of planning among adjoining municipalities on various planning issues, including growth management, transportation needs, public services, preservation of natural and historic resources, and economic development. Intergovernmental cooperative planning and implementation agreements (ICPIA) are enabled through Article XI of the MPC. These agreements are entered into by municipalities and counties to develop and implement multi-municipal plans and realize land use-related benefits available through engagement in the multi-municipal plan. The ICPIA establishes the roles and responsibilities of participating municipalities and outlines the process to achieve general consistency between the comprehensive plan and land use ordinances and capital improvements plans. The review and approval process for developments of regional significance and impact are also addressed through the ICPIA.

Multi-municipal, or joint municipal zoning, is authorized by Article VIII-A of the MPC. Joint zoning ordinances must be based upon a joint municipal comprehensive plan and be prepared by a joint municipal planning commission established in
accordance with the MPC. Joint zoning ordinances must be prepared through a joint municipal planning commission; however the participating municipalities have the option of implementing the ordinance through a joint or individual zoning hearing boards.

Resources

- DCED Community Planning Support
- MPC Article XI
- Planning Beyond Boundaries – A Multi-Municipal Planning and Implementation Manual for Pennsylvania Municipalities

Pennsylvania Examples

**Eastern Susquehanna County Partnership (Ararat Township, Herrick Township, Thompson Borough, Thompson Township), Susquehanna County** – These municipalities worked together on developing a multi-municipal comprehensive plan before developing a multi-municipal zoning ordinance. The plan and accompanying multi-municipal zoning ordinance were competed with an eye toward economies of scale and joint collaboration in anticipation of future development pressure.

For more information, contact: Herrick Township Supervisor/Partnership Chairman, (570) 679-2887

**Greater Mansfield Area (Mansfield, Richmond, Covington), Tioga County** – These municipalities adopted an intergovernmental municipal agreement to formalize a planning relationship begun during the development of a multi-municipal comprehensive plan. The municipalities subsequently performed a mobility analysis in 2007, leading to the identification of issues of mutual benefit for implementation. As the plan recommendations are being implemented, representatives from the municipalities continue to meet on a regular basis to tackle issues of mutual concern.

For more information, contact: Mansfield Borough Manager (570) 662-2315.

**Mann/Monroe/Southampton Townships, Bedford County** – These three rural municipalities in southeastern Bedford County developed a multi-municipal comprehensive plan and a related “Plan of Cooperation” prior to adopting an intergovernmental cooperative agreement.

For more information, contact: Bedford County Planning Commission (814) 623-4827.
Jefferson Morgan Regional Council of Governments, Greene County – The Jefferson Morgan Regional Council of Governments was created in 2004 and consists of Jefferson Township, Morgan Township, Jefferson Borough, Clarksville Borough and Rices Landing Borough. The council was created to allow the municipalities to purchase equipment and materials at a lower cost as well as pool their resources in times of need. Their multi-municipal zoning ordinance covers all of the COG members except Rices Landing Borough.

For additional information contact: COG President at jeff-morgcog@jeff-morgcog.org

Official Map

Description

An official map, as enabled under Article IV of the MPC, is a combination of a map and ordinance that identifies locations within a municipality that are anticipated to be needed for a variety of public lands and facilities such as parks, wellhead protection and storm water management areas, new roadways, pedestrian ways, railroad and transit rights-of-way, and roadway improvements.

Resources

- MPC Article IV
- Planning Bulletin #48, Official Map, Chester County Planning Commission
- Official Map Guide, Delaware County Planning Commission
- Official Map - Frequently Asked Questions, College Township, Centre County

Pennsylvania Examples

College Township, Centre County – The official map of College Township identifies proposed roadways/rights-of-way and proposed bicycle/pedestrian paths in addition to typical existing natural and built features of the township.

For additional information contact: Township Manager/Secretary at (814) 231-3021.
**Warwick Township, Lancaster County** – Warwick Township’s official map illustrates the location of proposed streets and highways and proposed trails within the township. The official map is being used to assist in the implementation of the Lititz/Warwick Joint Strategic Comprehensive Plan.

For more information contact: Warwick Township Manager at (717) 626-8900.

**Tunkhannock Township, Monroe County** – The official map of Tunkhannock Township is used to identify three key potential future uses: conservation easements, agricultural easements, and roadway improvements. These features are mapped in conjunction with existing conservation and agricultural easements as well as the typical elements of parcels, roads, water courses and water bodies, and political boundaries.

For more information contact: Township Secretary/Treasurer at (570) 646-3008.

### Parking Considerations

#### Description

The parking supply and demand need vary among municipalities. Many communities have traditionally attempted to provide for adequate parking through minimum parking requirements. These type of requirements often result in more parking than is actually needed. There are a number of other mechanisms available to communities to more appropriately accommodate parking needs and manage parking demand. Each community should identify its particular parking issues and tailor strategies to those needs. Strategies that can be used to reduce parking demand include: unbundled parking, variable pricing, setting maximum parking requirements, providing commuter benefits and incentives, and improving pedestrian and bicycle facilities. Strategies to accommodate parking demand include: providing on-street parking, setting minimum parking requirements, establishing shared parking arrangements, providing off-site/remote parking opportunities, and regulating time and users of parking spaces.

#### Resources

- [The High Cost of Free Parking](http://www.freeparking.org/), Donald C. Shoup
- [Parking Management: Strategies, Evaluation and Planning](http://www.transtats.bts.gov/TranStatTables.cfm), Todd Litman, Victoria Transport Policy Institute
- [Parking Management Strategies](http://www.dvrpc.org/parkingmanagement), DVRPC
Pennsylvania Examples

Benjamin Franklin Parkway; Circulation, Parking and Transit Study, City of Philadelphia – The City of Philadelphia comprehensively examined circulation parking and transit issues in the Benjamin Franklin Parkway area. The goals of the study included facilitating circulation (not only for through vehicles), recommending parking facilities and strategies, and reorganizing transit.

For additional information contact Philadelphia City Planning Commission at (215) 683-4615 or info@philaplanning.org.

Center City Parking Policy Evaluation, City of Philadelphia – The Philadelphia City Planning Commission performed an evaluation of parking policies and regulations for Center City. The objective was to move toward consensus on a direction for parking policy in Center City. The evaluation included a review and analysis of existing parking conditions, interviews with nearly 40 individuals concerned with parking in Center City, and in-depth case studies of how four other communities have addressed this complex issue.

For additional information contact Philadelphia City Planning Commission at (215) 683-4615 or info@philaplanning.org.

Municipality-Wide Parking Study, Norristown, Montgomery County – Norristown undertook this project to provide a comprehensive look at current and anticipated future parking conditions throughout the municipality, evaluate zoning ordinances and other regulations regarding parking, and provide recommendations for short and long-term policies that will alleviate parking problems and maximize the effectiveness of the parking supply.

For additional information contact Norristown Planning & Municipal Development at (610) 270-2892.

Downtown Parking Utilization Study, Carlisle Borough, Cumberland County – This study was designed to define how to best use the available parking in downtown Carlisle Borough.

For additional information contact the Borough Manager at (717) 249-4422 or borough@carlislepa.org.

Downtown Meadville Parking Study, Meadville City, Crawford County – The City of Meadville undertook a parking study to identify ways to best utilize the existing city-owned parking facilities to accommodate parking demand and maximize revenues collected.

For additional information contact the City Manager at (814) 724-6000.
Site Design and Roadway Standards

Description

Site design and roadway standards are almost always regulated in Pennsylvania through a county or municipal subdivision and land development ordinance (SALDO), which is enabled through Article V of the MPC. Roadway/street design standards and other similar infrastructure systems can also be regulated by a stand-alone ordinance separate from the SALDO. Zoning codes can also be used to influence site design and typically regulate land use, height, bulk, and setbacks. Unlike zoning, SALDOs typically provide flexibility in standards.

PennDOT’s Smart Transportation Guidebook is a useful resource for communities interested in developing roadway design standards to complement the surrounding land use context of a community. The guidebook contains easy to follow guidance to help identify existing and future contexts for land use and the roadway network. It provides a recommended range of design standards based on the contexts and is applicable to state and local roads.

Resources

- Pennsylvania Standards for Residential Site Development
- Smart Transportation Guidebook, DVRPC/PennDOT/NJDOT
- Guidelines For The Design Of Local Roads And Streets, PennDOT Pub 70M
- Pennsylvania’s Traffic Calming Handbook, PennDOT Pub 383
- Traditional Neighborhood Development Street Design Guidelines, Institute of Transportation Engineers
- Conservation by Design

Pennsylvania Examples

Chrin Commerce Centre, Palmer Township, Northampton County – A three-phase “Main Street” development was proposed that incorporated light industrial, commercial/retail and residential uses on a 230-acre tract. The first phase consists of light industrial development. The design concept for this phase included narrower, tree-lined streets with bicycle lanes in lieu of the typical municipal standard street cross section. Buildings were envisioned to depict an industrial-era façade set at a minimum building setback from the streets. A regional stormwater basin was used to avoid individual on-site basins, but each lot required its own
water quality control. Design and construction of the infrastructure for this phase has been completed, and building lots are being developed.

For more information, contact the Township Manager at (610) 253-7191.

City of Hermitage, Mercer County – The City has not required set-backs, but is allowing (and encouraging) developers to build closer to the street. This is a development model that is not only aesthetically more attractive, but promotes efficient transportation through its walkability and potential to be served by public transportation by moving parking spaces to the rear of the lot. Orienting commercial buildings toward the street with shorter set-backs and parking in the back gives improved definition to the street and an environment that is more pedestrian-friendly.

For more information, contact City of Hermitage Planning and Development Department (724) 981-0800.

Traditional Neighborhood Development

Description

Traditional neighborhood development (TND) is defined in Article VII-A of the Municipalities Planning Code (MPC) (Act 247 of 1968 as amended by Acts 67 and 68 of 2000) as an “area of land developed for a compatible mixture of residential units for various income levels and nonresidential commercial and workplace uses, including some structures that provide for a mix of uses within the same building.” A TND is served by a network of paths, streets, and lanes suitable for pedestrians as well as vehicles. This provides residents the option of walking, biking or driving to places within their neighborhood. Present and future modes of transit are also considered during the planning stages.

TND ordinances as authorized in the MPC and can take on one of four forms:

- a new development,
- an extension of an existing development,
- urban infill, or
- a combination of the above.

Resources

- MPC Article VII-A
- PA Governors Center for Local Government Services TND Fact Sheet
Appendices

- The TND Town Paper
- Association for the New Urbanism in Pennsylvania - a List of TND Projects
- Cranberry Township, Butler County TND Guiding Principles
- Traditional Neighborhood Development Street Design Guidelines, Institute of Transportation Engineers

Pennsylvania Examples

Crawford Square, City of Pittsburgh, Allegheny County – The design of this development creates a series of streets and public spaces which provide new linkages for the rest of the Hill District to downtown Pittsburgh. A total of 500 units of mixed-income housing have been built, which includes a mix of housing types and styles to accommodate both rental and owner-occupied housing needs.

For more information contact: City of Pittsburgh, at (412) 255-2200.

Cranberry Township, Butler County – The township has created three separate TND zoning overlay districts to promote integrated, mixed-use, pedestrian-oriented neighborhoods. These overlay districts encourage development at a higher density that provide public space, an interconnected grid pattern of streets, and buildings that define the streetscape to foster a sense of place and community.

For more information contact: Chief Strategic Planning Officer at (724) 776-4806 x1114.

TND Ordinance, Mechanicsburg, Cumberland County – Mechanicsburg Borough adopted a TND ordinance in 2006. This ordinance supports the borough’s comprehensive plan goals to promote revitalization efforts that respect the historical integrity of the downtown and provide an interconnected multi-modal transportation network.

For more information contact: Borough Manager at (717) 691-3310 or pdennis@mechanicsburgborough.org

Brighton Neighborhood, Manheim Township, Lancaster County – The Brighton neighborhood covers 53 acres and includes a variety of housing styles in a medium-high density development pattern surrounded by brick sidewalks, trails, and alley ways. The neighborhood is pedestrian-friendly and within easy walking distance to local shopping and an elementary school.

For more information contact: Planning and Zoning Department at (717) 569-6406 x 7.
Traffic Operations

Description
Traffic operations management includes improvements to the local traffic signal system and the use of intelligent transportation systems (ITS) to improve safety conditions and traffic flow. Simple, low-cost adjustments to a traffic signal system, such as adjusting the timing of traffic signals, can reduce congestion and lead to big payoffs in time savings, environmental benefits, and safety. ITS can be used to alert motorists of unfavorable traffic conditions as well as to manage high volumes of traffic during special events.

Resources
- PennDOT Regional Operations Plan
- Traffic Signals Self-Assessment, ITE

Pennsylvania Examples

US 11/15, Shamokin Dam Borough & Monroe Township, Snyder County – Shamokin Dam Borough and Monroe Township worked to upgrade 10 traffic signals along an approximately two-mile section of a commercial corridor. Work included inspection and replacement of traffic signal controllers, the addition of pedestrian accommodations and left-turn phasing, and the upgrade of signal indications to light-emitting diode (LED). The malfunction and lack of interconnection between signals was addressed by adding radio spread spectrum, a wireless technology using radio modems to interconnect the traffic signals.

For more information, contact: Monroe Township Engineer at (570) 884-3333, and Shamokin Dam Borough Manager at (570) 743-7565.

City of Lebanon, Lebanon County – The City developed a 48-intersection, closed-loop computerized traffic signal system. A comprehensive data collection program was implemented to collect peak-hour traffic volume information, which included coordination with city police and PennDOT officials. Crash analyses and signal warrant analyses were conducted along with signal timing development. Work involved the development of preliminary, pre-final, and final traffic signal plans; cost estimates; services during construction, including signal system fine-tuning; and coordination among PennDOT, the City of Lebanon, and utility providers.

For more information, contact: Lebanon County Planning Department at (717) 274-2801.

Athens Township (Sayre), Bradford County – The township is moving forward with plans to enhance its traffic signal system along SR1069/Elmira Street, a growing, 1.8-mile long commercial corridor just outside of Sayre Borough. Work involves
Appendices

Improving the Land Use - Transportation Connection through Local Implementation Tools

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.

For more information, contact: Athens Township Manager at (570) 888-1649; Northern Tier Regional Planning and Development Commission at (570) 265-1532.

Urban Growth Areas/Rural Preservation

Description
Urban growth areas are used to outline specific growth areas where development is to be encouraged. Urban growth areas are not typically regulatory in nature and need to be enforced through a zoning ordinance. Development in urban growth areas should be provided with a full range of public infrastructure services, including both public sewer and public water service with sufficient capacity to support the intended density and intensity of development. The use of urban growth areas can promote economic development opportunities in appropriate areas while preserving significant amounts of rural lands.

Resources

- Planning Beyond Boundaries, 10,000 Friends of Pennsylvania, 2002
- Conservation Tools.org
- Holding the Line: Urban Containment in the U.S.
- Designated Rural Areas, Lancaster County Smart Growth Toolbox

Pennsylvania Examples

Balance, Comprehensive Plan Growth Management Element, Lancaster County – This Growth Management Element of Lancaster County’s comprehensive plan establishes a framework for future land use and development in the County and its municipalities. Development is guided using Urban Growth Areas and Designated Rural Areas. Detailed strategies are provided for both the urban and rural areas, with development targets established for each.

For more information, contact: Director for Long Range Planning, Lancaster County Planning Commission, (717) 299-8333.
Model Subdivision and Land Development Ordinance, Lancaster County Planning Commission – The Model Subdivision and Land Development Ordinance was created by the Lancaster County Planning Commission as a planning tool to help municipalities promote consistency with the county and local comprehensive plans. It is meant to manage and direct growth in a way that respects the environment, reduces sprawl, and builds vibrant communities. The model SALDO presents different regulations depending on where the development is taking place: urban areas, rural areas, or redevelopment within already built areas.

For more information, contact: Director for Community Planning, Lancaster County Planning Commission, at (717) 299-8333.

Zoning for Mixed Uses and to Accommodate Higher Densities

Description

Zoning can promote a mix of uses and higher density development patterns through ordinances that encourage innovative techniques such as transit-oriented development, transfer of development rights, traditional neighborhood development, form-based codes, and cluster development. The Municipalities Planning Code also directly supports higher density development through Article VII - Planned Residential Developments and Article VII - Traditional Neighborhood Developments. Section 605(3) of the MPC encourages innovation and the promotion of flexibility, economy, and ingenuity in development by allowing increases in the permissible density of population or intensity of a particular use based upon expressed standards and criteria set forth in the zoning ordinance.

Transit-Oriented Development (TOD) is a moderate-to-higher density zoning technique promotes a mix of transit-supportive land uses, such as offices, day cares, convenience stores, restaurants, residential, and personal services within an easy walking distance of a transit station. These zoning districts can be implemented either by-right or as an overlay district. Transfer of Development Rights (TDR) is a voluntary, market-based tool that can be used to protect agricultural, environmentally sensitive land, and other open space areas by transferring the development rights from land in this “sending” zone to other designated “receiving” areas within the municipality where development is more appropriate.

Form-based codes focus on the physical form and mass of buildings and their relationship to the surrounding public realm rather than the separation of uses. Form-based codes typically encourage a mix of uses that closely address the local market. Cluster development encourages higher density development by grouping structures on a portion of the available land while reserving a significant amount of the site as protected open space. This is accomplished by establishing the number of units allowed for a parcel independent of any minimum lot size.
Resources

- [Essential Smart Growth Fixes for Urban and Suburban Zoning Codes](#)
- [The Lancaster County TDR Practitioners’ Handbook](#)
- [Conservation Tools.org](#)
- [Form-Based Codes Institute](#)
- [Cluster Design](#), Randall Arendt and Planners Web
- [Visualizing Density](#), Campoli and MacLean
- [Innovations in Zoning for Smart Growth](#), DVRPC

Pennsylvania Examples

**Transit-Oriented Development (TOD)**

Paoli Amtrak Station TOD, Tredyffrin Township, Chester County – The Transit District was developed to guide the redevelopment opportunities consistent with the intent of the township's Comprehensive Plan, specifically the Paoli Community Master Plan, that are supportive of a multi-modal transportation center and sensitive to the surrounding neighborhoods. Additional purposes of the district are to: permit development that is complementary to the multi-modal transportation center and help further define the prominence and importance of the core area to the Paoli community; tie the streetscape and pedestrian amenities of the district into adjacent mixed-use and residential areas, further promoting walkability; and provide for comprehensively planned integrated mixed-use development according to a master plan consistent with the goals and objectives of the township and Chester County.

For additional information, contact: Tredyffrin Township Manager at (610) 644-1400.

**Transfer of Development Rights (TDR)**

Warwick Township TDR, Lancaster County – The use of Transfer of Development Rights has enabled Warwick Township to encourage industrial development within a designated growth area while protecting farms and farming within rural areas of the township. By 2004, more than 600 acres had been preserved. Warwick is the first township in Lancaster County to complete the cycle of purchase of development rights from farmers, the sale of rights to a developer for use in the township’s industrial receiving zone, and preservation of additional farmland with the cash generated from the sale.

For additional information contact the Warwick Township Manager at (717) 626-8900 or dzimmerman@warwicktownship.org
**Form Based Codes**

*Cranberry Township, Butler County* – The township has adopted a form-based approach to land use regulations. Adopted by the Board of Supervisors in February 2008, this technique places the physical form of a construction project ahead of its intended use, leading to more efficient, pedestrian-oriented building patterns suitable for mixed uses. Form-based zoning will allow a greater mix of uses within a single district and facilitate more compact, pedestrian-oriented development. A growing number of communities throughout the country have already adopted such form-based codes.

For more information, contact: Cranberry Township Manager, at (724) 776-4806.

**Density Bonuses**

*East Lampeter Township, Lancaster County, Density Bonus* – The Optional Density Incentive standards intent is to accommodate the Medium Density Residential/Traditional Neighborhood Development land use designation in the Comprehensive Plan by providing density bonuses to encourage a preferred development pattern. The provisions provide an optional set of design standards that can only be applied to property located within the Residential District R-2. These optional design standards seek to achieve a well-planned, coordinated residential neighborhood and to achieve the desired community atmosphere. While some of the requirements deal with issues that would transcend zoning jurisdiction, they are provided as design options, and are, therefore, considered voluntarily self-imposed by prospective developers, but enforceable by the township.

For more information, contact: East Lampeter Township, at (717) 393-1567.

**Mixed-use Zoning**

*City of Lancaster, Lancaster County, Mixed-Use Zone* – The mixed-use districts in the City allow virtually all but the harshest industrial and most “suburban-like” uses. Use of the Mixed-use Provisions assures that the mixed-use character of the city can continue as infill and redevelopment continues in the city. Lancaster City Zoning is codified as Chapter 300, The Lancaster City Code.

For more information, contact Lancaster City Chief Planner, (717) 291-4754.

**Cluster Development**
Open Space Residential Zoning Districts, West Manchester Township, York County, Cluster – 
The township amended its zoning ordinance to require open space development within an 
undeveloped portion of the township. Previously 
the area had been zoned for single-family 
detached residential homes, on half-acre or 
smaller lots. Prior to the amendment the 
township prepared build-out maps showing what 
the area might look like if developed under the 
existing conventional zoning. These maps vividly 
showed the potential loss of the existing 
farmland and open space. The township also 
mapped out the open space it hoped to preserve 
to show landowners and developers exactly what 
was envisioned: interconnected open spaces 
crossing parcel lines.

The township's open space zoning provision 
requires a developer to first prepare a sketch 
plan showing the number of units that could be 
built under a conventional development pattern. 
This determines the allowable density that can be used when the project is 
designed in a clustered manner. Allowing the same density was important to allay 
the concerns of affected landowners. At the same time, preserving views of open 
space would make developments more attractive to home buyers. The open space 
zoning requirement only applies to developments involving 15 acres or more.

For more information, contact: West Manchester Township Zoning Department, at 
(717) 792-3505.

Planned Residential Development (PRD)

Susquehanna Township, Dauphin County – Deer Path Woods is a Planned 
Residential Development (PRD) in the township, a suburb of Harrisburg. The 
development, consists of 800 dwelling units and four office buildings.

For more information, contact Susquehanna Township Zoning Officer at (717) 545-
4751.

Zoning Overlays

Description

Article VI, Section 605 of the MPC allows additional classifications to be made within 
zoning districts through the use of an overlay district. The MPC states that
additional classifications may be made within any district “for the regulation, restriction or prohibition of uses and structures at, along or near major thoroughfares, their intersections and interchanges, transportation arteries and rail or transit terminals…” Zoning overlays can provide for additional provisions including regulation of the type and intensity of allowable uses, lot sizes, and setbacks.

**Resources**

- [Pennsylvania Municipalities Planning Code](#)
- [Planning Series #4 Zoning](#), DCED
- [Airport District Overlay Model Zoning Ordinance Language](#), PennDOT

**Pennsylvania Examples**

**Oxford Township, Adams County** – Oxford Township has an Environmental Overlay District that promotes conservation of land possessing natural features identified as essential to the environmental health, economy and rural character of the community. Areas within the Environmental Overlay include: Steep Slope; Wetlands; Floodplains; and Stream Corridors.

For more information, contact: Oxford Township Manager, at (717) 624-4544.

**Monroe Township, Snyder County** – Monroe Township is home to the Penns Valley Airport as such, the township established an Airport Overlay Zone. The intent of the overlay is to regulate the height of constructed and natural objects in the vicinity of the airport to protect against potential hazards.

For more information, contact: Monroe Township office, at (570) 743-7057.

**Eldred Township, Monroe County** – With the passage of Act 24, fifty-eight Pennsylvania municipalities through which the Appalachian National Scenic Trail traverses are required by law to use their zoning authority to preserve the Trail and protect the natural, scenic, historic and aesthetic resources along it. Eldred Township developed an overlay district that provides a buffer from incompatible uses along the Trail while recognizing that the Trail crosses private lands where reasonable uses must be permitted.

For more information, contact: Eldred Township, at (610) 381-4252.

**Cornwall Borough, Lebanon County** – This Borough utilizes five overlay districts in its Zoning Ordinance to regulate floodplains, resource extraction, environmental protection, historic structures, and intensive agricultural operations.

For more information, contact: Cornwall Borough, at (717) 274-3436.
Appendix 2: Financial Tools

Capital Improvement Programming (CIP)

Description
The CIP is a schedule or list of projects such as streets, storm water systems, water distribution, sewage treatment and other major public facilities for which public funds are needed for activities beyond normal operations and maintenance. The primary advantage of developing and maintaining a CIP is that it enables municipalities to better prioritize projects, identify potential funding sources, and program available funds over periods greater than one year. The CIP should include all proposed public improvements in the comprehensive plan for which there is an identifiable cost and should include inflationary factors for those improvements not planned to be implemented until the later years of the plan.

Resources
- Planning Series #1 Local Land Use Controls in Pennsylvania, DCED
- West Lampeter Township Capital Improvement Program

Pennsylvania Examples

Cranberry Township, Butler County, Comprehensive Plan – Plan uses a sustainability assessment approach, combined with market assessment, to mesh capital needs with fiscal capacity with likely development scenario to yield a CIP.

For more information, contact: Cranberry Township’s Chief Strategic Planning Officer at (724) 776-4806.

College Township, Centre County – In 2008 College Township developed a 5-Year CIP. The CIP is updated annually and is an important part of the Council’s long range planning. Any improvement that will replace, maintain or increase the value of the township’s equipment, facilities, infrastructure, and other real property is defined as a capital improvement. For an item to be included in the CIP, it must cost at least $1,000.

For more information, contact: College Township (814) 231-3021.
Doylestown Community Park, Recreation & Open Space Plan Capital Improvement Program, Doylestown Borough and Doylestown Township, Bucks County – This plan sets forth an action program for improving the quality of life in the Doylestown Community through parks, recreation and open space. The plan serves as a guide and provides a framework by which the community can come together in working towards a common vision for parks, recreation and open space. By having a plan in place, the township and borough can make sound decisions to allocate resources effectively.

For more information, contact Doylestown Township (215) 348-9915.

Developer Negotiation

Description

Negotiations with developers for needed off-site transportation improvements due to their proposed development can be a very effective means of implementing improvements to the transportation system. Such negotiations are acceptable if conducted in accordance with the MPC and current case law. The MPC prohibits municipalities to condition approval of a subdivision or land development proposal on the developer’s willingness to pay for off-site improvements. Negotiations can be supported through comprehensive plans that clearly identify anticipated infrastructure needs such as transportation system improvements. Cost estimates should also be incorporated into a regularly updated CIP to provide a firm basis for the negotiations. Advisement from the municipal solicitor is recommended.

Pennsylvania Examples

Susquehanna Township, Dauphin County – The township worked with the developer of a shopping center off of Linglestown Road (PA 39). As a result, the roadway is being improved to a five-lane facility from Progress Avenue to Crooked Hill Road. Intersection improvements such as widening, new signalization, installation of sidewalk and landscaping have been made along with two new intersections at the shopping center. These improvements were all paid for by the shopping center developer working with Susquehanna Township and PennDOT.

For more information, contact: Susquehanna Township Zoning Officer (717) 545-4751.

Lower Paxton Township, Dauphin County – Colonial Commons Shopping Center on US 22. The township negotiated with the developer for both transportation improvements at several new intersections on US 22 and also a land swap that provided additional lands to the township in exchange for giving some lands in an existing park (Brightbill Park). The land swap allowed the developer to consolidate their lands and enhance the design of their shopping center. The township gained extensive additional lands for the eventual construction of their “Friendship Center” indoor recreation complex. Transportation improvements included road widening on
US 22 and the installation of traffic signals to control ingress and egress from the shopping center.

For more information, contact Lower Paxton Township Manager (717) 657-5600.

*Liberty Township, Adams County* – A residential developer proposed a 700-acre Planned Residential Development in this rural township. Public hearings on a Tentative Plan submission led to extended negotiations involving the township, the developer, and a citizens group. These negotiations resulted in plan revisions that incorporated the interests of all groups with the introduction of additional conservation areas, open space, and pedestrian circulation that would benefit both new and existing residents.

For more information, contact Liberty Township Supervisors (717) 642-3780.

*Lower Paxton Township, Dauphin County* – Improvements for the area surrounding an existing Lowe’s store and McDonalds was negotiated with the developer(s) for transportation improvements. Developers contributed funds to an interest bearing escrow account held by the township for the eventual improvements. Other developers as they came in also contributed. Eventually, improvements such as road widening, intersection improvements and signalization were installed.

For more information, contact Lower Paxton Township Manager (717) 657-5600.

**Loan and Funding Reimbursement Programs**
(Safe Routes to School, PA Infrastructure Bank, Pennsylvania Community Transportation Initiative, etc.)

**Description**

There are a number of grant and loan programs that can facilitate the design and construction of transportation improvements throughout a community. Two common funding mechanisms for local transportation improvements include the Pennsylvania Infrastructure Bank (PIB) and the Safe Routes to School (SRTS) program.

The PIB is a low interest loan program administered by PennDOT for eligible transportation improvement projects. Loan terms are up to 10 years, and construction projects receive the highest priority. There are four separate accounts to cover highway/bridge, transit, aviation, and rail freight projects. The SRTS program provides federal funds to schools and municipalities for both infrastructure and non-infrastructure projects to improve and promote safe walking and biking opportunities to schools. These funds are used for the construction of transportation improvements such as sidewalks, crosswalks, and other
enhancements as well as to educate and encourage students to walk or bike to school.

The Pennsylvania Community Transportation Initiative (PCTI) is a PennDOT program that provides planning and construction funds for projects that demonstrate creative solutions for addressing transportation issues using local partnerships and community goals. This program is intended to link transportation investments with local land use and planning goals to better integrate transportation within the surrounding community.

Planning funds are also available through the Department of Conservation and Natural Resources (DCNR) to develop county and local open space, recreation, and greenway plans. Improving bicycle and pedestrian opportunities through trail/sidewalk/bike land networks is often a work element. Funding multi-municipal greenway/trail planning is a DCNR priority. Information on current funding opportunities is available through the DCNR Web site. Plans completed through this process are also available through the DCNR Web site.

Resources

- PennDOT Center for Program Development and Management
- Pennsylvania Infrastructure Bank
- Safe Routes to School Academy
- Smart Transportation Web Site
- DCNR Web site

Pennsylvania Examples

Springfield Township, Fayette County—The township installed a blinker light at the intersection of PA 381 and PA 711. The device was installed as a safety measure to prevent further crashes at the intersection, which is part of a highly traveled tourist corridor that includes Seven Springs Ski Resort, Fallingwater, and Ohiopyle. Total funding request was $9,500.

For more information, contact Springfield Township Supervisors (724) 455-3015.

Lower Providence Township, Montgomery County—After going through an extensive planning process and CIP analysis, the township was able to secure a $4M PIB loan to accelerate its CIP and resurface a number of roads throughout the municipality.

For more information, contact Lower Providence Township (610) 539-8020.
City of Bradford, McKean County – The City of Bradford will receive $911,268 for a Safe Routes to School project to replace sidewalks and curbs on North Center Street from Barbour Street to School Street; on School Street from Interstate Parkway to Pearl Street; and on Pearl Street from School Street to West Washington Street.

For more information, contact: City of Bradford Office of Economic Development (814) 368-7170

City of DuBois, Clearfield County – Awarded a $7,000 mini-grant as a “Non-infrastructure” SRTS effort for DuBois Area Middle School. This was one of 11 such grants PennDOT awarded in 2008.

For more information, contact: North Central PA Regional Planning and Development Commission (814) 773-3162.

Boroughs of Wellsboro and Mansfield and Richmond Township, Tioga County; Athens Township (Sayre), Bradford County – The municipalities worked with the Northern Tier Regional Planning and Development Commission in applying for PCTI funds for operational improvements to their roadway networks. The award came after Wellsboro Borough had completed a comprehensive mobility analysis of its transportation system which highlighted the need for improved traffic signal coordination to improve safety and mobility through the borough. The Borough of Mansfield and adjacent Richmond, Covington, and Putnam townships had completed a similar multimunicipal corridor study, and work is under way on an Athens Township study. The total funding award across these Northern Tier municipalities was $1,200,000.

For more information, contact: Wellsboro Borough Secretary (570) 724-3186

Borough of Carlisle, Cumberland County – The Borough of Carlisle received $2,826,000 to install multi-modal improvements in Downtown Carlisle to enhance safety and mobility. This PCTI project will see a reduction in the number of travel lanes through the borough from four to two (a “Road Diet”) with dedicated left turn lanes and a bicycle lane. The bicycle lane will ultimately connect to the LeTort Regional Trail which connects the borough to neighboring South Middletown Township. Signal coordination improvements will also be included, with side street detection. A related project includes truck signing on I-81 to help remove through truck traffic from the downtown.

For more information, contact: Carlisle Borough Manager (717) 249-4422.

City of Altoona, Blair County – Project includes the development of bicycle and pedestrian amenities that will help connect the downtown to the Penn State Altoona
campus. Total funding received was $300,000.
For more information, contact City of Altoona, City Manager at (814) 949-2408.

**Tax Increment Financing (TIF)**

**Description**

TIF, a redevelopment financing method, is authorized in Pennsylvania through Act 113 of 1990. TIFs allow additional taxes from a new development to pay off publicly issued debt associated with the development’s construction. Typically a TIF is a localized area which anticipates growth and will need supporting infrastructure improvements. Current property tax revenues within the TIF boundaries are used as a baseline to calculate the projected revenue increase after completion of a development project. A percent of future increases in tax ratables are dedicated to the TIF and used to pay the project costs or repay the bonds or other obligations that helped finance the project.

**Resources**

- Pennsylvania Department of Community and Economic Development
- Tax Increment Finance (TIF) in Allegheny County

**Pennsylvania Examples**

*Frazer Township, Allegheny County* – A mall was proposed for a 340-acre site valued at $1.3 million dollars. Based on an estimated assessed value of $195,750,000 at the completion of the project, TIF was used to finance a $50 million bond which resulted $34 million for public improvements. After completion of the project, the value of the property exceeded the estimate by more than $50 million. The project resulted in increased revenue in sales and property taxes for local taxing bodies, employment opportunities for local residents in construction and retail, and significant infrastructure improvements and environmental cleanup.
For more information, contact Frazer Township at (724) 226-2188.

*City of Bethlehem, Northampton County* – The City has established a TIF district that encompasses “Bethlehem Works” a 120-acre redevelopment area which was the former site of Bethlehem Steel.
For more information, contact City of Bethlehem at (610) 865-7094.

*Exeter Commons, Exeter Township, Berks County* – A shopping center situated on an approximately 50-acre site with a total project cost that exceeded $100 million, and included approximately $18 million related to road improvements required to
address pre-existing traffic conditions. In addition to funds provided by the developers, a portion of the road improvements were funded using Tax Increment Financing (TIF).

For more information, contact Exeter Township at (610) 779-5702.

**Conshohocken Borough, Montgomery County** – The Borough has created a Tax Increment District known as “Seven Tower Bridge Tax Increment Financing District” containing approximately 2.98 acres on Washington Street. The TIF District became effective December 15, 2009 and will exist for a period of twenty (20) years.

For more information, contact Conshohocken Borough at (610) 828-1092.

**Homestead, West Homestead and Munhall Boroughs, Allegheny County** - Redevelopment of the USX Homestead Works site into The Waterfront, a super-regional retail, entertainment and mixed-use office development. The site was formerly occupied by U.S. Steel's Homestead Works plant, which closed in 1987. It has a gross leasable area of 700,000 square feet in "The Waterfront" and 400,000 square feet in "The Town Center." The development, with a construction cost of $305,000,000, produced a TIF amount of $29,435,000 and created 5,490 permanent jobs.

For more information, contact Allegheny County Economic Development at (412) 350-1198.

### Transit Revitalization Investment Districts (TRID) Transportation Districts

#### Description
Pennsylvania enacted Act 238 of 2004 in order to establish TRIDs to facilitate and implement Transit Oriented Developments (TODs). TRIDs are value capture area areas that are typically within one-eighth of a mile to one-half mile of a railroad, transit, light rail, or busway transit stop or station. TRIDs allow local jurisdictions and the transit agency to share the incremental tax revenues generated by real estate investment for the needed infrastructure improvements within the district. TRID designations require planning studies that involve and facilitate a partnership among the municipality, transit provider, school districts, and the private sector.

#### Resources
- [Transit Revitalization Investment District Act](#)

#### Pennsylvania Examples
*Transit Revitalization Investment District Planning Study, 46th and Market Street Station and Temple Regional Rail Station, City of Philadelphia* – This TRID planning study began in December 2007 and examined the areas surrounding two SEPTA rail
stations in Philadelphia. The planning process consisted of three phases: The Existing Conditions phase which encompassed observation, research, and outreach to assess neighborhood dynamics and determine station needs; The Preliminary Recommendation phase which included the development of objectives, recommendations and a value capture analysis based upon potential development; and The Final Plan phase of work which packaged all materials into a draft plan for community review.

For more information, contact: NeighborhoodsNow at (215) 564-9470.

South Hills Transit Revitalization Investment District Planning Study, Mt. Lebanon Township, Allegheny County – The South Hills Revitalization Investment District Planning Study investigates potential development opportunities in the vicinity of the Potomac and Dormont Junction Light Rail Transit (LRT) stations and the Mt. Lebanon LRT station. The goals of the TRID study included promoting housing and other well-planned development in close proximity to the T stations in order to expand tax bases, invigorate business districts and encourage greater use of public transit. The study began in June 2007 and was completed in May 2008.

For more information, contact: Mt. Lebanon Municipal Planning at (412) 343-3684.

Transit Revitalization Investment District Study, Bristol Township, Bucks County – The TRID Planning Study was completed in 2009 and conducted in the area surrounding the newly renovated Croydon Regional Rail Station along Bristol Pike. This plan promotes the goals of the township to foster community and neighborhood revitalization to attract families, workers, and seniors throughout the region, with the aim of spurring local economic development and increasing transit ridership. The primary objective of the plan is to encourage a renaissance of the existing commercial district surrounding the train station and assist the township in securing additional monies for a streetscaping project in the center of the study area.

For more information, contact: Bristol Township Director of Building, Planning and Zoning at (267) 812-2897.

Transit Revitalization Investment District Study, Rochester Borough, Beaver County – This was the first TRID study in the state, aimed at creating redevelopment opportunities around BCTA’s Rochester Transit Center in downtown Rochester.

For more information, contact: Beaver County Transit Authority at (724) 728-4255.
Transportation Impact Fees

Description
In Pennsylvania, Act 209 of 1990 and Article V-A of the MPC enable municipalities to impose a fee on developers for the construction of necessary transportation infrastructure improvements. Local governments can adopt a local or multi-municipal transportation impact fee ordinance to charge a one-time fee to cover some of the cost of off-site transportation system improvements made necessary by new development. The MPC restricts municipalities to require as a condition for approval of a land development or subdivision application the construction, dedication or payment of any offsite improvements except as authorized through Article V-A of the MPC.

Resources
- Transportation Impact Fees - A Handbook for Pennsylvania’s Municipalities
- Article V-A, Municipal Capital Improvement of the PA Municipalities Planning Code

Pennsylvania Examples

Manheim Township, Lancaster County – This township has been administering impact fees since 1989. The township has developed a modified process where a land developer can receive a 20 percent reduction in the amount of the impact fee. In exchange for this, the township can then use the funds to improve any roadway within the township, regardless of the impact area of the development. It has worked well, and has been a win-win scenario for both developer and municipality.

For more information, contact Manheim Township Manager/Secretary (717) 569-6408.

East Coventry Township, Chester County – A Roadway Sufficiency Analysis and Transportation Capital Improvement Plan were prepared in the year 2000. A seven-person Transportation Advisory Committee (TAC) assisted in the effort and provided recommendations to the Township Supervisors. A 10-year planning horizon was selected for the purpose of this analysis, with the year 2010 considered the design year.

For more information, contact East Coventry Township at (717) 346-9903.

Washington Township, Berks County – Adopted an impact fee ordinance. This came into play during the development of their joint comprehensive plan with adjoining Hereford Township during 2001–03. The ordinance impacted land use decisions
made during the development of the comprehensive plan. The township is collecting fees for transportation related improvements.

For more information, contact: Washington Township office at (610) 845-7760.

**Transportation Partnerships**

**Description**

Formal transportation partnerships involve the development and adoption of Transportation Development Districts (TDD) pursuant to Act 47 of 1985 as amended by Act 75 of 1986, commonly known as the Transportation Partnership Act. These partnerships are a transportation improvement financing tool whereby “fair and reasonable” assessments are imposed on each property within the TDD or on all business properties within the TDD. Any TDD tax must be imposed only within the TDD and its proceeds spent within the TDD.

**Resources**

- [Transportation Partnership Act](#)

**Pennsylvania Examples**

*East Whiteland and Tredyffrin Townships, Chester County,* A Transportation Development and Business Improvement District was established through the East Whiteland – Tredyffrin Joint Transportation Authority in 1986 as a means for funding $26.2 million in transportation improvements. The TDD provided $4.6 million toward the total project cost through a business property assessment calculated through the ratio of individual property assessment to total property assessments in the TDD.

For more information, contact: [East Whiteland Township](#) at (610) 648-0600 or [Tredyffrin Township](#) at (610) 644-1400.

*Thorn Run Transportation District, Moon Township, Allegheny County,* A Transportation Development District was established through the Moon Transportation Authority in 1986 as a means for funding $10.8 million in transportation improvements. The TDD provided $4.0 million toward the total project cost through an assessment calculated through trip generation rates based on square footage and property type.

For more information, contact: [Moon Township](#) at (412) 262-1700.

*Upper Dublin Township, Montgomery County,* A Transportation and Business Improvement District was established in 1987 as a means for funding $750,000 in
transportation improvements, with the TDD providing all funding for the total project cost. All business zoned properties were assessed based on the ratio of individual property assessment to total property assessments in the TDD.

For more information, contact: Upper Dublin Township at (215) 643-1600.

*Paper Mill Transportation Development District, Spring Township and Wyomissing Borough, Berks County*, A TDD was established through Spring Township in 1989 as a means of funding $2.25 million in transportation improvements, with the TDD providing $1.5 million of the total project costs. All business properties were assessed based on the number of trips generated by a business as a percentage of the total trips in the TDD.

For more information, contact: Spring Township at (610) 678-5393 or Wyomissing Borough at (610) 376-7481.