

## IV. Planning for Infrastructure and Growth

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To implement a community's vision, a balance must be struck between preservation and growth, between new and old. The land use practices presented in this section can be easily linked to both local and county comprehensive planning processes discussed in Section III and cover a wide range of planning, zoning and land use regulations and techniques to assist with appropriate planning for infrastructure. As used here, infrastructure means transportation, sewer and water facilities, schools, parks, greenways and open space. Many of these basic practices have shaped the landscape and communities in which we live, work and play. The newer land use planning and development techniques will shape the kind of Pennsylvania we want to leave for our children.

For infrastructure, sound land use practice involves coordinating and integrating planning for infrastructure with land use planning. Moreover, all levels of government should implement those plans through consistent actions. Since infrastructure usually extends beyond municipal boundaries, planning for infrastructure should be both multi-municipal and local. State agency action should be consistent with county and local planning, and local zoning and subdivision and land development regulation should also be consistent with such plans.

Because Pennsylvania is such a diverse state with diverse interests and goals, there can be no universally appropriate land planning technique. However, certain general sound land use principles can be derived from this section of the inventory. Each community must find and apply its own sound land use practice. Whether rural or urban, high growth or low growth, this section provides a menu of planning techniques and practices for every Pennsylvania community to choose from. ■



## 1. Assessment of Water Resources on a Watershed Basis

### DESCRIPTION:

There are 356 watersheds in the Commonwealth. This practice looks to consider all water resource issues (quality and quantity for surface water and groundwater including drinking water supplies, wastewater and sewage, and stormwater issues) holistically on a watershed basis. Water resources can be assessed to create a sound scientific basis for establishing water resources management criteria that can be integrated into land use and development decision-making within a watershed. The information provided can assist planners and officials in determining development patterns that can be sustained by the existing water resources.

### BENEFITS:

A water resources assessment can characterize and quantify the potential impacts that can result from land development. By understanding the magnitude of the potential adverse impacts, planners can adjust the design of development to minimize impacts. In the future, safe and adequate water supplies can be ensured, unsustainable development may be avoided, and locations of particularly sensitive, stressed or vulnerable water resources can be identified and may be protected.

### IMPLEMENTATION:

By definition, water resource assessment studies must be conducted on a watershed basis. Then, a comprehensive water resources plan is developed and implemented for the watershed.

The disparity between the geographic boundaries of a watershed and political boundaries tends to complicate the implementation process. Also, assessments require technical studies, computer modeling, and/or Geographic Information System (GIS) applications. These are data intensive and therefore costly. To maintain the model over time, data must be input and updated regularly.

Defining areas for protection and implementing plans can be difficult and controversial. This approach which requires coordinated planning beyond municipal and sometimes county boundaries, may be a significant departure from existing community planning practices.

It should be noted that water withdrawal approvals are pre-empted by the multi-state organizations, such as the Susquehanna River Basin Commission and the Delaware River Basin Commission.

### EXAMPLES IN PENNSYLVANIA:

**The Water-Based Land Use Regulatory Program (WBLUR)** is a tool for water resource protection that has been developed by the Environmental Management Center of the Brandywine Conservancy. This science-based program uses a water budgeting computer model and GIS to evaluate the impacts of various land and water uses or development proposals on the natural hydrologic system of a community or watershed. The Center has developed model ordinances that can be adapted to a community's water resource protection

*(Assessment of Water Resources on a Watershed Basis, Cont'd)*

goals. It must be noted, however, that this science-based approach cannot be used to supplant or replace decision-making powers allocated to other agencies or property owners.

**The Lancaster County Water Resources Plan** was developed by the Lancaster County Commissioners and Planning Commission to provide a county-wide framework for water resources planning, and to provide information to help local communities develop and coordinate water supply plans and wellhead protection programs with county, regional and local growth management efforts.

**The Chester County Comprehensive Water Resources Plan** aims to integrate the assessment, planning and management of water withdrawals and discharges to groundwater and streams, stormwater runoff volume and pollutant loads, and riparian corridor enhancement, and encourages involvement and stewardship of the resources at all levels. The plan is being conducted on a watershed basis and covers 19 watersheds, 73 municipalities within Chester County, and portions of surrounding counties. The plan is being developed utilizing extensive public outreach and involvement including watershed associations, municipalities, industry, purveyors, and others. With the county taking the lead, it also fosters a multi-municipal approach that makes the most sense for effective watershed management.

**CONTACT INFORMATION:**

PA DEP Division of Drinking Water Management (717) 772-4018

PA DCNR Rivers Conservation Program, Bureau of Recreation and Conservation (717) 787-2316

The Brandywine Conservancy Environmental Management Center (610) 388-2700 or (610) 388-8351

Lancaster County Planning Commission (717) 299-8333

Chester County Water Resources Authority (610) 344-5400

Chester County Planning Commission (610) 344-6285

**FUNDING SOURCE(S):**

Grant funding is available from PA DEP and PA DCNR to conduct water resource assessment studies and prepare watershed plans.

PA Department of Environmental Protection (PA DEP) Bureau of Water Quality Protection (717) 787-2666

PA Department of Conservation and Natural Resources (PA DCNR), Conservation Partnerships Division, Bureau of Recreation and Conservation, Keystone Rivers Conservation Grant Program (717) 787-2316 ■



## 2. Water Supply System Planning

### DESCRIPTION:

Community water supply systems are defined as ranging from large regional systems (typical in urban and suburban areas), to small systems (serving less than 3,300 persons) such as those which serve individual developments and mobile home parks. While some of the larger community water supply systems use surface water, most of the smaller systems use groundwater. Planning for water supply systems, whether public or private, involves many variables for municipal decision makers. This planning can also be done on a municipal, multi-municipal or county level.

The quantity and quality of water are obvious concerns. However, location of sources, pollution impacts, engineering design and costs, installation requirements and costs, treatment criteria, service and other logistical considerations need to be dealt with. Act 247, the Municipalities Planning Code (MPC), allows for review and comment of water related plans. Section 209.1(a)(7.1) allows the local planning agency to conduct a water survey taking into consideration pertinent components of the state water plan, river basin water resource plans and local public water supplier plans. Section 301(b) allows a municipality to incorporate a water supply plan to their comprehensive plan and Section 303(a)(4) allows the planning agency to review and comment on the expansion of water lines if they have adopted a comprehensive plan. Section 304(a)(4) gives the same review and comment option to a county planning

agency. State and multi-state entities such as DEP, PA Infrastructure Investment Authority (PennVEST), the Delaware and Susquehanna River Basin Commissions, and the federal Rural Utilities Service may have review, oversight or regulatory jurisdiction over local and regional water planning.

### BENEFITS:

Planning for community water supplies involves both the use and protection of water resources. It also helps to delineate the logistical concerns from an environmental, engineering, financial and land use perspective that revolve around the expansion of water services. By requiring applicants for subdivision and land development approvals to plan for new water supply systems, the most appropriate system for the proposed development is selected. In addition, proper planning usually avoids future problems with the system, including possible water shortages during times of drought.

### IMPLEMENTATION:

Evaluations of proposed water supply systems should be done by professional planners, engineers and hydrogeologists. The complexity of state, regional and federal regulations that may apply to the various aspects of water treatment and supply need to be addressed by municipalities and/or public and private water suppliers as they implement sound water planning techniques. It is useful to have a county or local planning entity involved in this process.

*(Water Supply System Planning, Cont'd)*

Some communities have taken a broader approach to water supply planning by looking at the issue from a watershed basis and by addressing all water resources issues in an integrated water resources plan. (See the practice titled "Assessment of Water Resources on a Watershed Basis", page 29.)

In addition, it may be important to work with local utilities where communities rely on private water suppliers. One example provided below involves the development of a voluntary agreement between a county and PUC-regulated water utility. Voluntary agreements may be useful in some cases but have limitations because they are not binding. The Municipalities Planning Code (MPC) also does not clearly authorize the use of such agreements for planning and zoning purposes.

**EXAMPLES IN PENNSYLVANIA:**

**Perry County:** The County is developing a County Water Supply Plan. The plan will evaluate the technical, managerial and financial capacity of all 27 community water systems in the county and identify ways to improve and maintain capacity. Specific areas of concern to be addressed in the plan include insufficient sources of water supply, old distribution systems, recent Safe Drinking Water Act requirements and residential growth. The plan is intended to be a guidance document for federal, state, and local officials, as well as community water suppliers. The County Water Supply Plan and the county's on-going Regional Planned Growth Management Plan are to be closely coordinated.

**Pike County:** The County has developed and is implementing a County Water Supply Plan/ Wellhead Protection Program. As part of this effort 59 community water systems were evaluated to determine their current ability to comply with Safe Drinking Water requirements and the systems' needs for at least the next 10 years. In addition, a wellhead protection workbook was developed to provide assistance to other public water suppliers in developing wellhead protection programs of their own. An inventory of potential contaminant sources was completed for the entire county to highlight the need for wellhead protection.

**Forest County:** The County completed a year long Small Water System Regionalization Study. The technical, managerial and financial capacity of four community water systems was evaluated to determine the feasibility and benefits of system consolidation. The study identifies individual system strengths and weaknesses, along with current and future needs. Costs to address these needs were developed for various alternatives including one system merging with one or more other systems, cost sharing among systems to address common needs, and remaining as a "stand-alone" system. DEP's Division of Technical Assistance and Outreach has offered technical and financial assistance to the county to implement the study.

**York County:** A local water utility worked closely with the county to delineate where growth would occur and voluntarily agreed not to expand connections in non-growth areas.

*(Water Supply System Planning, Cont'd)*

**CONTACT INFORMATION:**

PA Department of Environmental Protection (PADEP) – Bureau of Water Supply Management, (717) 787-5017

supply and distribution systems, waste water collection and treatment systems and other related costs including feasibility studies. ■

For more information on the Perry, Pike and Forest County examples, contact PA DEP at (717) 787-0122.

**FUNDING SOURCES:**

Several grants and technical assistance programs are available to help with community water supply planning. Grants cover small water systems regionalization, formation of water authorities and county water supply planning.

PA Department of Environmental Protection (PADEP) – Bureau of Water Supply Management, (717) 787-5017

PA Infrastructure Investment Authority (PENNVEST)  
(717) 787-8137

Provides loan and supplemental grant funding for feasibility studies, design and engineering of systems and for construction, improvement, expansion, extension, acquisition, repair or rehabilitation of systems.

U.S. Department of Agriculture – Rural Development Program, Rural Utilities Service (RUS)  
(717) 237-2188

Provides loan and grant funds for rural areas with up to 10,000 population, to construct, repair, modify, expand, improve water



### 3. Source Water Protection: Wellhead and Aquifer Protection Zoning

#### DESCRIPTION:

"Source Water Protection," a term which applies to both large regional systems and small systems, places emphasis on assessment and protection of source waters for public water supplies through delineations, assessments and ordinances.

Wellhead Protection and Aquifer Protection Zoning are two types of source water protection available for 96 percent of the public water systems in Pennsylvania which are derived from groundwater.

While source water protection is mandated for all public water supplies by the Safe Drinking Water Act Amendments of 1996, the implementation of source water protection programs is voluntary on the part of local communities.

#### BENEFITS:

This practice protects public water drinking supplies by minimizing potential sources of pollution and reduces cost of water treatment needed to comply with Safe Drinking Water Regulations. It also reduces the need to develop new and more costly sources of water or to import water from other regions. The protections afforded maintain the longevity of the sources of the water supply. In addition wellhead and aquifer protection zoning encourages local citizens to assist in planning to address water quality and supply.

#### IMPLEMENTATION:

Authority to control land use is essential for the protection of drinking water sources, and does exist in the Municipalities Planning Code (MPC).

Procedural steps in wellhead protection are: [1] public participation in planning for wellhead protection; [2] delineation of wellhead protection areas; [3] assessment of potential sources of contamination; [4] management of the protection area through regulatory or nonregulatory methods; and [5] contingency planning for emergencies and planning for future needs.

Protective zoning that identifies areas that contribute water directly to wells or aquifers make it possible to control the location and effects of various land uses that can threaten groundwater sources.

The PA Rural Water Association has a program to help rural communities prepare wellhead protection plans.

#### EXAMPLES IN PENNSYLVANIA:

There are over 160 existing water supplies in Pennsylvania that have had some or all of the steps implemented in wellhead and aquifer protection. The following are a few examples:

**The Borough of Kutztown, Berks County**, and three surrounding municipalities have delineated wellhead protection zones and enacted ordinances to protect their

*(Source Water Protection, Cont'd)*

groundwater sources of public water supply;

Kutztown Borough, Berks County  
(610) 683-6729

**South Middleton Township, Cumberland County**, Wellhead Protection Zones and Ordinances;

South Middletown Township, Cumberland County  
(717) 258-5324

Municipalities in **Lancaster County** that have implemented wellhead protection areas (WHP areas) include: the **Boroughs of Christiana, Mount Joy, Terre Hill, New Holland, and Strasburg**; and **East Cocalico, East Earl, and Earl Townships**.

Christiana Borough, Lancaster County  
(610) 593-5199

Mount Joy Borough, Lancaster County  
(717) 653-5355

**East Marlborough Township, Chester County** adopted zoning amendments that created a special groundwater protection overlay zone. Development within the protected zone must minimize any threats of groundwater contamination; and

Terre Hill Borough, Lancaster County  
(717) 445-4581

New Holland Borough, Lancaster County  
(717) 354-4567

Strasburg Borough, Lancaster County  
(717) 687-7732

**West Whiteland Township, Chester County** has strict standards for development approvals to minimize adverse impacts on groundwater, including the installation of liners and monitoring devices for underground storage tanks, the use of fill not contaminated with materials defined as hazardous under state law, and the prohibition of grading, construction, or site improvements that would diminish the flow of natural springs.

East Cocalico Township, Lancaster County  
(717) 336-1720

East Earl Township, Lancaster County  
(717) 354-5593

Earl Township, Lancaster County  
(717) 354-0773

East Marlborough Township, Chester County  
(610) 444-0725

West Whiteland Township, Chester County  
(610) 363-9525

**CONTACT INFORMATION:**

PA DEP Bureau of Water Supply Management, (717) 787-0122.  
Wellhead Protection Information:  
[www.dep.state.pa.us](http://www.dep.state.pa.us).

Chester County Water Resources Authority  
(610) 344-5400

*(Source Water Protection, Cont'd)*

PA Rural Water Association  
(800) 653-7792  
(814) 353-9302

**FUNDING SOURCES:**

DEP provides grants and technical assistance to local communities for developing and implementing Wellhead Protection Programs. The PA Rural Water Association has a statewide program to help rural communities prepare wellhead protection plans. Contact them at (800) 653-7792 or (814) 353-9302. ■



## 4. Sewage Facilities Planning

### DESCRIPTION:

Pennsylvania's Sewage Facilities Act, commonly known as Act 537, places on local municipalities the responsibility of ensuring that sewage and wastewater is properly treated and disposed. This responsibility extends to existing developed areas as well as new land developments, and includes new and existing individual and community sewage systems. The level of involvement by the municipality in the ownership and management of sewage facilities is a local decision that can affect the health, safety, and welfare of the citizenry by affecting the type of system chosen, the overall system design, the quality of the system, system operation and cost to the users. Municipal management of community sewage systems is most applicable where large public sewer systems are not available. Municipal management is also important where an existing privately owned community system is not being managed properly and/or is malfunctioning.

### BENEFITS:

Establishing policies for the ownership and management of community sewage facilities can provide adequate financing and maintenance ability throughout the life of the facility. Such policies can support planning goals that call for higher density development patterns, such a cluster development and mixed use or open space areas. These policies also ensure that high quality sewage facilities are provided in the municipality, and that the type of sewage facilities provided are the type

desired by the community at large. This tool can also help municipalities carry out their primary responsibility of providing for the health, safety, and welfare of the citizenry.

### IMPLEMENTATION:

Act 537 requires each municipality to provide an updated sewage facilities plan. Plan revisions to properly plan for the sewage facilities needs of a development must be approved by both the municipality and Pennsylvania Department of Environmental Protection (PA DEP). Any resident or property owner within the municipality can request that the plan be revised to permit a proposed sewage system when it can be shown that the plan is inadequate to meet the resident's or property owner's sewage disposal needs.

Provisions can be added to municipal subdivision and land development ordinance to require submission of a community sewer facilities agreement covering operation and maintenance. Separate municipal ordinances can be used to govern sewage-related issues such as the use of holding tanks, the designation of sewer service areas, and the establishment of sewer connection policies and fees.

Municipal officials may require engineering support to properly select adequate and appropriate systems. Many municipalities prefer not to become "owners" of the sewage systems or be responsible for the management of the community system.

*(Sewage Facilities Planning, Cont'd)*

Act 537 plans should be consistent with and based upon the Comprehensive Plan and zoning ordinances.

Suburban and rural municipalities that have used the practice have determined that active involvement in the ownership and management of community sewage systems is essential for managing growth and encouraging higher intensity land uses in appropriate places.

Sewage planning can be done on a multi-municipal or county basis. One example cited below involves the use of a county-wide on-lot sewage ordinance to implement a program of multiple municipalities. Further examples can be found in the practice titled "Cooperative Approaches to Sewer and Water Management."

In some parts of the Commonwealth, County Health Departments and other local agencies have been delegated authority by PA DEP to administer the 537 program.

**EXAMPLES IN PENNSYLVANIA:**

Sewage facilities planning can take a variety of forms. Several examples are identified below.

**East Marlborough Township in Chester County** has been facing growth pressures, and also has had to deal with malfunctioning on-lot disposal systems in some older developed areas. To provide needed sewage facilities to areas determined in their Act 537 Plan, the Township now owns and operates two wastewater systems and has a third system under construction. The newest system is being funded by a combination of connection fees,

construction "seed" monies, grants and annual fees. In its most recent Act 537 Plan Update, the Township evaluated institutional alternatives for the newest system. The alternative selected was administration of the system by the Township Manager.

The Township also evaluates facility management policies and a wastewater management program to accommodate and manage new facilities that may be created as the result of new land developments. The management policy for community sewage systems requires: review and approval of system design and review of construction; a 100 percent construction escrow fund; routine maintenance; a continuous offer for dedication to the Township; routine inspections by the Township; and adherence to the management program.

The Wastewater Management Program contained in the Act 537 Plan states: "The intent of the Program is to provide for improved design, installation, operation, and maintenance of wastewater systems through municipal administration and ordinances." To make this program effective, the Township has taken on the following responsibilities: review of plans and systems by the Township Engineer; enacting and implementing ordinances to ensure the long term viability of systems; and developing and implementing an inspection program.

**West Hanover Township, Dauphin County:** West Hanover began its sewage management program in November 1993 as a result of a need to update its official sewage plan. The township is served 100

*(Sewage Facilities Planning, Cont'd)*

percent by on-lot sewage systems. The township's program includes registration of septic pumpers and an inspection of on-lot sewage disposal systems at the time of pumping using a township form. The program is reportedly proceeding satisfactorily and without serious citizen complaints.

**Carroll Township, York County:**

Carroll Township hired an engineering firm to handle its sewage enforcement duties. Several areas of the Township were identified with patterns of malfunctioning on-lot sewage systems, so the Township revised its official sewage plan to provide for a management system within these areas. Carroll Township adopted an ordinance in 1984 to address the problem and, as a further preventive measure, mandated that zoning approval and building permits may not be issued until there is certification that a sewage system which meets all state standards can be installed on the property. The ordinance also grants authority for the Township to own and operate community and alternate systems.

**The Lebanon County Planning Department** under voluntary agreement enforces Act 537 for 23 of the 26 municipalities in Lebanon County. This maximizes general consistency of enforcement county wide.

A similar structure exists in **Blair County**, where its Sanitary Administrative Committee administers Act 537 for 21 of the 24 municipalities of the County.

**CONTACT INFORMATION:**

East Marlborough Township, Chester County  
(610) 444-0725

West Hanover Township, Dauphin County - Contact Codes and Zoning Administrator at (717) 652-4841.

Carroll Township, York County –  
Contact Sewage Enforcement Officer at  
(717) 258-5114.

Lebanon County Planning Department  
Contact: Sewage Administration  
(717) 228-4444

Blair County Sanitary Administrative  
Committee  
(814) 696-1229

**FUNDING SOURCE(S):**

PA DEP funds comprehensive sewage planning with 50 percent matching grants. It will also pay up to 85 percent for costs incurred in administering a sewage program where certain quality criteria are met. This can cover the staffing and administration costs. PA DEP Bureau of Water Quality Protection, Planning Assistance and Grants Program:  
(717) 787-8184 ■



## 5. Alternative Treatment and Disposal Options for Community Sewage Systems

### DESCRIPTION:

Alternative sewage treatment and disposal options are important in areas where large public facilities are not available and where higher density, open space and cluster designs or new development is desired. The policies that specify the type of sewage systems preferred by the municipality and the types that must be evaluated for proposed new land development, can also specify the order in which various treatment and disposal options are evaluated. The availability and cost of land is one of the most important factors in selecting certain treatment and disposal options.

Wastewater treatment options include: septic tanks, aerobic units, package treatment units, sequencing batch reactor, treatment lagoons and ponds, sand filters land application of biosolids and other alternative or experimental systems. Effluent disposal options include: stream discharge, surface spray irrigation, drip irrigation, subsurface disposal and land application rapid infiltration.

### BENEFITS:

This practice supports goals for higher density development patterns such as cluster development and mixed-use areas. Use of this practice ensures that adequate sewage facilities are provided in the municipality, and that the type of sewage facilities provided are the types desired by the community at large. This encourages utilization of sewage treatment and disposal technologies that typically could

potentially minimize environmental impacts, low life-cycle costs and low user costs.

Land application of biosolids or wastewater effluent allows nutrients to be used as a value producing resource in agricultural applications.

### IMPLEMENTATION:

To be most effective, these options should be discussed and planned for within the context of the Comprehensive Plan and local 537 sewage facilities plan. Permits are required from PA DEP for use of these options.

### EXAMPLES IN PENNSYLVANIA:

**Chester County:** Several municipalities are requiring that a hierarchy of community sewage system alternatives be evaluated to help ensure that the most desirable alternatives are selected for new land developments. The following examples are from Birmingham, East Marlborough and London Grove Townships. These municipalities have instituted policies in their Comprehensive Plans and Act 537 plans to implement the selection of community sewage systems. These concepts can also be incorporated into a municipal subdivision and land development ordinance as was done in Pennsbury Township. Other Chester County municipalities, which have implemented this technique in one form or another include East Pikeland, North Coventry, South Coventry, and Warwick Townships.

*(Alternative Treatment and Disposal Options,  
Cont'd)*

**Birmingham Township, Chester County** — The basis of the Township's policies and objectives is the municipal Comprehensive Plan adopted in 1979. The residents and supervisors have strongly supported the preservation of natural resources and have adopted this specific policy: "To prohibit direct discharge of sewage and effluent and foreign material to streams." Their Comprehensive Plan also contains a policy to maintain the quality and quantity of ground water for water supply and includes the following: "Establish, as a basic Township planning criterion, the intent to obtain maximum recharge of the ground water supply." The Comprehensive Plan states that new land development proposals "... should identify those waste disposal alternatives compatible with the Township's Land Use policies and controls, and identify areas where such methods appear most feasible, e.g., possible sites for land application of effluent based on soils, vegetation and other natural considerations...". These and other related policies contained in the municipal Comprehensive Plan were incorporated by reference into the 1987 Official Sewage Facilities Plan of the Township, thereby helping to achieve the environmental goals of the community.

**East Marlborough Township, Chester County** — The Township prepared and adopted a sewage facilities plan (Act 537 Plan) in 1993. This plan contains a section on wastewater system selection strategy for both individual and community sewage systems for

proposed new land developments. A list of systems or technologies, is evaluated by a project sponsor or applicant.

The methodology used to evaluate the technologies relies on a hierarchy of system preference. This hierarchy is intended to direct applicants proposing wastewater systems in the Township to utilize the technology most desired by the municipality.

The purpose of this hierarchy is to place the responsibility of demonstrating the feasibility of a particular technology upon the applicant. This evaluation process is conducted under the close scrutiny of the Township and must fully comply with the DEP wastewater regulations.

**London Grove Township, Chester County** — The Municipal Act 537 Sewage Facilities Plan begins by stating the following goals and objectives:

1. Allow Township zoning ordinance to be implemented;
2. Provide for orderly growth and protection of the natural resources in the Township;
3. Maintain and improve the quality of local streams and protect the quality and supply of groundwater within the Township;
4. Encourage the preservation and protection of open space, wooded areas and stream valleys within the Township; and

*(Alternative Treatment and Disposal Options, Cont'd)*

5. Encourage groundwater recharge throughout the Township as follows:
  - Utilize spray irrigation disposal for wastewater flows greater than 10,000 gallons per day;
  - For flows less than 10,000 gallons per day the preferred method is still spray irrigation, but subsurface disposal systems providing groundwater protection are acceptable.

**CONTACT INFORMATION:**

DEP Bureau of Water Quality Protection  
(717) 787-8184

Chester County Planning Commission  
(610) 344-6285

East Marlborough Township, Chester County  
(610) 444-0725

London Grove Township, Chester County  
(610) 869-2896

**Broad Top Township and Coaldale Borough, Bedford County:**

This multi-municipal, local agency has a unique and all-inclusive sewage management program. It includes a combination of central and on-lot systems.

Broad Top Township  
(814) 928-5253

Carlisle Region Water Pollution Control Facility  
(717) 240-6993

**Carlisle Borough, Cumberland Borough:**

The Carlisle Region Water Pollution Control Facility has a successful biosolids recycling program. After treatment, biosolids are spread in a controlled way on 25 farms. The program is so popular that additional farms are on a waiting list to join the program.

Delaware Valley College  
(215) 489-2334

**FUNDING SOURCE(S):**

PennVEST  
(717) 787-8137 ■

**Delaware Valley College Project, Bucks County:**

Established as a research Center to develop and evaluate new on-lot sewage disposal options. This includes the following technologies: constructed wetlands, at-grade absorption beds, drip irrigation, various sand filters and filter media technology.



## 6. Locating Individual Sewage Systems in Open Space

### DESCRIPTION:

Locating individual sewage systems in a development's open space provides opportunities for creative residential subdivision designs that conserve critical environmental resources. Such an option creates an alternative to constructing a community sewage system. This practice applies to primarily new residential land development projects not located near a public sewer system.

### BENEFITS:

This practice supports cluster development designs and other alternative residential subdivision designs by creating flexibility in variable lot sizes. Such designs strive to conserve critical environmental resources and open space within a development. Lots within these developments are significantly smaller than the customary one or two acre building lots, and therefore makes the use of traditional septic systems or on-lot systems more difficult. This practice also allows for subdivision designs where some of the lots are served by on-lot systems and some lots are served by off-lot systems.

Use of this practice potentially provides a better match between land use needs and specific site characteristics. It also reserves the soils most suitable for subsurface disposal of treated sewage effluent. Typical individual sewage systems return most of the water used in a home back to the local groundwater system.

### IMPLEMENTATION:

Approving the use of individual sewage systems in open space areas is a decision that is made at the local municipal level. Such a decision to utilize this concept can be implemented through a combination of provisions contained in municipal Act 537 plans, a subdivision and land development ordinance, building codes and Home Owner Association agreements. Additional municipal involvement in the form of a sewage system management program is a key element in providing for the health, safety and welfare of residents and is necessary to ensure the successful implementation of this practice.

Municipalities that are already engaged in an active sewage facilities management program will be the most prepared to handle the administrative responsibilities of individual off-lot systems. Other municipalities that see the potential benefits of the individual off-lot sewage system concept should first establish a facilities management program.

Factors such as the size of the tract, soil conditions, and environmental resources present need to be considered to determine if, and how many, individual off-lot sewage systems should be used. While smaller subdivisions may lend themselves to the use of individual systems, there is a point where it is likely to be more cost effective to build a community system or connect to a public sewage system.

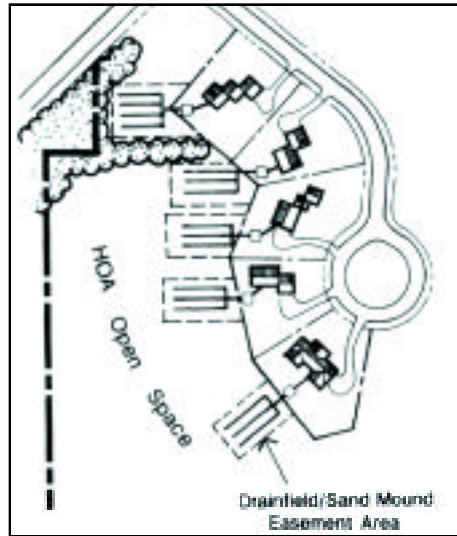
*(Locating Individual Sewage Systems In Open Space, Cont'd)*

**EXAMPLES IN PENNSYLVANIA:**

**Chester County:** The concept of using designated open spaces for individual sewage systems is relatively new.

Currently, **Franklin, West Vincent and New Garden Townships** have the most experience working with developers attempting to create conservation subdivisions with individual sewage systems in open space areas. East Bradford and West Brandywine Townships also have reviewed projects proposing to use designated open spaces for individual sewage systems.

**Sample Ordinance Standards** — In a recent update of its Act 537 Sewage Facilities Plan, **Wallace Township** included a policy which supports the use of individual off-site sewage systems in certain circumstances. The Township has implemented this policy through amendments to its subdivision and land development ordinance. While the Township still requires that the treatment tank and primary absorption area be located within the boundaries of the building lot, they allow up to ten percent of the total building lots in a development to have secondary or replacement absorption areas in designated open spaces. The replacement areas are required to be no more than 100 feet from the boundary of the lot the system serves. In order to use this option, the applicant must demonstrate to the satisfaction of the Township that a more environmentally sensitive site design can be achieved by locating the on-lot system in the open space.



**CONTACT INFORMATION:**

Chester County Planning Commission  
(610) 344-6285

Franklin Township, Chester County  
(610) 255-5212

West Vincent Township, Chester County  
(610) 827-7932

New Garden Township, Chester County  
(610) 268-2915

Wallace Township, Chester County  
(610) 942-2880

PA DEP Bureau of Water Quality  
Protection  
(717) 787-8184

Environmental Management Center of  
the Brandywine Conservancy  
(610) 388-2700 ■

## 7. Cooperative Approaches to Sewer and Water Management

### DESCRIPTION:

This practice describes multi-municipal, county-wide and other cooperative efforts for the management of sewer (on-lot and/or treatment plants) and water supply issues. Such cooperative efforts include a more formal approach involving establishment of sewer and/or water authorities to address sewer and water issues across municipal boundaries.

When systems fail and an authority is asked to provide additional connections and more capacity to address the failure, extension of systems can, in some instances, be a precursor to additional development. Therefore the service area of the authority or the multi-municipal agreement should be guided by and be linked to a proactive comprehensive planning effort that integrates 537 and water supply planning elements into one planning framework.

### BENEFITS:

Putting a joint authority in place or establishing other means to cooperate for multi-municipal management of water and/or sewer systems can provide for better and more efficient management of resources. This is especially valuable since water resources are not tied geographically to municipal boundaries. An authority can provide for an around-the-clock, professionally operated and managed system that can minimize the potential for health, safety and environmental problems that otherwise may result from a mismanaged system. An authority has the potential to take a broader view of the entire service area when sewer and water infrastructure

development decisions are being discussed. They can also designate a certain service area within which they will operate in an attempt to guide new growth to those areas. Cooperative efforts also help local jurisdictions leverage grant and loan funding as is with the case in the USDA example cited below.

### IMPLEMENTATION:

In the establishment of a joint authority, a group of municipalities, a county or multiple counties may choose to create an authority to take on the task of operating, maintaining and managing all or some of the water and/or sewer systems within an area. Contractual arrangements can be established where the locality retains ownership of the system(s) and the authority serves an operations and management role. A locality can also sell or relinquish its ownership of the resource and/or infrastructure to the authority.

Another approach involves the creation of voluntary agreements or memoranda of agreements between local government jurisdictions and others to provide sewer and water service, or to expand or limit connections or service to particular areas. In some instances, specific terms regarding limits on system expansion and/or new connections can also be placed in funding agreements for loans or grants that may be forthcoming for the construction of system infrastructure.

A local Comprehensive Plan can easily support these types of multi-municipal and other cooperation management approaches and implementation can

*(Cooperative Approaches to Sewer and Water Management, Cont'd)*

take place through adoption of local ordinances.

**EXAMPLES IN PENNSYLVANIA:**

**Lehigh County:** The county created a multi-municipal, joint sewer and water authority that services about one dozen or so communities in the western part of the county. On its own, the authority provides a water treatment and distribution system as well as a sewer collection system. However, it also has a contract with the City of Allentown for treatment of sewage.

**Centre County:** The University Area Joint Authority in Centre County runs a sewage collection and treatment operation on a multi-municipal level.

**Allegheny County: The Allegheny County Sanitary Authority (ALCOSAN)** provides interceptor service and treatment plant for a system of approximately 83 municipalities. Each municipality provides the collection services and the links to the interceptor.

**Chambersburg Wastewater Treatment Plant** — Regional plant that serves the boroughs of Chambersburg, Greene, Guilford and Hamilton Township. Each municipality has its own collection system, and regulates and maintains its system. However, the municipalities utilize a single treatment facility and share the operation costs of the plant.

**Chambersburg Borough and Bear Valley Joint Water Authority** — The two water systems are interconnected. Chambersburg sells water to the Bear Valley Authority.

**Indiana County:** Joint municipal authority owns, operates and manages several independent water and sewer systems.

**U.S. Department of Agriculture – Rural Development Program.** Several examples exist where municipal authorities enter into memoranda of agreement with USDA to specify appropriate sewer and water project boundaries as a condition of grant and loan funding.

**CONTACT INFORMATION:**

Lehigh Valley Planning Commission  
(610) 398-2503

University Area Joint Authority  
(814) 238-5361

Allegheny County Sanitary Authority  
(412) 766-4810

Chambersburg Borough, Franklin County  
(717) 264-5151

Indiana County Municipal Services Authority  
(724) 349-6640

**FUNDING SOURCE(S):**

PA Department of Environmental Protection (PADEP) – Bureau of Water Quality Protection, (717) 787-8184 and Bureau of Water Supply Management, (717) 787-0122. Funding and technical support is available to support intergovernmental cooperation for sewer and water management.

U.S. Department of Agriculture – Rural Development Program,  
(717) 237 2299 ■

## 8. Floodplain Management

### DESCRIPTION:

The Pennsylvania Flood Plain Management Act (Act 166) requires every municipality identified by the Federal Emergency Management Agency (FEMA) that is subject to flooding to participate in the National Flood Insurance Program (NFIP). The NFIP enables property owners to buy subsidized flood insurance in participating municipalities. In return for making flood insurance available for their residences, the participating municipalities are required to enact flood management regulations which comply with the minimum requirements of the NFIP and with regulations adopted by Pennsylvania's Department of Community and Economic Development.

Municipalities are required by law to place special controls over the 100-Year floodplain as defined and delineated by the NFIP and FEMA.

### BENEFITS:

Most municipalities regulate floodplains in some way. The extent of the regulations vary from municipality to municipality. However, not all regulations are aimed at preservation or protection of natural resources. Generally, they are designed to protect people and developed property.

If floodplains are not managed, increased flood heights and velocities will cause greater flood damage to unprotected buildings, land uses and natural resources. In addition to preventing loss of life and property damage, floodplain management reduces public funding for disaster response, assistance and relief efforts.

Floodplains can often provide opportunities for parkland and open space in a community.

### IMPLEMENTATION:

Floodplain management regulations and ordinances are focused primarily on preventing the loss of property and life. Floodplain regulations are found in zoning ordinances, subdivision and land development ordinances, and in building codes. DCED provides model ordinances and suggested provisions that can be enacted as amendments to zoning ordinances, a subdivision and land development ordinance, building codes or as a separate ordinance. Regulations located in the zoning ordinance may be included as an overlay district that places special controls over the 100-Year floodplain. This allows municipalities to regulate development in the 100-Year floodplain, the 500-Year floodplain, or within floodplain soils.

Act 166 permits a municipality to adopt floodplain management regulations without adopting a zoning ordinance. See also the practice "Open Space Zoning Conservation Design" in Chapter V, as an alternative to encroaching upon the 100-year floodplain.

### EXAMPLES IN PENNSYLVANIA:

**Lebanon County** - The Lebanon County Planning Department acts as a liaison between municipalities and the state and federal floodplain administrators.

*(Floodplain Management, Cont'd)*

In this capacity, the planning department develops model regulations, assists municipalities in their adoption, and enforces those regulations as the community zoning officer for 18 of the 26 municipalities in Lebanon County.

**Lycoming Economic and Community Development Services** also has a similar arrangement with many of the municipalities within County borders.

**North Londonderry Township, Lebanon County**, is a good example of a municipality that is partnering with the County Planning Department to effectively manage floodplain development.

**Upper Moreland Township, Montgomery County**, is a good example of a municipality that has floodplain management provisions in its zoning ordinance which exceed FEMA, NFIP, and state requirements.

**CONTACT INFORMATION:**

For more information, please contact the Governor's Center for Local Government Services at 1-888-2CENTER (223-6837).

For Center information on floodplain management issues ranging from permits to regulating development in the floodplain to variances. Consult Planning Series # 11, Technical Information on Floodplain Management, Administrative Guidelines.

Lebanon County Planning Department  
Phone: (717) 228-4444

Lycoming County Economic and Community Development Services  
(570) 320-2130

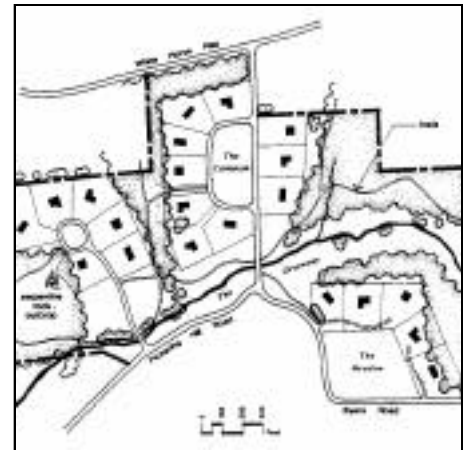
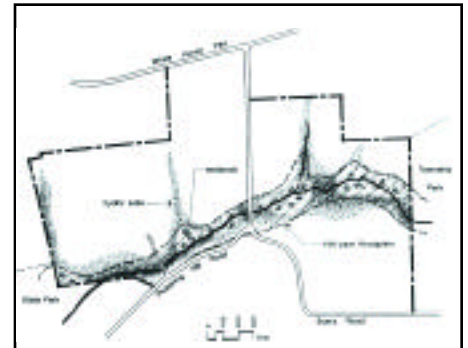
Upper Moreland Township,  
Montgomery County  
(215) 659-3100

Federal Emergency Management Agency (FEMA)  
(215) 931-5542

**FUNDING SOURCE(S):**

Municipalities are reimbursed for 50 percent of their administrative costs, upon request.

DCED provides funding through the Floodplain Management Act Reimbursement Program. Contact the Center at 1-888-2CENTER (223-6837) for Act 166 Administrative Cost Reimbursement forms. ■



## 9. Stormwater Management Planning

### DESCRIPTION:

The Pennsylvania Stormwater Management Act (Act 167) provides for planning, development of ordinances, technical guidance and funding to assist local governments in stormwater control and management. The Act is designed to limit impacts of stormwater to streams, groundwater, floodplains and storm sewers by controlling increased volumes and rates of stormwater runoff and changes in the water quality that can result from development. The Act requires that every county develop and adopt stormwater management plans for the watersheds within their boundaries and also to update those plans every five years.

The Act utilizes zoning and forecasting of future development to infer how development impacts flow and calls for preparation of plans to manage flow accordingly. The Act directs counties to do planning for stormwater management which is to be implemented by local ordinances.

The stormwater management plan is intended to assess existing problems and the cumulative impact of proposed development within a watershed. Depending on the type of problems and the level of development within the watershed, the plans may specify best management practices like structural controls (e.g., dams or retention basins) or changes in the type and form of future development to reduce or delay runoff volumes.

### BENEFITS:

Use of this practice to plan for and develop a stormwater management plan can limit impacts of stormwater to streams, ground water, floodplains and storm sewers by controlling increased volumes and rates of stormwater runoff and changes in the water quality that can result from development.

### IMPLEMENTATION:

Act 167 requires general consistency between stormwater management plans and other municipal, county and regional, and state environmental land use plans. This allows planning to occur on a more comprehensive regional level. To assist in the development of effective stormwater watershed plans, the DEP provides technical assistance and grants to support plan development and implementation.

Stormwater management plans are implemented by municipalities through enactment or amendment of local ordinances. Since stormwater flow does not recognize geographic boundaries, multi-municipal cooperation is ideal. Municipalities, when addressing drainage problems, should consider the impact of their actions on upstream and downstream communities. When adjoining municipalities have different stormwater control criteria conflicting requirements must be dealt with by developers.

The requirement of general consistency under Act 167 is accomplished in part by requiring the formation of a watershed plan advisory committee.

*(Stormwater Management Planning Cont'd)*

Generating interest and commitment from individuals within each municipality in a watershed is a critical part of the process.

Centre County Planning Commission  
(814) 355-6791

Lehigh Valley Planning Commission  
(610) 264-4544

**EXAMPLES IN PENNSYLVANIA:**

**Centre County** – Centre County’s stormwater planning efforts on Spring Creek is recognized by DEP as one of the best examples of stormwater planning in the state. The plan includes many new aspects of stormwater planning, including use of BMPs specifically designed for a karst (limestone) region. The plan not only includes stormwater quantity issues but water quality aspects as well. The plan has had an excellent stakeholder participation component.

Lebanon County Planning Department  
(717) 228-4444.

**FUNDING SOURCE(S):**

Grants are available that cover up to 75 percent of the cost of preparing storm water management plans, enacting ordinances, and administering and enforcing stormwater requirements.

PA DEP – Stormwater Management Program:  
(717) 772-5661 ■

**Lehigh County** – Lehigh County Planning Commission is also credited with successful stormwater management planning.

**Lebanon County Stormwater Management Ordinance and**

**Enforcement** – By voluntary agreement, the Lebanon County Planning Department enforces the Lebanon County Subdivision and Land Development Ordinance for 18 of the 26 municipalities in Lebanon County. Chapter 5 of that ordinance addresses stormwater management and design criteria.

**CONTACT INFORMATION:**

PA DEP – Stormwater Management Program  
(717) 772-5661

Center for Watershed Protection  
(610) 461-8323  
[www.pipeline.com/~mrrunoff/](http://www.pipeline.com/~mrrunoff/).

## 10. Stormwater Best Management Practices (BMPs)

### DESCRIPTION:

Best Management Practices (BMPs) for stormwater, are a combination of techniques designed to minimize the impact of development on surface water quantity and quality. Techniques related to site design will best manage the anticipated stormwater flow and quality based on an evaluation of site conditions and planning requirements. Traditional BMPs include dry detention ponds, wet ponds, wetlands, water quality inlets, oil and grit separators, among others. Emerging BMPs that are gaining recognition for their effectiveness include retention basins, infiltration basins, sand filters, biofilters, grassed swales and riparian buffers, pervious pavements and walkways, curb-less streets, and pollution prevention practices, among others. In addition, landscape practices can be designed into an initial site plan, with land owners accepting responsibility for maintenance.

### BENEFITS:

Implementation of stormwater management BMPs through municipal subdivision and land development ordinances provides acceptable practices for compliance with municipal regulation of stormwater management. These practices minimize the increase of surface runoff volumes, rates and frequencies resulting from development. They minimize the increase in downstream flooding, and thereby improve public safety, reduce property damage, and reduce flood impacts such as road closures.

Such practices also increase the recharge to groundwater, and decreases erosion and stream downcutting in upper reaches, and sedimentation in lower reaches. And, the practice reduce infrastructure requirements, space requirements, and maintenance costs for stormwater handling facilities.

### IMPLEMENTATION:

Stormwater management is implemented through the municipal subdivision and land development ordinance or in a separate stand-alone stormwater management ordinance. Within the ordinance, a hierarchy of BMPs can be established to encourage the use of those practices that best suit the condition and needs of the municipality.

The individual, organization or agency to be responsible for operation and maintenance (O&M) of the BMPs for the life of the project must be identified at the onset of the project. It must also be ensured that the responsible party for O&M has the financial ability to fulfill that responsibility. Increased use of BMPs requires increased application review, as well as increased inspections and enforcement during and after construction.

Any stormwater not retained for infiltration must be discharged off-site and may adversely impact adjacent properties.

Implementation generally tends to be through engineering solutions that are

*(Stormwater BMPs, Cont'd)*

aimed at detention rather than recharge of aquifers and maintenance of the hydrologic cycle.

#### EXAMPLES IN PENNSYLVANIA:

**London Grove Township in Chester County** adopted a stormwater management plan and ordinance standards that promote groundwater recharge, improve water quality, flood control, and includes a BMP hierarchy. The Township also provides a how-to manual for developers and engineers that shows examples of appropriate BMPs.

**Buckingham Township in Bucks County** has a good set of ordinances that spell out a hierarchy for BMP use.

#### CONTACT INFORMATION/ FUNDING SOURCE(S)

London Grove Township, Chester County  
(610) 869-2896

Buckingham Township, Bucks County  
(215) 794-8834

PA DEP Stormwater Management  
Program  
(717) 772-5661

PA Association of Conservation Districts,  
"Pennsylvania Handbook of Best  
Management Practices for Developing  
Areas" manual  
(717) 545-8878

US Department of Agriculture – Natural  
Resources Conservation Service  
(717) 237-2200

Center for Watershed Protection  
(610) 461-8323 or  
[www.pipeline.com/~mrunoff/](http://www.pipeline.com/~mrunoff/). ■

## 11. Erosion and Sedimentation (E&S) and Permitting Control Measures

### DESCRIPTION:

Pennsylvania's Clean Streams Law authorized the Erosion and Sediment Pollution Control Program. Under this program, the landowner, municipality or developer responsible for earth-moving activities is responsible for developing, implementing and maintaining sediment control measures for all projects involving construction that disturbs the surface of land. These projects include excavation, land development, subdivision development or storing, moving or depositing soil, rock or earth. This program is designed to reduce soil loss and the resulting water quality impacts associated with earthmoving and development activities.

### BENEFITS:

Erosion and Sedimentation (E&S) control measures minimize the surface runoff volumes, rates and frequencies resulting from development, minimize downstream flooding and, therefore, improve public safety, reduce property damage and reduce flood impacts. E&S control measures decrease erosion and stream downcutting in upper reaches, and sedimentation in lower reaches.

### IMPLEMENTATION:

Prior to initiating earthmoving activities, the responsible party, be it landowner, municipality or developer, must submit an erosion and sedimentation control plan to DEP or the local County Conservation District. Municipal officials generally will not issue a building permit before an applicant has obtained an E&S permit or an

exemption from an E&S permit, based on its erosion and sedimentation control plan. Permits are issued by DEP if required, or are reviewed by the County Conservation District.

The plan should include standards for grading, both excavation and fill, grading for drainage, management of vegetative cover, and management of soil resources. The duration of land disturbance should be kept to an absolute minimum and all land disturbance activity should be conducted in a way as to minimize erosion and resulting sedimentation.

### EXAMPLES IN PENNSYLVANIA:

Erosion and Sedimentation Control Plans are used throughout the Commonwealth. Permits are required for all large-scale developments.

### CONTACT INFORMATION/ FUNDING SOURCE(S):

PA Association of Conservation Districts  
(717) 545-8878

Contact your County Conservation District for information on specific measures used in your county. A list of County Conservation Districts and contact information for each is listed in the Appendix. ■



## 1. Development Districts

### DESCRIPTION:

Future land use designations can be one method of designating development districts. A development district has two coordinated purposes: first is to encourage compact development, which enables the efficient, cost-effective provision of infrastructure and public services. Second, is to preserve agricultural land and protect natural resources by directing growth away from these sensitive areas.

### BENEFITS:

This approach provides a clear framework for future growth in the municipality. It bases future development on logical restraints, natural resource limitations, and the ability to serve new development with public services.

### IMPLEMENTATION:

This approach categorizes land in one of four ways: urban area, development area, rural area or resource protection area. It is important that the districts be delineated after a thorough review of a community's overall goals for future growth and development. Use of this tool should be part of, or based on, a comprehensive plan.

Given current Pennsylvania enabling legislation, municipalities are restricted in their ability to limit development outside the development area. While the development district concept assists municipalities in determining where growth should be directed, regulations such as zoning and subdivision and

land development ordinances and municipal actions implement and directly influence development patterns.

### EXAMPLES IN PENNSYLVANIA:

**Bucks County** municipalities utilizing the development district concept in their comprehensive plan include: **Bedminster, Hilltown, and Warrington Townships**, as well as those municipalities adopting the **Quakertown Area Comprehensive Plan** and the **Newtown Area Comprehensive Plan**.

### CONTACT INFORMATION:

Bucks County Planning Commission  
(215) 345-3400

Bedminster Township, Bucks County  
(215) 795-2190

Hilltown Township, Bucks County  
(215) 453-6000

Warrington Township, Bucks County  
(215) 343-9350

Quakertown Borough, Bucks County  
(215) 536-5001

Newtown Borough, Bucks County  
(215) 968-2109

Newtown Township, Bucks County  
(215) 968-2800 ■



## 2. Growth Areas

### DESCRIPTION:

A growth area is a tool that can be used to build on and implement a comprehensive plan. A growth area is a geographic delineation, or boundary line, within which development at higher densities is encouraged and infrastructure (roads, water, sewer) to serve such development is provided for or planned. Outside of this area, land is planned to remain in predominantly rural (rural and agricultural and natural features areas) uses. Users of this tool must commit to providing for the infrastructure, including water, sewer roads, schools and parks, that will be needed to support development within the area.

Growth areas are not a tool to stop development; rather, they are used to geographically indicate where more development is appropriate and public investment in development is most appropriate. They should be used in connection with the Official Map provisions.

### BENEFITS:

Growth areas attempt to focus municipal resources to ensure that as the market creates the demand for development, the necessary facilities (infrastructure) will be available. Public and private cooperation meets growth needs by providing development in locations where it is wanted and limit growth pressures where it is not wanted. It encourages revitalization and reinvestment in development centers. Infrastructure becomes cost-effective and more efficient and to some degree

adds a sense of certainty to the development process.

### IMPLEMENTATION:

The urban growth area should be drawn to include enough land for the development needs of the next 20 years. This includes needed land for residential, institutional, commercial and industrial development, and for public open space and recreational facilities, and sufficient additional land to provide for flexibility in the real estate market. The growth area should be shown in the Official Map of participating municipalities, as well as the future land use and zoning ordinance. Growth areas are ideally multi-municipal, regional or county.

There is no specific authorization for the use of growth areas in Pennsylvania law.

To be most effective, growth areas should be established as part of a regional planning effort. Use of growth areas often requires a significant departure from conventional community planning.

### EXAMPLES IN PENNSYLVANIA:

**Lancaster County's Comprehensive Plan**, developed with its 61 municipalities, delineates 13 multi-municipal growth areas around its city, boroughs and rural villages.

The following are a sample of those Lancaster County municipalities that have adopted growth areas:

*(Growth Areas, Cont'd)*

**Warwick Township** — In conjunction with adopting a growth area, Warwick Township adopted effective agricultural zoning for one area outside of the growth area. The Township surrounds Liitz Borough and has extensive areas of prime agricultural soils. The key objective is to channel new development to areas with existing infrastructure and to protect the agricultural community. The Township government and Township Authority have worked closely together to ensure that infrastructure is consistent with the growth area objectives. Although these two bodies sometimes have different objectives, the coordination effort has produced fiscal benefits to both. Warwick Township has worked closely with the school district surrounding municipalities, developers, and the public to identify their needs and determine ways for everyone to benefit from participation in the program. Communication has been identified as a crucial component of the program.

**Manheim Township** — This Township is using transferable development rights (TDR) program to support its urban growth area. A new comprehensive plan and zoning ordinance created an agricultural district. The landowners in the agricultural district sell development rights to landowners in the receiving areas. Development within the growth area can occur at greater densities by using development rights from the agricultural area.

**East Hempfield Township** — The Township has used the growth area to identify an effective agricultural area. The Township has directed new development to areas served by sewer and water and encouraged the continued

operation of area farms. Development needs are being met and farms are remaining viable.

**CONTACT INFORMATION:**

Lancaster County Planning Commission  
(717) 299-8333

Warrick Township, Lancaster County  
(717) 626-8900

Manheim Township, Lancaster County  
(717) 569-6408

East Hempfield Township, Lancaster County  
(717) 898-3100

**FUNDING SOURCE(S):**

Reinvestment in established communities within the growth area can be encouraged by incentives such as Enterprise Zones, revolving loan funds to help finance the costs of development and redevelopment, small business incubator programs and marketing programs to revitalize downtown areas.

**The State Planning Assistance Program (SPAG)** provides funds on a 50-50 match basis for visioning and comprehensive planning projects involving multi-municipal efforts.

**The World Class Communities Program (WCCP)** also provides funds up to 50 percent for multi-municipal planning and visioning efforts.

**Small Communities Planning Assistance Program (SCPAP)** provides up to 100 percent of the cost to prepare multi-municipal Comprehensive Plans and implementing ordinances. Program

*(Growth Areas, Cont'd)*

guidelines emphasize compliance with Community Development Block Grant Program requirements.

For more information, please contact the Governor's Center for Local Government Service at 1-888-2CENTER (223-6837). ■



## 1. Coordination of Transportation and Land Use

### DESCRIPTION:

Optimally, planning for transportation infrastructure should be integrated with county and local land use planning from the outset in order to assure that roads and transit will be adequate to serve existing and planned development. While this is not an existing practice in Pennsylvania, PennDOT has developed a process for coordinating transportation and land use planning and implementation in the case of major transportation projects.

Major transportation projects span a development period of four to six years or more. During this time frame a “gap analysis” may be conducted to determine where gaps exist in local land use plans, or county Comprehensive Plans, etc. for those communities impacted by the transportation project. Funding or technical assistance may then be provided to those communities to update plans to provide for anticipated impacts of the project.

### BENEFITS:

Utilizing this practice allows a municipality to update its comprehensive plan and/or zoning and subdivision and land development ordinances prior to the actual impacts associated with a transportation project. This allows a municipality to plan for access, and to update, or initiate planning in areas where the community will benefit from it. At the same time, a community can limit access to those areas designated as open space.

### IMPLEMENTATION:

Transportation projects span several years and may not coincide with the local land use and/or municipal planning process. Moreover, transportation projects typically extend beyond municipal boundaries. Therefore, to adequately plan for the anticipated impacts of a transportation project, a regional cooperative effort by affected local municipalities and counties is needed. This may be inconsistent with the way local planning is conducted in some communities and/or regions.

Local municipalities and PennDOT can work together to form a partnership that fosters communication and involvement by the municipalities throughout the planning process. This partnership also allows PennDOT to take community plans and/or visions into account when considering project alternatives.

### EXAMPLES IN PENNSYLVANIA:

**Lackawanna Valley Industrial Highway Project** – The project is an example of a coordinated multi-municipal effort to link land use and transportation in the planning process. The Lackawanna Valley Industrial Highway is a multi-lane, limited access highway that runs from Interstate 81-84 in Dunmore, just north of Scranton, to just north of Carbondale. This highway spans approximately 16 miles and crosses seven municipalities. It is intended to provide better mobility in the Lackawanna Valley, improve access to the regional expressway network and relieve traffic congestion on the Lackawanna Valley roadways. Working together, state and federal agencies and the Lackawanna

*(Coordination of Transportation and Land Use,  
Cont'd)*

County Regional Planning Commission undertook a study to prepare a corridor plan. The purpose of the plan is to assure the planning partners that development occurring as a result of the highway's construction would take place in an environmentally-sensitive manner. The plan provides a framework for future land use, along with transportation improvements and land development regulations (including conservation, utilities, mine spoils reclamation and community facilities) to protect environmental resources and community character. Lackawanna Valley municipalities implement the plan on a voluntary basis, although not all municipalities have done so.

**Fayette County** – In connection with the development of the **Mon-Fayette Expressway, Uniontown to Brownsville Project**, several communities along the National Road and National Road Heritage Park are working with PennDOT, the Pennsylvania Turnpike Commission and the Department of Community and Economic Development (DCED) to update local zoning and land development ordinances to preserve the character and quality of the National Road.

**I-99 Partnership for Sustainable Development:** This partnership is comprised of the Centre County Commissioners, the Clearwater Conservancy and the Spring Creek Watershed Commission. Focus is on interconnecting transportation and land use planning to achieve sustainable development.

**Monroe County, Marshall's Creek**

**Project:** The project is located in Smithfield and Middle Smithfield Townships in Monroe County and Lehman Township in Pike County.

To maintain the local quality of life and provide adequate transportation facilities for the future, a Comprehensive Transportation and Land Use Management Strategy (CTLUMS) was developed by the Marshalls Creek Traffic Relief Study Land Use Committee.

The Land Use Committee created the Marshalls Creek Traffic Relief Study Land Use Partnership to implement the CTLUMS. The Partnership consisted of Monroe and Pike Counties, Smithfield and Middle Smithfield Townships, Lehman Township and the National Park Service in cooperation with PennDOT, the Federal Highway Administration (FHWA), U.S. Army Corps of Engineers (USACOE), USEPA and PADEP. The intent of the Planning Partnership Team is for all parties to work cooperatively to reduce traffic demands and to manage growth.

**Delaware Valley Regional Planning**

**Commission (DVRPC):** The DVRPC has adopted a year 2025 Comprehensive Land Use and Transportation Plan. The focus of the plan is to concentrate future growth within a regional growth boundary defined by sewer/water service and transportation infrastructure. The DVRPC also received a grant from the Federal Highway Administration (FHWA) to link land use and transportation

*(Coordination of Transportation and Land Use,  
Cont'd)*

planning by promoting transit-oriented development along the Schuylkill Valley Metro Transit corridor between Philadelphia and Reading.

State grants and funding may be available for local municipal planning, but those funds are typically available irrespective of ongoing, transportation projects. ■

**CONTACT INFORMATION:**

PennDOT: Center for Program  
Development and Management  
(717) 787-7335  
[www.dot.state.pa.us](http://www.dot.state.pa.us)

Lackawanna County Regional Planning  
Commission  
(570) 963-6826

Fayette County Planning Commission  
(724) 430-1210

Centre County Planning Commission  
(814) 355-6791

Monroe County Planning Commission  
(570) 420-3400

Delaware Valley Regional Planning  
Commission (DVRPC)  
(215) 592-1800

**FUNDING SOURCE(S):**

Federal funding for planning (including land use planning) is available for any major project as defined by the National Environmental Policy Act (NEPA). PennDOT is currently developing a 5-year initiative (beginning in 2000-2001) utilizing \$2 million in Federal Highway Administration (FHWA) planning funds specifically for this purpose.



## 2. Impact Fees

### DESCRIPTION:

Impact fees are fees authorized by a municipal ordinance which allows municipalities to assess developers for portions of the transportation capital improvement costs related to their developments. These fees are intended to generate revenue for funding the costs of transportation capital improvements necessitated by and attributed to the new development. Pennsylvania's Traffic Impact Fee Law, more commonly known as Act 209, or Article V-A of the Municipalities Planning Code (MPC), requires a linkage between the development and the need for transportation improvements. An impact fee can only be assessed by a municipality to address traffic concerns resulting from a new development, not to correct pre-existing deficiencies.

### BENEFITS:

The impact fee ordinance recognizes the direct relationship between land use and transportation capital improvements. Using the fees assists in capital infrastructure improvements planning. Moreover, such fees can lower municipal infrastructure installation costs or provide an alternative funding source for new capital infrastructure. Finally, these fees ensure that the cost for needed capital improvements associated with roadway improvements is applied to new development in a manner that allocates the cost for improvements proportionally among new property owners.

### IMPLEMENTATION:

Act 209 contains precise, detailed provisions that a municipality must follow to establish impact fees. In order to assess impact fees on new development, the Act requires municipalities to fairly apportion the costs of infrastructure in formulating a program.

Municipalities may be reimbursed for the cost of conducting the required infrastructure planning studies, by including those costs in the impact fees.

The process to develop an impact fee ordinance is well defined in the MPC. Impact fees are limited to 50 percent of the cost of improvements on state roads even when the impact of new development may exceed 50 percent of the necessary improvements. If construction of the improvement does not begin within the prescribed time, the impact fees are refunded. Improvements are limited to a service area of seven square miles.

Adjacent municipalities may cooperate to develop coordinated impact fee programs and Transportation Capital Improvements Programs (TCIPs).

### EXAMPLES IN PENNSYLVANIA:

Over 50 municipalities have enacted impact fee ordinances. Among these are:

**Cranberry Township, Butler County** – Cranberry Township was among the first of Pennsylvania's municipalities to enact and collect impact fees. When Act 209 was adopted, Cranberry

*(Impact Fees, Cont'd)*

Township conformed its existing program and has continued to collect impact fees. Since 1990 - 1991, Cranberry Township has collected impact fees in excess of \$5 million, and has leveraged that amount into \$12 million in Cranberry Township projects.

In a similar manner, Cranberry Township, Butler County has also collected "recreation impact fees" or "fees in lieu of" the dedication of land. Though this practice is authorized in a subdivision and land development ordinance, it is commonly thought of as an impact fee.

Under this practice, Cranberry Township has collected fees in lieu of dedication of land when granting subdivision and land development approvals. Since 1996, Cranberry Township has collected approximately \$700,000 in such fees. These fees have been used to purchase land and build a \$5 million community park facility.

**Uwchlan Township, Chester County  
Transportation Impact Fee Ordinance**

— The Township has used the traffic impact fee ordinance to support capital infrastructure improvements resulting from new development. The impact fees collected have enabled the Township to make a number of improvements within its identified transportation service area.

**East Goshen Township, Chester County  
Transportation Impact Fee Ordinance**

— The Township adopted a traffic impact fee ordinance to address capital infrastructure improvements related to new development. The

ordinance is relatively new and the Township has yet to apply it to any new development.

**Manheim Township in Lancaster County** was one of the first municipalities to enact impact fees.

**CONTACT INFORMATION:**

Cranberry Township, Butler County  
(724) 776-4800

Uwchlan Township, Chester County  
(610) 363-9450

East Goshen Township, Chester County  
(610) 692-7171

Manheim Township, Lancaster County  
(717) 569-6408 ■

### 3. Transportation Development Districts

#### DESCRIPTION:

The Transportation Partnership Act, Act 47, enables local property owners or cooperating municipalities to voluntarily establish a transportation development district (TDD) and assess specific fees or assessments on property owners within the TDD for transportation improvements, including state roads and public transportation facilities. The purpose of the Act is to enable the private sector and local municipalities to contribute to the cost of needed transportation improvements.

#### BENEFITS:

This practice allows the private sector and local municipalities to negotiate and contribute to the cost of transportation improvements.

#### IMPLEMENTATION:

Establishing the transportation development district is subject to a number of regulatory requirements under the Act. The initial start-up and background study costs can be prohibitive to many municipalities. Members of the development district must voluntarily agree to organize the TDD and then fund the transportation improvements. However, each property owner in a TDD does not have an equal vote.

#### EXAMPLES IN PENNSYLVANIA:

**Allegheny County, Moon Township –** The Thorn Run Transportation District was initiated in 1987. Four major projects,

of which three are completed, have been undertaken through the TDD. Approximately 5.6 million dollars in local financing was used to fund the projects. The local share was raised by a bond issue.

**Centre County, Ferguson Township – Western Inner Loop.** The Ferguson Township Transportation District is in the final evaluation stage of its first project, commonly known as Western Inner Loop. The local share of \$28 million to fund the project is being raised through a combination of assessments and taxes (real estate and transfer stamps). Construction is scheduled to begin in 2000.

#### CONTACT INFORMATION:

Moon Transportation Authority  
(412) 262-1700

Centre County Planning Commission  
(814) 231-3050

Ferguson Township, Centre County  
(814) 238-4651

PennDOT: Center for Program  
Development and Management:  
(717) 787-7335  
[www.dot.state.pa.us](http://www.dot.state.pa.us). ■



## 4. Technical and Financial Assistance to Rural and Metropolitan Planning Organizations

### DESCRIPTION:

Technical or financial assistance may encourage multi-municipal planning as it relates to infrastructure improvements or projects. When technical or financial assistance is provided to Metropolitan Planning Organizations (MPOs) and Local Development Districts (LDDs), these planning groups can work with local municipalities to assist PennDOT in coordinating transportation plans with local land use plans. Funding, or a portion of the funding, can be earmarked to direct the initial stage of a project (e.g., planning, locating the infrastructure, magnitude of infrastructure improvements, etc.). Technical assistance, in lieu of funding, can be another resource to encourage planning on a multi-municipal level.

### BENEFITS:

Assistance to MPOs and LDDs, be it funding or technical assistance, may bridge the gap between a local municipality's land use plan and infrastructure needs and transportation planning. When used in conjunction with grants or low interest loans from county planning commissions, multi-municipal planning for the integration of transportation and land use across municipal boundaries is encouraged.

### IMPLEMENTATION:

Of the 67 counties in the Commonwealth, 64 are organized into either a MPO or LDD or small area study, and the remaining three counties are independent. The MPOs and LDDs may form a planning partnership with PennDOT and

the municipalities to coordinate land use and transportation planning.

### EXAMPLES IN PENNSYLVANIA:

#### Erie County Long Range Plan:

Erie County, in the development of its long range transportation plan, provided funding to the MPO to conduct a county-wide planning study. This study was only part of an overall, larger study to prepare for the progressive future of Erie County and to meet various legislative requirements. The long range plan was adopted by the Erie MPO in February, 1995 to comply with ISTEA and the Clean Air Act Amendments of 1990. The County of Erie adopted the plan in October, 1995 as an element of the Comprehensive Plan for Erie County to bring the county into compliance with Act 247, the Municipal Planning Code and Executive order 1993-3 for State Land Use Planning. An update of this plan was completed and adopted by the Erie MPO and Erie County in 1998.

The Erie County Department of Planning worked closely with federal and state resource agencies and local organizations to establish purpose and need for the plan's major projects. This partnership led to a transportation plan that incorporates intermodal accessibility into the highway planning process. The program recommendations contained in the plan are confined to the expected available funding for the Erie MPO and contain only those projects that can be implemented using current revenues

*(Technical and Financial Assistance, Cont'd)*

while the existing system is being adequately operated and maintained.

**CONTACT INFORMATION:**

A listing of all MPOs and LDDs is contained in the Appendix.

Erie County Department of Planning  
(814) 451-6336

PennDOT: Center for Program  
Development and Management  
(717) 787-7335  
[www.dot.state.pa.us](http://www.dot.state.pa.us). ■

## 5. Corridor Planning

### DESCRIPTION:

A transportation corridor plan is both a description and a vision of what the corridor is, what it should be and what the corridor may be in the future. The plan may include an inventory of the corridor's characteristics, problems, assets and components that make the corridor unique. By building upon the inventory, a plan is developed which establishes recommendations for managing existing or potential concerns associated with safety, land use access, mobility, capacity or aesthetics of a highway or roadway corridor. These recommendations may include changes to municipal policy or regulations, including revisions to the comprehensive plan, zoning ordinance, or subdivision and land development ordinance.

A corridor plan can also be created for green infrastructure. Such corridors could include stream valleys, hiking trails, or horse trails. The plan can be used as a tool for preserving historic or scenic qualities of local roads.

### BENEFITS:

A corridor analysis plan seeks to maintain corridor mobility, increase motorist safety and establish priorities for preserving and enhancing corridor aesthetics. The plan assists in capital improvement planning, and reduces the need for extensive capital improvements through better and more efficient use of the existing corridor. The plan provides opportunities for Multi-municipal planning.

### IMPLEMENTATION:

Corridor plans can be prepared by a single municipality to address local corridor concerns, but ideally are prepared by a group of municipalities to address regional corridor issues. The plan can be used for traffic management issues, to establish access management policies before development creates traffic management problems. The plan can also be used for managing existing traffic conditions.

### EXAMPLES IN PENNSYLVANIA:

**PennPlan: Pennsylvania's Long Range Transportation Plan** – The Pennsylvania Department of Transportation has developed a corridor-based long range transportation plan. The plan, which covers a period of 25 years, divides the Commonwealth into 28 multi-modal corridors. These corridors are based on common travel patterns and include highways, transit systems, airports, passenger rail, rail freight, bikeways, ports, intermodal facilities and other transportation features of statewide importance. The plan establishes goals and objectives for each corridor and will help guide long term planning and decision making. The plan is based on the regional plans of the Commonwealth's Metropolitan Planning Organizations, Local Development Districts and county comprehensive plans.

**The Lackawanna Valley Industrial Highway** is a multi-lane, limited access highway that runs from Interstate 81-84 in Dunmore, just north of Scranton, to just north of Carbondale. This highway

*(Corridor Planning, Cont'd)*

spans approximately 16 miles and crosses seven municipalities. It is intended to provide better mobility in the Lackawanna Valley, improved access to the regional expressway network and relieve traffic congestion on the Lackawanna Valley roadways. Working together, state and federal agencies and the Lackawanna County Regional Planning Commission undertook a study to prepare a corridor plan. The purpose of the plan is to assure the planning partners that development occurring as a result of the highway's construction would take place in an environmentally-sensitive manner. The plan provides a framework for future land use, along with transportation improvements and land development regulations (including conservation, utilities, mine spoils reclamation and community facilities) to protect environmental resources and community character. Lackawanna Valley municipalities implement the plan on a voluntary basis, although not all municipalities have done so.

**Centre County – The U.S. Route 220 Improvements Project** addresses improvements to US Routes 220 and 322 from I-99 (US Route 220 Tyrone expressway in Blair County) to US 322 (Mt. Nittany Expressway). The project is part of a program that is intended to address both local and regional needs through coordination of projects in the development of a regional transportation solution. A major component in this project's proactive public involvement process is the Citizens Advisory Committee which is composed of representatives from affected municipalities, planning organizations, economic development groups, Chambers of Commerce and citizens

groups. The committee was formed in the early stages of the project to serve as a forum for direct exchange of information between the Project Team and interested local parties.

**Chester County – The Pennsbury Township (Chester County) U.S. Route 1 Corridor Study** focused on the Route 1 corridor and identified locations with problematic access. The study provides recommendations for circulation improvements and land use policy revisions. The circulation improvement recommendations identify intersection and roadway improvements, proper access management techniques, and design standards. Recommended land use policy revisions include changes to the township zoning ordinance regarding land use, signs, landscaping, regulations and right-of-way preservation.

**Chester County – The PA Route 100 Corridor Study** recognizes Route 100 as an important north-south link in Chester County. To assist in coordinating corridor planning efforts along Route 100, the Federation of Northern Chester County Communities prepared the plan as a regional effort. Specific improvements are recommended in the plan concerning roadway realignment, access management, channelization, signalization, safety, and general maintenance.

**The U.S. Route 202 and U.S. Route 1 Corridors Study** was prepared through the combined efforts of the Brandywine Conservancy, Delaware and Chester Counties, New Castle County, Delaware, the Delaware Valley Regional Planning Commission and PennDOT. The effort led to a planning manual for transportation and land use in the

*(Corridor Planning, Cont'd)*

Brandywine Valley section of both corridors. The primary purpose of the study was to develop strategies and methods for improving deteriorating traffic, land use, and aesthetic conditions in the corridor.

**CONTACT INFORMATION**

PennDOT: Center for Program  
Development and Management  
(717) 787-7335  
[www.dot.state.pa.us](http://www.dot.state.pa.us).

Centre County Planning Commission  
(814) 355-6791

Lackawanna County Regional Planning  
Commission  
(570) 963-6826

Chester County Planning Commission  
(610) 344-6285

Delaware Valley Regional Planning  
Commission (DVRPC)  
(215) 592-1800 ■



## 6. Access Management (Highway Occupancy Permit)

### DESCRIPTION:

PennDOT utilizes several tools to develop, coordinate and grant access to state-owned and operated roads and highways. The most common tool is the Highway Occupancy Permit (HOP) process. The HOP process is a regulatory program under which permits for driveway access to state owned and operated roads and highways are granted. PennDOT's HOP regulations require that PennDOT issue a HOP if all the design criteria and access requirements are met.

PennDOT's Access Management Program addresses concerns over traffic safety, as well as issues associated with expanding development. These issues include concerns over increasing traffic congestion and the escalating costs of upgrading roads.

Beyond PennDOT's programs, a municipality or county can regulate access and improve circulation and site design through land development and zoning ordinances. Other municipalities enact freestanding ordinances that specify standards for egress and ingress to public roads.

### BENEFITS:

The Highway Occupancy Permit Process and Access Management Program address concerns over traffic safety, as well as issues associated with expanding growth, such as increasing traffic congestion and the escalating costs of upgrading roads. Other benefits of the Access Management Program include maintaining the safety and capacity of existing transportation facilities.

### IMPLEMENTATION:

Existing HOP regulations require PennDOT to issue a driveway permit if the applicant satisfies all safety, traffic flow and design requirements. Therefore, unless the applicant voluntarily chooses to locate its driveway and requests access based on land use considerations, PennDOT has limited, if any, discretionary authority to comment on, or change, the location or design of the driveway for reasons other than safety or traffic flow.

Currently, it is PennDOT's policy to submit HOP applications to a municipality for review, only if the municipality requests such review. However, recent re-engineering of the HOP process recommends a pre-application scoping meeting involving local municipalities.

A municipality or county, with overall comprehensive knowledge of land development patterns within the community, should review these permits, and possibly make alternative recommendations to the access requested.

Businesses or commercial entities often oppose access management programs. These opponents argue that customers patronize those businesses with easy access. Failure to grant access results in a loss of business.

### EXAMPLES IN PENNSYLVANIA:

Three counties in PennDOT District 8-0 (**Cumberland, Dauphin, and Perry Counties**) will not issue a permit until the municipality has approved a final subdivision plat.

*(Access Management (Highway Occupancy Permit), Cont'd)*

The staff of PennDOT District 6-0 (metropolitan Philadelphia area) meets monthly with **Chester County Planning Commission** staff to review applications. It has active, but less structured interaction with staffs of the **Bucks and Montgomery County Planning Commissions**.

Tri-County Regional Planning Commission (Cumberland, Dauphin, Perry Counties)  
(717) 234-2639

Chester County Planning Commission  
(610) 344-6285

Bucks County Planning Commission  
(215) 345-3400

**CONTACT INFORMATION:**  
PennDOT Engineering Districts  
District 1-0  
(814) 678-5000

Montgomery County Planning Commission  
(610) 278-3730 ■

District 2-0  
(814) 765-0400

District 3-0  
(570) 368-8686

District 4-0  
(570) 963-4061

District 5-0  
(610) 798-4200

District 6-0  
(610) 205-6700

District 8-0  
(717) 787-6653

District 9-0  
(814) 696-7250

District 10-0  
(724) 357-2800

District 11-0  
(412) 429-5000

District 12-0  
(724) 439-7315

## 7. Right-of-Way Preservation

### DESCRIPTION:

Right-of-way preservation is a practice used for the acquisition of additional areas of land needed to accommodate new or future expansion of transportation facilities or for a variety of other public functions associated with safety, access or aesthetics. Right-of-way preservation can be accomplished either through dedication of land or the use of easements. Right-of-way preservation can be utilized by an individual municipality or municipalities to address local traffic concerns or regional transportation issues.

Right-of-way preservation includes land acquisition for many uses. Among these uses are travel lanes, median, and shoulders; public utilities — including stormwater sewers and electrical lines; future roadway widening and channelization; public sidewalks, paths and bicycle lanes; and safety buffers.

### BENEFITS:

Right-of-way preservation establishes a mutual understanding between municipal officials and landowners on the right-of-way locations. When used in the planning process, it affords a municipality or municipalities the opportunity to acquire adequate space for utility use and potential expansion of infrastructure.

### IMPLEMENTATION:

Right-of-ways can sometimes be required through a municipal subdivision ordinance, although the process cannot

be utilized as a substitute or replacement for the normal condemnation process which involves compensation to the landowner for the right-of-way. Whether the right-of-way can be preserved by requiring dedication at the subdivision stage or whether it requires compensation to the landowner depends upon the type of right-of-way being established, the necessity for it to serve the proposed development on the land subject to the right-of-way, and the relationship between the land being developed and the purpose of the right-of-way. Significant litigation had occurred throughout the country and Pennsylvania on the question of unreasonable restrictions and any municipality intending to utilize the right-of-way preservation process should seek the assistance of its solicitor prior to implementation of such concepts in the subdivision ordinance or as part of a plan review and approval process.

### EXAMPLES IN PENNSYLVANIA:

The following municipalities have enacted right-of-way provisions to provide solutions for future road and street improvements:

- **Westtown Township, Chester County, Subdivision and Land Development Ordinance** — The Westtown Township Subdivision and Land Development Ordinance provides an example of how municipalities can incorporate ordinance language to encourage ultimate right-of-way preservation.

*(Right-of-Way Preservation, Cont'd)*

- **The York County Planning Commission** facilitated a project involving a major highway located in York Township, Windsor Township, Springettsbury Township and Spring Garden Township. This project, a simple resurfacing project by PennDOT, was modified to involve the addition of a passing/climbing lane using right-of-way acquired by the municipalities through subdivision and land development ordinance as well as public and private financial contributions.

**CONTACT INFORMATION:**

Chester County Planning Commission  
(610) 344-6285

Westtown Township, Chester County  
(610) 692-1930

York County Planning Commission  
(717) 771-9870 ■

## 8. Community Impact Assessments

### DESCRIPTION:

Community Impact Assessment is a process to evaluate the effects of a transportation (infrastructure) action on a community and its quality of life. The assessment helps shape the outcome of a transportation project by providing documentation of the current and anticipated social environment of a geographic area with and without the action.

The Community Impact Assessment helps coordinate and integrate independent plans for land use, economics and transportation to achieve common goals. By doing so, state, county and local policies and regulations — such as zoning ordinances, environmental regulations, and comprehensive planning — can be met.

PennDOT is currently developing secondary and cumulative effects analyses tools to be used by PennDOT staff and planning partners to more fully understand and respond to the impacts of transportation projects.

### BENEFITS:

The Community Impact Assessment process alerts affected communities and residents, as well as transportation planners and municipal planners to the likely consequences of a project. It ensures that human values and concerns receive proper attention during project development. It helps coordinate and integrate independent plans for land use, economics, and transportation to achieve common goals.

### IMPLEMENTATION:

The Community Impact Assessment process involves a comprehensive study or studies that includes the following components: define the project or study area; develop a community profile; analyze impacts; identify solutions; use public involvement; and document findings. The assessment can include such items as mobility, safety, employment effects, relocation, isolation and other community issues.

Community Impact Assessment studies usually require the expertise of planners and engineers. Because they can take several years to complete, these studies tend to be costly.

### EXAMPLES IN PENNSYLVANIA:

Although the example that follows is dated, it represents a complete and effective use of this tool.

**Community Preservation: Chinatown, Philadelphia — Construction of the Vine Street Expressway.** In 1968, the right-of-way acquisition and demolition began for the Vine Street Expressway Project. In 1973, amid protests of the Chinatown community aimed at preventing the acquisition and demolition of key cultural buildings in the community, a report was commissioned by the city to study ways of preserving Chinatown. In 1975, the final report was released with a comprehensive planning approach to mitigate the impacts of the transportation project on the community. Innovative mitigation measures were implemented

*(Community Impact Assessments, Cont'd)*

including the use of landscaping and noise walls, as well as retaining the religious and cultural center slated for demolition at the outset of the project. The result: a sensitively planned and aesthetically pleasing, below-grade, limited-access highway design that has helped to preserve the Chinatown community, while the completed Vine Street Expressway provides vehicular access to a successfully redeveloped downtown Philadelphia. Chinatown's subsequent revitalization and success are indicative of the comprehensive approach to planning for anticipated community impacts.

**CONTACT INFORMATION:**

City of Philadelphia Planning  
Commission  
(215) 686-4607

PennDOT: Center for Program  
Development and Management  
(717) 787-7335  
[www.dot.state.pa.us](http://www.dot.state.pa.us). ■

## D. Capital Improvements Planning

### DESCRIPTION:

The capital improvements plan (CIP) is a document endorsed or approved by the governing body of the municipality that schedules all planned expenditures on capital improvements, usually for a 5- to 10-year period. A CIP sets priorities for project funding and explains how projects will be financed.

### BENEFITS:

The CIP can be used to assure that spending policies are coordinated with development planned for in the comprehensive plan, zoning ordinance and subdivision and land development ordinance. A multi-year scope allows for better scheduling of related improvements, and the level of detail can be tailored to a community's needs.

### IMPLEMENTATION:

The first step in developing a CIP should be setting up the process for proposing, reviewing, and ranking projects, and assigning responsibility for tasks related to the CIPs preparation. Without discussing particular projects, officials and staff should determine criteria for reviewing and ranking proposals. Priorities should be based upon the goals of the municipal Comprehensive Plan, especially those related to fiscal management. These priorities should be reviewed annually to be sure they are still applicable to current circumstances.

Finally, the CIP must consider how projects will be financed. The municipality should set a limit on how much it is willing to finance through current revenues,

using savings, or through borrowing.

Other methods for financing CIP projects include lease-purchase agreements, special assessments, tax-increment financing, or Pennsylvania Infrastructure Bank loans.

There is no requirement that approved projects be consistent with the municipalities comprehensive plan.

### EXAMPLES IN PENNSYLVANIA:

#### Falls Township, Bucks County –

Conducts an annual study or survey of what projects or improvements are needed in the municipality and then investigates what funding and financing mechanisms should be used.

### CONTACT INFORMATION:

Falls Township, Bucks County  
(215) 736-0749

### FUNDING SOURCE(S):

The State Planning Assistance Program (SPAG) provides funds on a 50-50 match basis for visioning and comprehensive planning projects involving multi-municipal efforts.

#### The World Class Communities Program (WCCP) also provides funds up to 50 percent for multi-municipal planning and visioning efforts.

Small Communities Planning Assistance Program (SCPAP) provides up to 100 percent of the cost to prepare multi-municipal Comprehensive Plans and implementing ordinances. Program guidelines emphasize compliance with Community

*(Capital Improvements Planning, Cont'd)*

Development Block Grant Program requirements. For more information, please contact the Governor's Center for Local Government Services at 1-888-2CENTER (223-6837). ■

## E. Residential Street and Sidewalk Design

### DESCRIPTION:

The design of streets within residential neighborhoods has a direct impact on the character and quality of the community they serve. Residential streets should be designed based on their intended function. Neighborhood streets, in addition to moving traffic, provide for pedestrian circulation, direct access to homes and are an important element of the neighborhood setting and character. Street design standards are appropriately located in subdivision and land development ordinances. Pavement width should be directly related to two factors: expected traffic volume and anticipated need for on-street parking spaces. Based on this criteria, it is often the case that streets can be less wide than typically required in current codes

### BENEFITS:

Properly designed streets lower construction and maintenance costs. When impervious surface areas are reduced, stormwater runoff is reduced, water quality is improved and less heat buildup in developed areas. Other benefits include lower travel speeds and improved safety, particularly for pedestrians and cyclists. Attractively designed streets with shade trees and sidewalks may also enhance property values.

### IMPLEMENTATION:

The implementation of appropriate street design standards has few drawbacks. However, where narrower streets will result in difficulty with access

for emergency vehicles, and turning of large service vehicles on smaller cul-de sac turnarounds, standards may need to be revised.

Determining proper street width is somewhat more complex than when a single set of residential street standards is employed.

### EXAMPLES IN PENNSYLVANIA:

**Bucks County**, – The municipalities of Solebury Township and Durham Township in Bucks County have adopted the residential street principles outlined in the Bucks County Planning Commission publication, Performance Streets. Streets are first categorized as residential access, subcollector, or collector streets based on the anticipated average daily trips. Then the cartway width of new residential streets is determined based on lot widths in the proposed development, whether parking is provided on- or off-street, whether or not driveways are provided, and the requirement for curbs.

The townships did not fully comply with the recommended standards for alleys. Durham Township allows alleys only within commercial and industrial districts, where a relatively wide minimum cartway of 22 feet is required. Solebury Township prohibits the use of alleys. Both of these townships are rural and may not have viewed alleys as necessary or desirable in the context of their communities. However, if a traditional development pattern is to be allowed in some areas of even rural communities, alleys should not be ruled out as an option.

*(Residential Street and Sidewalk Design, Cont'd)*

**CONTACT INFORMATION:**

Bucks County Planning Commission

publication: Performance Streets

(215) 345-3400 ■