

Part II **Comprehensive** **Plan Elements**

UNION COUNTY, PA



Part II - Comprehensive Plan Elements

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4. Natural and Agricultural Resources

4.1 Overview

Natural and agricultural resources have played an important role in shaping human settlement in Union County. Today, woodlands represent the predominant land use, with 60 percent of the County's land in public or privately owned forest, including approximately 100 square miles of state forest. With nearly 60,000 acres, farmland represents about 30 percent of the County's total land area, of which over 80 percent is cropland. Agriculture and forestry contribute \$122 million of economic output to the County each year.

In addition to woodlands, a wide range of natural resources, including stream and river corridors, wetlands, wildlife habitat, public and private conservation lands, and public and private working lands (forests and farms) together form the County's natural life support system or **green infrastructure** network. Union County has a strong legacy of planning to maintain and strengthen its green infrastructure resources. In 1997, it became the first county in the nation to be designated by the U.S. EPA as a "Green Community" based on the efforts of its public-private partnerships and involved citizenry.

Natural Resources

An essential component of a healthy natural resource system is the protection and conservation of water quality and supply. High-quality water resources are vital to ensuring a healthy community, sustainable economy, and the continued existence of native plant and animal species. There are approximately 50 small watersheds within Union County, each an integral part of a system of larger watersheds in the County. These smaller watersheds drain to either the West Branch or the Lower Susquehanna Subbasin and ultimately to the Chesapeake Bay watershed, which encompasses 64,000 square miles in portions of six states and the District of Columbia.

Greenways or open space corridors through the landscape are critical to sustaining the integrity of natural systems. Union County is fortunate to have substantial woodland and open space areas already preserved as state forestland, state gamelands, state parks, and Merrill Linn Conservancy sites. With the exception of the smaller Merrill Linn sites, these conservation areas generally form a "greenbelt" around the perimeter of the County. In addition, some privately owned woodland and open space corridors extend from the state forest into the central areas of the county. To provide a

SUSTAINABILITY KEY = SYSTEM INTEGRITY

System integrity is the sustainability key for the natural and agricultural resource element of the Comprehensive Plan. Maintaining the integrity of natural and agricultural systems (woodlands, greenways, waterways, wetlands, animal and plant habitats, open space, soils, and agricultural land) provides essential environmental, community health, and economic benefits.

Examples of these benefits include natural resource protection, energy conservation, improved water and air quality, recreation, food production, increased property values, and reduced costs of public utilities and services. In this context natural and agricultural resource systems include all living organisms (e.g., plants, animals, microorganisms), soils, mineral, water, and atmosphere in a physical environment functioning together as a unit. Ensuring system integrity reinforces the interconnectedness between the elements (land use, transportation, etc.) of the Comprehensive Plan and depends upon all of the other sustainability keys, including mixed-use development, energy conservation, and multi-modal transportation.

Green Infrastructure

Green infrastructure has been defined as: the Nation's natural life support system - a strategically planned and managed network of wilderness, parks, greenways, conservation easements, and working lands with conservation value that supports native species, maintains natural ecological processes, sustains air and water resources, and contributes to the health and quality of life for America's communities and people.

The network encompasses a wide range of landscape elements, including natural areas – such as wetlands, woodlands, waterways, and wildlife habitat, nature preserves, wildlife corridors, greenways, parks, forests, farms, and ranches.

(greeninfrastructure.net, sponsored by the Conservation Fund and USDA Forest Service)

basis for preserving natural system integrity, a number of statewide and regionally significant sites were identified for conservation in the County's Natural Heritage Inventory (last updated in 2000). This report prioritizes important sites and provides recommendations for preservation and resource management. The priority sites include Mohn Mill Ponds, Shikellamy Bluffs, Halfway Run, Penns Creek at White Mountain, The Gooseneck, and Seebold Quarry.

The greenways or riparian buffers that border streams, lakes, rivers, and other watercourses offer a number of important benefits, such as filtering urban and agricultural runoff, limiting erosion, improving air quality, and providing opportunities for outdoor recreation. The County supports a number of high quality streams, including Penns Creek, White Deer Creek, and Class A wild Trout waters (portions of Rapid Run, Buffalo Creek, and Weikert Run). Segments of Beaver Run, Buffalo Creek, Penns Creek, Turkey Run, Limestone Run, and the West Branch of the Susquehanna River are classified as impaired by the Pennsylvania Department of Environmental Protection (PA DEP). Sources of water degradation are often unknown, but include nutrient and silt runoff from agricultural land use and leaking of mercury or PCB into the water and then aquatic life. Imple-

mentation of the Susquehanna Greenway and other potential recreational trails is underway (see Section 2.6 and 2.7 for a more complete description of existing conservation and recreation areas in the County).

Agricultural Resources

Generations of farmers have sustained a diverse agricultural economy that helps define Union County's rural character. Though agriculture has impacted native plant and animal communities, it should be considered an important resource that adds value to the green infrastructure system. Given the preponderance of livestock agriculture and the County's location in the Chesapeake Bay watershed, there is growing public concern about nutrient management of these operations.

Agriculture is a significant industry in the County representing nearly 60,000 acres and approximately 30 percent of the County's total land area. About 72 percent of agricultural land is enrolled in Agricultural Security Areas (ASAs), and the County Purchase of Agricultural Conservation Easement (PACE) program has protected 52 farms or more than 6,000 acres of its 2010 goal of 10,000 acres. The County's ultimate goal is to protect 40,000 acres by 2020. The program has a

strategy to protect large blocks of farmland and applies ranking criteria that emphasize protection of the best soils and best farms.

The majority of the County's farmers (about 70 percent) are from Plain Sect communities, predominantly Old Order Mennonites, who provide the County with a distinctive cultural perspective and uphold its agrarian traditions. In addition to the business of farming, commercial opportunities related to the natural environment, such as milling, mineral extraction and food processing, support the economies of the County's historic towns and villages.

Contract farming and confined livestock operations are growing sectors of Union County's agricultural economy. Contract arrangements separate livestock and/or poultry production from ownership. Contractors — including processors and packers — own the livestock or poultry and essentially hire the farmer to raise and care for them in his facilities. Contractors typically furnish production inputs, provide technical assistance, and pick up and deliver for slaughter, final processing and marketing. Confinement operations are known to concentrate nutrients on specific sites creating the potential for water pollution. Although federal cost-share

funds are available to improve nutrient management, Plain Sect farmers who manage many of these operations often do not participate in federal programs.

The future of these important agricultural and natural resources depends on the land use decisions being made today. It is important to plan for an integrated system that balances agriculture and resource conservation with sustainable growth. This element (or section of the plan) establishes goals and strategies designed to preserve farms and forest lands, maintain valuable agriculture and forestry economic enterprises, and protect natural resources and systems. More information on the state of the County's resources is available in Appendix C - the Agricultural and Natural Resources Technical Report prepared for Union County by American Farmland Trust (AFT)



4.2 Strengths and Issues

Natural Resources

Strengths

- Located within the Ridge and Valley geologic province, Union County has a four-season climate, including cold winters and generally warm summers with an average of about 40 inches of rainfall annually. Natural disasters, such as extreme storms or drought are not common in this region.
- About 60 percent of the County's land area is publicly or privately owned woodlands. Nearly 35 percent of the County's woodlands are publicly owned or permanently conserved as state forest, state parks, state gamelands, or Merrill W. Linn Conservancy lands. Over 40 percent of the County's land is zoned for either forestry or woodland preservation.
- Forests are important economically. The County's sawmills generated \$13 million of economic output and \$1.7 million in employment compensation in 2006.
- Forestlands provide multiple environmental benefits, such as wildlife habitat, clean air and water, erosion control, and fire suppression. Multiple research studies have shown that open space and forest preservation increase net property tax revenue.
- Forests also offer a wide range of recreation opportunities that add to the quality of life for residents and attract tourists interested in camping, hiking, fishing, and hunting.
- Woodlands offer presently untapped economic benefits, such as the potential to provide renewable sources of energy by combusting biomass (wood). While underutilized today, Union County's forested land could provide renewable and energy-efficient building products in the future.
- Many streams and river corridors, including streams classified as high quality and Class A Wild Trout waters, traverse woodlands, agricultural lands, towns, and villages throughout Union County.
- The Merrill Linn Conservancy works with non-profit, governmental and private groups to identify, evaluate, and protect land for conservation.
- Another non-profit group, the Buffalo Creek Watershed Alliance, monitors water quality and organizes stream restoration and habitat improvement projects, such as buffer plantings, within the Buffalo Creek Watershed. Similarly, the Lower Penns Creek Watershed Association's mission is to protect, conserve, and improve the Penns Creek watershed. This group was formed by residents with assistance from Union and Snyder County Conservation Districts.
- Greenways and open space corridors throughout the County perform essential environmental functions, including floodplain management, water quality protection, erosion control, and wildlife habitat. They further provide recreational and aesthetic benefits that improve the quality of life of nearby residents and attract investment in local economies.
- The Union County Natural Areas Inventory (last updated in 2000) includes a list of priority sites recommended for preservation due to their statewide significance for the protection of biological diversity in plant and animal species.
- Mifflinburg and Lewisburg have mature street tree canopies that are not only attractive, but also provide environmental benefits such as shade, energy savings, stormwater reduction, and attenuation of air pollutants.

Issues

- Scattered development within and at the edges of forest resources has divided the County's larger woodlands into smaller parcels, fragmenting and impacting natural systems.
- Population growth and shifting development patterns, in which new housing and businesses are

located farther away from town and village centers, generally increases reliance on automobiles and non-renewable energy sources, such as fossil fuels.

- Many small towns and villages of the County developed around stream and river corridors. Inappropriate development in these areas near floodplain and flood-prone areas may threaten water quality and lead to increased flooding and property damage.
- Some state forest access roads traverse private lands that are being developed for residential uses, leading to demand for maintenance and services to residential rather than rural standards.
- Managing competing public interests in recreational activities is a challenge. For example, conflicts can arise between those who enjoy hiking or mountain biking and those who enjoy dirt bikes and ATVs.
- Forest health is declining for several reasons, including unsustainable management practices such as high-grading, diseases (especially hemlocks), deer browsing, invasive species, and effects on soil chemistry of acid precipitation. These various factors inhibit the growth of native forest communities.
- Runoff from urban development and agricultural land use poses a continuing threat to the water quality of streams and rivers throughout the County.

Agricultural Resources

Strengths

- Union County's farmland provides multiple scenic, economic and environmental benefits and was identified during public meetings as one of the County's most valuable assets.
- About 72 percent of agricultural land is enrolled in Agricultural Security Areas (ASAs), and the County Purchase of Agricultural Conservation Easement (PACE) program has protected more than 6,000 acres.
- The majority of farmland in the County is classified as either Prime Farmland (land that has the best combination of physical and chemical characteristics for producing food and other agricultural crops as determined by the Secretary of Agriculture) or Farmland of Statewide Importance (designated by the State Rural Development Committee for the production of food, feed, fiber, and forage).
- The County has an active Conservation District with ample staff capacity to administer the County's PACE program and help farmers protect agricultural resources.





- The farm economy is healthy: overall net farm income grew 115 percent in 10 years from \$11.4 million to \$24.5 million in 2005.
- Over 50% of farms use “no-till” farming leading to less erosion, less fertilizer use, and less use of gasoline for farm equipment.
- Union County is a rural county with access to major metropolitan markets along the Northeast corridor and to Cooperative Extension at Penn State University.
- Given Plain Sect family structure and social order, young people stay on the farm, supplying labor and helping provide stability for agriculture in the future.

livestock operations is changing agricultural practices in the County and creating tensions between farmers and nonfarm residents.

- Costs of production inputs are increasing rapidly, especially grain and energy, putting a strain on farm operations.
- Given these pressures, some farmers would like to pursue secondary commercial activities on their land, such as feed mills, dog kennels, repair shops, welding, woodworking and other “cottage industries” (home-based businesses) that may or may not be related to the primary farming operations.

Issues

- Scattered development has fragmented the farmland base and caused conflicts between new neighbors and established farmers. These trends threaten the viability of farming in the future.
- The County has preserved less than 10 percent of its farmland but could preserve more with greater funding. The PACE program currently has a backlog of 40 applications representing 4,363 acres of farmland.
- The growth of contract arrangements and confined

4.3 Natural and Agricultural Resource Goals

Natural Resource Goals

- Valued private woodland resources are protected from scattered development and fragmentation.
- The County's forests and woodland resources are managed for long-term sustainability and environmental health.
- The quality of the region's water resources, including rivers, streams and groundwater, is improved and protected.
- Greenway corridors protect stream and rivers, provide ecological habitat for native plant and animal species, and connect major conservation areas, such as the Bald Eagle State Forest with other areas of the County.
- Important natural areas are monitored on a regular basis and protected from threats to their environmental health and biological diversity.
- Quality-of-life for residents in Union County is enhanced through diverse and accessible opportunities for outdoor recreation in natural settings.
- Development patterns allow opportunities for use of alternative energy sources (e.g., solar, wind, geothermal), conservation of natural resources, and decreased reliance on automobiles for transportation.

Agricultural Resource Goals

- A minimum of 40,000 acres of productive farmland are permanently protected to support the agricultural economy, and prime and statewide important soils are preserved.
- Scattered development and conflicts between new neighbors and existing farms are minimized to sustain the agricultural economy, a rural quality of life, and landscape character.
- The farm economy is strong, there is adequate agricultural infrastructure, and farmers have sufficient support to adapt to changing markets and socio-economic forces.
- Farmers practice sustainable agricultural production and conservation practices to protect and enhance environmental quality.



Figure 4-1
Natural Resources

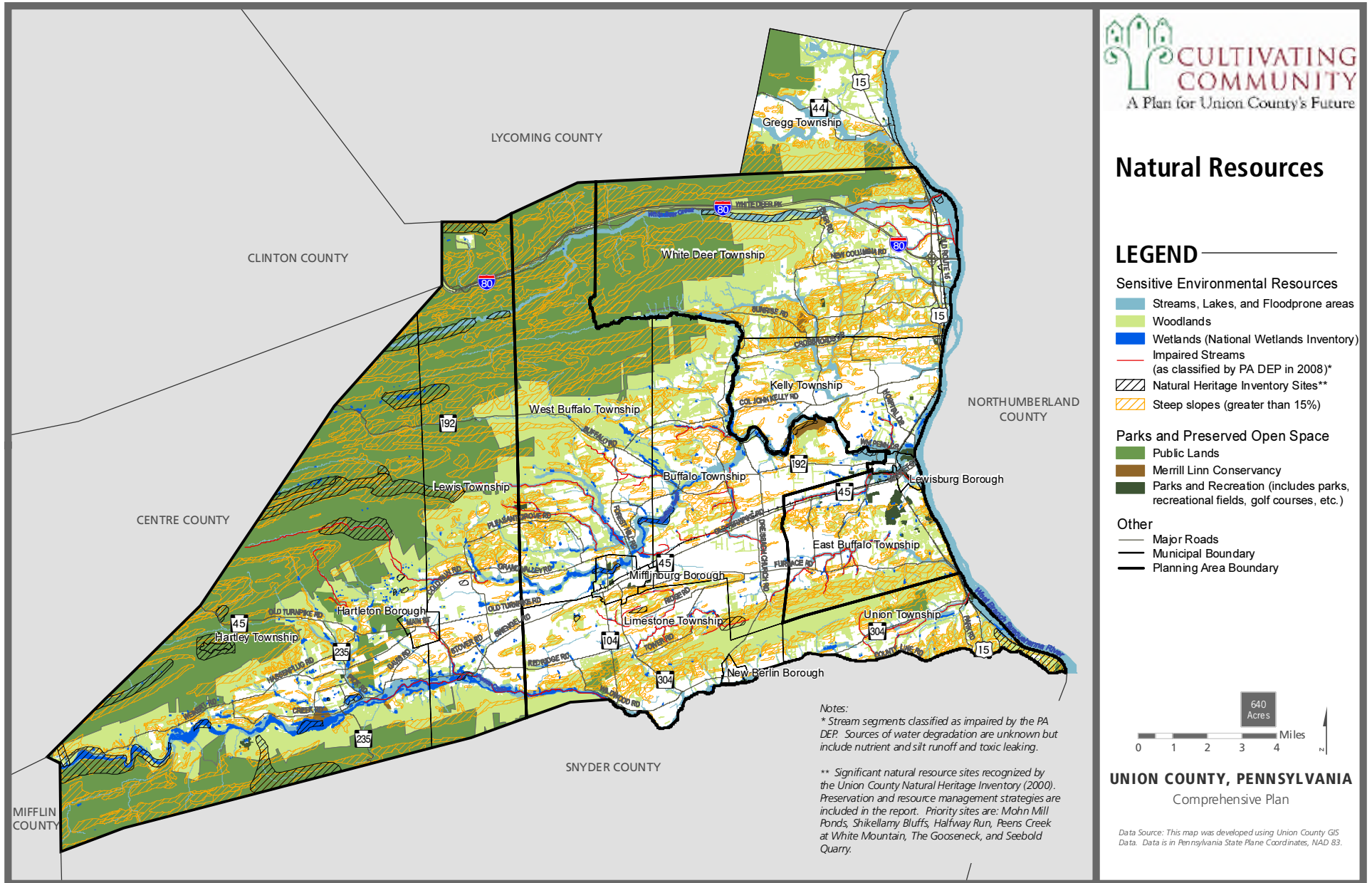
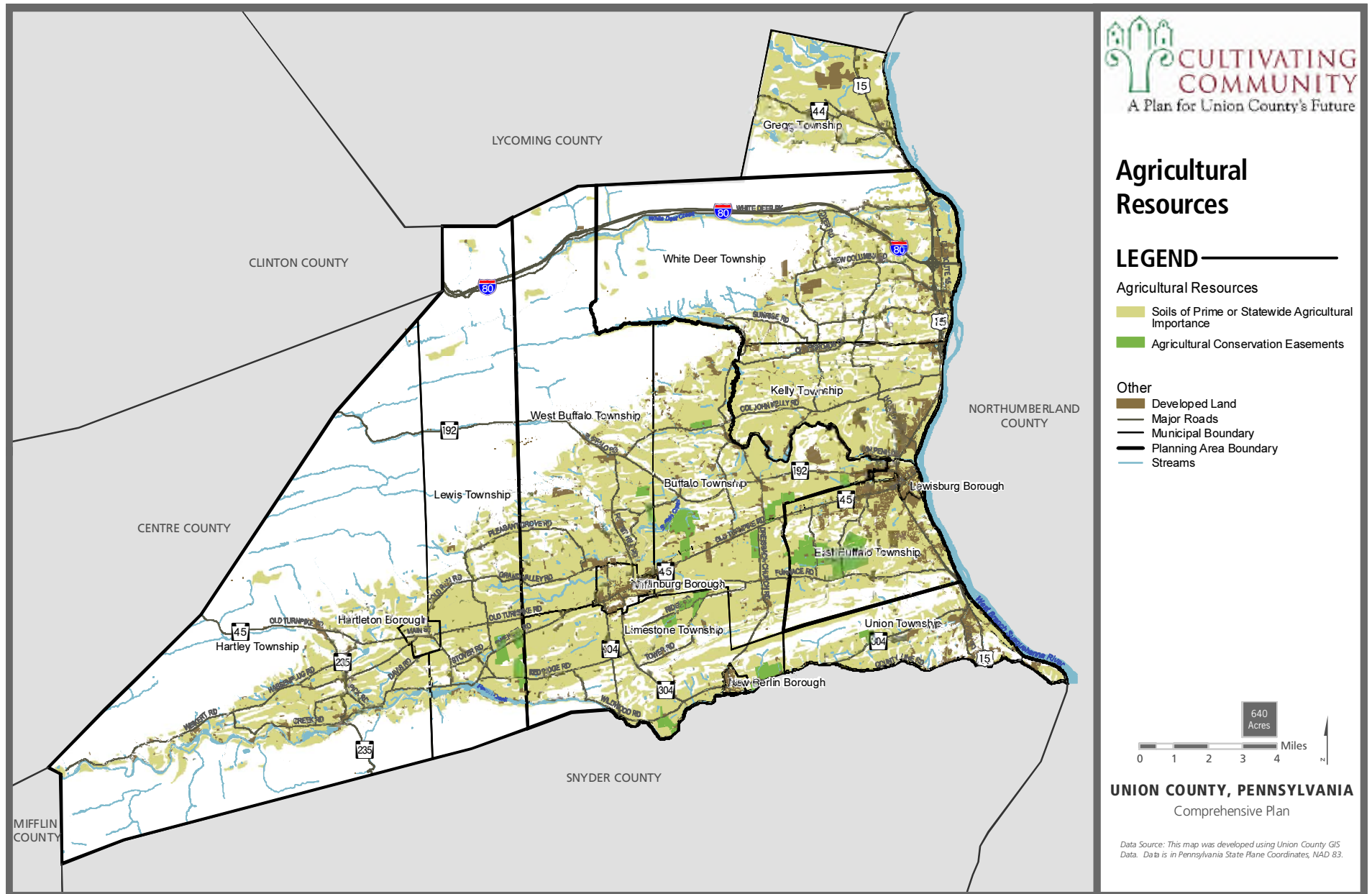


Figure 4-2
Cultural Resources



4.4 Natural and Agricultural Resource Strategies

TRANSFER OF DEVELOPMENT RIGHTS (TDR)

A TDR ordinance allows property owners in designated sending areas (e.g., valuable agricultural or woodlands resource lands) to transfer development potential to parcels in designated receiving areas (e.g., Growth Areas). Typically, owners purchasing the development rights are allowed to develop at a higher residential density in receiving areas than otherwise would be permitted under existing zoning. The highest quality natural resources lands are often designated as sending areas. TDR programs can be established at the municipal, county or state level. Pennsylvania requires a multi-municipal plan for the transfer of development rights across municipalities.

The use of TDR programs to preserve agricultural land and open space has been successful in many places across the Country such as the Pinelands in New Jersey, Warwick Township in Lancaster County, Montgomery County, Maryland and Boulder County, Colorado.

Natural Resource Strategies

4-1. Enact regulatory provisions and incentives to preserve natural resources.

Natural resource preservation is essential for long-term environmental health in the County and larger region. Preservation of rural resources such as sensitive natural features and scenic views is also a sustainability principle of this Plan (see Chapter 3). Municipalities can adopt regulations and incentives to support preservation of natural resources. Conservation zoning, which establishes larger minimum lot sizes based on the carrying capacity of the land, and conservation subdivision design, which allows development on smaller lots while maintaining large tracts of open space, and Transfer of Development Rights (TDR) are examples of available tools (see Section 5.4 for more information on conservation design).

4-2. Work with private landowners to protect and restore natural resource lands.

There are a number of effective conservation tools available to private landowners. In Union County, the Merrill W. Linn Land and Waterways Conservancy works with private landowners to protect land through conservation easements, land gifts, and purchases.

Additional approaches include land management plans (to guide native habitat preservation and restoration) and the promotion of sustainable forestry practices. Private woodland owners can join together to form a marketing cooperative that adds value to locally grown forest products by tapping into niche markets and promotes sustainable forestry practices. In addition, owners can improve the market value of harvests by having their operation certified. Certified forests are managed in an environmentally responsible manner for long-term sustainability. Certification uses an independent scientific review process that determines if an operation maintains a healthy forest ecosystem. Pennsylvania has over 2 million acres of certified forestland, the largest amount of any state in the nation.

4-3. Develop and implement a comprehensive strategy to improve the quality of the County's waterways.

Many high-quality streams and river corridors traverse the County's woodlands, agricultural lands, towns, and villages. A comprehensive waterways strategy can help improve the County's watersheds and should include techniques to monitor and improve streams impaired by urban and agricultural runoff and maintain high-quality waterways.

Potential components of the waterways strategy include:

- Watershed management plans / partnerships with watershed organizations
- Riparian buffer protection through measures such as planting native vegetation along waterways
- Ordinances to protect streams and improve water quality
- Stormwater best management practices
- Partnerships with farmers through the Union County conservation district to reduce impacts of agricultural operations on waterways

4-4. Initiate a "green infrastructure" approach to preserving, restoring, and managing natural resources as part of an integrated system.

The purpose of this strategy is to establish an interconnected system of green infrastructure **hubs** – forested areas, parks, and other concentrations of "green" resources – connected by **greenways** – open space corridors along linear features such as streams. At present substantial woodland and open space areas are preserved in public ownership, generally forming a "green-belt" around the perimeter of Union County. A green infrastructure approach would extend and connect this greenbelt to the County's towns and villages through a system of greenways and open space linkages through the central valley. A key component of this system, the Susquehanna River Greenway, will provide a connection to the statewide greenway system. To implement this approach, a plan should be developed that updates the Union County Natural Heritage Inventory and integrates it with a broader strategy to preserve, restore, and create a green infrastructure system throughout the County. Elements of the green infrastructure plan should include, among others:



- *Definition of a countywide network of greenways and open space*
- *Protection and restoration of significant natural areas and the ecological functions needed to sustain them*
- *Green features in existing communities (e.g., the urban tree canopy) and new developments (e.g., street trees and open spaces)*
- *A network of parks and outdoor recreational facilities, including greenways and trails*
- *Watershed protection and enhancement (e.g., restoration of riparian vegetation along streams)*
- *Urban green infrastructure (e.g., green streets, green roofs, pedestrian and bicycle networks, “rain gardens” that absorb stormwater on site, etc.)*

Agricultural Resource Strategies

4-5. Strengthen the existing Union County Purchase of Agricultural Conservation Easements (PACE) program.

As noted, the County PACE Program has preserved more than 6,000 acres and has an ultimate goal to protect 40,000 acres by the year 2020. The program has a strategy to protect large blocks of farmland and applies ranking criteria that emphasize protection of the best soils and best farms. As easement acquisition is expensive with increasing costs over time, potential strategies include boosting funding to meet the short-term (2010) program goal of 10,000 acres, pursuing diversified funding (e.g., federal funding¹⁰, encouraging townships to contribute a larger share) to match the County contributions, and evaluating the use of other tools, such as donated easement, fee-simple acquisition, and Transfer of Development Rights (TDR).

¹⁰ The federal Farmland Protection Program provides matching funds for easement acquisitions and is funded at \$646 million for the next four years.

4-6. Enact municipal or multi-municipal policies, regulations, and infrastructure investments to direct new development away from agricultural lands to designated growth areas. (See also Land Use Strategies 5-1 to 5-3.)

Figure 5-1 (Future Land Use) designates Growth Areas and Rural Resource Areas (Conservation/Woodland and Agriculture). Municipalities should evaluate current zoning ordinances and adopt policies and regulations to strictly limit development in Rural Resource Areas. Potential tools include maintaining or establishing effective agricultural zoning, creating a countywide TDR program, limiting infrastructure extensions outside of growth areas, and locating commercial development related to the rural economy in Rural Business Centers.

4-7. Reduce conflicts between agriculture and other land uses.

Scattered development in rural areas causes fragmentation of agricultural resources, creates conflicts with neighbors and escalating land prices and real estate taxes, all of which affect profitability for farmers. In Union County, conflicts have been exacerbated with the rise of con-

tract arrangements and the increase in confined animal feeding operations (CAFOs). Potential tools to reduce conflicts include:

- Conservation subdivision ordinances that create buffers between new homes and existing farms
- Other buffer/land use separation requirements
- Notification requirements for prospective buyers of nearby real estate
- Local right-to-farm ordinances
- Mediation program modeled after Maryland's "Farm Sense" Program
- Public education campaigns
- "Cottage industry" or on-farm¹¹ ordinances to regulate on-farm businesses that do not directly relate to the agricultural use of the land

¹¹ Cottage industries, sometimes referred to as on-farm businesses, generally refer to part-time, home-based operations. Traditionally, cottage industries were related to home-based manufacturing generally on farms (e.g., spinning, sewing, furniture making, etc.). The definition has expanded to include almost any small home-based businesses (home-based assembly, dog kennels, technology hosting, Internet/eBay Vendors, etc.).

4-8. Institute an on-going, multi-faceted approach to supporting the "business" of farming.

Sustaining farm viability is important to agricultural land use and the local economy. Municipalities can help support the agricultural economy in a number of ways. For example, Pennsylvania Cost of Community Services studies have repeatedly shown that agricultural properties contribute a surplus of revenue for public services such as schools. Municipalities can consider reducing or freezing property taxes on preserved farms to create an incentive for preservation.

The growing demand for alternative management systems (e.g., organic, pasture-raised, locally grown food, and antibiotic-free meat, etc.) offers potential growth for agriculture in the County. For example, Bucknell University in Lewisburg purchases 25% of its produce locally from growers, suppliers, and dairies within 150 miles of the University. Other potential elements of an economic development strategy for agriculture include:

- Support and enhance agricultural infrastructure
- Support and enhance traditional livestock agriculture in regional markets

Maryland's FARM SENSE Program

Farm Sense is a USDA-certified mediation program. It provides a low cost, voluntary, and confidential dispute resolution system in which a neutral party helps disputing parties to reach a mutually agreeable solution. The program is funded through matching grants from the USDA Farm Service Agency's (FSA) Agricultural Mediation Program. Farm Sense provides mediation services for farmers involved in conflicts that could affect the profitability of their enterprises, such as a nuisance dispute with a neighbor. Mediation generally resolves disputes faster than traditional litigation. Farm Sense offers farmers a free initial consultation and can partially or in some cases totally waive program fees based on the parties' income.





- Support opportunities for on-farm energy production techniques (e.g., methane power)
- Promote agri-tourism, farmers' markets, community supported agriculture (CSAs), farm-stands, and accessory farm businesses
- Create local distribution chains to reduce barriers to selling Union County milk and farm products

4-9. Promote agricultural conservation and nutrient management practices that protect Union County's waterways and the larger Chesapeake Bay watershed.

Confined livestock operations (CAFOs) are known to concentrate nutrients, creating the potential for water pollution. Nutrient management is heavily regulated in Pennsylvania to prevent water pollution and is an issue of public concern, in particular because of Union County's location in the Chesapeake Bay watershed. Federal cost-share funds are available to improve nutrient management; however Plain Sect farmers who manage many of these operations often do not participate in federal programs. Other potential strategies to protect the County's waterways

include conservation technical assistance, conservation planning, best practices, use of regional or on-site manure digesters, education for non-farmers, and nutrient trading.

5. Land Use

5.1 Overview

Land use in Union County has been shaped by its natural features – ridges and valleys, rivers and streams, woodlands, and productive agricultural soils – and by its agricultural and small town heritage. The pattern of boroughs, villages, farmland, and forests that have characterized the Union County landscape since the 19th century still define the County's unique identity and sense of place today. However, this pattern is being disturbed, and in some cases destroyed, by trends such as commercial strip development along roadway corridors and scattered, large-lot development in rural areas. An analysis of recent residential development reveals that approximately 40% is occurring outside of established towns and villages.

Despite these trends, Union County's traditional land use pattern is remarkably intact. Almost 90% of the County is classified either as woodlands (60%) or agriculture (29%). Residential, commercial, industrial, and other “developed” uses comprise less than 10% of the County's total land area. These uses are largely concentrated in towns and villages located along the County's watercourses, such as the Susquehanna River, Buffalo Creek, and Penns Creek, as well as along active and inactive rail lines. In addition, smaller villages dot the County's rural landscape (see Section 3.5 for a more

SUSTAINABILITY KEY = MIXED-USE

Mixed-use is reinforced throughout the Land Use and related elements of the Comprehensive Plan. The intent is to strengthen and adapt Union County's traditional land use pattern of compact, mixed-use development focused on small towns and villages to the growth and environmental changes occurring in the 21st century. The benefits of mixing, rather than separating land uses, include opportunities for:

- Walkable and accessible neighborhoods, centers, parks, and schools;
- Activity in town and village centers during varying hours of the day;
- Diverse housing types to meet the needs of residents (attached, detached, housing above retail, etc.);

- Reduced dependence on vehicle travel and increased transportation options; and
- Reinforced sense of place and community in towns and villages.

Mixed-use can be created at varying scales (building, parcel, neighborhood) and its success depends on its ability to relate to the established development context. As a Sustainability Key, mixed-use has the ability to affect all other plan elements (e.g., by promoting transportation choices, conservation of natural and agricultural resources, and housing diversity).

complete description of existing land use).

Union County's traditional land use pattern of compact, mixed-use development focused on towns surrounded by farmland and natural resources in rural areas embodies contemporary principles of sustainability. The challenge for the County's future is how to perpetuate and adapt this pattern to maintain its viability in the face of growth and accelerating change in the 21st century.

The overall intent of this chapter is to influence the location, pattern, and form of development to achieve the Sustainable Growth and Preservation Framework set forth in Chapter 4. In addition to land use policy and regulation, a variety of factors – transportation, utility systems, economic development, the viability of farming as a business, etc. – will impact future land use in Union County.

5.2 Land Use Strengths and Issues

Strengths

- Nearly 90% of the County's land use is either woodlands or farmland. About 60% of the County's land area is woodland (state-owned, federally-owned, or privately owned forests and open space) and 29% is agricultural use.
- Prime farmland soils and soils of statewide importance are present throughout Union County with the major concentration in the County's central valley. Working farms and cropland activities are located in many of these areas.
- Traditional small towns and villages are located throughout the County and provide a high quality of life, livable communities, mixed-used commercial districts, and public and civic amenities.
- The majority of the County (82%) is zoned for agriculture, agricultural preservation, woodlands, or rural density.
- Availability of outdoor recreational opportunities ranks high among residents as a strength of the County. Over 32% of the County is within the Bald Eagle State Forest and three state parks.

Issues

- While 29% of the County is in agricultural land use, only 3% of the total land area has been permanently preserved as farmland through the County's agricultural preservation program.
- Residential housing has been increasing at a steady pace since 1990. The number of housing units is projected to increase (from 14,684 in 2000) by 40% in 2030 and 68% in 2050.
- Recent development activity has been scattered around the County and not necessarily located near existing towns and villages or municipal services. A GIS analysis of new development between 2000 and 2006 found that about 60% occurred in or near existing towns and villages and 40% occurred outside of those areas.
- Prime farmland soils are relatively easy to build on and are therefore attractive for new development located outside of established towns and villages. Such development consumes prime soils and creates compatibility issues with nearby working farms.
- While many of the County's municipalities have agriculture or preservation zoning districts, some form of low density residential development is permitted in over two-thirds of those zoning districts.
- Residents have expressed a strong need for employment and retail services in the County, especially in the Western Planning Area.
- Constraints to developing in older towns and villages include the presence of the 100-year floodplain along stream corridors.
- There are some vacant or underutilized commercial and industrial properties in the County, in particular along Route 15 in Lewisburg and Route 45 in Mifflinburg. The closing of the Laurelton State Center in Hartley Township and Pennsylvania House Furniture in East Buffalo Township and downsizing of Yorktowne in Mifflinburg have created vacancies and loss

5.3 Land Use Goals

of employment in the County.

Land Use Goals

- Productive farmland with prime agricultural soils is preserved from development and remains in agricultural use.
- Union County's valued natural resources (e.g., streams, wetlands, bird and animal habitat, steep slopes), woodlands, and open spaces are protected and preserved throughout the County.
- Urban services, such as public water and sewer, are designed to serve towns and villages and do not extend into working agricultural lands.
- Residential, commercial, and employment land uses are located in areas where they can be best supported, limiting their impact on agricultural land, natural resources, and community services/utilities.
- Municipal policies and regulations, including municipal zoning, are developed to support the preservation of farmland, conservation of natural resources, and development of traditional neighborhoods.
- New development is designed to incorporate a mix of uses and residential densities and provide convenient access to retail, parks, and services, and to create alternatives to vehicular transportation.
- Employment opportunities are maximized in new development to serve both towns and rural areas and provide a solid tax base in the municipalities.
- Underutilized and infill sites are used for new commercial and employment development.
- Development is sited and oriented to avoid the 100-year floodplain, maximize passive solar heating and cooling, and reduce energy costs.



5.4 Future Land Use

Figure 5-1 (Future Land Use) depicts in general terms where different types of uses should be located to implement the goals of the Plan. Table 5.1 provides definitions of the land use types shown on the map. As described below, the proposed future land use pattern is structured around the Growth and Preservation Framework presented in Chapter 3 and its two primary components, the Town Policy and Rural Policy. Based on this framework, approximately 80% of new residential development is targeted to occur in growth areas (Primary and Secondary) and 20% is targeted to occur in rural areas.

Town Policy

Primary Growth Areas

Figure 5-1 designates four Primary Growth Areas in the County, centered on the four boroughs: Hartleton, Lewisburg, Mifflinburg, and New Berlin. In addition, a growth area was designated in Gregg Township by the US 15 South Comprehensive Plan and is shown on Figure 5-1. In these areas growth is focused in existing towns and established contiguous areas of a township, where infrastructure and services are available.

Boundaries are determined based on the existing development pattern, zoning, location of natural features, preserved farmland, and infrastructure. Most (at least 2/3) future growth occurring over the next 40-year period will be directed to the Primary Growth Areas and should be provided with a full range of infrastructure and services.

To be compatible with existing town development and to maximize the use of land and infrastructure, an average density of 6 dwelling units (DU) per buildable acre is proposed for the Primary Growth Areas. Future land use in these areas is designated as town mixed-use or medium to high density residential on Figure 5-1.

Densities within the Primary Growth Areas are expected to be mixed. Where appropriate, based on services and the surrounding development pattern, densities of new development in some areas will exceed the 6 DU/buildable acre average and in other areas may be built at lower densities. The Eastern and Western Planning Areas each have one designated Primary Growth Area. There are two Primary Growth Areas in the Central Planning Area: Mifflinburg and a smaller area designated around New Berlin.

The preferred land use pattern in Primary Growth Areas is referred to as Traditional Neighborhood Development (TND). In the overall future land use framework, the majority of growth is directed to Primary Growth Areas, while the Secondary Growth Areas, described under the Rural Policy below, are envisioned to accommodate a much smaller proportion of total growth.

Traditional Neighborhood Development

(TND) promotes compact, mixed-use, pedestrian-friendly patterns modeled after traditional American towns as an alternative to conventional suburban development. Typical TND characteristics include interconnected streets, street design focused on creating a pedestrian-friendly environment, buildings close to the street, and a mix of uses. These uses include diverse housing types and a central core of retail and community-serving uses within convenient walking distance of the surrounding neighborhood.

Rural Policy

Secondary Growth Areas

In the Rural Policy, development that occurs outside of towns is directed to Secondary Growth Areas, focused on existing villages. These areas are designated throughout the County and are illustrated on Figure 5-1 (Future Land Use). New development is envisioned with the desired walkable land use pattern focused around a central place. Secondary Growth Areas are intended for a smaller percentage of the overall growth than Primary Growth Areas. In this category the intent is to “capture” development that would typically occur as rural sprawl. The target density for new development in the Secondary Growth Areas is an average of 2.5 DU per buildable acre. While it is envisioned that the amount of development in Secondary Growth Areas will be much less than in Primary Growth Areas, the combined total should be at least 80% of all new development in the County.

Rural Resource Areas

As described in the Growth and Preservation Framework (Chapter 3) Rural Resource Areas include land with environmentally sensitive features, conservation areas, productive agricultural soils, preserved farms, woodlands, or steep slopes. Development is limited in these

areas in order to maintain and protect natural features or agricultural uses. On Figure 5-1 (Future Land Use) Rural Resource Areas include two categories: Conservation/Woodlands and Agriculture.

Rural Development Areas

The Growth and Preservation Framework (Chapter 3) calls for a maximum of 20% of development to occur in Rural Development Areas. This category includes Rural Neighborhoods, Rural Business Centers, and “on-farm” development.

- Rural Neighborhood development may occur in existing Hamlets (see Table 5.1) or in existing subdivisions with undeveloped lots. The purpose is to capture residential development, which would otherwise occur outside of growth areas, and locate it adjacent to existing development. Rural Neighborhoods should be limited in scale and should incorporate conservation subdivision design principles and a clear development edge.
- Rural Business Centers (see Table 5.1) are areas where agricultural support services, mining, or light industrial uses occur. These areas are located near working farms, but should maintain a separation from residential neighborhoods to limit negative impacts related to business operations.

- On-farm Development refers to uses that relate to a farm business (e.g., agricultural support businesses, energy production, agri-tourism) and are located on the farm. It may also include a limited number of residential lots for family members.

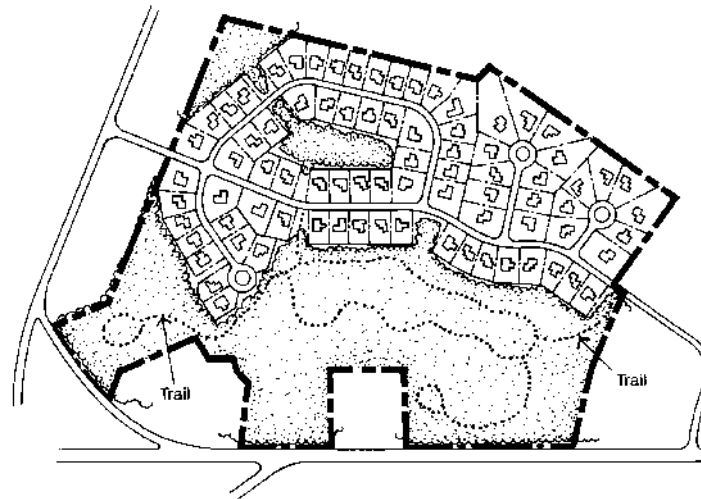
Conservation Subdivision Design promotes small-lot residential subdivision (1/2 to 1-acre lots) with the preservation of open space and farmland. Intended as an alternative to conventional large-lot subdivision, residential units are clustered in a neighborhood and open space is preserved through permanent conservation easements or covenants.

The developer is required to first provide a site plan which delineates and preserves environmentally sensitive features (e.g., steep slopes, wetlands, woodlands, or working farmland). Typically there is a minimum lot size required for this type of development and incentives such as density bonuses are offered to developers. Non-residential land uses are generally restricted to agriculture, parks, and municipal uses. In hamlets, limited commercial, service, institutional, and office uses are also permitted (*see following page for conservation subdivision design illustration*).

Garnet Oaks, Bethel Township, Delaware County Developer: Realen Homes, Ambler
Source: Natural Lands Trust, Growing Greener, Conservation by Design

Just over half of this 58-acre site has been conserved as permanent privately-owned open space through the simple expedient of reducing lot sizes to the 10,000–12,000 sq. ft. range (approximately 1/4 acre). The developer reports that these lot sizes did not hinder sales because about two-thirds of the lots directly abut the densely wooded open space, which gives them the feel and privacy of larger lots. In fact, the evidence indicates that the open space definitely enhanced sales in two ways: increased absorption rates and higher prices (through premiums added to the prices of lots which abut the conservation areas).

The locations of these conservation areas were carefully selected after a comprehensive analysis of the site's natural and historic features had been conducted.



Conservation Subdivisions, New Jersey



Regional Impacts

The Pennsylvania Municipalities Planning Code (MPC) requires that County Comprehensive Plans identify current and proposed land uses which have a regional impact and significance. The majority of new growth in the County is planned for infill development in existing commercial, employment, and residential centers (see Town Policy). This type of new development will provide additional housing and employment opportunities but is not expected to have a significant regional impact. There are developments with the potential to impact the region in terms of traffic impacts, employment, commercial floor space, and residential options. Two examples include the planned redevelopment of the 40-acre Pennsylvania (PA) House site and the potential development of the former Walmart site on Route 15. Redevelopment of the PA house site is mostly conceptual at this stage but is planned for mixed-use. MC Federal Credit Union recently completed a partial renovation of the main showroom and is using the facility for offices and banking. Energy efficient practices (including the installation of a geothermal heating and cooling system) were utilized in the renovation. Plans for the remaining 11,000 SF space are underway. As the site develops, additional traffic impacts and employment, retail, and housing options are anticipated.

Bucknell University, Evangelical Community Hospital, and the existing Super Walmart are developed sites that currently impact the region. Other future land uses that may cause regional impacts include large shopping centers, movie theaters, large-scale entertainment, major industrial parks, distribution centers, school complexes and/or office parks.

Compatibility with Contiguous Municipalities

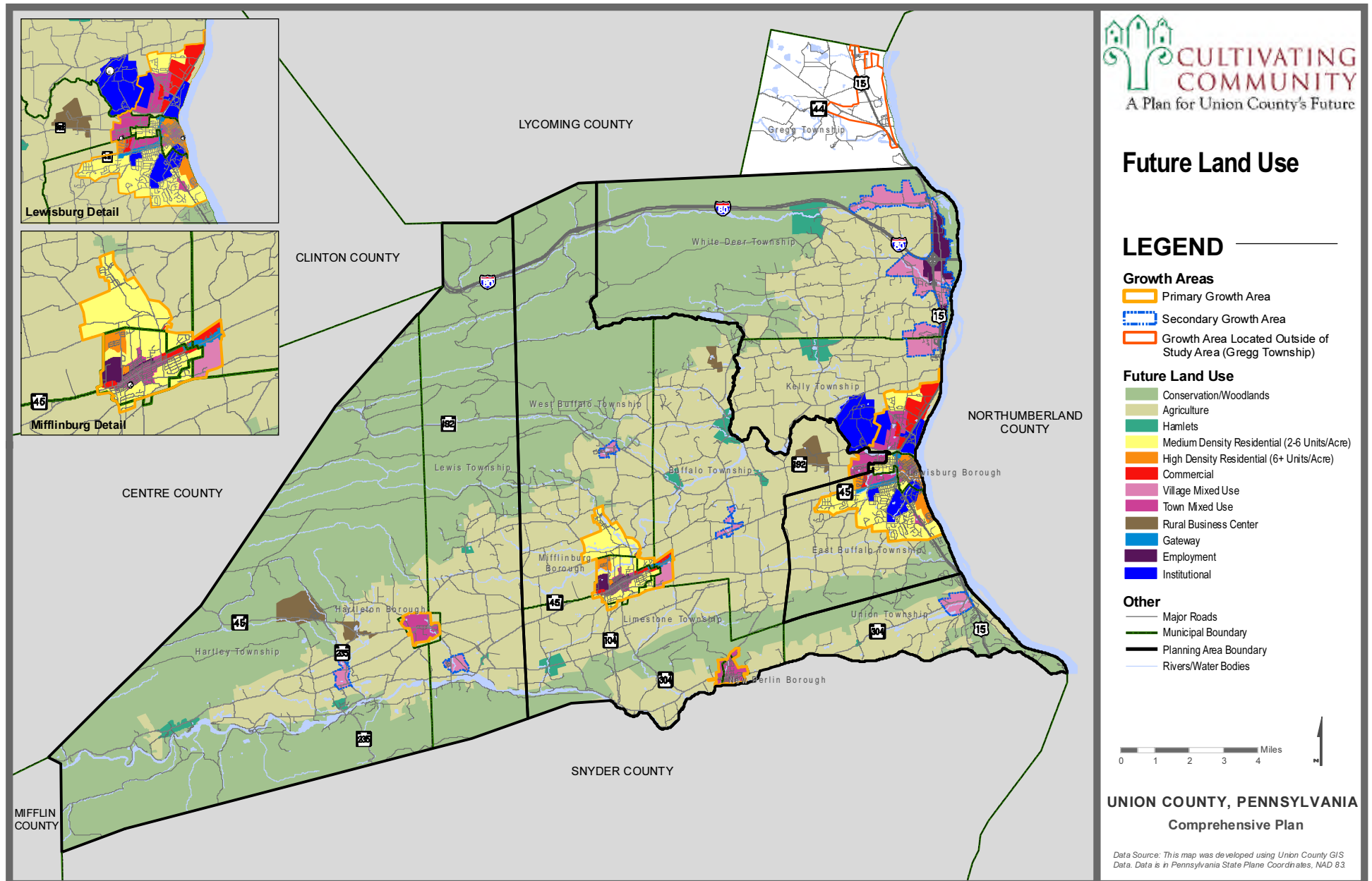
Union County's proposed land use pattern (see Figure 5-1) is compatible with existing and proposed development in the County's contiguous municipalities. In many areas the Bald Eagle State Forest and surrounding woodlands create an open space buffer between Union and its surrounding counties (Lycoming, Clinton, Centre, Mifflin, and part of Snyder County). The Susquehanna River creates a similar buffer to the east with Northumberland County.

Planned growth areas in Lycoming County are compatible with the planned areas in Union County. Planned agricultural and woodland uses along the southern boundary of the County are consistent with Snyder County's plans for rural and woodland uses and a potential greenway corridor along Penn's Creek. Snyder County's Future Land Use Plan designates a center for new development (Penn's Creek) which is similar in concept and scale to New Berlin's Primary Growth Area.

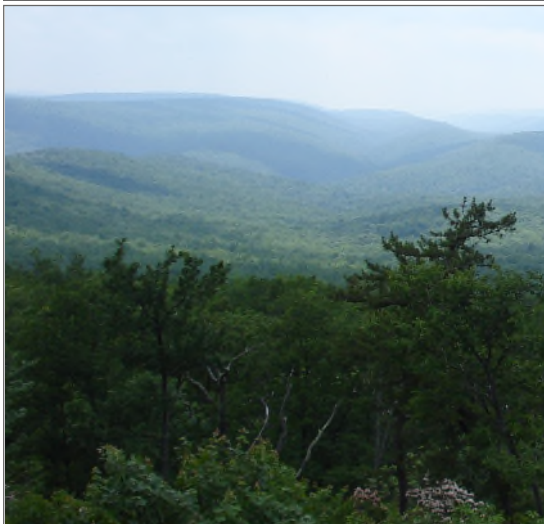
Table 5.1 Future Land Use Map – Land Use Categories

Agriculture	Land primarily used for agricultural purposes. Residential and other farm related uses are incidental to the agricultural land use. Agricultural land is typically located on soils of prime or statewide importance.
Conservation	Land that is characterized by forest habitat, steep slopes, wetlands, and wildlife habitat. The majority of the land in this category is in state forest ownership. Development is strictly limited to protect natural resources and woodlands.
Hamlet	Areas of existing development located in predominantly rural areas, which are too small to be considered villages. Typically these areas include a mix of uses or are predominantly residential, adding to the County's agricultural character. A limited portion of the County's future land use needs can be accommodated in these areas. New development should be consistent with the existing rural character and preserve resource areas through conservation subdivision design or similar technique. Hamlets indicated on Figure 5-1 include Weikert, Glen Iron, Swengal, Pleasant Grove, White Springs, Cowan, Mazappa, Buffalo Crossroads, and Kelly Crossroads.
Medium Density Residential	Land designated for single, two, or multi-family residential at densities less than 6 units per acre.
High Density Residential	Land designated for single, two, or multi-family residential development at densities of 6 units per acre or greater.
Commercial	Land that is designated for commercial sale of goods and services, including retail and wholesale establishments, personal services (dry cleaners, beauty salons, restaurants, etc.) and service related offices (medical, dental, financial, real estate, etc.).
Gateway	Land in this category is generally commercial in use, but requires added consideration for its form and design, given its prime visibility along major corridors in and out of growth areas. The concept is to create attractive entrances to growth areas through coordinated streetscape design (street trees, sidewalks, building setbacks, landscaping, signage, lighting, etc.).
Mixed-Use (Town or Village)	Land designated for a mix of residential and commercial uses. Mixed-use development typically occurs in a denser, compact, and walkable form. Proposed mixed-uses within Primary Growth Areas are classified as Town Mixed-Use. All Secondary Growth Areas are classified as Village Mixed-Use on Figure 5-1.
Rural Business Center	Land primarily used for commercial or industrial development that is related to the agricultural and rural economy. Such development is intended to be consistent with the agricultural areas in which the centers are located. As indicated on Figure 5-1 there are three Rural Business Centers proposed for the County, one in the Western Planning Area and two in the Central Planning Area. Rural Business Centers are not intended to stimulate growth in rural areas, but rather to "capture" development that would typically occur as rural sprawl.
Employment	Land primarily designated for employment-related uses, including offices, light manufacturing, technological and research-related parks. Convenience retail and personal services (dry cleaners, beauty salons, daycare facilities, etc.) are incidental to the employment-related uses. The major employment center in the County is located in the White Deer Township Secondary Growth Area, along Route 15, near the I-80 and US 15 Interchange.

Figure 5-1
Future Land Use



5.5 Land Use Strategies



The land use strategies provide direction for achieving the Town and Rural Policies. They are divided into three categories: location, pattern, and form, respectively.

While some strategies may overlap, in general:

- Location addresses where growth and preservation will occur.
- Pattern addresses the type or mix of land uses.
- Form addresses the shape that new development will take and how it will relate to existing development and rural resources.

Location

5-1. Enact municipal or multi-municipal policies and regulations to direct at least 80% of new residential development through the year 2050 to Primary and Secondary Growth Areas.

Figure 5-1 (Future Land Use) designates four Primary Growth Areas and six Secondary Growth Areas throughout the County and targets at least 80% of new residential development through 2050 into these areas. In addition, the Town Policy calls for all major new commercial (retail and employment) to be located in Primary Growth Areas or in designated employment centers. Adopting the growth area boundaries

at the municipal level is a first step in advancing the sustainable growth principles introduced in Chapter 3, which are: 1) focus new development in and around established communities; 2) preserve rural resources; 3) conserve energy; and 4) conserve fiscal resources.

Municipalities that have growth areas within their boundaries should evaluate and revise, where necessary, existing zoning and subdivision ordinances to accommodate residential and mixed-use development within the designated boundaries.

5-2. Enact municipal or multi-municipal policies and regulations to protect Rural Resource Areas and direct the remaining 20% of growth to Rural Development Areas as the basis for managing development outside Primary and Secondary Growth Areas.

As part of the Rural Policy, Figure 5-1 (Future Land Use) designates Hamlets and Rural Business Centers throughout the County. Rural Business Centers are located in the Central and Western Planning Areas and are intended to “capture”

agriculturally-related commercial or industrial development that would otherwise occur as rural sprawl. Concentrating this type of development in Rural Business Centers, rather than allowing it to spread out, requires fewer infrastructure improvements (e.g., roads, water, and sewer) and development costs.

To accommodate a minimal amount of residential growth and acknowledge the existing rural development patterns which contribute to the character of the County, Rural Neighborhood development should be directed to existing hamlets and other development areas as well as a limited number of new on-farm residences for family members.

5-3. Concentrate infrastructure improvements and expansion of public services in growth areas.

Limiting infrastructure and service improvements, such as roads, water, and sewer extensions to the Growth Areas is essential to influencing where development will occur in the future. In addition, by improving existing infrastructure and services, the growth areas can better accommodate new development.

5-4. Encourage broader participation in land conservation programs.

Union County has an active Conservation District which administers the County's Purchase of Agricultural Conservation Easement (PACE) program. Increasing participation in this program and considering implementation of other land and natural resource preservation programs (e.g., TDR, voluntary easements, etc.) can help limit development in Rural Resource Areas.

Pattern

5-5. Examine zoning districts countywide to implement the development pattern shown on Figure 5-1 (Future Land Use).

To implement the Growth Management Strategy and Future Land Use Plan, municipal zoning ordinances must be adopted, where they do not now exist (Union Township, Limestone Township, and Hartleton Borough), and revised to be consistent with land use categories shown on Figure 5-1 (Future Land Use).

Specifically, zoning changes or new ordinances should limit development outside of Growth Areas, Rural Business Centers, or Hamlets and





encourage mixed-use development inside of Growth Areas.

5-6. Establish Traditional Neighborhood Development (TND) as the preferred land use pattern in Growth Areas.

Mixed-use development is the Sustainability Key for the Land Use Element. A major component of TND is the inclusion of a mixed-uses and residential densities, similar to the pattern already established in Lewisburg, Mifflinburg, and smaller communities throughout the County. Extending and improving the existing TND pattern as infill or new development in the Growth Areas where infrastructure is present, can help to maintain the viability of existing communities while diverting growth from the surrounding rural areas. Zoning and developer incentives (e.g., density bonuses) are effective tools in implementing TND. TND regulations can vary in scale and density as appropriate to the established context. For example, lower density village or hamlet overlay districts can be applied to Secondary Growth Areas or in smaller communities located outside of designated growth areas.

5-7. Develop a variety of residential amenities, such as parks and community centers, in Growth Areas and avoid development in the floodplain.

Open space and preservation of natural features should not be reserved for Rural Resource Areas; instead, quality of life amenities, such as parks, trails, bike paths, and open space, can be integrated within neighborhoods and centers throughout the Growth Areas. Existing floodplains areas along stream corridors present an opportunity to create additional parks, greenway corridors, and passive open space in Growth Areas. All commercial and residential development in flood prone areas should be avoided.

Form

5-8. Create walkable, mixed-use, compact communities that maintain and complement the historic and cultural character of existing towns and villages in Growth Areas.

Municipalities can adopt a range of regulations, standards, and other strategies to implement mixed-use development. Examples of potential tools include TND ordinances, historic districts, design guidelines, form-based zoning overlays,

infill development standards, developer incentives, and standards for mixed-use development.

5-9. Preserve and enhance natural resource systems throughout rural resource areas by influencing the shape and density of new development.

By influencing the form of development in rural areas, through regulations, standards, and other strategies, municipalities can help preserve and enhance natural resource systems (air quality, water quality, riparian/wetland areas, etc.). Potential tools include conservation subdivision, minimum open space requirements, tree preservation standards, light pollution ordinances, rural neighborhood design standards, acquisition of easements for open space or farmland, public-private partnerships, private land-owner outreach programs, and technical assistance.

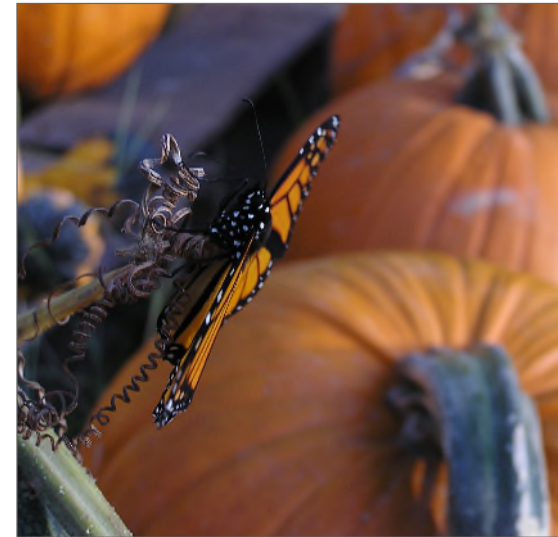
5-10. Reduce the overall environmental impact of buildings.

In addition to creating mixed-use neighborhoods in and around established communities, the need to conserve energy by decreasing fossil fuel consumption and reducing automobile use is one of the sustainable growth principles introduced

in Chapter 4 and a priority issue identified in the citizen survey.

According to the U.S. Green Building Council (USGBC), buildings account for 72% of total electricity consumption and 39% of energy use. Minimizing the impact of buildings on the environment, through green building techniques and low impact site design standards, is one approach to conserving energy and protecting natural resources. Sustainable building practices, such as passive solar building siting, energy efficient building systems, use of renewable energies, green roofs, on-site water recycling, and native landscaping can be integrated into existing and new development through increased education, awareness, and incentives.

The SEDA-COG Energy Resource Center, is an example of a local organization working in the public and private sectors with the goal of reducing energy costs and creating new energy markets in the region. The Center is planning to move into a new LEED-certified building, partially funded by a state grant, which will serve as a learning laboratory for sustainable building practices.



6. Housing

6.1 Overview

Union County's population is projected to grow substantially over the next several decades (Table 6.1 on page II-26). The Union County Planning Department projects an increase of 10,541 new residents between the years 2000 and 2030, requiring an additional 6,000 new housing units to accommodate them.⁸ By 2050, another 3,920 housing units will be needed to support the projected population growth. The character, location, availability, and affordability of these new units, and their responsiveness to changing demographics and market conditions, will have profound implications for the County's character and quality of life.

The impact of housing development on future land use is a significant planning issue for Union County. The County's overall population density of just over 131 persons per square mile in 2000 is projected to increase by 26% to approximately 165 persons per square mile in 2030. Currently about 12,034 acres, or 6% of the County's land area, are in residential use. If the projected 6,000 new units were to be accommodated at the recent average of 1.2 units per acre (including land needed for infrastructure and rights-of-way), a total of 7,200 acres now in other uses would be developed for housing. This would bring lands in residential use in

⁸ The Pennsylvania State Data Center projects an identical percentage increase (25%) in population from 2000-2030 for Union County.

SUSTAINABILITY KEY = DIVERSITY

In the context of housing, **diversity** refers to providing choices in housing types and prices that meet the needs of different segments of Union County's population. Demographic changes such as the aging of the population and decreasing household sizes are causing a shift in demand from conventional single-family homes on large lots to smaller units that are typically located in more compact patterns within walking distance of amenities and services. In addition to meeting the needs of a growing number of Union County's households, smaller units in higher density settings provide benefits such as:

- Reduced land consumption
- More efficient use of infrastructure and services
- Reduced dependence on automobiles and greater opportunity to use other forms of transportation (walking, transit, and biking)
- Lower energy costs and consumption of fossil fuels
- Increased affordability

The provision of affordable housing choices is a critical component of the housing sustainability key. In addition to homeownership opportunities, affordable rental housing in decent condition is needed by a significant proportion of the County's population.

2030 to 19,234 acres, or 9.4% of the County's total – an increase of 60% from 2000. By 2050, 4,704 more acres would have been developed to serve the projected housing increase since 2030. Under this scenario lands in residential use would account for 23,938 acres – almost double the 2000 total. In the past, agricultural lands have often been the first to be converted to residential uses because of their suitability for construction. In recent years, much of the new residential development has occurred on large lots at the edge between the County's prime agricultural lands and for-

ests. Clearly, new housing development will need to be carefully managed if Union County is to retain its rural character and agricultural base in accordance with the vision statement and growth management framework set forth in Chapter 3 of the Plan.

Table 6.1 Union County Population Projections, 2000-2050

	2000	2010	2020	2030	2040	2050
Population	41,624	45,578	48,871	52,165	55,460	58,752
Increase		+3,954	+3,293	+3,294	+3,475	+3,112

Source: Union County Demographic Digest 2002

The housing sector in Union County shows a mix of affordability and stability. The median value of an owner-occupied house was \$97,800 in 2000, with significant variations from the eastern to western parts of the County (see Section 2.5). Over 1,100 new units have been constructed since the 2000 Census, bringing the total units in the County to over 15,800, for an overall growth rate of 7.5% during the eight year period. Over 73% of the County's housing stock is owner occupied. Higher residential densities are found in the boroughs, especially Lewisburg and Mifflinburg.

Shifting demographics are affecting and will continue to affect the housing needs of Union County residents in the future. The County's population, like most of America's, is aging. With an increase in elderly households will come new demands for centrally located, higher density developments within walking distance of amenities. The current pattern of large lot development in the County does not respond to these needs or to the demands of younger households with similar interests.

A number of organizations are active in housing issues in Union County. Key players include:

- The Union County Planning Commission provides planning services to municipalities and organizations within the County. It is tasked with promoting orderly growth and balancing the need for new development with the protection of the natural environment and quality of life in the County.
- The Union County Housing Authority's mission is to provide safe, decent, affordable housing for lower income households. As such, it provides Section 8 assistance for low-income rental housing, administers a first-time homebuyer program, and has a residential rehabilitation program for low income homeowners. The Housing Authority also serves as the County's Redevelopment Authority
- The municipalities have zoning and land use powers, and as such are responsible for regulating and enforcing residential development within their boundaries.
- The Central Keystone Council of Governments is an organization of local governments in Northumberland, Snyder, and Union Counties that have joined together to manage the adoption of the Uniform Construction Code (UCC). It is currently responsible for inspecting rental properties in Lewisburg.
- The Union County Affordable Housing Trust Fund, an advisory board to the County Commissioners, assists first-time homebuyers with closing costs and down payments. Administered by the Union County Planning Commission, the program is funded through a fee charged when deeds are registered.
- The Snyder/Union Community Action Agency operates a heating fuel assistance program.

6.2 Strengths and Issues

Strengths

- Union County residents value their sense of community and small town atmosphere, which make the County an attractive place to live and raise a family.
- Union County's location within a three or four hour drive of a number of major cities, combined with its rural life style and moderate housing prices, make it a desirable residential location.
- A variety of outdoor recreational opportunities and experiences are readily accessible to most of the County's housing stock.
- Homeownership rates in Union County are higher than in Pennsylvania and the United States, indicating that the residential community is fairly stable.
- The year 2000 median value of an owner occupied home in Union County was slightly higher than Pennsylvania's, but substantially lower than the United States as a whole, making it an affordable place to live.
- Union County's traditional towns are relatively compact and walkable, establishing a precedent for additional compact development.

Issues

- The demand for housing is resulting in sprawling growth patterns in formerly undeveloped parts of the County outside of traditional population centers.
- Housing demand is causing home prices to rise, impacting the affordability of the housing stock.
- Farmers in need of income to cover costs and/or taxes are selling off road-fronted lots for development.
- There has been a significant consumption of agricultural and forested land due to large minimum lot sizes required for housing that does not have access to public water and sewer.
- The aging "baby-boomer" generation and other nontraditional household types (i.e., not comprised of two-parent families with children) will increasingly demand housing in higher density, convenient, and walkable neighborhoods close to a variety of cultural and recreational opportunities.
- Rental housing in some locations has deteriorated, negatively impacting nearby properties and some downtown areas.
- The costs of heating and providing electricity for homes are escalating. Residents identified energy conservation as an important issue in the citizen survey conducted for the Comprehensive Plan. This

trend will increase the attractiveness of housing in compact, walkable settings with convenient access to shopping and services.

- Assisted housing (elderly and subsidized) is concentrated in certain areas of the Boroughs and not in more dispersed patterns that integrate such housing into communities throughout the County.



6.3 Housing Goals



Housing Goals

The following housing goals provide general statements indicating the desired direction for Union County over the next 20 years.

- A minimum of eighty percent of new residential development occurs within designated growth areas in compact patterns that make use of existing infrastructure, including roads, water, and sewer.
- New housing in rural parts of the County is located in or near existing hamlets and neighborhoods or on farms to accommodate family members who will carry on the tradition of farming.
- Quality housing opportunities are available throughout the County to meet the needs of different income levels, age groups, physical abilities and lifestyles. These opportunities include both rental and homeownership options; residential components of mixed-use developments; and diverse housing types ranging from single family detached homes and townhouses to apartments, condominiums, and “granny flats” (small units within or connected to existing homes).
- Residential neighborhoods are designed to be pedestrian-oriented and to connect to nearby development, so that residents have convenient access to facilities and services.
- The historic housing stock in traditional towns and villages and throughout the County is preserved.
- The use of vernacular architecture that reflects the County’s history and heritage is encouraged in new construction.
- Energy efficiency is a priority for all housing, ranging from retrofitting of historic and older homes to “green” building technology in new residential construction.

6.4 Housing Strategies

6-1. Direct a minimum of 80% of new housing development to Primary and Secondary Growth Areas. Direct new housing in rural areas to existing hamlets, neighborhoods, and a limited number of new on-farm residences for family members.

The Town and Rural Policies and associated strategies described in Chapter 5 (Land Use) set the direction for how new housing should be accommodated consistent with the Vision Statement and Growth Management Framework. Union County should work with municipalities to establish Primary and Secondary Growth Areas coordinated with infrastructure provision and municipal land use regulations that encourage compact housing development and discourage sprawl in rural areas.

6-2. Enact regulations and incentives to encourage the development of housing types in designated growth areas that meet the needs of different segments of the County's population.

Municipal zoning and subdivision regulations for designated growth areas should be changed to accommodate housing types that fit the needs of different segments of the County's population,

including seniors, empty nesters, young singles, those with disabilities, and others. In addition, municipalities can offer incentives (e.g., stream-lined development review, density bonus, height bonus, etc.) to encourage mixed-income developments with a variety of housing types. Examples of these housing types include detached and attached units in compact patterns on small lots; residential components of mixed-use developments, such as apartments or condominiums above commercial uses; senior housing with access to infrastructure and services; and accessory units ("granny flats") in existing or new homes.

Traditional neighborhood development is an example of a regulatory approach that can be used to promote diverse housing types. In addition to meeting the needs of different segments of Union County's population, higher density, compact housing patterns served by existing sewer, water, and other infrastructure and services lower housing costs and promote affordability while reducing sprawl in rural areas. Bonuses or incentives such as increased density and expedited review could be provided for appropriately located and designed developments that meet housing needs and are served by existing infra-

structure. Design standards should be enacted for higher density housing to ensure appropriate transitions and compatibility with surrounding neighborhood character.

New developments should incorporate sidewalks and paths providing opportunities to walk or ride bikes to shops, services, parks, and community facilities, located either inside or outside the development. In general, the connectivity and mix of uses (including housing) should be increased in designated growth areas to encourage alternatives to driving (see Chapter 8).

6-3. Enact regulations and incentives to limit new housing development outside of designated growth areas and to limit its impacts on rural resources.

Effective agricultural zoning that maintains existing farms while allowing for the subdivision of a limited number of residential lots for family members who are engaged in farming is key to maintaining Union County's rural character and the viability of the agricultural economy. As described in Chapter 5 (Land Use), a variety of regulatory approaches can be used to direct new



housing development away from rural resources to villages, hamlets, and other existing development areas. These approaches include:

- *Village/hamlet zoning with standards appropriate in density and scale to existing development and infrastructure*
- *Conservation subdivision regulations that allow residences on smaller lots while maintaining open space on adjacent agricultural and forested land*
- *Transfer of Development Rights (TDR) from rural (agricultural and forested) lands to designated growth areas with available infrastructure*

6-4. Continue to meet the needs of all segments of Union County's population for decent, affordable housing.

Existing housing assistance programs, such as the Housing Authority's Section 8 program and the Snyder/Union Community Action Agency's heating fuel assistance program, should continue to target Union County residents in need. The Housing Authority should continue to identify and target homeowners for rehabilitation assistance to make existing homes more energy efficient, allow older citizens to remain in place,

and provide first-time homebuyers with affordable housing options. Priority should be given to purchase of homes in designated growth areas using no interest second mortgages available through the Union County Affordable Housing Fund.

6-5. Conserve and enhance the character and stability of Union County's existing neighborhoods.

Code enforcement and inspection programs should be used to address destabilizing influences such as deteriorated rental housing properties and the inappropriate subdivision of existing single family homes into multi-family housing units. As noted in Strategy 6-2, design standards should be enacted for new development affecting existing neighborhoods to ensure appropriate transitions and compatibility with established neighborhood character. The County's rehabilitation assistance and first time home buyers program can be used to strengthen targeted neighborhoods. Examples of other actions to promote neighborhood conservation and stabilization include streetscape, landscaping, or other improvements; community clean-ups and special events; and community policing or block watch programs.

The Pennsylvania Department of Community and Economic Development's (DCED) Elm Street Program is designed to strengthen older neighborhoods typically located next to a traditional downtown. It is based on a "five-point approach" that targets action in five focus areas: Clean, Safe and Green; Neighborhoods and Economy; Design; Image and Identity; and Sustainable Organization. Both Lewisburg and Mifflinburg are participating in the Elm Street Program.

6-6. Preserve Union County's historic homes and encourage new housing that complements the County's vernacular architecture.

A number of Union County's older homes and neighborhoods have historic value. However, as noted in Chapter 9 (Cultural, Historic, and Recreational Resources), only Lewisburg has a local historic district that provides regulatory protection for these resources. Additional local ordinances should be considered to protect historic homes and neighborhoods elsewhere in Union County. (Historic designation can also provide tax benefits for property owners.) As an alternative to strict historic district or landmark

regulations, neighborhood conservation overlay districts can be used to set general compatibility standards for new developments within existing neighborhoods.

To promote preservation and awareness of the County's traditional architecture and its expression in existing and new homes, an educational program could be developed in conjunction with the Union County Historical Society to highlight characteristics typical of the architecture of Central Pennsylvania in general and Union County in particular (e.g., form, massing, site orientation, vernacular materials, etc.). These characteristics should be used to inform guidelines for incorporation into zoning and development regulations throughout the County.

6-7. Increase the energy efficiency of existing and new housing.

Establishing a green building program with requirements for increased energy efficiency would significantly reduce the carrying costs of new and rehabilitated housing while contributing to the sustainability objectives of the Comprehensive Plan. The United States Department of

Energy's Building Energy Codes Program can be used as a guide to establishing code requirements that are more energy efficient than the Uniform Construction Code.

Retrofitting of existing homes to increase energy efficiency should be promoted through means such as the Housing Authority's residential rehabilitation program and partnerships with utility companies (Citizens Electric Company, PPL Electric Utilities, and the Borough of Mifflinburg). Further, SEDA-COG's weatherization program is offered at no-cost to qualifying low and middle-income homeowners in the region and could potentially be expanded.

7. Economic Development

7.1 Overview

Union County had a total of 17,517 persons in its workforce at the end of 2007 and a relatively low unemployment rate of 5.2%. However, at the end of 2008, the County's unemployment rate increased to 7.4% consistent with trends in the national economic and housing markets. The largest private and/or institutional employers in the County include Evangelical Community Hospital, Bucknell University, US Government, Ritz-Craft, Albright Care Services, Weis Markets, and Playworld.

The Central Pennsylvania Workforce Investment Board (WIB), using the best currently available data, estimates that Union County will add 974 workers to its workforce by the year 2010. At an overall estimated employment rate of four workers per acre, the County would need about 245 acres to accommodate this job growth. If that trend were to continue over the long-term (between 2014 and 2024), about 500 acres would be needed.

The largest new business park in the County is the 670-acre, mixed-use Great Stream Commons located five miles north of Interstate 80 along US Route 15. In addition to Great Stream, there are nine other existing

SUSTAINABILITY KEY = BUILDING LOCAL ASSETS

The sustainability key for the Economic Development Element of the Union County Comprehensive Plan focuses on **building local assets**. It refers to economic activities that:

- Draw on the County's intrinsic advantages – its high quality of life in a beautiful town and country setting, fertile agricultural soils, quality educational and medical institutions, etc.; and/or
- Reduce dependence on outside resources (e.g., by substituting locally produced goods and services for those imported from beyond the region).

The importance of the latter is highlighted by escalating fossil fuel prices that affect not only the transportation and heating costs of Union County residents

and businesses, but also the prices of food and goods that are transported to the County across long distances.

Conservation and sustainable use of the County's natural, cultural, and social assets are central to the concept of building local assets. These assets define the quality of life that attracts businesses and residents to locate, stay, and invest in Union County. The County's agricultural soils and woodlands support key sectors of the County's economy that can substitute local for imported produce and products. Industries that use local resources to manufacture "value-added" products are a potential source of economic growth. In addition, Union County's heritage, recreational opportunities, and sense of place combined with its relative proximity to major metropolitan areas make it an attractive, affordable tourism destination.

(or potential) business parks in the County with a total of 3,347 acres available (Table 8-1).

Of the total 3,347 acres in the ten business parks shown in Table 7.1, 1,337 acres are presently developed and another 2,010 are available for development or

could be made available with appropriate infrastructure. Those sites that can be developed almost immediately include Great Stream Commons, the 40-acre Pennsylvania House site (currently proposed for a mixed-use development, and 28 acres available at the Mifflinburg Industrial Park. Final plans have not been announced for the 297 acres available for redevelopment at the former

Property	Location	Acres	Available Acres (approx.)
Great Stream Commons Business Park	US 15 north of I-80, Gregg Twp	444	278
Greater Lewisburg Industrial Area	Lewisburg and E Buffalo Twp	98	40
I-80 & US 15 Interchange	White Deer Township	247	189
Mifflinburg Industrial Park	State Route 45, Mifflinburg	127	28
New Berlin Industrial Area	New Berlin Boro	69	35
Rte 15/Lewisburg Corridor	US 15, Kelly Township	286	100
Route 15/New Columbia North Corridor	Rte 15, White Deer	1,035	673
Route 15/New Columbia South Corridor	Route 15, White Deer	140	70
Sensenig Industrial Area	Buffalo Twp, Route 192	565	300
Laurelton State Campus	State Rte 45, Hartley Twp	336	297
Total		3,347	2,010

Source: *Site Selection Sourcebook*, Union County Planning Department, 2002; WRT and S. Huffman Associates interviews (2007).

Laurelton State Campus. The current state of the economy suggests that the County has adequate land zoned for industrial and retail uses to accommodate demand over the next ten years.

Preliminary discussions are underway among counties in the Central Pennsylvania region about the location of the next regional industrial park, which is likely to be somewhere near Interstate 80. At the same time, rising fuel prices and the probability that market demand and periodic shortages will keep those prices high is likely

to make transportation and warehousing an increasingly expensive enterprise. Increased distribution costs will make locally produced goods, including those that are manufactured and those that are raised or grown, increasingly competitive in the regional market and surrounding area.

A total of 2,194 acres (about 1% of Union County's land area) are currently used for retail and commercial activities. In addition, neighboring locations in central Pennsylvania, such as Snyder County, State College,

Williamsport, Bloomsburg, and Lycoming County, have a variety of retail options. The major retail locations in the County are the existing town centers of Lewisburg and Mifflinburg, and the Route 15 and Route 45 corridors. As of 2000, the County had an estimated 832,480 square feet of retail commercial space, based upon data from the County Tax Assessment office. In order to assure that its growing population will be adequately served by retail through 2030, it would need to add another 210,820 square feet (the approximate size of one community shopping center), for a total of 1,043,300 total retail commercial square feet in the long-term. Recent retail trends and vacancies nationwide suggest that there is little need for building new retail space in the short-term. Instead there are opportunities for reuse of existing buildings within the County's population centers and in nearby Snyder County.

As the County's population and employment base increases, so also will the need for office space to house business and professional services, as well as finance, insurance, and real estate, increase. Most existing office space in the County is located in Lewisburg, Mifflinburg, and along Route 15. Great Stream Commons is a possible future office location.

A number of organizations are active in economic development issues in Union County. These organizations include:

- The Union County Industrial Development Corporation is an independent industrial development entity chartered by the County. It is responsible for attracting and assisting businesses in the County.
- The Central Pennsylvania Workforce Investment Board governs the Central Pennsylvania Workforce Investment Development Corporation, whose mission is to encourage coordination of workforce activities and resources among the nine counties of Central Pennsylvania. It works to insure that workforce development services support the needs of local business and industry.
- The Sun Area Career and Technology Center (Sun Tech) is the regional vocational training center for the region. It teaches recent high school graduates and adults career and technical skills that will allow them to function in the 21st century workplace.
- The Susquehanna River Valley Visitors Bureau promotes tourism and provides joint marketing services to tourism-related businesses in Central Pennsylvania's Susquehanna River Valley (formerly the Susquehanna Valley Visitors Bureau).
- The Greater Susquehanna Valley Chamber of Commerce is a membership organization charged with promoting business activity within Union, Snyder, Northumberland, and Montour counties.
- A partner in Pennsylvania's Small Business Development Center (SBDC) program, the Bucknell SBDC provides low-cost consulting services on request to businesses in the central region on a wide range of business related topics. SBDC's services are available in a mentoring role to business at all stages of growth.
- SEDA-COG is a regional agency that promotes economic development in its 11-county service area. It is the contact point for Economic Development Administration and Appalachian Regional Commission funding and makes micro-loans available to very small businesses.



7.2 Strengths and Issues

Strengths

- Union County has a stable, diverse, and moderately growing economy. Two of the major employment sectors in the County are education and health care. Growth projections for these sectors are not available at the County level, but the Central Workforce Investment Board projects that they will grow more than 12% between 2004 and 2014 in the region. Accommodations and food services are another growth sector.
- The County has a good quality of life and a capable labor force with a strong work ethic, which makes it attractive to business.
- The County is rich in agricultural and natural resources (e.g., timber), creating opportunities for rural resource-based economic development.
- Union County's location within three to four hours of four major urban areas gives it easy, relatively low cost access to major markets for home grown and manufactured products. The County will have an increasing advantage over international and West Coast producers as distribution costs rise.
- Bucknell University, located in the Eastern Planning Area, contributes to the region's economy in a variety of ways. The University is a major employer, provides

technical expertise (e.g., low-cost or free workshops, lectures), and acts as a cultural center of the surrounding community. A 2006-2007 Community Impact Report estimates that those affiliated with Bucknell spend over \$24 million on local goods and services annually. The University also provides direct support to local institutions (e.g., Lewisburg Downtown Partnership, Arts Council), local police, and the Lewisburg Area Recreation Authority.

- The County's proximity to four large urban areas, the character of its rural landscapes, and its water resources are contributing to a growing tourism industry.
- The County's historic town centers have the potential to attract additional specialty retail establishments.
- "Home-based" industries that produce local goods and services on a small scale and employ very few people could grow to be a larger part of the County's economic base.
- Sun Tech is an important workforce development asset, as demonstrated by its focus on preparing students for employment in manufacturing businesses with automated production processes.
- The wood products manufacturing sector, which has recently lost several establishments, may have stabilized over the past two years.

Issues

- If Union County's economy is to continue to grow, incentives are needed for existing businesses to expand and for new businesses to locate and infrastructure must be provided to appropriate sites.
- Retail commercial development on corridors outside of Lewisburg and Mifflinburg has affected existing businesses in the boroughs, resulting in some store vacancies.
- The development of Monroe Marketplace north of Selinsgrove and new retail in Snyder County will compete with Union County to attract shoppers.
- The current market for the warehouse sector is for large buildings on large sites near highway interchanges. Union County has a very limited number of these sites.
- Part of the County's economy is based on recreation and tourism, particularly hunting and fishing. As development pressures move westward, conflicts between agricultural and forested uses are likely to occur, threatening the region's economic base and the quality of its water.
- As home and farm-based businesses grow and require additional space, including outbuildings and workers, there is the potential for land use conflicts.

7.3 Economic Development Goals

Economic Development Goals

- Existing businesses are retained and their expansion needs are accommodated.
- Home-based enterprises are located throughout Union County and are a key part of the County's economic base.
- Space is made available for former home-based enterprises to grow and technical assistance and incentives are provided to ensure that this happens.
- Office spaces are available for business support services needed to serve the growing health, education, and production based economy.
- Training programs and public/private partnerships focusing on strategic niches prepare the County's workforce to compete in the 21st century economy. These niches include healthcare, education, lumber and wood products, diversified manufacturing, and hospitality and tourism.
- New businesses from outside the region related to the strategic niches are attracted to locate in and near Union County.
- Union County's economy is diversified by the goods and services produced by the creative class⁹, which is attracted by its quality of life, proximity to major urban areas, attractive and walkable small communities, and the presence of Bucknell University.

⁹ The term "creative class" was coined by economist and social scientist, Richard Florida, around 2002. Florida defined the creative class to include about 1/3 of U.S. workers in a range of occupations (e.g., science, engineering, architecture, art, design, media and "knowledge based professionals" working in healthcare, business and finance, and education, etc.).



7.4 Economic Development Strategies



7-1. Target economic development initiatives and programs to retain and grow existing businesses/employment and attract new ones in five “industry clusters”: healthcare, education, lumber and wood products, diversified manufacturing, and hospitality and tourism.

This strategy is designed to focus economic development efforts on industry clusters that have the greatest potential for growth in Union County, including:

- *Healthcare: hospitals, as well as nursing and residential facilities, medical laboratories, pharmacies, and pharmaceutical and medical equipment manufacturing.*
- *Education: colleges, universities, technical and trade schools, day care, libraries, and all other schools and instruction.*
- *Lumber and wood products: logging, wood furniture, wood millwork, cabinets, lumber wholesalers, emerging niche markets for hand-made U.S. wood-based products (e.g., toys), and all other wood products.*
- *Diversified manufacturing: the manufacture of food, paper, textile, petroleum, plastic, metal, and electrical products. Although in*

Union County this sector actually lost employment between 1995 and 2001, factors such as increased manufacturing costs abroad and cost of oil suggest that the trend may not continue.

- *Hospitality and tourism: accommodations, food services, hunting and fishing, and recreational activities.*

7-2. Encourage the development and growth of locally based industries that use local resources.

This strategy supports the “Building Local Assets” Sustainability Key by focusing on businesses within the strategic industry clusters that have strong connections to Union County’s local assets and/or provide locally produced goods and services. Examples within the lumber and wood products cluster could include millwork, production of furniture, handmade wooden toys, cabinet making, etc. Examples within the diversified manufacturing cluster in which Union County is already competitive in Pennsylvania include sporting and athletic goods manufacturing, agricultural equipment manufacturing, and food processing (canning or freezing operations, semi-prepared foods, dairy products, etc.)

This strategy is intended to encourage the formation and growth of “home-based” and other entrepreneurial businesses (e.g., furniture design, small-scale food production such as cheese-making, academic services such as tutoring, equipment and machinery repair, etc). It also supports strengthening the County’s historic downtowns, expanding existing businesses, and attracting new ones that use local assets and otherwise fit with the Sustainability Key. Approaches to implementing this strategy include technical assistance and business development training, incentives (Strategy 7-3), ensuring that land is available for the various stages of business development (Strategy 7-4), and a favorable regulatory environment (e.g., home occupation ordinances that allow for home-based businesses while safeguarding adjacent land uses from adverse impacts).

7-3. Provide incentives for businesses to locate in the County that are good “fits” with the targeted industry clusters.

The Great Stream Commons Business Park is designated as a Keystone Opportunity Zone (KOZ) under the state program and thus offers greatly reduced state and local taxes for businesses and

employers. In addition to the KOZ, examples of potential incentives include the provision of infrastructure to marketable sites, assistance with industrial development bonds, liaison with local resources and Small Business Development Centers, and assistance in identifying loan and grant funding available from the Pennsylvania Department of Community and Economic Development (DCED) and other sources.

7-4. Ensure that the County has an inventory of appropriately located land available for economic development.

As described in Section 7.1 and Table 7.1, there is more than enough vacant land available to meet projected future employment needs for the foreseeable future. However, the key factor is not the total amount of land, but rather whether the land is in the right locations, is adequately served by infrastructure, and meets the needs of different types of businesses in various stages of development and expansion. For example, the County may wish to consider establishment of an “incubator” that provides space and support services for start-up businesses, possibly in partnership with Bucknell University. In addition,

upper story floors of buildings in Lewisburg (e.g., federal building) and Mifflinburg are often underutilized. The County’s downtowns provide a number of opportunities that support economic development (e.g., affordable housing, proximity to jobs, entertainment, and retail, and walkable streets, etc.).

7-5. Partner with health care institutions to reinforce their role as one of Union County’s leading employers and to maximize their benefits for the County’s economy.

Health care is part of Union County’s largest employment sector. It includes providers such as Evangelical Community Hospital in Kelly Town-





ship and Geisinger Medical Center in Montour County, to which a small but important group of county residents commute to high-paying jobs. The County should continue to work with these entities to reinforce their role as providers of quality employment, to promote opportunities for spin-off businesses, and to ensure that vocational training programs in the County are responsive to their needs.

7-6. Partner with educational institutions to strengthen student and workforce training programs and to increase their contributions to the local economy and employment.

As noted, Sun Tech is a major economic resource for Union County through its work in preparing students for the 21st century economy. Partnerships between the center and existing employers in the County should be strengthened. Also, the potential to promote the center's benefits for desirable businesses to locate or remain in Union County should be explored. This strategy should also include the County's school districts, which play an important role in preparing students for the workforce and whose quality is an important factor in locational decisions made by businesses.

Another key economic resource, Bucknell University provides quality jobs, business activity generated by its operations and students, and partnership opportunities on strategic economic development initiatives. For example, Bucknell has explored a joint biotechnology venture with Geisinger Medical Center, although this initiative has not moved forward.

7-7. Promote retail/mixed-use development in traditional patterns within designated growth areas.

Consistent with the Town Policy described in Chapter 3 and the land use strategies described in Chapter 5, retail/mixed-use development should be encouraged within designated growth areas. From an economic development perspective, the objective is to improve the economic vitality of the County's traditional towns while limiting sprawl that adversely impacts agricultural, natural, and visual resources that are important to Union County's economy.

7-8. Promote heritage and eco-tourism and associated economic activity tied to the County's natural and cultural assets.

Hospitality and tourism is a prime example of an industry cluster that is based on Union County's local assets. The Susquehanna River Valley Visitors Bureau is charged with tourism marketing in the central Pennsylvania region; its efforts should be continued and built upon by promoting visitation and associated business activity tied to the County's natural and cultural assets. Examples of these assets include the Susquehanna River Valley, historic towns and villages, agricultural landscapes, and outdoor recreation opportunities provided by forests and gamelands. Visitation and tourism also serves to showcase the County's assets for potential new businesses. The Middle Susquehanna State Heritage Area proposed by SEDA-COG should be supported for its potential to increase heritage tourism and related business activity. The Mifflinburg-Lewisburg Rail Trail is an example of another project that will attract both county residents and visitors, thus stimulating economic activity in the two boroughs and in the vicinity of other strategically located access points.

7-9. Increase the energy efficiency of Union County businesses.

Increased energy efficiency should be promoted as a way to reduce costs for existing businesses, as a marketing tool to attract new businesses to the County, and to contribute to a strategy to reduce reliance on imported fossil fuels. Energy efficiency programs for businesses should address both conservation and use of alternative energy sources through approaches such as code requirements and incentives, technical assistance, grant and loan programs (e.g., as provided by the Pennsylvania Alternative Energy Investment Act of 2008), and partnerships (e.g., with area electric companies).

Economic Impacts of Trails

Numerous studies have demonstrated that trails improve the local economy by increasing nearby property values and resulting tax revenues, increasing expenditures by residents on recreation, providing business opportunities, and attracting tourists who spend money on lodging, food, and recreation-related goods and services. Studies conducted for two Pennsylvania trails demonstrate the positive economic impacts. The Pine Creek Rail Trail in north-central Pennsylvania was found to generate \$1 to \$1.5 million in annual spending on "hard goods" (e.g., supplies), \$2.5 million to \$3.6 million annually on "soft goods" (e.g., meals), and \$1.3 million to \$1.85 million annually on overnight stays. The Heritage Rail Trail County Park (which extends from the Maryland state line to downtown York) was found to generate \$1.6 to \$2.1 million in spending on hard goods, \$3.05 to \$4.1 million in spending on soft goods, and an average of \$51.15 per overnight stay (including those who stayed "for free" with a friend or relative) in 2007.

Sources: Pine Creek Rail Trail 2006 User Survey and Economic Impact Analysis, Rails-to-Trails Conservancy, Northeast Regional Office, December 2006; Heritage Rail Trail County Park 2007 User Survey and Economic Impact Analysis, Carl R. Knoch, Chairman, York County Rail Trail Authority, November 2007.

8. Transportation

8.1 Overview

Union County's transportation system is structured around major corridors that connect towns and villages within the County (see Section 2.7). Rural roads provide access to the agricultural and rural areas between these corridors and generally have low traffic volumes. In the towns and villages, buildings are typically constructed close to roadways, making it infeasible to widen them to increase capacity. Given these conditions, much of existing network consists of two-lane roadways.

The Plain Sect community travels throughout much of Union County via bicycle as well as horse-drawn vehicles. However, the limited shoulders along rural roadways in particular and the lack of multi-use trails create safety issues for these travel modes. Additionally, many villages and smaller town centers do not have complete sidewalk networks, inhibiting walkability and connectedness. The availability of public transit service is very limited. In general, there is a great interest in and need for multi-modal transportation options throughout the County. Towards this end, the sustainability key for this element is transportation choices.

It is critically important that the goals, strategies, and actions of the Land Use and Transportation Elements of the Comprehensive Plan be closely coordinated. The

Plan targets 80% of new residential development to occur within existing towns and villages (designated as Primary and Secondary Growth Areas, respectively), and 20% to occur within rural areas. Most new commercial development is targeted to be located in Primary Growth Areas. In this context, multi-modal opportunities should be focused to serve and connect designated growth areas, which are Union County's major existing and future population centers.

Mixed-use is the sustainability key of the Land Use Element. The mix of land uses and intensity of development in a particular area affects how motorists will access the transportation network, as well as the efficiency of the system. Land use characteristics also affect transportation needs, specifically by generating lesser or greater amounts of vehicular traffic. For example, developments that combine a mix of land uses (housing, retail stores, offices, etc.) generally experience a reduction in overall traffic because vehicular travel is not necessary between land uses, as would be required by conventional single-use developments. A mix of complementary uses, shared access and parking areas, a linked sidewalk network, and buildings designed for easy pedestrian connections are development characteristics that support the provision of multi-modal transportation choices.

SUSTAINABILITY KEY = MULTI-MODAL TRANSPORTATION CHOICES

A **multi-modal transportation system** is one that provides convenient choices for people to use different forms of travel, such as automobiles, bicycles, transit, and walking, to meet their mobility needs. Such a system promotes sustainability by supporting walkable communities where residential, retail, and other uses are located in proximity to each other, and by reducing automobile dependency, associated fuel consumption, and resulting emissions of carbon and other pollutants. In addition, the recent rise in gasoline prices at the pump highlighted the long-term importance of providing multi-modal transportation choices as a pocketbook issue for Union County residents.

8.2 Strengths and Issues



Strengths: Roads

- The existing road network provides sufficient access throughout most of Union County.
- Major roadways are generally designed to accommodate a variety of motorized vehicle types.
- With some exceptions, traffic congestion is not a major issue along most of the County's rural roadways.
- The Lewisburg Traffic Advisory Committee and the Lewisburg Downtown Partnership's Downtown Design Committee are committed to identifying and addressing traffic needs in Lewisburg.

Issues: Roads

- Traffic congestion (level of service E and F) currently occurs along the US Route 15 corridor, particularly during the commuter peak period on weekday afternoons. Delays will increase in the future, particularly at key intersections along the US Route 15, PA Route 45, and PA Route 192 corridors. (See Technical Appendix B for the results of a detailed analysis of existing and future capacity/level-of-service at 20 key intersections within the County.)
- The traffic demands along US Route 15 cause delays along the major intersecting streets of Market Street

(PA Route 45) and Buffalo Road (PA Route 192).

- Due to traffic congestion along US Route 15, motorists are using alternate cut-through routes, which are designed to serve local and residential traffic. These routes include a series of roadways along the west side of US Route 15 north of Lewisburg and River Road on the east side of US Route 15.
- Traffic congestion and multimodal conflicts occur along PA Route 45 throughout the County, particularly in and between Lewisburg and Mifflinburg Boroughs, due to heavy vehicular traffic volumes (including truck traffic) and bicycle, pedestrian, and horse-drawn vehicle use. PA Route 45 is also a heavily traveled route for regional traffic and special events, such as during weekends of Penn State University home football games and the annual Christkindl holiday celebration in Mifflinburg.
- Heavy truck traffic along Buffalo Road (PA Route 192) west of Lewisburg, mainly from quarry operations, has caused deterioration of pavement conditions and traffic operations, adding to congestion along the corridor.
- There are conflicts between motorized and non-motorized vehicles due to the lack of shoulders and design deficiencies along many rural roadways.

- Some motorists do not follow posted speed limits along rural roadways, which creates unsafe conditions for both motorized and unmotorized travelers.

Strengths: Railroad

- Rail transportation reduces the number of trucks on roadways and provides an energy efficient alternative for moving large quantities of goods and county railroads can support the 286,000 pound railcar standard.
- There is significant commercial and industrial zoned land in White Deer Township, and to a lesser extent in Kelly Township, with rail service.
- County railroads and shippers have access to the Norfolk Southern Buffalo Line in Milton, PA and the Canadian Pacific Railroad at Sunbury, PA, both Class I railroads.
- There is a history of rail advocacy and interest within the region via the SEDA-COG Joint Rail Authority, Union County Industrial Railroad, West Shore Railroad, and the Lewisburg and Buffalo Creek Railroad.

Issues: Railroads

- Railroad infrastructure is costly to maintain and rail companies are finding it increasingly difficult to operate lines.
- As the local economy has shifted from manufacturing to a more service and retail orientation some municipalities have amended their zoning regulations to accommodate more commercial and retail developments on lands with rail access.
- The rail north of White Deer village is not operational due to a bridge being out over White Deer Creek. This would prevent rail service to the Great Stream Commons Business Park in Gregg Township if it were needed.

Strengths: Bicycle Travel

- Bicycles produce no harmful emissions and contribute to improved public health.
- Many residents, primarily the Plain Sect community and also students, faculty, and staff of Bucknell University, use bicycles as a primary form of transportation.
- Plans are underway to develop bicycle/pedestrian facilities via the Mifflinburg-Lewisburg Rail Trail and the Susquehanna River Greenway.

- Local committees and organizations, such as the Bicycle and Pedestrian Subcommittee of the Lewisburg Traffic Advisory Committee, the East Buffalo Township Pedestrian and Bicycle Committee, and the Lewisburg Area Recreation Authority (LARA), are committed to expanding bicycle facilities throughout the County.

Issues: Bicycle Travel

- Designated bike routes or paths in Union County are extremely limited. PennDOT's "BicyclePA Route V" traverses east-west across the entire State and is designated along PA Route 192 through Union County; however, this route does not provide a demarcated lane for riders. Additionally, a small section of rail trail is provided at Cherry Run for bicycle use.
- The lack of paved shoulders providing an adequate width of four to eight feet for shared use along many roadways in the County creates conflicts between motorists, bicyclists, pedestrians, and horse-drawn vehicles.



Strengths: Pedestrian Travel

- Walking is the most environmentally friendly form of transportation and contributes to improved public health.
- Sidewalk networks in and surrounding Union County's boroughs and villages provide pedestrians with good internal mobility and access.
- Traffic signals in downtown Lewisburg and Mifflinburg provide for pedestrian push button activation for safe crossing movements at several locations.
- A pedestrian tunnel under US Route 15 connects the Bucknell University main campus with facilities and athletic fields on the west side of the highway.

Issues: Pedestrian Travel

- Automobile-oriented commercial areas, such as along US Route 15 north of Lewisburg in Kelly Township and PA Route 45 on the east side of Mifflinburg, lack pedestrian facilities and connectivity to adjacent developments and residential areas.
- Other roadways outside downtown and commercial areas that are heavily used by pedestrians (including joggers, runners, and school children) lack sidewalks and/or shoulders. Stein Lane and Smoketown Road

in East Buffalo Township have been identified as especially problematic.

- The lack of designated trails in Union County (see Chapter 9) means that there is little or no connectivity between boroughs and villages or to surrounding developments and rural areas.
- The lack of paved shoulders providing an adequate width of four to eight feet for shared use creates conflicts between motorists, bicyclists, pedestrians, and horse-drawn vehicles along many roadways in the County.
- The County's sidewalk network (predominantly in the boroughs and villages) is old and in general disrepair in many places.
- Where sidewalks are required by ordinance, developers can request a waiver through the SALDO process, thus continuing a pattern of discontinuity.

Strengths: Transit

- Transit service is provided by the Union/Snyder Transportation Alliance (USTA) via discounted or free bus service for senior citizens and Medical Assistance (Medicaid) ACCESS card holders.
- The USTA is examining expanding service for resi-

dents of Union and Snyder Counties.

- Taxi service is available in the Lewisburg area.

Issues: Transit

- The availability of transit service to the general public is very limited. USTA currently provides full fare service for the public. However, the service area is limited and trip reservations are required a day in advance, at minimum. In addition, participation in the USTA program is expensive (\$7-34/trip) for those who do not qualify for a subsidized rate.

Strengths: Downtown Parking

- Existing parking spaces in Mifflinburg Borough are adequate to meet current as well as future needs based on projected growth potential.
- Current parking usage indicates a strong presence in the downtown Lewisburg Borough core.
- The Lewisburg Downtown Partnership's Parking Task Group of the Business Support and Development Committee is committed to addressing parking needs in downtown.

Issues: Downtown Parking

- There is a lack of adequate signage in both Mifflinburg and Lewisburg to direct drivers to available public parking.
- Much of the parking in Mifflinburg is located behind buildings and is not designated as public parking, which further indicates the need for proper signage.
- In Lewisburg, inadequate parking for both employees of and visitors to the Union County Courthouse greatly impacts parking availability in the downtown.
- Store owners, employees, and residents utilize on-street parking in downtown areas for extended periods of the day.
- There is a public perception that the existing parking supply in downtown Mifflinburg is inadequate. However, portions of the available supply, such as on-street parking along side streets, is underutilized. In addition, motorists tend to avoid parallel spaces, resulting in underutilized parking along major corridors.



New Berlin Transit (Auto Bus circa 1917)

8.3 Transportation Goals



Roadway Goals

- Union County's road network accommodates all travel modes, including both motorized and non-motorized users, in a safe and efficient manner.
- Automobile usage as measured by vehicle miles traveled is reduced through increased multimodal transportation options and mixed-use development patterns that reduce the need to drive.
- Vehicular flow along major corridors is improved through the targeted application of strategies to reduce traffic congestion.
- The County's roadways are designed to standards that balance the need for efficient movement with safety and sensitivity to the surrounding context.

Rail Goals

- Viable rail service will be retained and expanded as demand warrants.
- Industrial zoned lands will be provided near rail so that rail served areas are not entirely developed for non-freight oriented commercial and retail uses.
- When an existing line is no longer viable, and the owner does not want to maintain and operate it, the corridor is railbanked for future use.

Bicycle Goals

- A comprehensive network of on-road bike lanes and shoulders and off-road trails safely accommodates

bicycle travel within and between towns and villages.

- Bicycle use for both transportation and recreation purposes is increased as a percentage of trips taken by county residents.

Pedestrian Goals

- Complete sidewalk networks within Union County's towns and villages promote walking as a basic form of transportation.
- Commercial corridors outside of town and village centers have sidewalks, crosswalks, and median refuges that provide safe pedestrian access.
- A multi-use trail network connects rural parts of the County to towns and villages.
- New development incorporates a mix of uses to encourage accessibility to pedestrians.

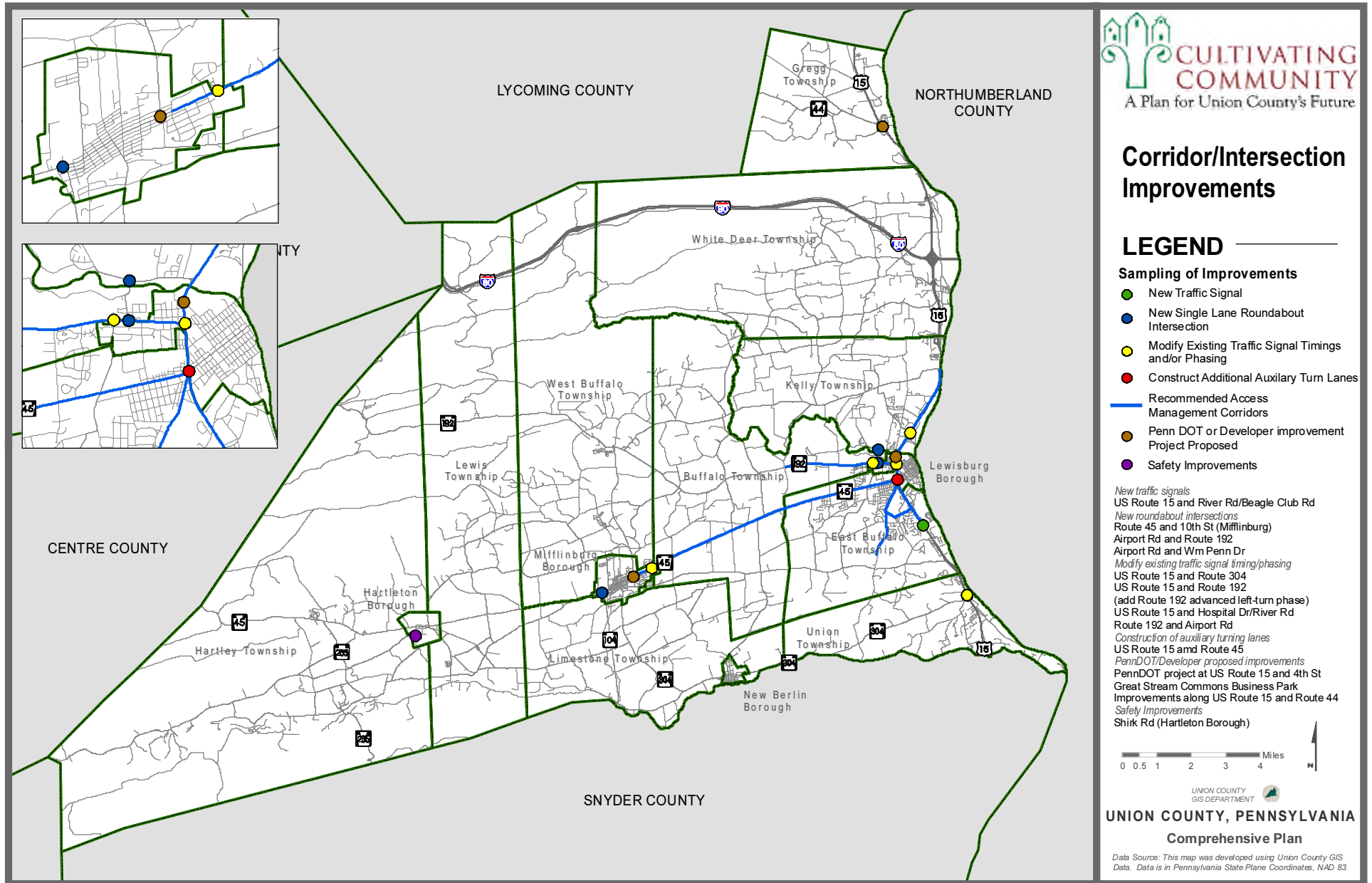
Transit Goal

- Convenient, affordable transit service to destinations throughout and beyond Union County is available to the general public.

Parking Goals

- Clearly marked parking is available in Union County's town centers to support economic development and patronage of local businesses.
- New mixed-use developments encourage use of alternatives to the automobile, thereby reducing the need for parking.

Figure 8-1
Corridor and Intersection Improvements



8.4 Transportation Strategies

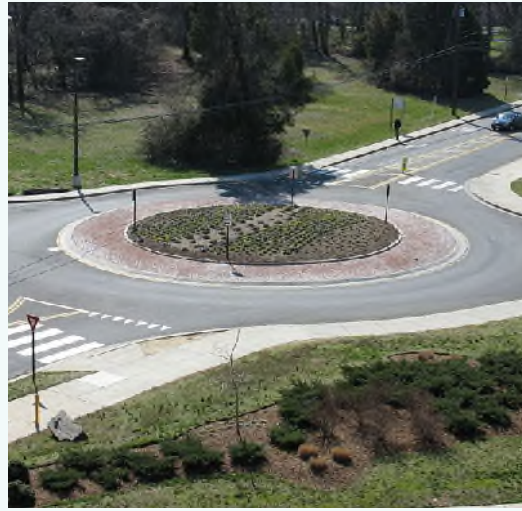
8-1. Implement targeted capacity improvements to improve traffic flow along major corridors (including US Route 15, PA Route 45, and PA Route 192) and at key intersections (e.g., JPM Road and Hospital Drive).

Examples of these improvements include dedicated turn lanes, new signals or coordination of existing signal timing, and roundabouts. Planning and design for such improvements should balance the need to improve capacity with the need to maintain environmental, scenic, and historic values through context-sensitive design solutions.

Based on the results of the analyses of a number of key intersections within the County (see Appendix B), specific roadway improvement projects are recommended as priorities to improve motorized traffic flow. These priorities are listed in the Planning Area Action Plans in Chapter 11.

Roundabouts

In a single-lane roundabout, there are only 8 vehicle-to-vehicle conflict points, reduced from 32 at a traditional intersection. Roundabouts encourage reduced speeds and increase traffic capacity since traffic is always moving. As a result, due to improved traffic operations, there is less delay and vehicle idling, resulting in fewer emissions. Currently over 1,400 roundabouts exist in the United States. According to a study completed by the Insurance Institute for Highway Safety in 2000, roundabouts reduce the frequency of all crashes by 39 percent, injury crashes by 76 percent, and fatal crashes by 90 percent.



University of Maryland, Source: Andrew Bossi, (Creative Commons CC-BY-SA-2.5)

Context-Sensitive Solutions

Context-sensitive solutions refer to planning and design of transportation and infrastructure projects to address environmental, scenic, and historic values along with mobility, safety, and economics. Typical transportation improvements can result in negative impacts on natural and historic resources. A concept that is gaining in acceptance by PennDOT and other state transportation departments, context-sensitive solutions are designed to adapt conventional engineering approaches to local conditions. They can be used to minimize the impacts of roadway, bridge, and other transportation construction projects on resources such as streams, woodlands, and scenic landscapes.

Case Study: The Danville-Riverside Bridge spanning the Susquehanna River in Montour County is a replacement project that was designed to be compatible with its historic, environmental, and agricultural setting. The project integrates a number of goals, such as traffic congestion relief, truck and delivery access, and access to historic business districts with a bridge design incorporating decorative work, plantings, architectural lighting, brick sidewalks, and park improvements.

8-2. Minimize the number, location, and width of intersecting streets and driveways along major corridors through access management techniques to improve traffic flow and safety.

Access management limits the ability of traffic to enter, leave, or cross through roadways in order to promote the efficient traffic flow. Access management techniques are critically needed along the County's major roadway corridors, including US Route 15, PA Route 45, and PA Route 192. Future development along these corridors should be concentrated in designated growth areas and limited in rural areas in accordance with the growth management framework. New development should utilize existing intersecting street and driveway connections wherever possible, both to limit the number of access points and to promote connectivity between land uses. Additionally, as redevelopment occurs along these and other corridors, consideration should be given to consolidating access points to better manage traffic flow.

PennDOT Traffic Calming Handbook (Publication 383)

The Traffic Calming Handbook was developed by PennDOT in response to the growing interest in traffic calming practices. The Handbook provides guidance for the use of traffic calming measures along State roadways. Municipalities can also use the information in the Handbook to establish a traffic calming program for roadways within their jurisdiction. Various traffic calming issues are discussed, including legal authority, liability, funding, impacts on emergency services, etc. Additionally, a procedure is outlined for the completion of a traffic calming study and the approval process. The Handbook also provides discussion regarding the effects of various traffic calming measures. It is recommended that the Institute of Transportation Engineers publication Traffic Calming – State of the Practice, which provides additional history, principles, and examples of traffic calming, be used in conjunction with PennDOT's Handbook.

Smart Transportation Guidebook

The Smart Transportation Guidebook was developed by PennDOT and NJDOT to integrate the planning and design of systems in a manner that fosters development of sustainable and livable communities. The principles are applicable to rural, suburban, and urban areas. The guidebook proposes to manage capacity through integration of land use and transportation planning. Roads have many purposes, including providing mobility and access, as well as to support economic growth. Smart Transportation outlines a new approach to roadway planning and design, in which the transportation solutions are specific to the needs of each project. Smart Transportation encompasses the ideas of context-sensitive solutions, network connectivity, and access/corridor management. Intended to assist states and communities in completing projects within a constrained budget, the principles are:

- Tailor solutions and approach to the context
- Plan all projects with the community
- Plan for alternative transportation modes
- Use sound professional judgment
- Scale the solution to the size of the problem



8-3. Enact regulations calling for new developments to adhere to appropriate design standards and address existing roadway deficiencies commensurate with project impacts.

At a minimum, design standards requiring sidewalks in new developments should be incorporated into site plan and subdivision regulations. Where appropriate, developers should be required to address the provision of additional facilities to promote multimodal travel (e.g., bike lanes, paved shoulders, and off-road trails), particularly where needed to fill identified network gaps. Consideration should also be given to enacting traffic impact study ordinances outlining guidelines for completion of traffic impact studies and identifying the responsibilities of new developments to mitigate traffic impacts.

The Pennsylvania Impact Fee Law, Act 209 of 1990 (amended in 2002), as outlined in Article V-A of the Pennsylvania Municipalities Planning Code, enables municipalities to impose traffic impact fees on new developments. Traffic impact fee ordinances are especially recommended for Union County municipalities projected to

experience the most development (in the Eastern Planning Area and in the Central Planning Area along the Route 45 corridor). The state legislation also permits multiple municipalities to adopt a joint ordinance, an approach that should be considered for Union County to promote regional traffic assessments and planning. To enact an ordinance, municipalities must follow the process outlined in the law during a timeframe not to exceed 18 months, including preparation of a Land Use Assumptions Report, Roadway Sufficiency Analysis, and Transportation Capital Improvement Plan.

8-4. Widen and pave shoulders along key connecting roadway corridors to safely accommodate non-motorized users (pedestrians, bicyclists, and horse-drawn vehicles).

Particularly in rural parts of Union County, paved shoulders are a way to promote a multimodal network and to reduce conflicts between motorized vehicles and other users. Given the feasibility and design challenges that often characterize existing roadways, the most heavily traveled and suitable routes where off-street trails cannot be provided should be identified as priorities for this

strategy. Shoulders should be four to eight feet in width along these routes.

8-5. Establish a countywide network of designated bicycle routes consisting of bicycle lanes, shared lanes, and shoulders.

A connected network of designated bicycle routes is needed to effectively promote bicycle use as an alternative means of transportation. Bicycle lanes and shared lanes are cost-effective ways to “retrofit” existing streets within designated growth areas and should be pursued in areas where modifications to the existing pavement or widening is feasible based on physical and design constraints. Outside of designated growth areas, bicycle routes can use the network of paved shoulders established per Strategy 8-4.

Bicycle Lanes and Shared Lanes

According to the Federal Highway Administration, bicycle lanes should provide a minimum of five feet next to a curb or adjacent parking lane, but wider lanes are recommended for roadways with higher vehicular speeds and volumes. However, for roadways that are too narrow and constrained to provide bicycle only lanes, shared lanes can be provided which are permitted for use by both motorists and bicyclists. Adequate signage and striping must clearly convey to both motorists and bicyclists that a lane is shared.

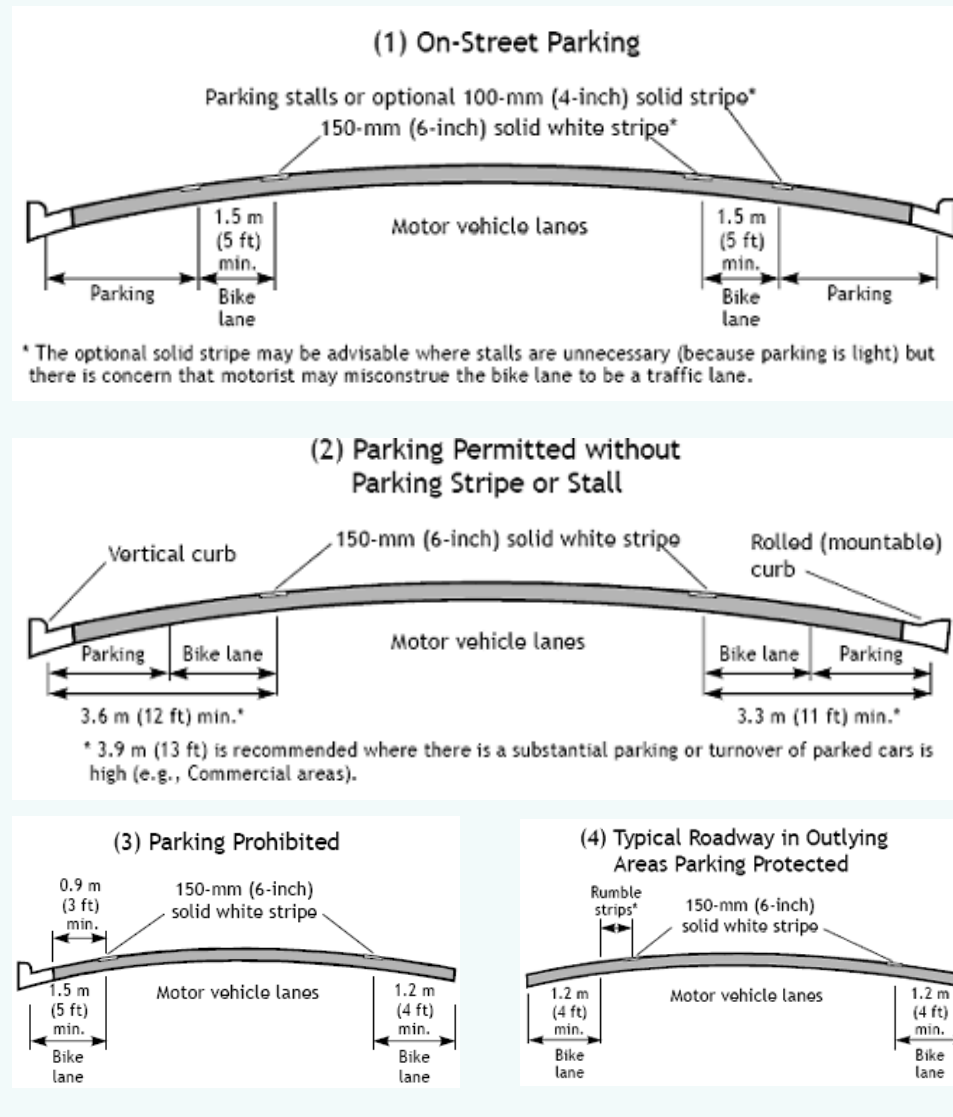
Bicycle Lane



Shared Lane



Cross section examples from the AASHTO Guide for the Development of Bicycle Facilities:



High Street in Pottstown Borough, Montgomery County. As part of a traffic calming plan, Pottstown Borough modified the cross section of High Street in the downtown area to promote pedestrian/ bicycle travel and to increase parking downtown.

- Previous cross section: Two 8-foot parallel parking lanes, Four 10.5-foot travel lanes (two lanes in each direction), 10-foot turning lane
- Modified cross section: Two 11-foot travel lanes (one in each direction), 10-foot turning lane, Two 6-foot bike/multi-use lanes (one in each direction), 8-foot parallel parking along south side, 18-foot angle back-in only parking along north side



8-6. Provide multi-use trails to accommodate off-road non-motorized travel, particularly in areas where adequate bike lanes, sidewalks, or paved shoulders are infeasible due to constraints.

While most of the multimodal network will be accommodated along existing roads and streets, off-road trails can provide critical links in the network. Currently in the planning stage, the Mifflinburg-Lewisburg Rail Trail will function as the “spine” of a multi-use trail network by connecting the County’s two major town centers (Lewisburg and Mifflinburg) and roadway corridors (US Route 15 and PA Route 45). Signage should be provided at major intersecting streets and destinations along the trail, as well as at locations where the trail can be accessed.

Establishing a continuous trail along the Susquehanna River as part of the Susquehanna River Greenway, including a connection to the Mifflinburg-Lewisburg Rail Trail in downtown Lewisburg, is another important priority. The rail trail is currently planned to terminate at Huffnagle Park in Lewisburg, although how it will cross the barrier created by US Route 15 needs to be resolved. The connection from downtown

Lewisburg to the river is a longer term prospect that likely will be accommodated via the existing street/sidewalk network.

8-7. Maintain multimodal streets, roads, and trails to ensure safety for non-motorized users.

Pavement along routes designated for non-motorized users should be maintained in good condition. Shoulders should be swept frequently to remove debris that can damage bicycle tires. Drainage grates should be reconstructed/reoriented to be safe for passage by bicycles. Other hazards, such as rough shoulders and road surfaces that are prone to puddles, should also be addressed. All signage and pavement markings associated with non-motorized route designations must be maintained.



8-8. Provide connected street and sidewalk networks in towns and villages.

The pedestrian-friendly environment of Lewisburg, Mifflinburg, and Union County's smaller towns and villages is an important transportation resource that should be enhanced by establishing continuous sidewalk networks within each community. Gaps in existing sidewalk connections and streets without sidewalks that provide linkages to important destinations (e.g., schools and shopping areas) should be targeted as priorities to ensure continuity in walkable communities.



A connected street system provides choices for drivers, thus distributing traffic and reducing congestion along major corridors. In Pennsylvania, municipalities can adopt official maps that define existing and future streets, pedestrian routes, and other public lands and easements. Consideration should be given to preparing and adopting official maps for Union County's designated growth areas, thus providing a framework for ensuring connected street and sidewalk networks within these areas as they develop.

8-9. Establish safe pedestrian facilities along commercial corridors (US Route 15 in the Lewisburg area and PA Route 45 in the Mifflinburg area) and provide connections to nearby residential areas.

If pedestrian travel is to be a viable alternative to motorized travel, safe connections must be provided for everyday trips. Currently, the US Route 15 corridor lacks pedestrian facilities through the growth area designated by the plan in East Buffalo and Kelly Townships and Lewisburg Borough. Continuous sidewalks along the corridor, sidewalk connections to intersecting streets, and safe crossings across US Route 15 are critically

needed to accommodate pedestrian usage. Appropriate pedestrian treatments for the traffic conditions and needs along US Route 15 at various locations should be explored with PennDOT, including consideration of the following options:

- *Pedestrian crossing treatments at uncontrolled locations*
- *Exclusive pedestrian traffic signal phasing*
- *Median modifications to provide a "refuge" allowing pedestrians to cross US Route 15 in two stages*
- *Pedestrian bridge over US Route 15*
- *Pedestrian tunnel under US Route 15*

The proposed Lewisburg-Mifflinburg Rail Trail is one of the key crossing points (Strategy 8-6).

On the east side of Mifflinburg, pedestrian facilities are not provided along the PA Route 45 commercial corridor east of Line Street. A continuous sidewalk network with designated crossings should be pursued to promote pedestrian access to existing and future development.

8-10. Incorporate bicycle and pedestrian facilities into transportation improvement projects wherever possible.

As a matter of course, roadway improvement projects should include sidewalks, pedestrian signals, and crosswalks for pedestrians and dedicated or shared lanes for bicyclists. Successful implementation of this strategy depends on incorporating these elements into the planning process at an early stage; towards this end, an overall transportation improvement policy with design standards for alternative modes should be established for use by PennDOT, Union County, and the municipalities. All pedestrian facilities must be designed and constructed in accordance with the requirements of the Americans with Disabilities Act.

8-11. Develop maps and other materials related to alternative transportation choices available in Union County and communicate this information to the public.

These materials could include:

- *A map keyed to a network of signed bike routes throughout the County*

- *Other materials to enhance public awareness of bicycling as an alternative form of transportation and to promote safe interactions between bicyclists and drivers.*
- *A map identifying preferred routes for horse-drawn vehicles*
- *Other materials to promote awareness in the general public and Plain Sect community (e.g., the horse and buggy driver safety manual prepared by the Lancaster County Planning Commission)*
- *A map identifying off-road and preferred on-road routes for recreational walkers and runners and associated safety pamphlet to educate users and the motoring public, particularly in the vicinity of Bucknell University*

The maps can be used for planning purposes to guide development of the bicycle, horse-drawn vehicle, and walking/running networks, including priorities for projects such as shoulder widening, bike lane striping, and signage installation.

8-12. Work with the local school districts to promote the safety of children walking and bicycling to school.

Union County's school districts should participate in a "Safe Routes to Schools" (SRTS) initiative. SRTS initiatives use 1) education, enforcement, and infrastructure improvement strategies to make routes safer for children to walk and bicycle to school and 2) "encouragement" strategies to entice them to do so with the involvement of parents, teachers, and administrators. The Pennsylvania Department of Transportation has funding available for infrastructure projects (e.g., sidewalks, crosswalks, traffic signals, etc.) through the federal SRTS program.

8-13. Explore the feasibility of providing public transit service to serve and connect Union County's designated growth areas. Develop a phased program to provide such service over time.

The County should work with the Union/Snyder Transportation Alliance (USTA) to evaluate areas of need where additional public transit can be provided, as USTA is currently pursuing expanded service. Additionally, Bucknell University has expressed an interest in providing students

with transit service as the campus expands in the Lewisburg area. Local partnerships will be vital to assessing and enhancing public transit in Union County.

Public transit is difficult to sustain in rural and less populated suburban areas because population density is critical to a successful public transportation system. In these areas, transit services are often limited to less stops per hour, or may operate only during the peak commuter hours. This inconvenient service forces people to plan around the transit schedule, and will ultimately attract less ridership with more people continuing to use their personal vehicles.

Light rail transit systems in the United States have a consistent history of low ridership, resulting in low cost effectiveness. Light rail produces only 3.6 percent of transit trips in the United States, but consumes approximately 12 percent of transit capital funds. A more cost effective and viable approach to public transit in small suburban and rural areas is bus service. Buses can carry the same capacity as light rail systems, doing so at an estimated 1/7th of the cost, with

much less investment for implementation.

The Federal Transit Administration provides funding for public transportation in rural and small urban areas with a population of less than 50,000 through the Federal Section 5311 Program, which was created through the Federal Transit Act of 1964. Eligible applicants include counties, cities, public transportation corporations, and regional transit authorities. The Section 5311 Program provides grant assistance in the following areas: feasibility studies, capital projects, expenses, and intercity projects,

In order to effectively implement a widely used, sustainable public transit system, coordination is needed throughout Union County and the region. A community-based transportation management organization could be established to assess and monitor public transit needs. This organization could work with USTA, Bucknell University, large employers, local public school districts, and others to promote and encourage transit use and other transportation alternatives such as ride sharing and car pooling.



8-14. Explore the potential to expand long-distance bus service to/from Lewisburg to increase accessibility to destinations outside of the County.

The County could work with USTA and private carriers such as Greyhound Lines to explore opportunities for expanded service. The objective would be to increase multimodal choices for residents, including access to travel options such as Amtrak and air travel.



8-15. Coordinate the provision of parking in designated growth areas, particularly downtown Lewisburg and Mifflinburg, with implementation of the Comprehensive Plan land use and multimodal transportation strategies. Explore options to meet needs that do not require parking lot expansion.

While adequate, accessible parking is essential for the economic viability of downtown businesses, increased provision for alternative modes of travel (walking, biking, and transit) and mixed-use development patterns that decrease the need to drive will affect parking demand. Parking utilization counts should be taken regularly in downtown Lewisburg and Mifflinburg to evaluate trends and provide a basis for managing demand.

Techniques such as shared parking can be used to meet parking needs in designated growth areas, along with management techniques such as signage, metering, and permitting (see Strategy 8-16). In Lewisburg and Mifflinburg, partner-

ships can be established to allow for sharing of parking areas that have limited use hours with the general public (e.g., church lots, which are typically used by members mainly on Sundays).

The evaluation of parking needs for mixed-use developments should address the potential for shared parking. Mixed-use developments typically contain complementary land uses that reduce the need for separate vehicle trips, thus reducing parking demand and associated pavement area. Municipalities can enact ordinances that reduce parking requirements for mixed-use developments that provide shared parking. Ordinance standards can be based on parking industry guidelines, such as those published by the Urban Land Institute.

8-16. Develop parking management programs to more effectively manage demand and supply in Lewisburg and Mifflinburg



Boroughs. Program components should include directional signage in both Lewisburg and Mifflinburg, enhanced metering and permitting in Lewisburg, and consideration of future metering along PA Route 45 in Mifflinburg.

A signage plan to clearly demarcate public parking spaces and direct visitors and residents to them is recommended for both Lewisburg and Mifflinburg Boroughs. Directional signage can be creatively designed to indicate time/distance to downtown destinations, thus counteracting public perceptions that some parking areas are too remotely located.

In addition to directional signage, an enhanced parking metering and permitting program should be developed in Lewisburg to achieve more effective utilization of available public parking. This

program should be structured to promote use of the main street spaces by patrons of local businesses and to direct employee and residential parking to side streets and public lots accessed from them. The Parking Task Group of the Business Support and Development Committee of the Lewisburg Downtown Partnership is evaluating potential changes to the current program and has completed an initial report, including parking utilization counts, which can serve as a baseline. As modifications are made to the program parking counts should be completed on a regular basis in order to monitor effectiveness. Specific recommendations for enhancements to downtown Lewisburg's existing parking program are provided in the Eastern Planning Area Action Plan in Chapter 11.

In downtown Mifflinburg, signage is provided to indicate two-hour parking along PA Route 45, which functions as the main street. However, it is difficult to monitor parking activity without metering the spaces. In the future as parking demand increases, the Borough may need to consider metered parking along PA Route 45 to encourage and enforce longer term parking on side streets and in public parking lots.

8-17. Provide for the parking needs of non-motorized means of transportation, including bicycles and horse-drawn vehicles.

As the strategies to establish designated routes, lanes, and paths are implemented and bicycle usage increases, bike racks should be provided in town and village centers, in new commercial developments via ordinance requirements, and at other key destinations for riders. Bike rack locations should allow for convenient access while minimizing conflicts with pedestrians (e.g., by blocking sidewalk use). In order to ensure all modes of travel are accommodated, consideration should be given to providing accommodations (i.e., hitching posts) for horse-drawn vehicles in towns and village centers, in new commercial developments via ordinance requirements, and at community facilities.

9. Cultural, Historic, and Recreational Resources

9.1 Overview

Union County's community character, including cultural, historic, and recreational resources, defines what is special and unique about the region. The County's rich natural features, a longstanding agricultural tradition, and abundant recreational resources are at the core of the County's identity, attracting residents and visitors alike.

Cultural Heritage

Union County's regional tourism agency, the Susquehanna River Valley (formerly the Susquehanna Valley Visitors Bureau), promotes culture, heritage, and arts in the tri-county region. The Union County Historical Society, located in the County Court House in Lewisburg, provides a glimpse into the agricultural and industrial heritage of the County through its archives, lectures, and tours throughout the region.

Arts-related cultural resources in Union County include the Weis Center for the Performing Arts at Bucknell University and the Campus Theatre in Lewisburg. The Weis Center hosts professional and student music and dance events and the Campus Theatre holds film festivals each year which draw regional audiences.

Historic Resources

The majority of historic buildings and sites in Union County are concentrated in the boroughs of Lewisburg, Mifflinburg, and New Berlin. The Union County Historical Society is the principal organization supporting historic resources and research. At the municipal level, there are few organizations specifically focused on historic preservation. Local supporting organizations include the Lewisburg Downtown Partnership, which was recently accredited as a 2008 National Main Street Program, the Mifflinburg Heritage and Revitalization Association (MHRA), the Mifflinburg Buggy Museum, the Market Street Log House Committee, Preservation Mifflinburg, Inc., the Historic Elias Church Committee, and the New Berlin Heritage Association.

While both Lewisburg and Mifflinburg have Historic Districts listed on the National Register, the only jurisdiction with a local historic district and Historic Architectural Review Board (HARB) is Lewisburg. The Mifflinburg Heritage and Revitalization Association is an active local historic and cultural organization.

Increased development activity can threaten the existence of important historic and agricultural structures. Rather than risk losing them forever, municipalities and private owners are beginning to explore reuse of exist-

SUSTAINABILITY KEY = ADAPTIVE REUSE

Adaptive reuse refers to the modification or rehabilitation of existing structures to serve new uses, for example the "recycling" of former schools or industrial buildings for purposes such as retail stores, offices, and/or residences. Adaptive reuse supports the sustainability principles of the Comprehensive Plan by promoting reinvestment in established communities where existing infrastructure is available, providing an alternative to "greenfield" development, and eliminating the expenditure of energy needed to extract, process, manufacture, transport, and install materials for new building construction (referred to as "embodied energy"). It can also preserve historic architectural features that contribute to community character and sense of place.

While adaptive reuse is a concept typically associated with historic preservation, redevelopment plans for "brownfield" and "grayfield" sites can incorporate parks and recreational facilities to meet identified needs in proximity to existing population centers.

ing buildings.

In addition to historic buildings and districts, Union County is rich in historic/cultural landscapes. Agricultural structures, barns, rural landscapes and covered bridges located throughout the County contribute to the region's identity. Generally, a cultural landscape is an area associated with a historic event, activity, person, or group and can be an expression of regional history and identity. As defined by the Cultural Landscape Foundation, these landscapes can range from farmlands, public gardens, college campuses, cemeteries, scenic highways, and industrial sites. Penns Valley in Centre and western Union County and Buffalo Valley in Union County are two examples of historic/cultural landscapes. Resources associated with each of these areas include the development of agriculture, rural architecture, transportation, and industry in the region.

Recreation

This section classifies recreation into regional and local resources. Regional parks, such as the state lands, serve at least several communities and are generally defined by the National Recreation and Park Association (NRPA) as areas of natural quality that provide predominantly passive recreational opportunities (e.g., hiking trails), as well as conservation of resources. Local recreational

resources include both neighborhood and community parks and have a service area between 0.5 and 2 miles. Community and neighborhood parks typically provide both active (e.g., ballfields) and passive uses.

The majority of Union County's land area is state or private woodlands. Public land (state forest, state parks, and gamelands) comprises over 30% of land use in the County and provides generous recreational offerings at the regional level.

Regional Recreation

The Bald Eagle State Forest, managed by the PA DCNR, is the largest publicly owned area in Union County. The forest covers parts of five counties: Union, Centre, Clinton, Mifflin, and Snyder. Numerous recreational opportunities, such as hiking trails, multi-use trails, ATV trails, camping sites, picnicking sites, parks, fishing, and hunting, are available for residents and visitors.

In addition to state forestland, there are three state parks located in Union County. They include the R.B. Winter State Park and the Sand Bridge State Park, located in the Bald Eagle forest. The third park, Shickellamy State Park, is located in Union Township, at the southern edge of the county. All of the state parks pro-

Table 9.1 State Owned Recreational Land

Type	Total Acreage	% of State Recreation Land
State Parks	701 Acres	1%
State Forests	67,262 Acres	95%
State Gameland	2,984 Acres	4%
Total	70,947 Acres	100%

Source: Union County Planning Commission, GIS Data

vide picnic facilities and both R.B. Winter and the Shickellamy have recreational trails. Modern camping sites, swimming facilities, and a public beach are available at the R.B. Winter Park. State gamelands are managed by the Pennsylvania Game Commission and are located in Hartley, Limestone, Union, and Gregg Townships. A new state gameland is planned for Hartley Township, just west of Hartleton Borough.

Union County's many watercourses offer excellent recreational opportunities. Fishing is popular along the West Branch of the Susquehanna River, Penns Creek, Buffalo Creek, and White Deer Creek. Opportunities for boating, kayaking, and canoeing are available on the Susquehanna River, Penns Creek, and Buffalo Creek. However, public access is not generally available along these waterways. In addition to water based activities, rivers and streams provide obvious scenic benefits.

Local Recreation

Located in the Eastern Planning Area, the Lewisburg Area Recreational Authority (LARA) provides local programs and activities serving Lewisburg Borough and East Buffalo Township. The Lewisburg Area School District and Bucknell University are partners of LARA. Programs and activities are open to anyone, but are offered at a discounted rate to residents of Lewisburg and East Buffalo. Through a public/private partnership, LARA recently renovated the Lewisburg Area Recreation Park, which attracts local and regional park users. The park provides multi-generational facilities, including a community pool, outdoor ice skating rink, and skate park. Organized recreational activities and programs, such as ice skating, gymnastics, track and field, swimming, and tennis, are offered by LARA at a variety of facilities. In addition, a private indoor pool complex is currently planned in the Lewisburg Area.

Mifflinburg also has a park system that serves surrounding municipalities and local sports leagues are active throughout the County. The West End Youth Group provides activities for children in Union County's western municipalities. In addition, Hartley Township constructed an indoor recreation facility adjacent to the public library near Laurelton.

In order to adequately provide for local park needs, the NRPA has established acreage minimums for the amount of local (neighborhood and community) park land available per 1,000 persons. While the recommendations are meant to be used as guidelines, not standards, they are useful in planning for recreational needs of existing and future residents. Neighborhood parks often serve as the focus of the neighborhood and are typically less than 5 acres and have a ½-mile service radius. Community parks are larger (greater than 5 acres) and have a wider service area (2 miles). Both types of parks can accommodate active and passive uses. The NRPA's recommended guideline, which has also been adopted locally by LARA, is a minimum of 10 acres of local parkland per 1,000 residents.

The Union County Planning Commission recently completed an inventory of 70 parks and recreational sites in the County, which includes a range of public and private parks ranging from neighborhood-level parks to trails and regional facilities. Table 9.2 estimates future park need based on the existing inventory of community and neighborhood level parks. This table uses the NRPA guideline of 10 acres of parkland/1,000 persons applied to each planning area and municipality. The 10-acre guideline is divided between community parks (8 acres) and neighborhood parks (2 acres).



Table 9.2 Park Need Projections (2010 and 2050)*

Community and Neighborhood Parks			
Municipality	Existing Acres*	Surplus or Deficit (2010)	Surplus or Deficit (2050)
Gregg Township**	-	(11.0)	(13.0)
Eastern Planning Area	92.6	(111.3)	(174.0)
East Buffalo Township	9.5	(57.5)	(85.0)
Kelly Township**	10	(20.6)	(25.6)
Lewisburg Borough	54.5	(3.3)	(5.8)
White Deer Township	18.6	(29.9)	(48.7)
Central Planning Area	36.1	(112.1)	(169.4)
Buffalo Township	-	(35.8)	(50.9)
Limestone Township	-	(17.2)	(24.8)
Mifflinburg Borough	24.5	(15.1)	(26.7)
New Berlin Borough	11.6	2.1	(0.1)
Union Township	-	(16.1)	(22.2)
West Buffalo Township	-	(30.0)	(44.7)
Western Planning Area	43.5	7.6	(2.1)
Hartley Township	37.7	19.3	15.2
Hartleton Borough	1.8	(0.7)	(0.9)
Lewis Township	4.0	(11.0)	(16.4)
Union County Total	172.2	(226.8)	(358.5)
Source: Cultural and Recreational Inventory and Study (Union County Planning Commission)			

1. * This inventory **only** includes community and neighborhood level parks. Community parks are defined as typically larger than 5 AC in size with a 2-mile service area and include active (e.g., ball fields) and passive use facilities. Neighborhood parks are defined as less than 5 AC in size with a ½-mile service area. Neighborhood parks often have minimal facilities, but may include large conservation areas. There are 70 parks and recreation sites in Union County, of which only 14 fall into the community or neighborhood parks definition applied in Table 9.2. Other park types in Union County consist of schools, special use parks, private parks, state forests, state parks, railways, and water recreation access points. See the *Cultural and Recreational Inventory and Study (Union County Planning Commission, 2008)* for more information about other park types.
2. ** This analysis factors out institutionalized group quarters population in Federal Prisons.

Future need is based on the 2010 and 2050 Union County population projections. Relying on existing park acreage and population projections, none of the three planning areas will meet the community and neighborhood parks guideline in 2010 and 2050.

While the majority of municipalities do not meet the park acreage recommendations, it is important to note that these guidelines only apply to neighborhood and community parks, and do not include other recreational options available to residents, such as regional (state) parkland, school facilities, recreational facilities provided by churches, trails, water based recreation, private parks, and recreational programs/leagues. In addition, the inventory does not include park development projects that may be in the early planning stages.

9.2 Strengths and Issues

Strengths: Cultural and Historic Resources

- Union County is rich in historic resources. There are two historic districts, located in Mifflinburg and Lewisburg, and 17 sites that are listed on the National Register of Historic Places. Examples of historic sites include houses, churches, covered bridges, the Union County Courthouse, and the Reading Railroad Freight Station.
- The Susquehanna River Valley, the tourism agency for Snyder, Union, and Northumberland Counties, promotes heritage and arts in the region. The regional agency advertises self-guided historic walking tours of Lewisburg and Mifflinburg. Other initiatives include Art Thrives on Route 45, a campaign directing visitors to local galleries and museums, and Covered Bridges of the Susquehanna Valley, which highlights the five covered bridges located in Union County.
- The Pennsylvania Historical and Museum Commission (PHMC) manages and maintains historical markers, identifying special features, events, or significant events. Signage is located along state highways and near significant sites throughout the County.
- The Union County Historical Society supports local history through lectures, tours, exhibitions, recordings, oral history documentation, research and archival materials, and workshops. The Historical Society also offers tours of the Dale/Engle/Walker house site.
- There are numerous sites and cultural resources that may not be eligible for National Register designation, but are still critical to the community character and agricultural tradition of the County. Many barns and agricultural structures are located throughout the county adding to the area's cultural and agricultural heritage.
- There is a concentration of land held in conservation easements or in Agricultural Security Areas (ASAs) in the Central and Eastern Planning Areas. The continued use of land for agricultural purposes limits conversion to another use, which can result in protection of cultural/rural resources, health of the agricultural economy, and recreational enjoyment by residents and visitors to Union County.
- Local cultural celebrations occur throughout Union County each year. The rich heritage and traditions of the rural, agricultural landscape are highlighted in these festivals. A few examples include:
 - » Mifflinburg Christkindl and Oktoberfest. These annual festivals celebrate the region's Germanic history with handmade arts and crafts, entertainment, food, and drinks each October and December.





- » New Berlin Day. New Berlin celebrated its 38th annual street festival in August of 2008. This event is one of the largest of its kind in Central Pennsylvania with street vendors, artists, music, historic open houses, and samplings of traditional Pennsylvania German food.
- » Rural Heritage Days at the Dale/Engle/Walker House. Sponsored by the Union County Historical Society, this event occurs each August and features children's games, porch-side history demonstrations, tours, and traditional food.
- » Union County West End Fair. This traditional "country fair" has been held in Laurelton for over 80 years celebrating the area's agricultural heritage. Located at the fairgrounds (Lincoln Park), the celebration features 4-H and FFA activities, games and rides, the Miss Union County Pageant, and tractor pulls each year in August.
- Union County's numerous cultural and historic resources are important not only to quality of life and sense of place, but also to the economy. They have the potential to expand heritage tourism and promote sustainable economic development.
- » There is a growing concentration of historic and cultural resources in Mifflinburg (e.g., Mifflinburg Heritage and Revitalization Association, Buggy Museum, historic buildings, annual festivals, and nearby covered bridges) providing potential support for increased economic activity. A major project of the Mifflinburg Heritage and Revitalization Association (MHRA) is the Elias Church restoration project. The wood structure, built in 1806, will be restored with state grant assistance and reused as a center for performing arts, lectures, and concerts.
- » The Lewisburg Arts Festival, a two-week long celebration of the arts, is held each year at the end of April. The largest event sponsored by the Lewisburg Arts Council, it includes two highlights: the Market Street Festival, with over 100 juried artists, entertainment, and food along Market Street; and Lewisburg Live, with live bands and music in multiple venues downtown.
- The former sites of the Pennsylvania House Company in Lewisburg, the Yorktowne Building in Mifflinburg, and the Laurelton Center in Hartley Township are locally significant historic properties with potential for adaptive reuse and development that supports the local craft and industrial heritage.

Issues: Cultural and Historic Resources

- While both Lewisburg and Mifflinburg have Historic Districts listed on the National Register, Lewisburg is the only municipality with a local historic district and Historic Architectural Review Board (HARB). Outside of Lewisburg, there is little regulatory protection of historic resources.
- The Union County Historic Preservation Plan (1978) inventoried over 700 historic sites; 19 sites or districts are now listed on the National Register. While the majority of sites are intact, a number have been altered or destroyed over the years. Future residential and commercial development will threaten more of these valuable resources.
- Barns and other agricultural structures are an important but disappearing resource in the region. In general, these structures were not well represented in the 1978 Historic Preservation Plan.
- Covered bridges are an important historical resource in the County. Of Union County's five covered bridges, two are closed to public use and at least one (Red Bridge) is in poor condition.
- If completed without considering the local context, the widening of roadways and other planned infrastructure projects could greatly impact historic landscapes.
- The greatest population growth is projected in the Central Planning Area. New residential and commercial development that is out of character with existing development has the potential to threaten historic and cultural resources and scenic vistas, particularly along Route 45.

Strengths: Recreational Resources

- Union County has a tremendous asset in its regional recreational resources, including state forests, gamelands, state parks, and waterways, in particular the West Branch of the Susquehanna River, Penns Creek, White Deer Creek, and Buffalo Creek. These resources contribute to the quality of life of residents, reduce demands for public services, and add to the economy by attracting visitors.
- There are conservation areas offering scenic and recreational activities throughout the County. The largest area, the Bald Eagle State Forest, and the smaller state parks provide year-round recreation, including hiking trails, fishing, hunting, horseback riding, and camping, etc. Trails maintained by the Merrill Linn Conservancy provide additional walking paths and scenic vistas (see Section 3.6 for a more complete description of recreational resources).



- The County is currently involved in trail and greenway planning with two organizations: the Lewisburg Area Recreation Authority (LARA) and the Susquehanna Greenway Partnership. The two trail/greenway projects are the Mifflinburg-Lewisburg Rail Trail, which will connect Lewisburg, Vicksburg, and Mifflinburg, and the Susquehanna Greenway. Both partnerships involve planning for additional recreation opportunities in the eastern and central portions of the County.
- LARA is finalizing the Lewisburg Area Comprehensive Recreation, Park, Open Space and Greenway Plan. The plan evaluates and makes recommendations for park planning, greenways, trails, and open space conservation in Lewisburg, Kelly Township, and East Buffalo Township.
- There are active sports leagues throughout the County. In addition, some of the smaller organizations, such as the West End Youth Group, share recreational space and partner with other private providers (e.g. schools districts, churches). Mifflinburg Borough has a park system that serves surrounding municipalities. Based on population (see Table 10.2), New Berlin has a surplus of both community and neighborhood parks to serve the borough.

Issues: Recreational Resources

- While there are significant areas of regional parkland and recreational activities, Union County has relatively little parkland at the local level. Most of the regional parkland (e.g. state parks, forests, etc.) is only reached by car and therefore inaccessible for local recreation. Table 10.2 shows a total deficit of about 240 acres of municipal community and neighborhood park space to serve the projected 2010 population based on NRPA.
- LARA is an active recreational provider that uses private recreation centers spread across the County; however, its park, open space, and greenway planning has focused on Lewisburg, East Buffalo, and Kelly Township.
- Recent subdivision typically does not provide parks and trails within walking distance of residents. However, open space and recreational trails are proposed in the Pennsylvania House redevelopment.
- The County lacks a connected walking and biking trail network. Existing facilities include trails within conservation lands and state parks, Lewisburg, Mifflinburg, and western Hartley Township. There are a few bike routes in the County, along Route 192. Many local roads, such as Stein Lane in Lewisburg, lack sidewalks or bike lanes creating a conflict be-

tween vehicles, joggers, and bikers.

- The County lacks sufficient indoor and other recreational facilities serving organized sports. Currently municipalities in the Western and Central Planning Areas share facilities. In addition, the LARA plan notes the need for athletic facilities and gyms to serve sports leagues.
- There is a need for more recreational facilities and programs to serve residents across the County through all phases of life, in particular programs to serve seniors as Union County's population ages, young families, and at-risk teens (15-20 yrs old). The Lewisburg Area Recreation Park is an example of a facility with activities to serve multiple generations – trails were developed in collaboration with Penn State University to provide an inclusive fitness option for older adults.

9.3 Cultural, Historic, and Recreational Resource Goals

Cultural, Historic, and Recreational Resource Goals

- Union County's valued cultural and historic resources, including structures, buildings, districts, and landscapes, are recognized and protected for their key contributions to community identity and sense of place.
- Older buildings are maintained, restored, and adapted for productive uses.
- New development is designed to respect the historic and rural character of the region.
- Cultural and historic resources are maximized for their educational and economic value through heritage tourism.
- A network of parks, open spaces, greenways, and trails providing recreational, environmental, economic, and transportation benefits extends throughout Union County.
- Citizens' needs for access to quality indoor and outdoor recreational facilities and programs are satisfied.



9.4 Cultural, Historic, and Recreational Resource Strategies



Cultural and Historic Resource Strategies

9-1. Maintain a comprehensive, up-to-date inventory of Union County's historic resources.

The most recent inventory of historic sites in the County was prepared in 1978 by the Union County Planning Commission. This inventory focused on historic sites mostly located in Lewisburg, Mifflinburg, and New Berlin and did not address rural resources such as cultural landscapes and historic barns. In addition, many structures listed in the 1978 inventory have subsequently been demolished. A comprehensive update to the 1978 inventory should be conducted. The scope of the update should be expanded to include rural historic resources throughout the County. It can be used to identify additional sites or districts that may be eligible for listing on the National Register and/or local historic designation. National Register listing is a prestigious designation that can provide tax advantages for property owners but does not provide regulatory protection, which requires the adoption of local historic district/landmark ordinances.

9-2. Strengthen existing local historic district regulations and consider new ordinances where warranted to protect historically significant resources.

Lewisburg is the only jurisdiction with a local historic district that provides regulatory protection for historic resources. Lewisburg should evaluate its existing ordinance and other municipalities should consider adopting new ordinances, including a Historic Architectural Review Board (HARB) or Design Review Commission, to protect designated historic resources. Items that should be covered by ordinances include, but are not limited to:

- Develop a rating system to define the significance of local cultural and historic resources (for non-National Register properties);
- Develop criteria to evaluate the appropriateness of alterations to historic buildings or sites and construction in historic districts;
- Develop a process to determine hardship cases;
- Develop criteria for minimum maintenance standards and to address demolitions by neglect;
- Establish penalties for violations.

Smart Building Codes

"Smart Building Codes" are intended to encourage and stimulate rehabilitation activity. Studies in New Jersey, New York, and Rhode Island have shown that existing building codes often include requirements for new buildings which may be costly in renovations and discourage reuse of older buildings. After New Jersey adopted its revised code, the US Department of Housing and Urban Development and the International Code Council (ICC) developed model rehabilitation codes for municipalities to tailor and adopt. A 2006 study in the Journal of the American Planning Association found that smart building codes, when compared to traditional codes, do encourage building rehabilitation and reuse. In 2007, Pennsylvania adopted the ICC International Existing Building Code for use throughout the state. Municipalities have the option to adopt the code locally.

9-3. Protect cultural landscapes along roadway corridors.

A cultural landscape has been defined as "a landscape created by people and their culture, simultaneously the product of nature and of human interaction with nature." This definition applies to the agricultural and forest lands that define rural Union County, particularly when viewed along key roadway corridors such as Route 45. Techniques that can be used to protect these landscapes include development rights acquisition through the County's Purchase of Agricultural Conservation Easements (PACE) program, working with Merrill Linn Conservancy to obtain conservation easements on privately owned lands, and enactment of a scenic byways program to promote preservation of rural character along key highway corridors.



9-4. Promote infill development that is compatible with traditional development patterns.

Infill development refers to new development on vacant or underutilized parcels within established communities. Such development can promote the economic vitality of Union County's towns and villages and supports the Comprehensive Plan's land use strategy of directing development to Primary and Secondary Growth Areas as an alternative to rural sprawl. However, such development needs to be carefully managed to ensure that it is compatible with the surrounding built context. This strategy should seek to remove barriers to infill (e.g., by adopting smart building codes) in communities such as Lewisburg and Mifflinburg while setting guidance for development character and form through regulatory approaches such as design standards and neighborhood conservation overlay districts.

9-5. Promote adaptive reuse of older buildings.

Adaptive reuse of existing buildings is the Sustainability Key for the Cultural, Historic, and Recreational Resources Element. It applies both to designated historic structures as well as to other structures that may not be formally recognized but that contribute to Union County's historic character. Maintaining productive uses of these buildings is the best way to ensure their survival.



Examples of approaches that can be used include incentives (e.g., federal historic preservation tax incentives for buildings located in National Register districts), public-private partnerships, heritage tourism marketing, and the elimination of building code barriers to reuse.

9-6. Educate the public on the importance and economic benefits of historic preservation at the local level.

Historic preservation activities cannot succeed without the support of the public and particularly those who own historic properties. An ongoing public education and outreach effort can help build local awareness of the importance of cultural and historic resources to Union County's sense of place and to its economy. A range of partners should be involved in this effort, such as the Union County Historical Society, the school districts and Bucknell University through educational programs, the Susquehanna River Valley (formerly the Susquehanna Valley Visitors Bureau), and SEDA-COG through management of the proposed Middle Susquehanna Heritage Area (see Strategy #9-7).

9-7. Promote local pride, cultural awareness, and heritage tourism through heritage area designation under the Pennsylvania Heritage Areas Program.

Pennsylvania's Heritage Area Program was established in 1992 to provide regional economic development through cultural conservation, heritage learning and interpretation, recreation and open space, and capacity building through regional partnerships. There are 12 Pennsylvania designated heritage areas, five of which are also designated at the national level. The state program defines eight industrial heritage themes: coal; lumber; iron and steel; agriculture; transportation; machine and foundry; oil; and textiles.

SEDA-COG is completing a feasibility analysis to create the Middle Susquehanna Heritage Area, proposed to include Union, Snyder, Montour, Columbia, and Northumberland Counties. This region is seeking designation with a focus on transportation to highlight early roads, canals, buggies, railroads, rail manufacturers, covered bridges, and major river travel on the Susquehanna. The other industrial heritage themes defined by the state program, with the exception

Historic Preservation Assistance/Incentive Programs

A variety of assistance programs can be used to promote preservation of historic resources. Examples of these programs include:

- Local matching grants, funded jointly by the county and the participating municipality, to provide incentives to private businesses and building owners to restore and repair historic buildings;
- Design assistance or low-cost architectural services, to help business owners interested in restoring historic building facades;
- Pennsylvania Historical and Museum Commission grants, such as the Keystone Historic Preservation Grant Program, the PA History and Museum Grant Program, and Historic Preservation Projects;
- Historic Easements for building façade preservation for properties listed on the National Register or within a historic district; and
- Federal Historic Preservation Tax Incentives.

of oil, will be viewed as sub-themes to support the transportation theme. The feasibility study is expected to be completed in 2008, and pending approval by the PA Department of Conservation and Natural Resources (DCNR), SEDA-COG will prepare a ten-year plan for development of the heritage area. This effort has involved many regional partners in the study and feasibility phase, such as local universities, historical societies, tourism agencies, downtown organizations, chambers of commerce, recreation authorities, and the state parks program.

Heritage area designation will build on current events and programs that highlight Union County's cultural and historic resources, such as Buggy Days in Mifflinburg and the West End Fair in Laurelton. Such events should be supported, promoted, and expanded where possible to increase public involvement and awareness of Union County's heritage.

9-8. Promote countywide context-sensitive design solutions to reduce the negative impacts of transportation and infrastructure projects on historic and cultural resources.

"Context-sensitive solutions" refer to planning and design of transportation and infrastructure projects that address environmental, scenic, and historic values along with mobility, safety, and economics (see Section 9.3 of the Transportation Element). A concept that has been gaining in acceptance by PennDOT, this approach is designed to adapt conventional engineering approaches to local conditions. It can be used in designing roadway and other improvement projects to maintain the historic fabric of communities such as Lewisburg, Mifflinburg and New Berlin and to ensure that roadway improvements do not compromise the integrity of cultural landscapes in rural parts of Union County.



Recreational Resource Strategies

9-9. Establish and maintain sufficient publicly accessible parks and recreational facilities to meet the needs of Union County's present and future population for neighborhood and community parkland.

As noted in the Recreational Resources Strengths and Issues section, Union County has more than sufficient regional parkland due to the extensive amount of state park, forest, and gamelands but lacks sufficient community and neighborhood parkland to serve the existing and projected population when compared to nationally accepted standards. Additional publicly accessible parkland is needed to address these deficiencies, preferably in or near Growth Areas so as to be readily accessible to the bulk of the County's population. While there is a need for public acquisition and development of new parkland, other approaches such as partnerships with public schools or other recreational providers can be used to meet a portion of the need.

Meeting park and recreational needs will require ongoing efforts to maintain and upgrade existing parks and manage new parkland after it is acquired.

9-10. Explore regional/multi-municipal approaches to meeting citizens' parks and recreation needs.

Regional approaches to providing publicly accessible parks and recreational facilities can promote program coordination, sharing of resources, cost savings, and more efficient service delivery. Implementing this strategy can begin with informal networking among existing service providers such as LARA, Mifflinburg, the West End Youth Group, school districts, and R.B. Winter State Park. Such networking can provide a forum for exploring more formal organizational approaches at the regional or countywide level. Preparation of more detailed regional parks, open space, and recreation plans should be considered to guide regional initiatives.

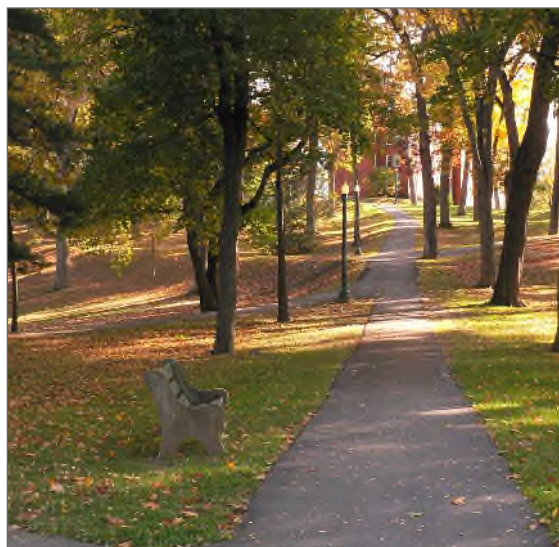
9-11. Develop a network of recreational trails throughout Union County.

Recreational opportunities desired by residents include not only parks and active recreational facilities such as ballfields and indoor gymnasiums, but also walking, hiking, and biking trails. These facilities also serve an alternative transportation function, thus supporting the "Transportation Choices" Sustainability Key identified by the

Transportation Element. Park and recreational planning and coordination should address trail development as an integral element.

9-12. Define an integrated framework and strategy for establishing, preserving, restoring, developing, and connecting parks, natural areas, greenways, and other “green infrastructure” resources throughout Union County.

As described in the Natural and Agricultural Resources Element, parks and trails can be viewed as one component of a larger green infrastructure system – Union County’s natural life support system – that also includes such resources as forestlands and other natural habitat areas; “greenway” corridors along rivers and streams, and “green” components of town and village landscapes such as trees, community gardens, and pocket parks. Development of a countywide green infrastructure plan – for which funding is available from the Pennsylvania Department of Conservation and Natural Resources – can provide an overall framework for provision of parks and trails at the regional and municipal levels.





9-13. Enact regulatory provisions and incentives for integrating open space and recreational land into new developments.

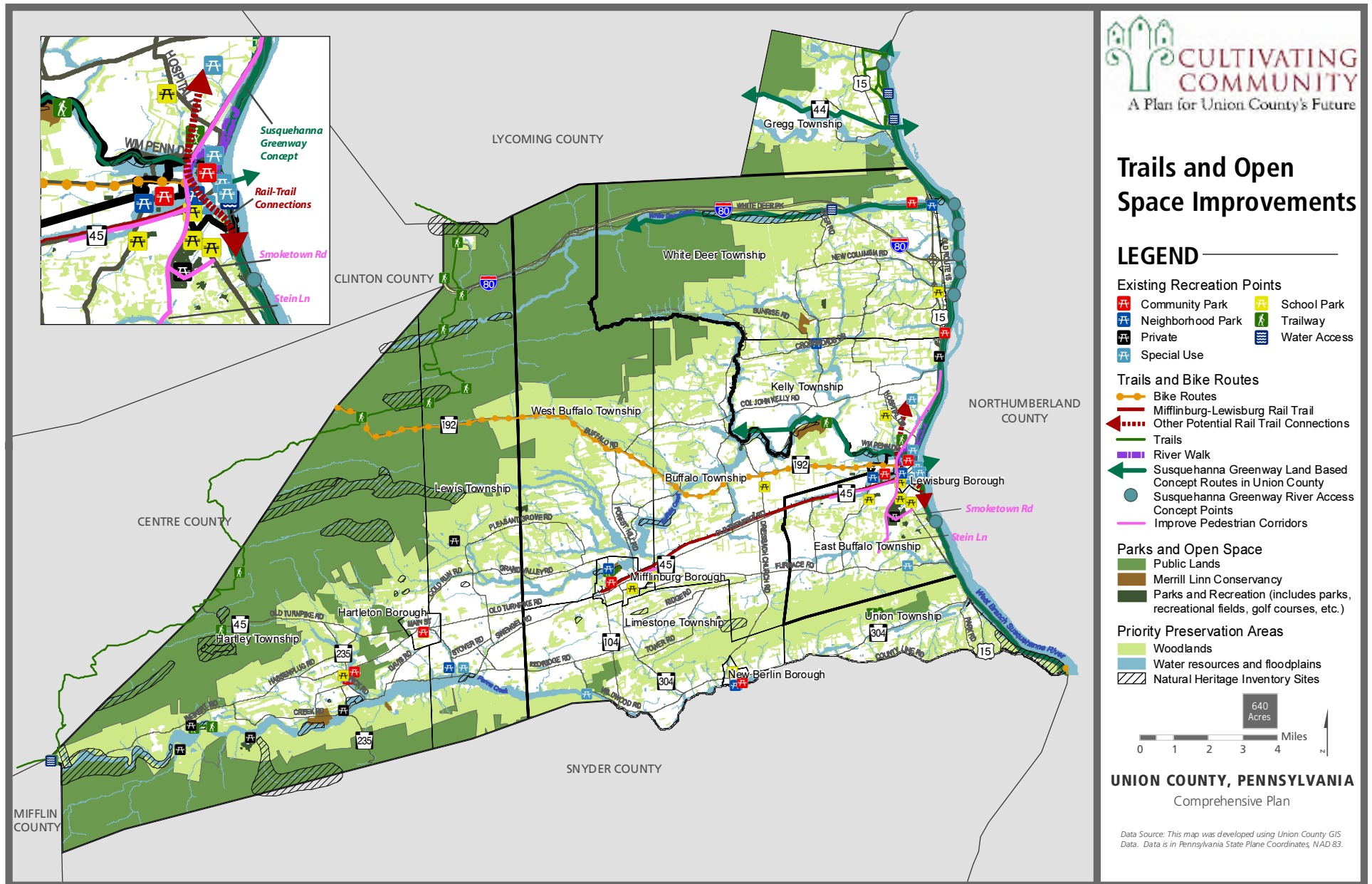
Parkland dedication ordinances and conservation subdivision ordinances are regulatory approaches to providing parkland or preserving open space within new developments. They are a way to meet the recreational and open space needs of new residents without public investment in land acquisition or facility development.

Development of a multi-municipal or municipal parks, open space, and recreation plan is a prerequisite for enactment of a parkland dedication ordinance (required by MPC). Municipalities can utilize existing park and recreation guidelines (e.g., NRPA guideline of 10 Acres of parkland/1,000 persons) to help gauge community need. The call for dedicated park and open space applies both to infill and redevelopment projects within previously developed areas such as the boroughs and to "greenfield" development that may be permitted in the townships.

9-14. Pursue partnerships with governmental, nonprofit, and private sector service providers to meet recreational needs throughout the County.

Meeting the park and recreational needs of Union County residents should be a collaborative effort that involves a variety of players such as LARA, the County, municipalities, school districts, etc. The private sector can also play an important role as evidenced by the participation of Playworld in the renovation of the Lewisburg Area Recreation Park.

Figure 9-1
Trails and Open Space Improvements



10. Community Facilities, Utilities, and Energy Conservation

10.1 Overview

The community facilities of Union County greatly impact its citizens' quality of life and safety. They include: public sewer and water, emergency services, schools, libraries, healthcare institutions, and related services. (Park and recreation facilities, often addressed under community facilities, are addressed separately in Chapter 9 of the Plan.) This element analyzes the current status of these facilities and services and makes recommendations for providing them as effectively as possible.

The County is served well by many types of community facilities; examples include Bucknell University, the SUN Area Career and Technology Center, Evangelical Community Hospital, Citizens Electric Company, and the Union County Library System. Assessing the operations and planning for the future needs of these organizations and institutions as part of the county comprehensive planning process provides an important perspective because most currently serve more than one municipality. This offers the opportunity for more regional understanding and cooperation among service providers, as exemplified by the current regional police study being completed by Lewisburg Borough and East Buffalo Township.

Union County's growing and changing population will need expanded and new community facilities. These changes will vary from renovated or new school buildings to educate the County's children to different emergency services to address new needs in the population. The locations of these community facilities are also an important planning consideration that significantly impacts their accessibility and can strongly influence growth patterns in the County.

SUSTAINABILITY KEY = ENERGY CONSERVATION

Energy is required for all of life's activities, from simple movements to complex lighting and heating systems. Minimizing energy usage both conserves resources and yields economic returns by lowering costs. With the cost of energy rising globally, there are significant environmental and economic benefits to be gained by modifying daily patterns and designing the built environment to do more with less energy. Examples of how these methods could be applied to community facilities include co-locating different facility types to reduce vehicular trips by citizens using their services, and designing buildings for maximum natural light exposure to reduce the need for artificial lighting. Energy conservation measures are also an easy solution for residences and businesses seeking to reduce their costs and/or increase profits.

10.2 Strengths and Issues

Union County's community facilities are diverse in their operations. (See Part I Regional Context and Trends – Community Services and Utilities of this Plan for more information and the locations of Union County's existing community facilities.) The projected growth across the County will create new demands on these important services.

Strengths

- Union County has an established tradition of volunteering and provides strong support for its community organizations. A unique source of volunteer support, especially in the central and western areas of the County, is the involvement of the Mennonite community in fire and emergency services.

Utilities

- Ground and surface waters in Union County provide adequate water sources to meet the needs of residents and businesses. Central water systems are available in primary growth areas with the exception of Hartleton Borough.
- Central sewage systems are present in all primary and secondary growth areas in the County except Forest Hill and Winfield.

- There are no substantial threats to water supply in the primary and secondary growth areas. Further, the State Water Plan (2008) did not identify any critical water issues in future development areas of the County.
- Conservation measures, such as the installation of water-saving toilets at Bucknell University, have lowered the flow demand for the Lewisburg Area Joint Sewer Authority.
- Safe and reliable electric, phone, and other services are available throughout Union County. No capacity issues are projected.

Emergency Services

- There are five police forces currently providing police protection based in designated growth areas. They are Hartleton, Mifflinburg, Lewisburg and New Berlin Boroughs and East Buffalo Township.
- There is a Pennsylvania State Police Barracks nearby in Milton, PA.
- Fire and emergency services groups provide good coverage across the County.
- Police, fire and emergency service providers work together to share resources, special training, and equipment.

- Union County's citizens care for and watch their neighborhoods, providing extra protection and safety in these communities.

Education

- The four school districts serving Union County are recognized for their quality education by local residents and businesses. The schools are an economic asset to the County and are coordinating with the Pennsylvania Heartland Coalition of Schools to promote the quality of public education to attract new businesses to the region.
- The SUN Area Career and Technology Center is an excellent vocational and technical education facility that provides resources for Union County recognized by students and businesses.
- Union County's citizens have access to a diverse set of quality colleges and universities. The County's public schools take advantage of partnerships with local universities, especially Bucknell and Susquehanna, for programs. In addition, the Susquehanna Valley Community College, which will provide classes at regional high schools, is currently under consideration in Sunbury, Northumberland County.

Healthcare

- Evangelical Community Hospital in Lewisburg and Geisinger Medical Center in Danville, PA provide high-quality healthcare services for Union County residents. Access to these facilities is also viewed as an economic asset for the County.
- Several different retirement facilities, ranging from Riverwoods to the Buffalo Valley Lutheran Village, offer a variety of senior living options in the County.

County Government & Prison Facilities

- Union County has excellent administrative facilities located primarily at the Union County Courthouse, the Union County Government Center, and the Union County Community Services Center in Lewisburg and the County Office Center in Mifflinburg.
- A full range of prison facilities are located in Union County, which provides good access to these services and offers stable, good-paying jobs for the County's residents. The prison facilities located in Union County are: the Union County Jail in Lewisburg, the Lewisburg Federal Penitentiary in Kelly Township, and the Allenwood Federal Correctional Complex in Gregg Township.

Other Community Services

- The County is well served by its public library system in three locations: Lewisburg, Mifflinburg, and Laurelton. The Public Library for Union County in Lewisburg recently expanded to accommodate new materials and computer terminals. Plans for the expansion of the Herr Memorial Library in Mifflinburg are underway.
- A number of community centers offer meeting places and various local services. The three community centers are the Donald Heiter Community Center in Lewisburg, the Community Center in New Berlin, and the West End/Hartley Township Community Center in Laurelton. There are also several senior centers: the Lewisburg Center, the New Columbia Senior Center, Penns Creek Adult Resource Center, and the West End Center/Hartley Township Community Center.

Issues

- Many opportunities exist for regional cooperation, but too many community facilities and services continue to be duplicated in individual municipalities.
- The scattered nature of new development is making it difficult to serve it efficiently with infrastructure and community facilities.

New Growth and Costs for Community Facilities

As new development occurs in Union County an important on-going planning consideration for each community will be: how does growth affect the capacity of existing community facilities to provide vital services? The Union County Planning Commission has compiled the following costs of local services to show the possible fiscal impacts of new growth on the County's community facilities:

Average Annual Cost of Local Police Services	
Per Resident.....	\$152
Cost of a New Fire Engine.....	\$500,000
Annual Expenditures per Pupil.....	\$7,550-\$8,970

- The cost of community services for new residential development is often greater than its contributions in tax revenues. Growth management and the balance of various land uses are very important to the fiscal health of community facilities. This was demonstrated in two studies conducted in Union County by the Penn State Cooperative Extension for Kelly and Buffalo Townships.¹⁰

¹⁰ Penn State Cooperative Extension, The Public Finance Implications of Land Uses and Community Services: Kelly Township & Buffalo Township.



Utilities

- Several areas around the County have inconsistencies between designated growth areas and utility service areas.
- Eight of the ten sewage authorities in Union County have Act 537 Plans that are more than 10 years old.
- At least half of the County's sewer authorities have indicated the need for upgrades to their current systems and few of these authorities have the financial resources to complete the necessary improvements. Mifflinburg Borough, New Berlin Borough, and White Deer Township's authorities are currently under corrective orders from the PA Department of Environmental Protection.
- The Chesapeake 2000 Agreement pursuant to the U.S. Clean Water Act requires Pennsylvania and other states within the Chesapeake Bay watershed to reduce sediment loading to the Susquehanna River and other bay tributaries, with the goal of removing the nation's largest estuary from the Clean Water Act's list of impaired waters by 2010. The Pennsylvania Department of Environmental Protection (DEP) is requiring sewage authorities in Union County to upgrade their treatment plants to comply with the agreement.
- Various rural locations around Union County are experiencing problems with on-lot sewage systems, such as Winfield, Kelly Crossroads, Buffalo Crossroads and Cowan. Problems are remote and spread out from existing central systems.
- Water pressure is an issue in the Lewisburg/East Buffalo Township water system.
- There is no central water system in Hartleton Borough, the designated primary growth area for the Western Planning Area.
- Energy costs are currently increasing at a high rate. Citizens Electric rates serving the eastern portion of Union County increased by 50 percent in January 2008. Conservation is the major option for lowering costs.
- An electric substation is projected to be needed in the Mifflinburg area in the next ten years.

Emergency Services

- Most municipalities in Union County rely on the Pennsylvania State Police for service. However, this coverage is very minimal with long response times because the State Police at Milton patrols three counties. Other local police forces in Union County are often asked to respond, which places additional demands on their resources.

- With the projected growth in Union County additional police will be needed but there is a lack of funding to hire new officers and address more specialized training.
- Criminal drug activity and drug-related crime is increasing, which creates a need for specialized policing and requires substantial staff time. This issue is a challenge for the current small police forces to address.
- Alcohol use and violations are a significant public safety issue.
- Availability of personnel, especially for daytime fire/emergency calls, is an issue for most companies in the County because these companies mainly rely on volunteers. Job and two-income family demands have limited citizens' time available for volunteering.
- Fundraising and training needs are becoming a greater burden on the volunteer fire / emergency companies.
- Congestion on major routes in the County, including Routes 15, 45 and 192, is impacting response times for emergencies.

Education

- In the next ten years the County's school districts will have significant facility needs. Lewisburg School District is projecting the need for a new high school. Mifflinburg School District has major renovation needs. The SUN Area Career and Technology Center has renovation and expansion plans.
- Advanced academic and technical training standards are needed in the County's schools to meet international competition.
- Current funding for public education is mostly based on property taxes, creating disparities in the County and inadequate funding for education. State financial assistance for technical education is also being reduced.
- Federal education mandates create significant resource demands on public school districts.

Healthcare

- Evangelical Community Hospital needs to expand its facilities onto property surrounding its current building.
- Transportation access for health services is difficult for anyone without an automobile.

County Government & Prison Facilities

- It has been determined by a peer study sponsored by the National Association of Counties that the current Union County Jail is inadequate and should not continue to operate.
- New drug, alcohol, and mental health courts will likely reduce the future prison population at the County level.

Other Community Services

- Meeting/community facilities for young families with children, teens, and informal community groups and clubs are somewhat limited.
- Securing adequate funding for operating the County's libraries and community centers is a constant challenge.

10.3 Community Facilities, Utilities, and Energy Conservation Goals



Community Facilities, Utilities, and Energy Conservation Goals

- The coordination of municipal services / facilities and regionalization of community services are encouraged where feasible.
- The region's water supply is maintained and improved.
- Efficient, centralized sewer and water facilities are provided within Union County's growth areas and strongly restricted in designated rural areas.
- The reliance on energy sources external to Union County is reduced through conservation and use of local generation facilities.
- The growth needs of Evangelical Community Hospital are supported.
- Existing fire and emergency services are maintained and their capacities improved to serve a growing population.
- Specialized police services are expanded to meet local needs.
- Union County's education systems receive adequate investment to provide internationally competitive training. In addition, educational facilities are community focal points within the County's designated growth areas.
- Growth of the Union County Library System is supported.
- Provide adequate, shared, multi-purpose community space in towns and villages for seniors, families with small children, non-religious community groups, and youth (age 15-20).

10.4 Community Facilities, Utilities, and Energy Conservation Strategies

10-1. Regionalize sewer and water authorities where possible.

Many of the County's sewer authorities require costly upgrades and maintenance to their current systems. The Pennsylvania Department of Environmental Protection has found that by regionalizing sewer and water authorities, especially in smaller villages and towns, municipalities can improve operating efficiency, reduce costs, and help alleviate overflows that threaten the environment. In addition to addressing structural improvements on a larger scale, regionalized authorities can consider best management practices, water conservation, and water reuse for larger areas of the County reducing the need to duplicate studies.

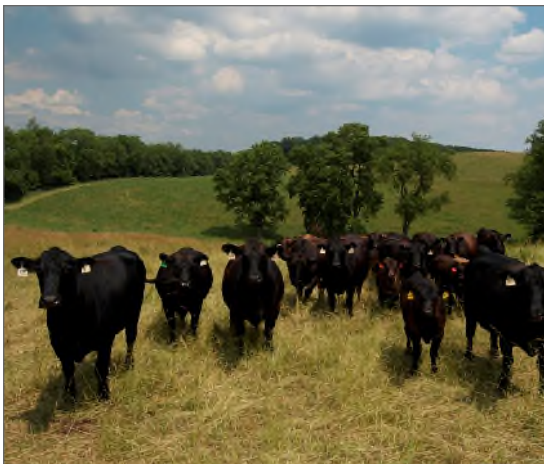
10-2. Support centralized utility investments in the County's designated growth areas by directing the location and timing of future growth and infrastructure.

Growth Areas and Rural Resource Areas (Conservation/ Woodland and Agriculture) are designated in Figure 5-1 (Future Land Use). To effectively implement the Union County Rural and Town Policies (Section 3.4) it is essential that municipalities direct utility investments and infra-

structure to the designated growth areas. Each municipality needs to review its municipal land development regulations and Act 537 plans for consistency with the land use, infrastructure, and community facilities goals of this Plan.

In addition, development densities within the County's growth areas should support central sewer and water utilities. The average residential density target in the County's primary growth areas should be 6 dwelling units/acre, and the target for secondary (village) growth areas should be an average density of 2.5 dwelling units/acre. Within the primary and secondary growth areas, development should be sited in locations suitable for connections to utilities and water supply.





10-3. Restrict centralized sewer and water facilities outside of designated growth areas and promote alternative solutions for rural environments.

Residential development depends on sewer and water facilities. Better maintenance, repair, and inspection of existing on-lot systems is a preventive measure that can be taken as a first line of defense. In addition, rather than expand centralized sewer and water facilities to hamlets and existing rural development, municipalities can promote sewage treatment systems that improve groundwater recharge, such as spray and drip irrigation systems. Biological solutions that use natural processes to treat wastewater are another possibility. In agricultural areas, municipalities and farmers can explore the potential for expanding the use of composted sewage treatment as fertilizer.

10-4. Explore innovative approaches to meeting Pennsylvania's DEP requirements for the Chesapeake Bay watershed.

The Susquehanna and Potomac River watersheds in Pennsylvania contribute about half of the fresh water to the Chesapeake Bay. Pennsylvania signed the Chesapeake 2000 Agreement and is committed to removing the Bay from the federal Clean Water Act's list of impaired waters by 2010. To meet the Pennsylvania DEP requirements for the Chesapeake Bay watershed and reduce pollution for nonpoint sources (e.g., farmland and urban runoff), Union County can explore innovative approaches such as nutrient trading¹¹ and biological treatment (for example, the process used at the Lewisburg Sewage Treatment Plant).

¹¹ Nutrient trading is a voluntary program developed by DEP to help meet the requirements of the Chesapeake 2000 Agreement. It allows parties that reduce the amount of nitrogen, phosphorus, and/or sediments they generate below baseline environmental requirements to sell the resulting credits to other parties. For example, farmers can sell credits derived from reducing nutrients generated by manure or chemical fertilizer application below specified thresholds to municipal sewage treatment plants to contribute to meeting effluent discharge requirements.

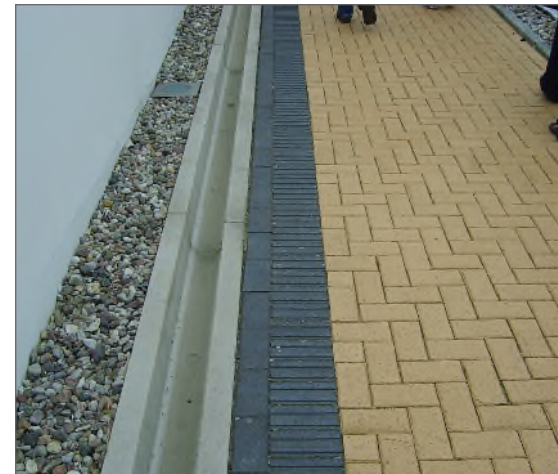
10-5. Promote stormwater best management practices and other development methods to preserve the County's existing vegetation, maximize groundwater recharge, and minimize impermeable surfaces.

Promoting development methods that limit negative effects on the environment is consistent with the sustainability principles of this Plan. Examples include conservation subdivisions, green roofs, rain gardens, porous paving, and best practices for stormwater management. To help preserve the County's existing vegetation and maximize groundwater recharge stormwater management should seek to minimize the use of engineered solutions such as pipes. In rural resource areas, any development should preserve existing vegetation to the extent possible, especially on steep slopes and in riparian corridors, to protect water quality.

10-6. Maintain the energy supply infrastructure while maximizing conservation and increasing renewable energy usage (e.g. - wind, solar and biomass).

This strategy supports "Energy Conservation", the Sustainability Key for this Element, by conserving resources and lowering costs. A number of existing institutions and companies, such as the SEDA-COG Energy Resource Center, Citizens Electric, and the Sustainable Energy Fund (SEF) of Central Eastern PA, work with municipalities and private users to increase the use of renewable energy and reduce demand through conservation.

Municipalities can enact land development regulations to encourage the siting of new structures to take the best advantage of passive solar lighting and heating and to allow for renewable (wind and solar) installations. Federal grants through the U.S. Departments of Agriculture and Energy help reduce the cost of wind and solar installations on farms. For example, in 2008 federal grants provided over \$730,000 to 14 farms in the State of Massachusetts for energy efficiency and renewable energy projects.



Surface Stormwater Drainage Treatment, Malmo, Sweden



Rain Garden in Parking Lot

Other potential tools include establishing local renewable energy suppliers and setting targets for reduced municipal and private energy consumption.

10-7. Seek additional opportunities for joint training, equipment and other regional cooperation among Union County's police, fire, and emergency services organizations.

With the exception of the four boroughs and East Buffalo Township, municipalities in Union County rely on the Pennsylvania State Police for police protection. The limited local police coverage in most parts of the County increases demand on the existing municipal departments. To conserve resources, limit spending, and streamline services, municipalities could pursue regional police forces. Such regionalization would facilitate opportunities for joint training, shared equipment, and combined facilities across the County's police, fire, and emergency services. Through regional cooperation, the departments can better combat increases in drug and criminal activity and focus some new, specialized police positions and training on drug and alcohol enforcement issues.

10-8. Maintain effective emergency response times as Union County continues to grow.

By directing the majority of the County's new population into growth areas, police, fire, and emergency services can concentrate their resources and therefore maintain emergency response times. In addition, limiting new development in rural resource areas and managing traffic on major routes in the County may help to improve emergency response.

10-9. Generate financial resources for additional staff and services through special services taxes.

In Pennsylvania, municipalities can adopt a Local Services Tax (LST) payroll tax of not more than \$52 per year per taxpayer. The tax was renamed in 2008 from the Emergency and Municipal Services Tax, but the primary purpose remains to help fund police and other emergency related services throughout the state. Municipalities must use at least 25 percent of the tax revenue for emergency services such as hiring more police and fire district staff. LST revenues can also be used to reduce property taxes through homestead or farmland exclusions.

10-10. Expand joint educational programs among Union County's school districts to the greatest extent possible.

School districts throughout Union County, in particular Lewisburg and Mifflinburg Districts, are anticipating the need for new and updated educational facilities over the next ten years. Again, by regionalizing and expanding joint education programs, such as before and after-school recreation or tutoring programs, the districts can help cut costs and avoid duplicating some services. In addition, non-profit education-based organizations could use space at local schools and provide services for students across districts.

10-11.Target resources to make education facilities in Union County environmentally sustainable, energy independent, and demonstrations of technical and public innovation.

Whenever feasible, school districts should meet expansion needs by utilizing and renovating existing educational facilities rather than constructing new buildings. When new facilities are planned they should be located within the County's designated growth areas and connect to current neighborhoods for multi-modal transportation access. In addition, school districts and municipalities should consider the co-location of school and other community facilities, such as recreation or cultural arts centers, in order to maximize the use and investment in these public buildings.

Also, school districts can target resources to make educational facilities throughout the County environmentally sustainable, energy independent, and demonstrations of technical and public innovation. Possible partners such as Bucknell University and the SEDA-COG Energy Resource Center could assist the school districts in these initiatives.

Utilizing Alternative Energy Systems

The Benton Area School District, located in Columbia County, PA, is installing a biomass boiler system in an effort to switch to renewable energy sources and support the local economy. Advanced Recycling Equipment (St. Mary's, PA) designed the system to heat two schools by utilizing energy sources such as corn, wood chips, wood pellets, and switchgrass pellets from a central service building. The School District was awarded a \$350,000 grant from the PA Energy Development Authority (PEDA) to purchase and install a biomass boiler in 2006. *Sources: Commonwealth News Release (2006) and Lancaster Farming Magazine (2007).*

10-12.Support the growth of Bucknell University through compatible infill projects in Lewisburg Borough and East Buffalo Township.

Bucknell University is committed to "building bridges" between the university, surrounding communities, and the larger region. Through its Strategic Plan, the University is focused on local partnerships and community development efforts. Infill projects will provide anchors of economic activity for these communities and enhance services for the University's students.

Bucknell University Strategic Plan

In April 2006 the Board of Trustees approved The Plan for Bucknell. This strategic plan calls for improvement in five areas: strengthening the academic core curriculum, deepening the residential learning experience, enhancing diversity, building bridges with the local community, and securing Bucknell's financial future. "Building bridges" covers a broad range of interactions between Bucknell and the surrounding community, for example:

- Providing diverse opportunities for students to promote social change
- Engaging Lewisburg and the region through partnerships and relationships with governmental agencies at all levels
- Advancing Bucknell's strength as an employer of choice locally, regionally, and nationally

10-13. Improve access to healthcare and related services by encouraging the expansion of Evangelical Hospital and the Union/Snyder Transportation Alliance.

Evangelical Hospital currently provides specialty units for adult, pediatric, and intensive care and is highly regarded in the community. The Hospital can expand its facilities and patient services by redeveloping nearby properties for use as new medical facilities. It could also partner with other medical providers such as outpatient doctors' offices to redevelop nearby sites for medical services. In addition to medical related facilities, compatible uses such as senior mixed-use housing adjacent to the Hospital should be encouraged.

Also, the County can work with the existing Union/Snyder Transportation Alliance to improve access to quality healthcare and other services for anyone without an automobile.

10-14. Maintain Union County's excellent government facilities and reduce reliance upon the County's antiquated prison.

Union County has adequate administrative facilities to operate and provide effective services for the foreseeable future. One identified need is for additional County storage, which is currently under consideration.

It has also been determined that the current Union County Jail is deficient. The lockup, some parts of it dating back to 1856, will continue to play a role in housing special inmate populations. Meanwhile, exploration has begun and should continue with neighboring counties for a possible regional multi-county prison approach.

10-15. Support maintaining and expanding the County's library system and other community centers.

The number of residents using the Union County library branch has more than doubled over the past twenty years. Planned renovations will improve the services offered to local patrons and better serve new users to the library. The Herr Memorial Library in Mifflinburg and the



West End Library in Laurelton should continue to assess their needs and consider renovations and expanded facilities as necessary.

In addition, co-locating community services provided by the County's libraries and community centers could improve access to these services and reduce operating costs by sharing resources. For example, Hartley Township's new library and recreation center are located next to one another. These buildings are also contiguous to the township park, offering convenient services for residents in one place.