

CARBON COUNTY

**COMPREHENSIVE PLAN
& GREENWAY PLAN**



Carbon County Comprehensive Plan and Greenway Plan

Carbon County, Pennsylvania

This Comprehensive Plan was adopted on November 21, 2013
by the Carbon County Board of Commissioners.

*This Comprehensive Plan was funded in part by a Land Use
Planning Technical Assistance Grant, as administered
by the Governor's Center for Local Government Services,
Pennsylvania Department of Community and Economic Development,
and in part by a Community Conservation Grant, as
administered by the Pennsylvania Department of
Conservation and Natural Resources.*



Community Planning Consultants
Urban Research and Development Corporation
Bethlehem, Pennsylvania

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OFFICE OF THE
CARBON COUNTY COMMISSIONERS

Commissioners
Wayne E. Nothstein, Chairman
Tom J. Gerhard, Vice-Chairman
William J. O'Gurek, Member
Eloise K. Ahner, County Administrator
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**CARBON COUNTY 2013 COMPREHENSIVE PLAN
RESOLUTION**

WHEREAS, the Carbon County Board of Commissioners authorized the Carbon County Office of Planning and Development to prepare a new Comprehensive & Greenway Plan for Carbon County; and

WHEREAS, the Carbon County Board of Commissioners hired the firm of Urban Research and Development Corporation (URDC) to work with the Carbon County Office of Planning and Development in the preparation of a new Comprehensive & Greenway Plan for Carbon County; and

WHEREAS, the Carbon County Board of Commissioners established a Comprehensive Plan Committee for local input into the preparation of the Comprehensive & Greenway Plan; and

WHEREAS, the Carbon County Planning Commission has reviewed and recommended adoption of the Comprehensive & Greenway Plan; and

NOW, THEREFORE, BE IT RESOLVED by the Board of Commissioners of Carbon County that the Comprehensive & Greenway Plan, including all written material, maps, charts, etc., as attached hereto, is hereby formally adopted as the Official Comprehensive & Greenway Plan of Carbon County.

BE IT FURTHER RESOLVED that all prior Comprehensive Plans, prepared and/or adopted by Carbon County, including but not limited to the 1998 Comprehensive Plan, are hereby rescinded with the formal adoption of this Plan.

ENACTED on this 21ST day of **November, 2013**.

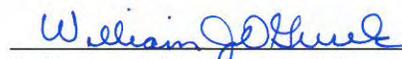
CARBON COUNTY BOARD OF COMMISSIONERS:



Wayne E. Nothstein, Chairman

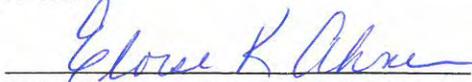


Tom J. Gerhard, Vice-Chairman



William J. O'Gurek, Member

ATTEST:



Eloise K. Ahner, County Administrator

RESOLUTION NO. 13-028

OFFICE OF THE
CARBON COUNTY COMMISSIONERS



Commissioners
Wayne E. Nothstein, Chairman
Tom J. Gerhard, Vice-Chairman
William J. O'Gurek, Member
Eloise K. Ahner, County Administrator
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**CARBON COUNTY 2013 GREENWAY PLAN
RESOLUTION
Closing Out Community Conservation Partnerships Grant Project
(BRC-TAG-A3.3-462)**

WHEREAS, Carbon County has prepared a Greenway Plan as a part of the Carbon County Comprehensive Plan for the County-wide area; and

WHEREAS, the County-wide Plan incorporated findings from the Regional Plans developed by municipalities within the County;

WHEREAS, a Comprehensive and Greenway Plan is to provide an overall set of policies for the future development and conservation of Carbon County over the next 15 years; and

WHEREAS, the purpose of the Greenway Plan is to help ensure this change is positive and that Carbon County retains the qualities that make people want to live, work and visit the County; and

WHEREAS, the Plan was financed in part by a Community Conservation Partnerships Program grant under the administration of the Pennsylvania Department of Conservation and Natural Resources, Bureau of Recreation and Conservation, under contract number BRC-TAG-A3.3-462;

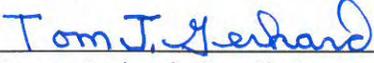
NOW, THEREFORE, BE IT HEREBY RESOLVED by the Board of Commissioners of Carbon County that:

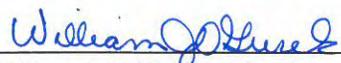
- a. The project was completed in accordance with the Grant Agreement.
- b. All project expenditures have been made and were in accordance with the Grant Agreement.
- c. The Plan and related materials are acceptable to the Carbon County Commissioners.
- d. The Plan and related materials will be used to guide future recreation and conservation decisions.

ADOPTED this 21ST day of **November, 2013**.

CARBON COUNTY BOARD OF COMMISSIONERS


Wayne E. Nothstein, Chairman


Tom J. Gerhard, Vice-Chairman


William J. O'Gurek, Member

ATTEST:


Eloise K. Ahner, County Administrator

RESOLUTION NO. 13-029

INTRODUCTION

What Is a Comprehensive Plan and a Greenway Plan?

This Comprehensive and Greenway Plan provides an overall set of policies for the future development and conservation of Carbon County over the next 15 years. The purpose of the Comprehensive and Greenway Plan is to help ensure this change is positive and that Carbon County retains the qualities that make people want to live, work and visit the County.

The Comprehensive and Greenway Plan is not a regulation by itself. This Plan is intended to suggest policies for future changes to the municipalities' development regulations.

The first step in a comprehensive and greenway planning effort is to understand the community today. Current and future trends will continue to influence the conservation and development of Carbon County. This Comprehensive and Greenway Plan considers the following questions:

- What are our community's assets and concerns?
- How do we build on our assets and overcome our concerns?
- What do we want to change and what do we want to save?
- How can we encourage the changes we want and preserve what is most valuable about the community?

Major Benefits of the Comprehensive and Greenway Plan

The Comprehensive and Greenway Plan offers many benefits, including the following:

- Addressing land uses in coordination with roads, to avoid future traffic problems.
- Avoiding conflicts between different types of development, particularly across municipal borders, such as having intense business uses placed adjacent to a residential neighborhood.
- Considering development policies in a comprehensive and coordinated manner, as opposed to piecemeal review of individual lots.
- Highlighting opportunities where the municipalities could save money through shared services.
- Recommending ways that natural corridors should be preserved and conserved.
- Recommending improvements to connect and complete greenway corridors and recreation trails.

Inter-Related Topics

The topics addressed in this Comprehensive and Greenway Plan are closely inter-related. Actions taken in one of these areas often affect the other areas. For example, decisions about the size, location and density of a new development can impact traffic patterns, the demand for utilities, and the preservation of open space, among other factors. In turn, roadway improvements, streetscape enhancements, and other public sector initiatives can directly increase the development potential of affected properties.

Timing of the Plan

The Plan considers existing conditions and how those conditions are likely to influence the future of the County over the next 10 to 15 years. Some actions, events and future growth contemplated in this Plan could materialize in the next year or two. Other developments will depend much more on market forces and consequently their timing will vary.

Regional Location

Carbon County is in north-eastern Pennsylvania. It is surrounded by Monroe County to the east, Lehigh and Northampton counties to the south, Schuylkill County to the west and Luzerne County to the north. The County is situated to the south of the Wilkes-Barre/Scranton region and north of the Lehigh Valley–Allentown, Bethlehem and Easton area. Carbon County contains approximately 380 square miles.

PA 476, the Northeast Extension of the Pennsylvania Turnpike, traverses north to south, connecting the Philadelphia area and the Lehigh Valley with the northeastern Pennsylvania. Interstate I-80, a major route between the New York City metropolitan area and the Midwest, runs east-to-west in the northern portion of the County and has a connection to reach I-476 in Kidder Township.

The Turnpike is accessed from the Mahoning Valley interchange at Route 209 and an interchange with I-80, with an additional interchanged planned with Route 903.

Route 248 provides connections from Jim Thorpe and Lehigh to the Lehigh Valley to the south. Route 209 connects to the Stroudsburg area to the east and Tamaqua to the west. Route 895 extends into Schuylkill County to the west. Route 903 connects to Route 115, the Pocono Raceway and an interchange with I-80. Route 93 connects with Hazelton and I-81.

The Lehigh River has its headwaters outside the northeastern portion of Carbon County. The river flows through the central part of the County, creating a natural boundary. Many of Carbon County's boroughs, such as Jim Thorpe, Lehigh and Palmerton, are situated along the Lehigh River.



Regional Location Map

State Policies

Pennsylvania Outdoors; The Keystone for Health Living (2009)

States are required to produce a State Comprehensive Outdoor Recreation Plan (SCORP) every five years in order to receive federal Land and Water Conservation Funds (LWCF). Pennsylvania released the latest update of the state plan in 2009.

The plan includes research, public input, findings, policies, goals, and recommendations regarding outdoor recreation throughout the state. The document illustrates the inextricable link between greenways and outdoor recreation with the following references:

- Action Step: Update the [this plan] to a web-based series of fact sheets.
- Action Step: Support the implementation of County greenway plans by developing grant guidelines and ranking criteria that give priority funding to projects that encourage development of walkable communities and that strengthen local land use policies encouraging protection of open space.
- Action Step: Work with state agencies and other partners to assess which current cultural or historic features like parks, monuments, natural features, or historic districts could add recreational assets like trails and greenways.
- Goal: Develop a Statewide Land and Water Trail Network to Facilitate Recreation, Transportation, and Healthy Lifestyles.
- Action Step: Update the 2001 Pennsylvania Greenway Plan and evaluate state progress in meeting its goal of establishing close-to-home greenways/trails within 1,000 Pennsylvania municipalities.

The SCORP has extensive appendices, one of which identifies trail gaps in major greenways throughout the state. Carbon County includes one of the identified trail gaps: segment of the Delaware and Lehigh Canal Trail from Jim Thorpe Borough to the Lehigh Canal Park in Franklin Township. There was also considered to be a missing link between Tamaqua, Lansford and Jim Thorpe.

An accompanying survey of State Park users found that there were widespread public requests for trails that will connect State Parks with neighborhoods.

The Plan emphasizes ways to promote physical activity to reduce obesity rates and improve overall health. There also is an intent to promote “Close to Home Nature” in which urban residents (particularly children) can easily reach natural areas.

Pennsylvania Greenways—An Action Plan for Creating Connections (2001)

The recommendation to preserve and protect greenways goes back to the early 1990s. In 2001, the statewide Greenways Plan provided specific coordination and strategic planning processes to incorporate Pennsylvania’s counties into a statewide greenways network. The plan defines greenways, networks of hubs and spokes, and green infrastructure. The plan also provides 12 strategies for implementation and statewide and local context for each strategy:

- Use **hubs and spokes** to develop the greenway network.
- Prepare **local greenway plans** at the County and municipal levels.
- Increase **opportunities for diverse populations** to enjoy greenways.
- Use greenways to **promote physical and mental wellness**.
- Develop **trails to offer transportation alternatives** to the automobile.
- **Protect natural resources and environmental quality** with greenways.
- Develop a greenways **organizational structure**.
- Assemble **public and private funding** to support greenways.

- Develop a **greenways toolbox** including technical resources, “best practices”, and guidance on important issues, such as design standards and liability.
- **Incorporate greenways into training programs**, such as environmental and ecological coursework.
- **Showcase greenways** in promotional and marketing campaigns.
- Establish a **corps of volunteers** to help maintain and promote greenways.



EXISTING LAND USES BACKGROUND

The generalized existing land uses are shown on maps for the northern, central and southern portions of the County.

Residential

Data about housing conditions in Carbon County is provided in Appendix A. Most residential units in Carbon County are single family detached houses and houses that have been converted into two or more units. A significant number of single family homes are located within manufactured home parks. Rowhouses / townhouses and twin houses exist in most of the boroughs.

Single-family Detached

Single-family detached housing are found throughout the County. Most of the single-family detached units are in the rural areas outside of the more dense Borough's. Although, there are detached housing units within the denser Borough's, but detached units in the Townships are more prevalent because of the available land for construction and the larger lot requirements from zoning techniques.



Carbon County has a population of single-family detached housing units that are considered “second homes” for many non-county residents. These homes normally are summer homes that residents outside of Carbon County own and/or rent.

Single-family Attached

Single-family attached housing units are mostly found in the historic, densely populated centers of the Boroughs. The majority of single-family attached housing units were built prior to 1950 for the working class families.

In recent development methods in the past 10 years, new single-family attached housing units have been constructed in planned developments and in commercial recreation areas such as ski resorts.



Apartments / Condominiums

Apartment complexes have been historically constructed in urban areas that promote higher density, local jobs and pedestrian friendly areas. Condominiums have been a major residential component in certain areas of Carbon County, specifically in the planned developments located in Penn Forest and Kidder Townships.

Manufactured Housing Parks

Manufactured housing parks within Carbon County are not large in acreage size and are scattered throughout the County.



Commercial

Commercial districts are well represented in the Boroughs of Carbon County. The “Main Street” areas of each of the Boroughs have been the local commerce center since the creation of each individual urbanized area. Local businesses such as hardware stores, local grocery stores and other specialized commercial outlets have been focused in these areas.

In recent years, commercial development patterns have changed course. Large box-stores became popular, depleting the locally run, small business owners located in the each downtown area. These larger commercial strips offer a one-stop shop for commodities.



Different state routes are becoming a popular destination for larger strip malls and commercial centers. Particularly, Route 442 in Mahoning Township has experienced large lot commercial construction in the past ten years. Routes 248 and 209 are also areas that have experienced the construction of the larger commercial lots along its corridors. The Route 903 corridor that connects the commercial recreation areas of Kidder and Penn Forest to Jim Thorpe has seen a recent increase in the construction of commercial uses. The commercial construction was a direct demand from the intense residential development construction in the northeast portion of the County.

Industrial

Industrial areas in Carbon County have been dwindling since the 1990's. Large heavy industrial uses have since been put under stricter regulations and/or have moved out of the area for economic reasons. The Palmerton area was once the hotbed for heavy industry but is now in the process of land reclamation for future use. The East Plant site in Palmerton is still active but the West Plant is currently having the land reclaimed.

The Route 54 corridor contains several industrial sites, such as Ametek and Kovatch industries. These sites have accessible active rail service. The Route 54 corridor has the highest concentration of active industrial uses in the County.



Industrial parks, areas that focus on retaining industrial uses, are planned and located in four different tracts throughout Carbon County. The following are located in Carbon County:

- South Carbon Business Park
- Packerton Yards
- Green Acres Industrial Park
- McAdoo Industrial Park

More information about these industrial parks can be found in the *Economic Development* background section.

Mining

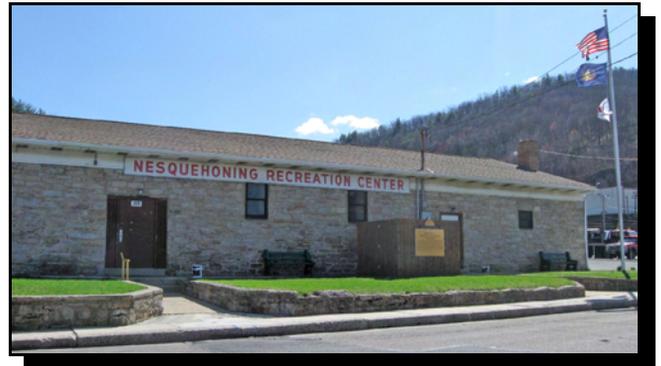
Mining was a major contributor to the economy of Carbon County. The mining and all components of mining, created many jobs for the County residents. Most anthracite coal mining has occurred in Banks Township and the boroughs of Nesquehoning, Lansford and Summit Hill. In addition, there are sand and stone mining operations, including in East Penn, Lower Towamensing and Penn Forest townships.

Mining has had a significant impact on the environment. The physical remnants of the open-site mine pits can be seen today. Pollution from abandoned mine drainage is still affecting the Lehigh River and select streams where the mines drain. Abandoned mine drainage (AMD) is surface water that emanates from an area disturbed by mining activities. The following are AMD sources within Carbon County:

- Buck Mountain #1 - *Lausanne Twp.*
- Buck Mountain #2 - *Lausanne Twp.*
- Lausanne Tunnel - *Nesquehoning Bor.*
- Quakake Tunnel - *Packer Twp.*

Communication & Utilities

These include uses devoted to providing electric power distribution, telephone, water and sewer services. To protect water quality and quantity, the water authorities control tens of thousands of acres of land, as seen on the Existing Land Uses Map. Carbon County has no landfills within its borders. All trash collection service is transported to surrounding counties.



Public & Semi-Public Uses

The most common public and semi-public uses are schools, fire companies, ambulance companies and municipal buildings.

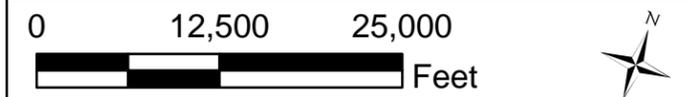
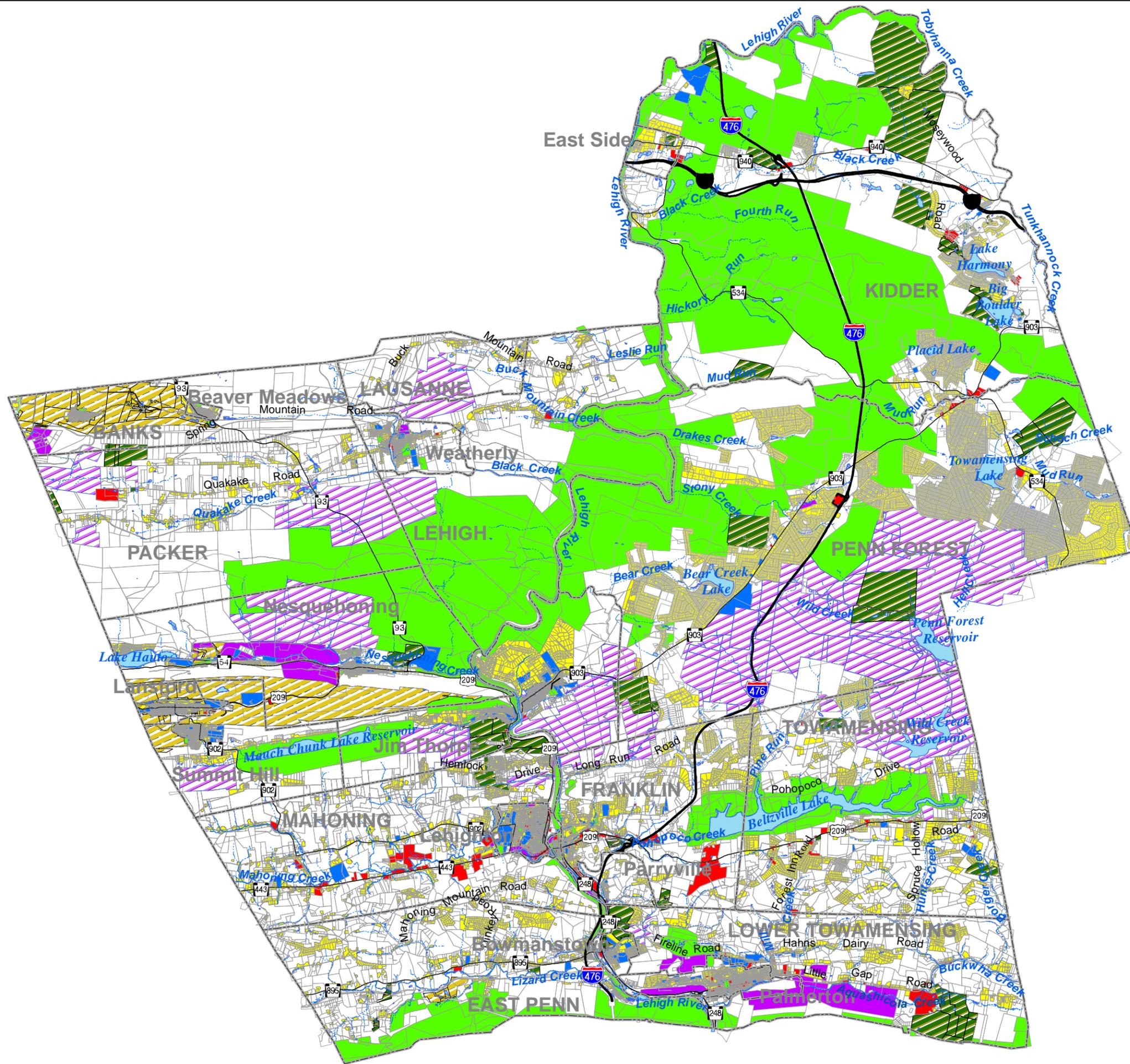
Existing Zoning

The map on the following page summarizes the existing zoning policies throughout the County, as of 2009.

Carbon County Comprehensive & Greenway Plan

Generalized Existing Land Use

-  Residential
-  Public & Qausi-Public
-  Public Recreation
-  Commercial
-  Private & Commercial Recreation
-  Industrial
-  Mining
-  Water Authority
-  Agriculture & Vacant



Source: Carbon County, PA DCNR, Wildlands Conservancy and The Nature Conservancy.

Carbon County Comprehensive & Greenway Plan

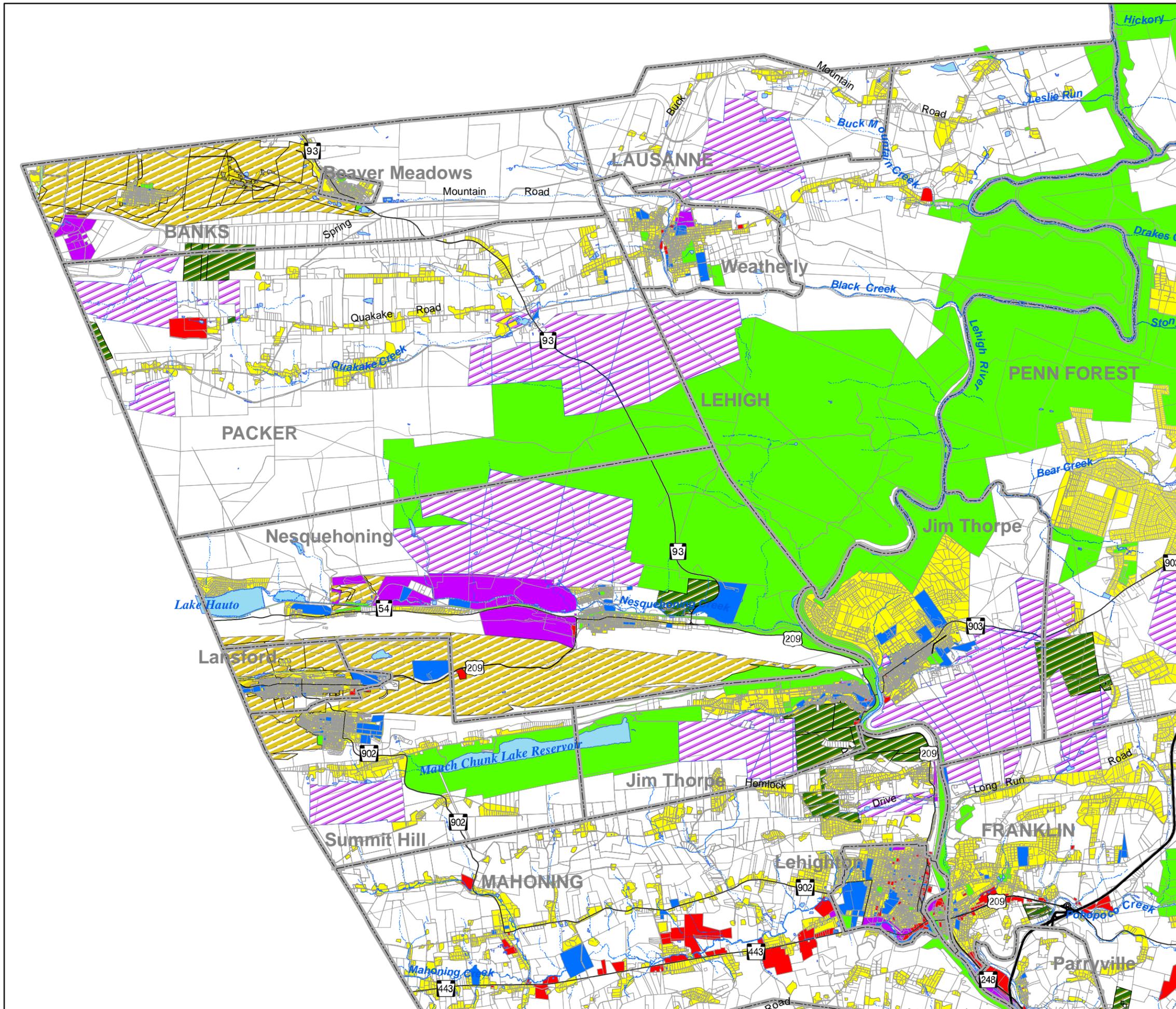
Generalized Existing Land Use

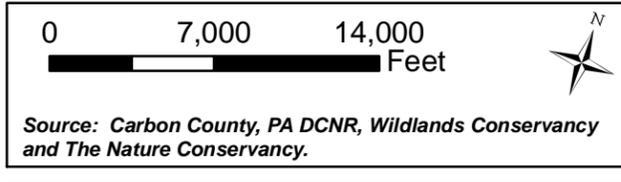
Central Section

-  Residential (some lots are vacant)
-  Public & Semi-Public
-  Public Recreation
-  Homeowners Association Land
-  Commercial
-  Private & Commercial Recreation & Resorts
-  Industrial
-  Mining & Mine Reclamation
-  Water Authority
-  Agriculture & Vacant



Source: Carbon County, PA DCNR, Wildlands Conservancy and The Nature Conservancy.





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Carbon County Comprehensive & Greenway Plan

Generalized Existing Land Use

Southern Section

NATURAL RESOURCES BACKGROUND

Carbon County's major natural features include the following:

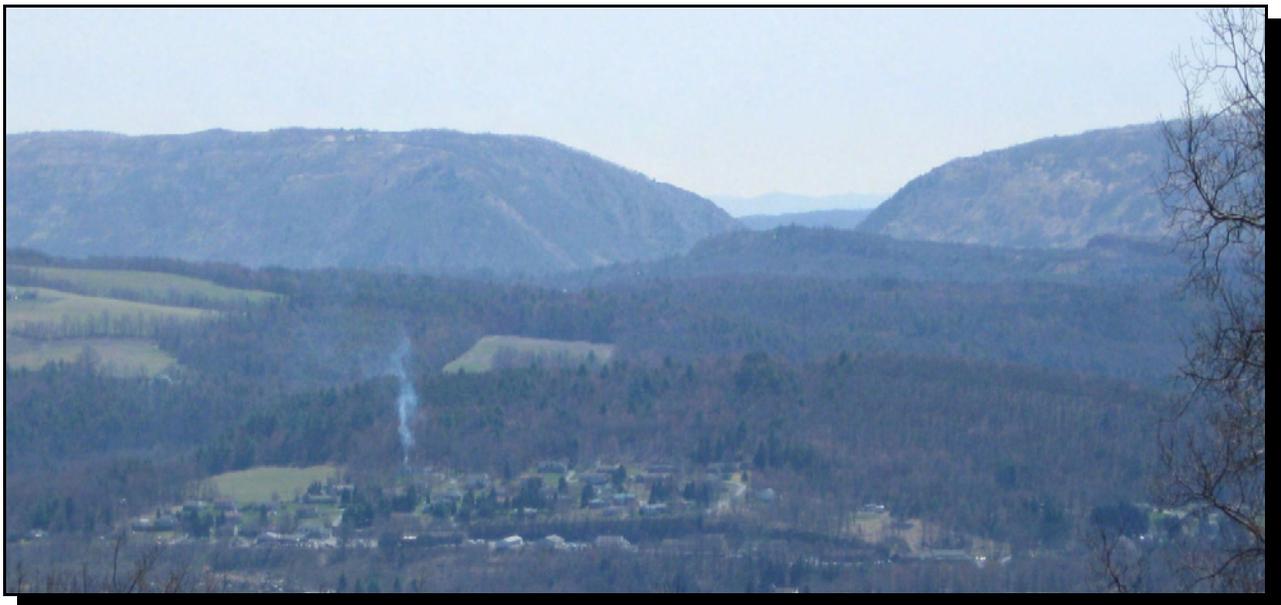
- Physiology and Geography
- Topography
- Woodlands
- Unique Natural Areas
- Hydrology
- Prime Agricultural Soils
- Preserved Farmland and Agricultural Security Areas
- Migratory Corridors

Physiography & Geology

Physiographic provinces are large regions, typically including multiple states, that exhibit similar topography and geology. Carbon County is located in two physiographic provinces: Ridge and Valley Province and Appalachian Plateaus Province.

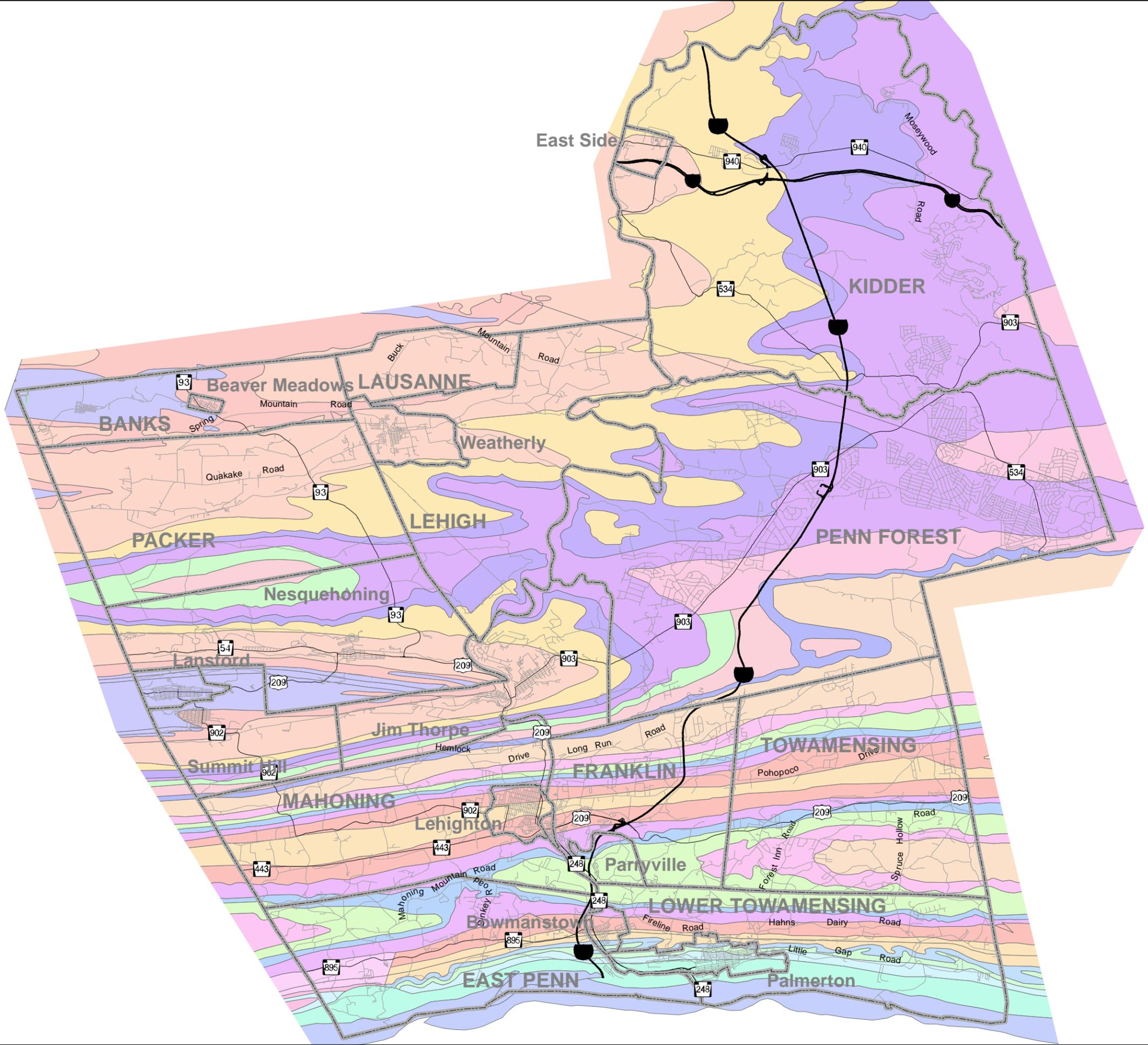
In the northeastern section of Kidder and Penn Forest Townships is the Glaciated Pocono Plateau Section. The Blue Mountain Section follows the Kittatinny Ridge through Palmerton, Towamensing, Lower Towamensing, Parryville, Franklin, Lehigh, Bowmanston, and Mahoning. The remaining central and northwest portions of the County are within the Anthracite Upland Section.

Geology also affects the underlying soils of Carbon County. Various geologic eras (Table 3.1) are exhibited in the County, during which the geology underlying the County was formed (Table 3.2 and Bedrock Geology Map).



Carbon County Comprehensive & Greenway Plan

Bedrock Geology



- Beaverdam Run Member of Catskill Formation
- Berry Run and Sawmill Run Members of Catskill Formation, undivided
- Bloomsburg Formation
- Buttermilk Falls Limestone through Esopus Formation, undivided
- Clarks Ferry Member of Catskill Formation
- Decker Formation through Poxono Island Formation, undivided
- Duncannon Member of Catskill Formation
- Long Run Member of Catskill Formation
- Packerton Member of Catskill Formation
- Poplar Gap Member of Catskill Formation
- Towamensing Member of Catskill Formation
- Walcksville Member of Catskill Formation
- Hamilton Group
- Marcellus Formation
- Mahantango Formation
- Onondaga and Old Port Formations, undivided
- Ridgeley Formation through Coeymans Formation, undivided
- Trimmers Rock Formation
- Spechty Kopf Formation
- Mauch Chunk Formation
- Pocono Formation
- Llewellyn Formation
- Pottsville Formation
- Shawangunk Formation



Source: PA DCNR, PASDA, Wildlands Conservancy, URDC

**Table 3.1
Geologic Eras**

| Period | Age | Explanation |
|---------------|-------------------|---|
| Pennsylvanian | 290 - 323 million | Cyclic sequences of sandstone, red and gray shale, conglomerate, clay, coal, and limestone (<i>coal, clay, lime, building stone</i>). |
| Mississippian | 323 - 354 million | Red and gray sandstone, shale and limestone (<i>flagstone, limestone, clay</i>). |
| Devonian | 354 - 417 million | Red sandstone, gray shale, black shale, limestone, and chert (<i>flagstone, silica sand, clay, lime</i>). |
| Silurian | 417 - 443 million | Red and gray sandstone, conglomerate, shale, and limestone (<i>lime, building stone</i>). |

Source: PA DCNR

**Table 3.2
Bedrock Geology**

| Symbol | Bedrock Geology Name | Age |
|--------|--|--------------------------|
| Dbe | Buttermilk Falls Limestone through Esopus Fm. | Devonian |
| Dcbr | Beaverdam Membe of Catskill Fm. | Devonian |
| Dcbs | Berry Run - Sawmill Run Member of Catskill Fm. | Devonian |
| Dccf | Clarks Ferry Member of Catskill Fm. | Devonian |
| Dcd | Duncannon Member of Catskill Fm. | Devonian |
| Dclr | Long Run Member of Catskill Fm. | Devonian |
| Dcp | Peckerton Member of Catskill Fm. | Devonian |
| Dcpg | Polar Gap Member of Catskill Fm. | Devonian |
| Dct | Towmensing Member of Catskill Fm. | Devonian |
| Dcw | Walcksville Member of Catskill Fm. | Devonian |
| Dh | Hamilton Group | Devonian |
| Dm | Marcellus Fm. | Devonian |
| Dmh | Mahantango Fm. | Devonian |
| Doo | Onondaga Fm and Old Port Fm Undiv. | Devonian |
| Drc | Ridgeley Fm through Coeymans Fm. Undiv. | Devonian |
| Dtr | Trimmers Rock Fm. | Devonian |
| MDsk | Spechty Kopf Fm. | Mississippian & Devonian |
| Mmc | Mauch Chunk Fm. | Mississippian |
| Mp | Pocono Fm. | Mississippian |
| Pl | Llewellyn Fm. | Pennsylvanian |
| Pp | Pottsville Group | Pennsylvanian |
| Sb | Bloomsburg Fm. | Silurian |
| Sdp | Decker Fm through Poxono Island Fm. Undiv. | Silurian |
| Ss | Shawangunk Fm. | Silurian |

Source: PA DCNR

Topography

Carbon County, north of Blue Mountain, is a high rolling plateau, with steep-walled stream and river valleys. The most visible evidence of this is along the Lehigh River, near Jim Thorpe. The plateau is characterized by the numerous lakes and wetlands. Carbon County's lowest point is located to the south along the base of Blue Mountain.

Topography is one of the most visible environmental factors. Steep slopes are found along the streams and rivers within the County (see Topography Map). Vegetation on steep slopes is crucial in controlling erosion, slowing storm water runoff, and preserving viewsheds. Slopes of 0 to 15 percent occur as flat, low rolling hills where development and farming are prime. Slopes between 15 and 25 percent consist of rolling hills and stream and river banks. Slopes above 25 percent are higher and mountainous areas that are generally considered unsuitable for development and should be protected. Development restrictions are often placed on land with slopes above 25 percent and regulated between 15 to 25 percent.



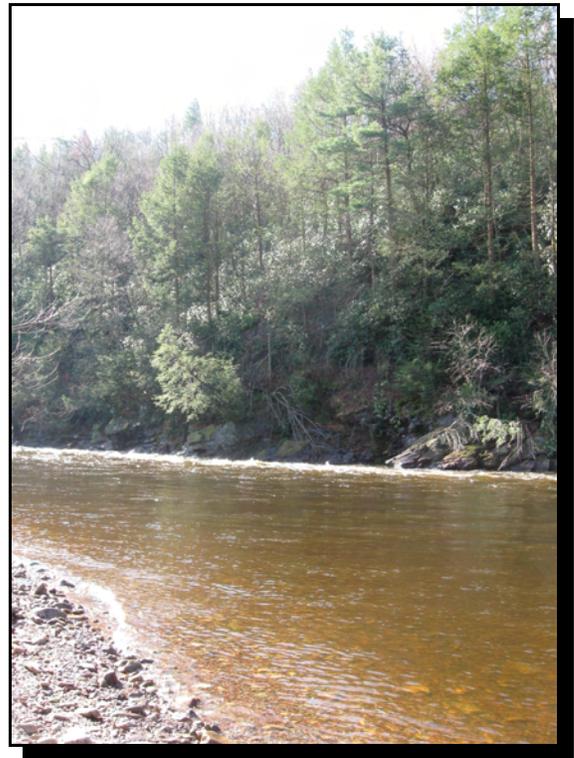
Woodlands

Woodlands are an important natural resource in several regards. The root systems of trees and other woodland vegetation stabilize the soil, preventing erosion. Woodlands act as natural stormwater control as vegetation and the forest floor absorb and reduce runoff. With these controls on erosion and runoff, water quality in nearby streams benefit immensely. Woodlands are wildlife habitats that, if destroyed, take decades to replace. Woodlands are also a scenic resource that provide visual relief from the built environment.

Carbon County has an abundant amount of wooded areas (see Woodlands Map). The County has over 50,000 acres in protected federal, state and county lands that are wooded. Away from the small developed boroughs of Lehighton, Palmerton, Parryville, Bowmanston, Weatherly, Summit Hill, Lansford and Beaver Meadows, the County is largely rural and wooded.

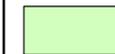
Unique Natural Areas

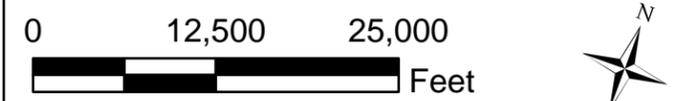
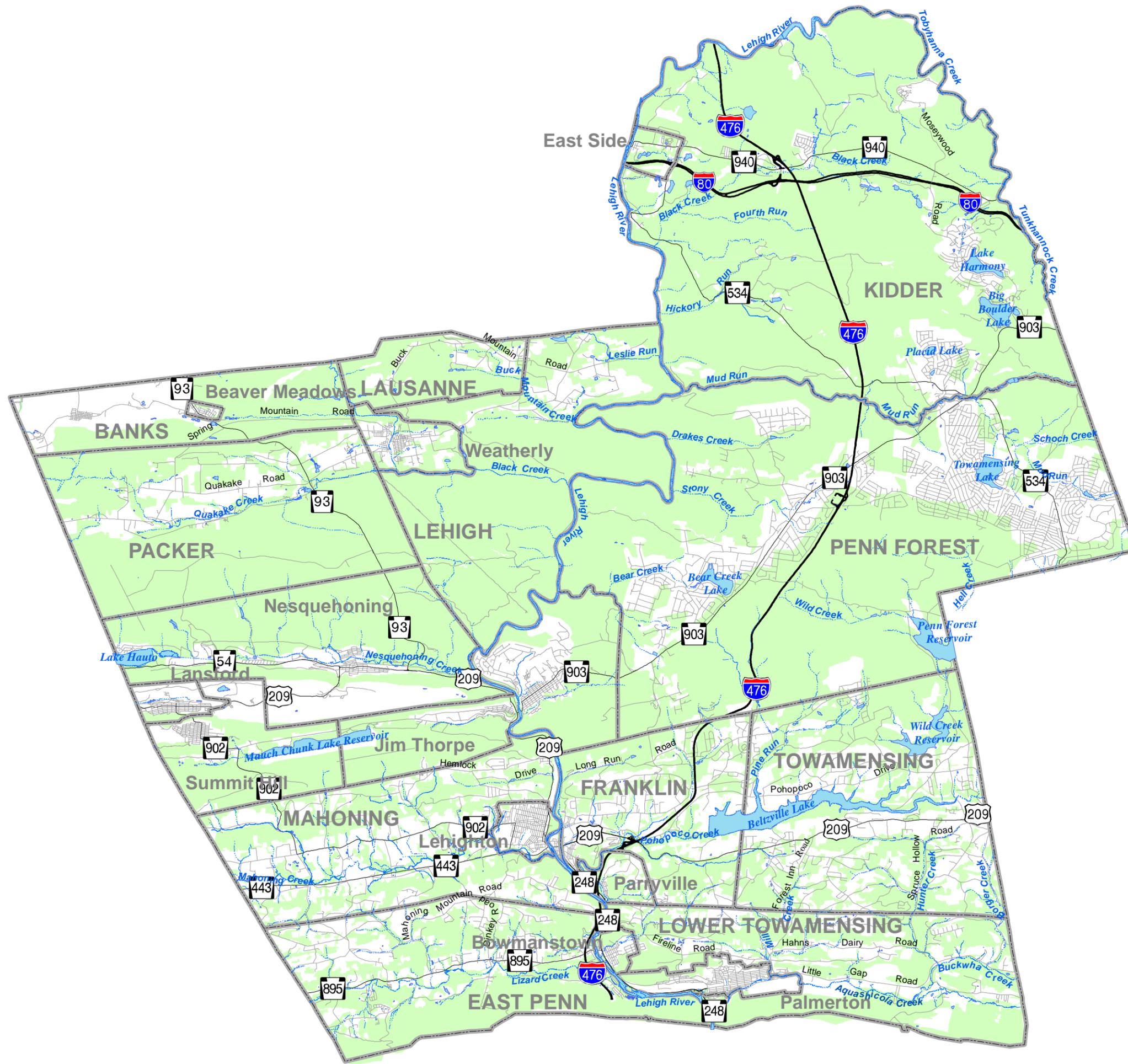
Natural areas are specifically identified for special characteristics, such as a unique plant or animal habitat or an important waterway or mountain. The Natural Areas Inventory (NAI) identifies national, statewide and locally important, rare, threatened, and endangered species of plants and animals within Carbon County (Table 3.3, and Unique Natural Areas Map). The inventory was prepared in 2005 by the Pennsylvania Science Office (PSO) of the Nature Conservancy. Sites are ranked from highest importance to the least. Carbon County has one “exceptional” and five “top priority natural areas, which are considered to be of the highest importance. A description of the six highest rated natural areas, according to PSO, are listed below:



Carbon County Comprehensive & Greenway Plan

Woodlands

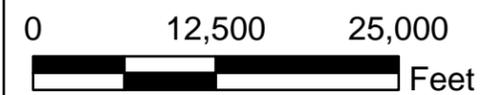
 Woodlands



Carbon County Comprehensive & Greenway Plan

Topography

-  Slopes 8-25%
-  Slopes >25%



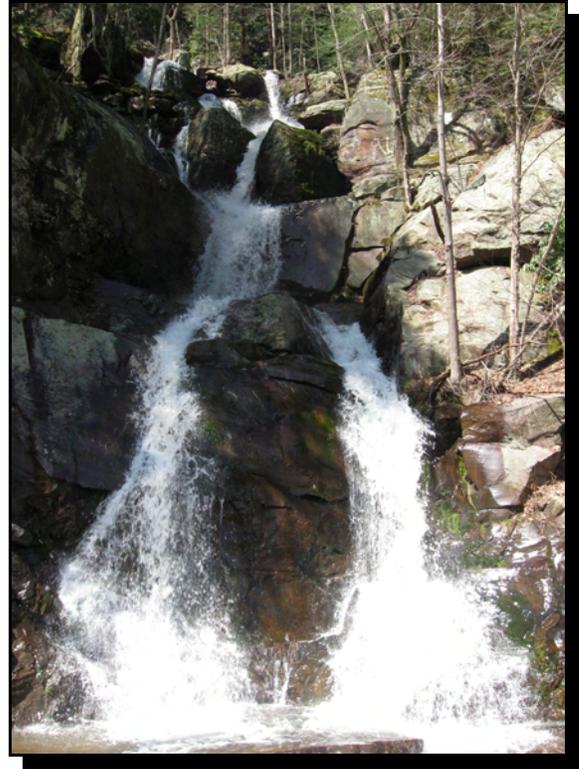
Source: PA DCNR, PASDA, Wildlands Conservancy, URDC



Community Planning Consultants
Urban Research & Development Corporation
28 West Broad Street Bethlehem, Pennsylvania 18018 610-865-0701

Exceptional Natural Feature

Lehigh Gorge – An extraordinary natural feature cutting through Carbon and Lehigh Counties. The Lehigh Gorge runs for about 32 miles and includes Lehigh Gorge State Park and is designated as a Pennsylvania Scenic River from Francis E. Walter Dam to Jim Thorpe. The Lehigh Gorge offers many recreational opportunities such as whitewater rafting, kayaking, bike riding, hiking and photography.



Top Priority Natural Areas

Fawn Run Wetlands – This wetland habitat covers approximately 220 acres in northwest Kidder Township. The majority of the site is located in State Game Lands #40. This area contains several sphagnous/boggy wetlands dominated by shrubs and small stunted trees. Some areas have a more open, savanna-like aspect with sedge-dominated vegetation.

Mosey Wood Wetlands – This site is approximately 1,000 acres, located in eastern Kidder Township. Mud Pond is also contained in this site. Mud Pond is an Acidic Glacial Lake in good condition. The lake has a narrow, floating mat around the edge that provides unique habitat for a suite of plants and animals. Other PA-Endangered flora and fauna are found within these wetlands.

Penn Forest / Wild Creek Reservoir – This site encompasses about 4,900 acres, primarily in Penn Forest Township. The site includes two reservoirs, Wild Creek and the southern slope of Pohopoco Mountain. This extensive forested area provides habitat for a variety of species and protection for a valuable water source. The watersheds of both Penn Forest and Wild Creek Reservoirs are almost entirely protected by the Bethlehem Authority. PA-Endangered flora and fauna are found within this site.

Schoch Barrens Complex – Schoch Barrens Complex includes a group of sites that covers nearly 1,500 acres in Carbon and Monroe Counties. Ten elements monitored by the PA Natural Heritage Program were found in this site including three plant species of concern, four animal species of concern and three natural communities. A portion of this site is located in Delaware State Forest and State Game Lands #129.

**Table 3.3
Natural Area Inventory**

| Site | Municipality | Significance |
|-------------------------------------|--|-------------------------|
| Aquashicola Creek Wetlands | Lower Towamensing Twp. | Locally |
| Bake Oven Knob | East Penn Twp., Lehigh Co. | Statewide |
| Bear Creek Lake | Penn Forest Twp. | Statewide |
| Bears Rock | East Penn Twp., Lehigh Co. | Statewide |
| Beltzville Lake Vernals | Franklin & Towamensing Twps. | Statewide |
| Berry Run Barrens | Penn Forest Twp., Jim Thorpe Boro. | Statewide |
| Black Creek Gorge | Lehigh Twp. Weatherly Boro. | Locally |
| Black Shanty Run | Kidder Twp. | Locally |
| Broad Mountain West | Packer Twp., Nesquehoning Boro. | Locally |
| Carpsoocus Creek Thickets | Penn Forest Twp. | Statewide |
| Chirstmans Pond | Penn Forest Twp. | Statewide |
| Christmas Wetland | Penn Forest Twp. | Locally |
| Cross Run Vernals | Penn Forest Twp., Monroe Co. | Statewide |
| Devils Potato Patch / Little Gap | Lower Towamensing Twp., Northampton Co. | Statewide |
| East Side Wetland | Kidder Twp. | Statewide |
| Fawn Run Wetlands | Kidder Twp. | Top Priority, Statewide |
| Fourth Run Wetlands | Kidder Twp. | Statewide |
| Francis E. Walter Reservoir Site | Kidder Twp., Luzerne Co., Monroe Co. | Statewide |
| Glen Onoko | Lehigh & Penn Forest Twps., Jim Thorpe and Nesquehoning Boros. | Statewide |
| Golf Course Wetland | Kidder Twp. | Statewide |
| Hell Creek Barrens | Penn Forest Twp. | Statewide |
| Hickory Run Boulder Field | Kidder Twp. | Statewide |
| Hickory Run Campground | Kidder Twp. | Statewide |
| Hickory Run Headwaters | Kidder Twp. | Statewide |
| Hickory Run Wetland | Kidder Twp. | Statewide |
| Hughes Swamp | Lehigh Twp., Packer Twp., Nesquehoning Boro. | Statewide |
| Indian Mountain Barren | Penn Forest Twp., Monroe Co. | Statewide |
| Irishtown Run | Kidder Twp. | Statewide |
| Keipers Run | Penn Forest Twp. | Statewide |
| Kidder Wetlands | Kidder Twp. | Statewide |
| Lake Harmony / Big Boulder Lake | Kidder Twp. | Statewide |
| Lehigh Gap | Lower Towamensing & East Penn Twps., Nortampton & Lehigh Cos. | Statewide |
| Lehigh Gorge at Sandy Run | Kidder Twp., Lehigh Twp., Luzerne Co. | Exceptional, Statewide |
| Lehigh Gorge at Tank Hollow | Penn Forest Twp., Lehigh Twp. | Exceptional, Statewide |
| Leonardsville Swamps | Kidder Twp. | Locally |
| Mahoning Creek Wetlands | Mahoning Twp., Schuylkill Co. | Locally |
| Mauch Chunk Ridge Barrens | Jim Thorpe & Summit Hill Boros. | Locally |
| Mosey Wood Wetlands | Kidder Twp. | Top Priority, Statewide |
| Mud Run Natural Area | Kidder Twp., Penn Forest Twp. | Statewide |
| Mud Swamp | Penn Forest Twp. | Statewide |
| Owl Creek Wetlands | Summit Hill Boro & Schuylkill Co. | Statewide |
| Penn Forest / Wild Creek Reservoirs | Penn Forest & Towamensing Twps., Monroe Co. | Top Priority, Statewide |
| Penn Haven Oak Barren | Lehigh Twp. | Statewide |
| Penrose Swamp Barrens | Banks, Lausanne & Lehigh Twps. | Statewide |
| Pine Run Woods | Penn Forest, Towamensing & Franklin Twps. | Statewide |

| Site | Municipality | Significance |
|---------------------------|--|-------------------------|
| Pocono Mountain Barren | Penn Forest Twp., Jim Thorpe Boro. | Statewide |
| Pocono Mountain Wetlands | Kidder Twp. | Statewide |
| Quakake Creek Wetland | Packer Twp. | Statewide |
| Roundhead Mountain Barren | Lehigh Twp. | Statewide |
| Schoch Barrens Complex | Kidder Twp., Penn Forest Twp., Monroe Co. | Top Priority, Statewide |
| Schoch Thicket | Penn Forest Twp. | Statewide |
| Scrub Mountain | Penn Forest Twp. | Statewide |
| Spring Mountain | Banks Twp., Packer Twp. | Locally |
| Stone Mountain Woods | East Penn Twp. | Statewide |
| Stony Ridge | Lower Towamensing & Penn Twps., Palmerton Boro. | Statewide |
| Swamp Run | Kidder Twp. | Statewide |
| Yellow Run Barrens | Penn Forest Twp. | Top Priority, Statewide |

Source: PA Science Office of The Nature Conservancy, 2005

Hydrology

The Hydrology Map highlights the science of water. In comprehensive planning, hydrology involves identifying surface waters, drainage basins, floodplains, and wetlands. It also involves identifying how these natural features should be considered in formulating development and preservation policies.

Watersheds

A watershed is an area where all runoff is naturally directed into a particular creek or river. Watersheds are defined by topographic ridge lines, which may be prominent ridges or less notable areas of high ground. Since the activities occurring within a watershed affect the quality of the collecting stream, environmental protection measures are often performed on a watershed basis.

Carbon County is completely within the Lehigh River Watershed. The Lehigh River watershed drains 1,345 square miles, encompasses 108 municipalities, and drains portions of ten counties in eastern Pennsylvania, including Lehigh, Northampton, Berks, Bucks, Carbon, Monroe, Luzerne, Schuylkill, Lackawanna, and Wayne¹.

Waterways

Creeks, streams and other surface waterways are valuable aquatic habitats that provide both active and passive recreation. Carbon County has a total of 36 named rivers, creeks and streams, the largest of which is the Lehigh River. Pennsylvania’s water quality standards, called for under Pennsylvania Code 93, designate protection categories for streams and establish water quality criteria for each category that is used in regulating the discharge of effluent into streams. The following are categories of streams found in Carbon County:

EV, Exceptional Value Waters – a stream or watershed which constitutes an outstanding national, state, regional or local resource, such as: a) waters of national, state or county parks or forests, b) waters which are used as a source of unfiltered potable water supply, c) waters of wildlife refuges or state game lands, d) waters which have been characterized by the PA Fish & Boat Commission as “Wilderness Trout Streams”, or e) other waters of substantial recreational or ecological significance. *Examples: Shafer Run, Stony Creek, Deep Run, First Hollow Run, White Bear Creek and Wild Creek*

CWF, Cold Water Fisheries – streams that should be protected as habitat for cold water fish and other fauna and flora indigenous to cold water. *Examples: Beaver Creek, Black Creek, Wetzel Creek, Quakake Creek, among others.*

WWF, Warm Water Fisheries – streams that should be protected as habitat for warm water fish and other fauna and flora indigenous to warm water. *Example: Nesquehoning Creek.*

MF, Migratory Fisheries – streams that should be protected for the movement of trout and other anadromous fish species which ascent streams to spawn. *Examples: Aquashicola Creek and Buckwha Creek, among others.*

TSF, Trout Stocking – maintenance of stocked trout from February 15 to July 31 and maintenance and propagation of fish species and additional flora and fauna that are indigenous to a warm water habitat. *Example: Aquashicola Creek, Lizard Creek.*

HQ, High-Quality Cold Water Fisheries – Cold Water Fisheries with excellent water quality and other environmental attributes. *Examples: Lehigh River, Shingle Mill Run, Tobyhanna Creek, Maple Hollow, among others.*

**Table 3.4
State Stream Quality Designations**

| Stream | Segment | Designation |
|--|--|-------------|
| Lehigh River | Basin, Source to Tobyhanna Creek | HQ-CWF, MF |
| Tobyhanna Creek | Main Stem | HQ-CWF, MF |
| Unnamed Tributaries to Tobyhanna Creek | Basins | HQ-CWF, MF |
| Tunkhannock Creek | Basin | HQ-CWF, MF |
| Shingle Mill Run | Basin | HQ-CWF, MF |
| Lehigh River | Basin, Tobyhanna Creek to Buck Mountain Creek | HQ-CWF, MF |
| Buck Mountain Creek | Main Stem | HQ-CWF, MF |
| Unnamed Tributaries to Buck Mountain Creek | Basin | HQ-CWF, MF |
| Indian Run | Basin | HQ-CWF, MF |
| Shafer Run | Basin | EV, MF |
| Lehigh River | Main Stem, Buck Mountain Creek to PA 903 Bridge (at Jim Thorpe | HQ-CWF, MF |
| Unnamed Tributaries to Lehigh River | Basins, Buck Mountain Creek to PA 903 Bridge | HQ-CWF, MF |
| Drakes Creek | Basin | HQ-CWF, MF |

| Stream | Segment | Designation |
|---|--|-------------|
| Stony Creek | Basin | EV, MF |
| Penn Springs | Basin | HQ-CWF, MF |
| Black Creek | Basin, Source to Beaver Creek | HQ-CWF, MF |
| Beaver Creek | Basin | CWF, MF |
| Black Creek | Main Stem, Beaver Creek to Mouth | CWF, MF |
| Unnamed Tributaries to Black Creek | Basins, Beaver Creek to Mouth | HQ-CWF, MF |
| Quakake Creek | Basin, Source to Wetzel Creek | HQ-CWF, MF |
| Wetzel Creek | Basin | CWF, MF |
| Quakake Creek | Basin, Wetzel Creek to Mouth | CWF, MF |
| Maple Hollow | Basin | HQ-CWF, MF |
| Nesquehoning Creek | Basin, Source to Lake Greenwood | HQ-CWF, MF |
| Nesquehoning Creek | Main Stem, Lake Greenwood to Tibbetts Pond Dam | HQ-WWF, MF |
| Unnamed Tributaries to Nesquehoning Creek | Basins, Lake Greenwood to Tibbetts Pond Dam | HQ-CWF, MF |
| Grassy Meadow Run | Basin | HQ-CWF, MF |
| Bear Creek | Basin | HQ-CWF, MF |
| Nesquehoning Creek | Main Stem, Tibbetts Pond Dam to Mouth | CWF, MF |
| Unnamed Tributaries to Nesquehoning Creek | Basins, Tibbetts Pond Dam to Mouth | HQ-CWF, MF |
| Dennison Run | Basin | HQ-CWF, MF |
| Broad Run | Basin | HQ-CWF, MF |
| Deep Run | Basin | EV, MF |
| First Hollow Run | Basin | EV, MF |
| Jeans Run | Basin | HQ-CWF, MF |
| Robertson Run | Basin | HQ-CWF, MF |
| Unnamed Tributaries to Lehigh River | Basins, PA 903 Bridge to Allentown Dam | CWF, MF |
| Silkmill Run | Basin | CWF, MF |
| Mauch Chunk Creek | Main Stem | CWF, MF |
| Unnamed Tributaries to Mauch Chunk Creek | Basins | CWF, MF |
| White Bear Creek | Basin, Source to PA 902 Bridge | EV, MF |
| White Bear Creek | Basin, PA 902 Bridge to Mouth | CWF, MF |
| Beaverdam Run | Basin | CWF, MF |
| Long Run | Basin | CWF, MF |
| Mahoning Creek | Basin | CWF, MF |
| Pohopoco Creek | Basin, Middle Creek to Wild Creek | CWF, MF |
| Wild Creek | Basin | EV, MF |
| Pohopoco Creek | Basin, Wild Creek to Mouth | CWF, MF |
| Fireline Creek | Basin | CWF, MF |
| Lizard Creek | Basin, T-922 Bridge to Mouth | TSF, MF |
| Aquashicola Creek | Basin, Source to Buckwha Creek | HQ-CWF, MF |
| Buckwha Creek | Basin | CWF, MF |
| Aquashicola Creek | Main Stem, Buckwha Creek to Mouth | TSF, MF |
| Unnamed Tributaries to Aquashicola Creek | Basins, Buckwha Creek to Mouth | CWF, MF |
| Mill Creek | Basin | CWF, MF |

Source: Chapter 93, Pennsylvania Code

Floodplains

Floodplains surround streams and rivers in varying widths, depending on the topography of the surrounding natural land. 100-year floodplains are areas that would theoretically be inundated in a storm of such magnitude that it would only occur once in a hundred years, according to the Federal Emergency Management Agency (FEMA). In other words, the entire area of the 100-year floodplains has a 1 in 100 (or 1%) chance of flooding in a given year.

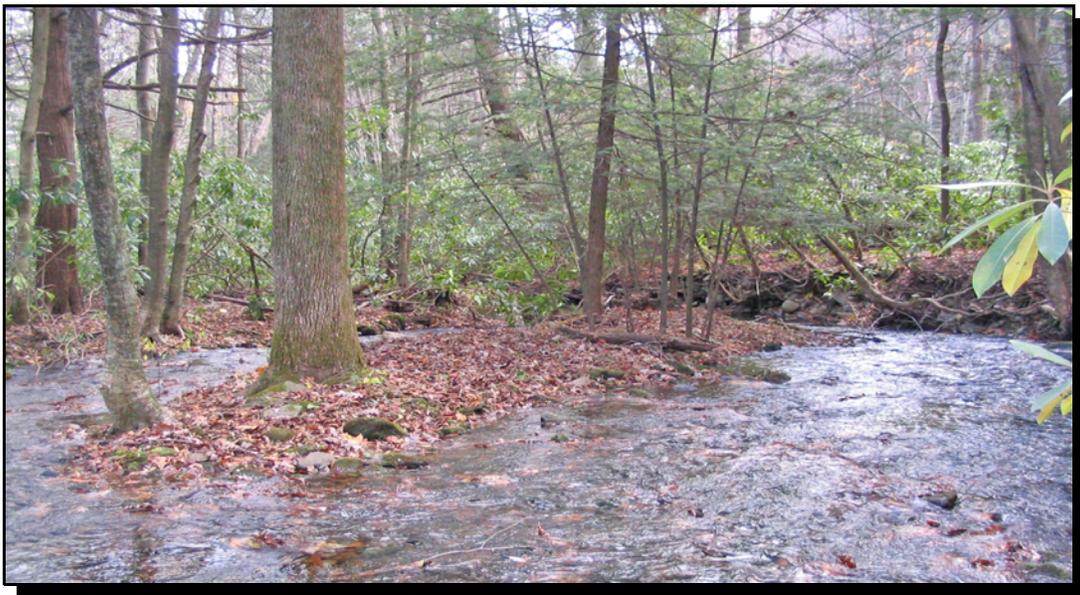
Floodplains, while controlling flooding, also produce environmental benefits. These benefits include erosion control, sustaining water quality by filtration and shading streams and habitats for many flora and fauna. In addition to providing natural habitat, floodplains carry flood waters and help moderate flood heights. All major streams and their tributaries in Carbon County have 100-year floodplains.

The Pennsylvania Floodplain Management Act (Act 166 of 1978) requires municipalities identified as being flood-prone to enact floodplain regulations which, at a minimum, meet the requirements of the National Flood Insurance Program. Carbon County municipalities participate in the program and have floodplain studies that were prepared by the Federal Insurance Administration of the U.S. Department of Housing and Urban Development.

Floodplains are shown on the Hydrology Map.

Hydric Soils

According to the U.S. Natural Resources Conservation Service, hydric soils are those soils that have formed “under the conditions of saturation, flooding or ponding long enough during the growing season to develop anaerobic conditions in the upper part.” The most important implication of hydric soils is that they may contain wetlands. Soils with major hydric component are very likely to be predominantly wetlands, while soils with only minor hydric components are likely to contain some wetlands. Most hydric soils occur in or near stream valleys, floodplains, and other low-lying areas.

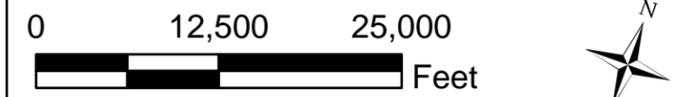


Carbon County Comprehensive & Greenway Plan

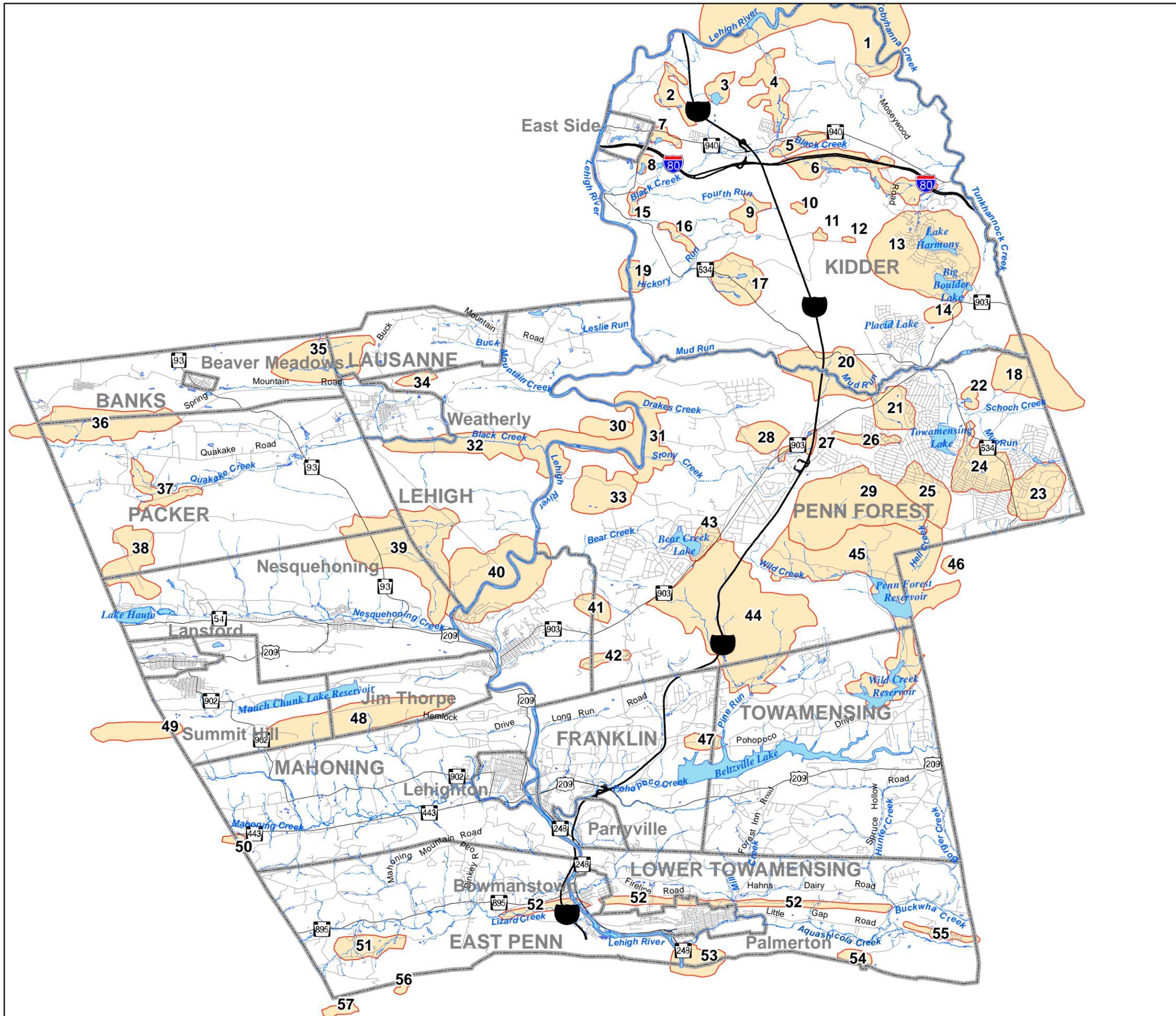
Unique Natural Areas

 Unique Natural Areas

- | | |
|-------------------------------------|---|
| 1. Francis E. Walter Reservoir Site | 31. Lehigh Gorge at Tank Hollow |
| 2. Kidder Wetlands | 32. Black Creek Gorge |
| 3. Fawn Run Wetlands | 33. Scrub Mountain |
| 4. Pocono Mountain Wetlands | 34. Roundhead Mountain Barren |
| 5. Leonardsville Swamps | 35. Penrose Swamp Barrens |
| 6. Mosey Wood Wetlands | 36. Spring Mountain |
| 7. East Side Wetland | 37. Quakake Creek Wetland |
| 8. Golf Course Wetland | 38. Broad Mountain West |
| 9. Hickory Run Wetland | 39. Hughes Swamp |
| 10. Fourth Run Wetlands | 40. Glen Onoko |
| 11. Hickory Run Headwaters | 41. Pocono Mountain Barren |
| 12. Hickory Run Boulder Field | 42. Berry Run Barrens |
| 13. Lake Harmony / Big Boulder Lake | 43. Bear Creek Lake |
| 14. Swamp Run | 44. Pine Run Woods |
| 15. Black Shanty Run | 45. Penn Forest / Wild Creek Reservoirs |
| 16. Irishtown Run | 46. Cross Run Vernalis |
| 17. Hickory Run Campground | 47. Beltville Lake Vernalis |
| 18. Schoch Barrens Complex | 48. Mauch Chunk Ridge Barrens |
| 19. Lehigh Gorge at Sandy Run | 49. Owl Creek Wetlands |
| 20. Mud Run Natural Area | 50. Mahoning Creek Wetlands |
| 21. Keipers Run | 51. Stone Mountain Woods |
| 22. Schoch Thicket | 52. Stony Ridge |
| 23. Indian Mountain Barren | 53. Lehigh Gap |
| 24. Carpsocus Creek Thickets | 54. Devil's Potato Patch / Little Gap |
| 25. Hell Creek Barrens | 55. Aquashicola Creek Wetlands |
| 26. Mud Swamp | 56. Back Oven Knob |
| 27. Christmans Wetland | 57. Bears Rocks |
| 28. Christmans Ponds | |
| 29. Yellow Run Barrens | |
| 30. Penn Haven Oak Barren | |



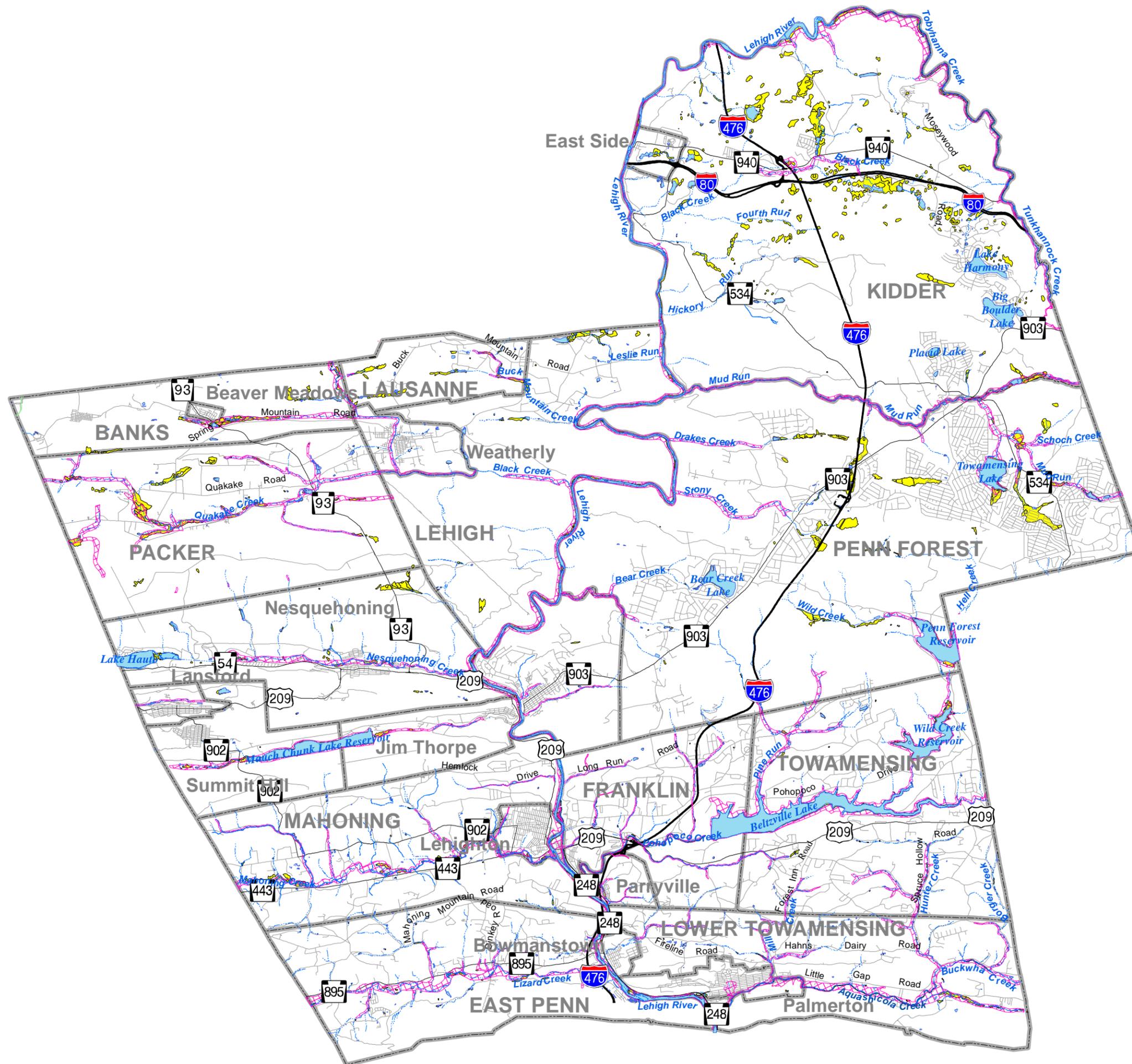
Source: PA Science Office of The Nature Conservancy.



Carbon County Comprehensive & Greenway Plan

Hydrology

-  Rivers, Streams & Tributaries
-  Lakes, Ponds and Reservoirs
-  100-Year Floodplains
(see official Federal mapping)
-  Known Wetlands



Prime Agricultural Soils

The U.S. Natural Resource Conservation Service (formerly known as the SCS) has established soil capability classes based on each soil type’s agricultural productivity. Capability classes range from Class I to Class VIII. Class I through IV soils are considered “prime agricultural soils” (see Prime Agricultural Soils Map). Capability classification definitions are as follows for Classes I to IV:



- Class I - soils that have few limitations which restrict their use.
- Class II - Soils that have some limitations which reduce the choice of plants or require moderate conservation practices.
- Class III - Soils that have severe limitations which reduce the choice of plants, require special conservation practices, or both.
- Class IV - Soils that have very severe limitations which restrict the choice of plants, require careful management, or both.



Prime agricultural soils are well-suited for farming. Prime agricultural soils often drain well and have other characteristics that are well suited for development. As a result, land that is good for farming is typically among the property most sought after by residential and non-residential developers. The majority of prime agricultural soils are located in Palmerton, Towamensing, Lower Towamensing, Parryville, Franklin, Lehighton, Bowmanston, and Mahoning. Other substantial concentrations of prime agricultural soils are along streams in the municipalities of Packer, Nesquehoning, Lausanne, Lehigh, Penn Forest and Kidder.



Migratory Corridors

Migratory corridors allow migrating birds to follow specific ridges, rivers, and other natural landmarks to breeding grounds and summer/winter homes. Bird migration is generally a north-to-south, vice-versa, movement, with coastlines, mountain ranges, and river valleys offering the highest concentration of routes. Pennsylvania is unique because the commonwealth's complex topography and geographic position provide two major migratory bird pathways—the Atlantic and Appalachian Flyways—and several minor flyways to converge on the state².

The Kittatinny Flyway, located along the Blue Mountain / Kittatinny Ridge, is the most famous seasonal (fall and spring) flyway in Pennsylvania. Stretching from Maryland east toward New Jersey along the eastern edge of the Ridge and Valley Province, the flyway acts as a major corridor for migrating raptors and song birds. The Kittatinny Ridge is recognized as a “globally significant” migration flyway in spring and fall for thousands of hawks and eagles and millions of songbirds and has been officially designated by the Audubon Society as the state's largest “Important Bird Area”.

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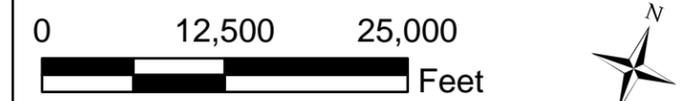
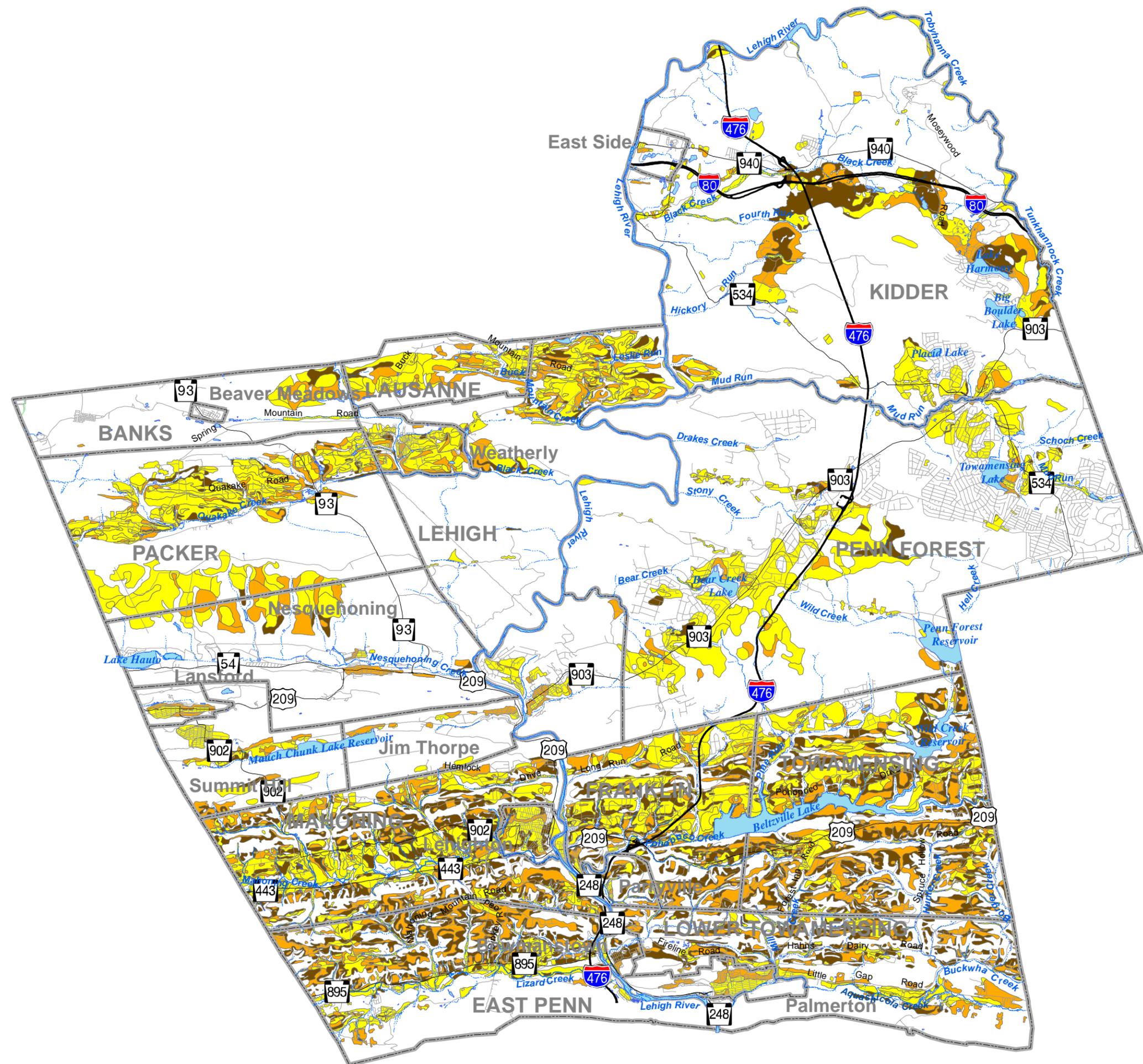
Carbon County Comprehensive & Greenway Plan

Prime Agricultural Soils

Soil Classifications

-  Class I & II
-  Class III
-  Class IV

Class I soils are the most productive for most crop farming, followed by classes II, III, ect.



Source: PA DCNR, PASDA, Wildlands Conservancy, URDC

RECREATION, PARK & OPEN SPACE BACKGROUND

Recreation sites serve the public in many ways. Locally, regionally and nationally significant sites are found within Carbon County, as seen on the Recreation Areas Map. These sites are useful for local residents who use a local municipal park, or a through hiker taking advantage of the Appalachian Trail. A large portion of Carbon County land is preserved by the above entities and also by local conservancies and water authorities. The large tracts of open space found in Carbon County, contributes to tourism, recreational activities and healthy living. Carbon County includes recreation areas that are owned by non-profits, municipalities, the County, State agencies, the U.S. Government, water authorities and private companies.

Local Recreation Areas

Each borough and most townships have at least one municipal park. Local recreation needs are also served by public school lands.

County Recreation Areas

Mauch Chunk Lake Park is an extremely popular County-owned park. This 2,300-acre park contains the 330 acre lake, and is located in Jim Thorpe and Nesquehoning. The park offers many recreational activities, such as swimming at a beach area, picnicking, hiking, boating, cross-country skiing and fishing. There are tent sites and cottages for rent. The Park also includes the Carbon County Environmental Education Center.



The County also owns areas of land along the Lehigh River north of Jim Thorpe.

State Recreation Areas

Pennsylvania owns an estimated 52,369 acres of land within Carbon County. Most of these lands are located along Blue Mountain, Beltzville State Park, the Lehigh River corridor and the northeastern portion of the County (Table 4.1). Most of the state lands are for passive recreation opportunities, such as camping, hiking, boating, fishing and hunting. The state lands also protect valuable natural resources and create wildlife corridors.

**Table 4.1
State Recreation Areas**

| Recreation Area | Municipalities | Acreage |
|-------------------------|--|---------|
| Hickory Run State Park | Kidder & Penn Forest Twps. | 15,990 |
| Lehigh Gorge State Park | Jim Thorpe Bor, Lehigh Twp, Penn Forest Twp, Kidder Twp | 4548 |
| Beltzville State Park | Franklin & Towamensing Twps. | 3,002 |
| State Game Lands #40 | Kidder Twp | 6,119 |
| State Game Lands #129 | Kidder & Penn Forest Twps. | 2,968 |
| State Game Lands #141 | Penn Forest Twp, Lehigh Twp, Packer Twp, Nesquehoning Bor. | 17,048 |
| State Game Lands #168 | Lower Towamensing Twp. | 334 |
| State Game Lands #217 | East Penn Twp. | 1,471 |
| Weiser State Forest | Penn Forest Twp | 889 |

Source: DCNR, PGC, URDC

State Parks

The Bureau of State Parks operates the following areas:

Hickory Run State Park is located in Penn Forest and Kidder Townships. The park is the largest state park in the County at 15,990 acres. This park has over 40 miles of hiking trails, three designated natural areas and miles of trout streams. The Boulder Field, a striking boulder-strewn area, is a National Natural Landmark.

Hickory Run State Park has an abundant amount of campsites for short and/or long-term stay. The park also includes environmental educational classes, pavilions / picnic areas, a swimming area, wildlife watching, fishing / hunting and a disk golf course.

Lehigh Gorge State Park includes 4,635 acres. Lehigh Gorge begins in the northern portion of Kidder Township at the outflow of the Francis E. Walter Dam and follows the Lehigh River corridor south into Borough of Jim Thorpe. The gorge has many scenic attributes, including the abundant cascading waterfalls and rapids that allow for whitewater rafting. The Lehigh Gorge Trail follows over 20 miles of former railroad grade along the river, providing opportunities for hiking, bicycling, sightseeing and photography.

Beltzville State Park is located in Franklin and Towamensing Townships. The 3,002 park encompasses Beltzville Lake that is very popular during the warmer months for boating, picnicking and swimming at the sandy beach. The 949-acre Beltzville Lake is stocked with warm-water and cold-water game fish and panfish. Beltzville State Park also includes 15 miles of trails that surround the lake.

State Game Lands

The Pennsylvania Game Commission (PGC) oversees all rules, regulations and activities within the State Game Lands throughout Pennsylvania. Pennsylvania owns and operates State Game Lands # 40, 129, 141, 168 and 217 within Carbon County and adjacent counties. The largest concentrations of State Game Lands are north of Jim Thorpe and along Blue Mountain. There is nearly 30,000 acres of State Game Lands within Carbon County.

The State Game Lands main purpose is to allow the public hunting and fishing areas. The land is managed to accommodate deer, pheasant, turkey and other game through specific management practices. The PGC created Wildlife Management Units (WMU) throughout the state to regulate hunting seasons and bag limits to control game populations. Carbon County is split into three WMU's: 3D, 4C, and 5C.

State Game Lands #40 is located in northwestern Kidder Township. A total of 6,119 acres are open for public use. The Pennsylvania Turnpike and Interstate 80 are constructed through portions of SGL 40. Fawn Run, Shanty Run, Black Creek and Fourth Run all flow through SGL 40. These lands are adjacent to Lehigh Gorge State Park and Francis E. Walter Dam.

State Game Lands #129 is located in southeastern Kidder Township and northeastern Penn Forest Township, while some land extends east into Monroe County. Swamp Run and Dilltown Creek flow through SGL 129, which totals 2,968 acres in Carbon County.

State Game Lands #141 is by far the largest of State Game Lands within Carbon County. SGL 141 stretches from Hickory Run State Park in Penn Forest Township, through Lehigh Gorge State Park and west into Nesquehoning Borough and Packer Township. The 17,048 acres encompasses natural features such as Broad, Scrub and Millstone Mountains, the Lehigh River and several tributaries.

State Game Lands #168 stretches from the Lehigh River, at the border of Carbon and Lehigh counties, west along Blue Mountain into Northampton County. The Appalachian Trail travels along the summit of Blue Mountain through SGL 168. A total of 334 acres are in Carbon County.

State Game Lands #217 extends from the western border of Schuylkill County to the Lehigh River in Carbon and Lehigh counties. Carbon County has a total of 1,471 acres in SGL 217, which are located on Blue Mountain along the Appalachian Trail.

State Forest

The Weiser State Forest consists of eight tracts of State Forest Land located in northern Dauphin, Schuylkill, Carbon and Berks Counties. The total area of State Forest Land is 17,961 acres. The 889-acre tract of Weiser State Forest, located in Penn Forest Township, is the only tract located in Carbon County. State Forest lands are open to the public for hunting and fishing and other recreational activities.

Federal Recreation Areas

Francis E. Walter Dam is an 1,800-acre park with a small 80-acre reservoir to help control the flooding in the Lehigh River. Since 2005, the U.S. Army Corps of Engineers, in partnership with the Pennsylvania Fish and Boat Commission, Department of Conservation and Natural Resources, Delaware River Basin Commission, and stakeholders from both the nonprofit and private sectors, has employed a collaborative approach to managing flows out of the Francis E. Walter Dam into the Lehigh River.



The Walter Dam area is located at the northern edge of Kidder Township and in neighboring Luzerne County. Canoeing, hiking, picnicking, fishing, frisbee golf and other passive recreational opportunities exist and bald eagles have also been known to frequent the grounds around the reservoir.

The National Park Service owns small segments of land located along Blue Mountain that protect the Appalachian Trail. These lands are located in southern Carbon County and are typically adjacent to State Game Lands.

Trails

Trails connect urban areas to rural lands, waterways to farmland and allow for people use non-motorized methods of traveling. Trails offer the local resident a recreational activity but also invites tourists from around the country to explore the land around the trails.

Trail systems create physically active environments for all ages of people. Trails, in relation to promoting a healthy lifestyle, assist in curbing obesity which, in conjunction with, leads to other serious health conditions such as diabetes, heart disease and other life-threatening conditions. The prevalence of obesity in the U.S. more than doubled (from 15% to 34%) among adults and more than tripled (from 5% to 17%) among children and adolescents from 1980 to 2008.



Carbon County has a variety of trail systems in place (Map 4.1). The Appalachian Trail is the most widely-known trail due to its overall expanse. State Parks and Game Lands have trails that traverse their property. The Delaware and Lehigh Trail will extend from Philadelphia north to Wilkes-Barre. The Lehigh River serves as water trail that is famous for white water rafting in the northern stretches.

Appalachian Trail

The Appalachian Trail (AT) is the longest trail in the United States, running from Georgia to Maine. In Carbon County, the AT follows the ridge of Blue Mountain, passing adjacent to East Penn and Lower Towamensing Townships and Palmerton Borough. At one section, between the Lehigh Gap and Little Gap the AT crosses over the Lehigh Tunnel which was created for the Pennsylvania Turnpike.

The following are quick facts for the entire Appalachian Trail:

- Completed in 1937.
- Overseen by the National Park Service, but with maintenance conducted by local organizations.
- Is the nations longest footpath, at approximately 2,178 miles.
- Touches 14 states, houses more that 2,000 occurrences of rare, threatened, endangered, and sensitive plan and animal species at about 535 sites.



Appalachian Trail looking north through the Lehigh Gap

Delaware & Lehigh Trail

The Delaware & Lehigh (D&L) Trail is a 165-mile corridor extending from Bristol (Bucks County) to Wilkes-Barre (Luzerne County). The D&L Trail is overseen by the Delaware and Lehigh National Heritage Corridor, a Federally authorized partnership.

The Delaware & Lehigh Trail meanders parallel to the Lehigh River through the entire stretch of Carbon County. Many of the most populated areas in the County, such as Jim Thorpe, Lehighton and Palmerton, have an established connections to the Trail. The Trail not only serves as a regional entity, but also represents American history; showcasing transportation, industrial, cultural and heritage aspects.

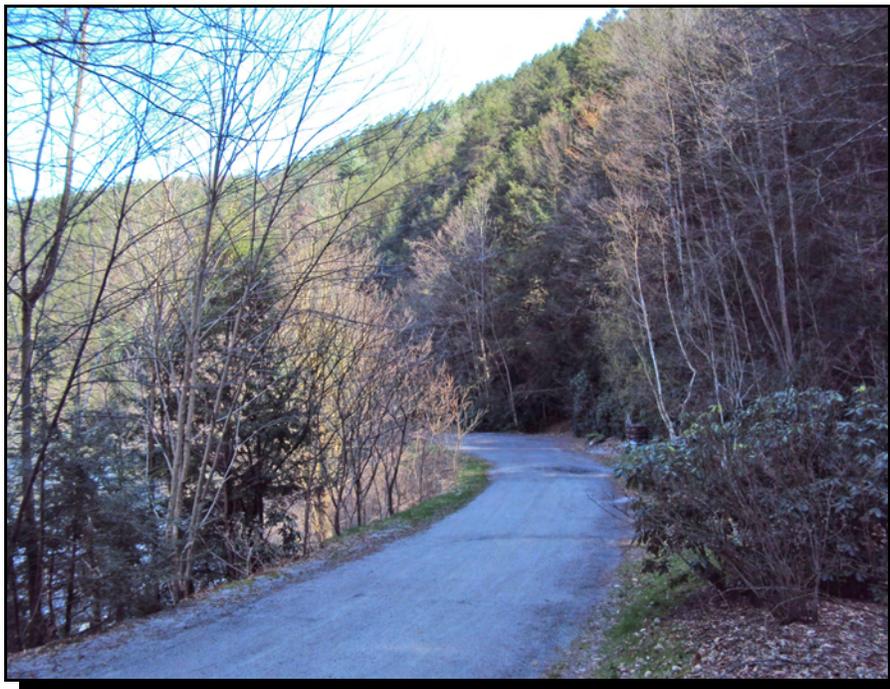
The entire D&L trail serves as an economic component to tourism for communities along its' path. The direct and indirect economic impact of tourism spending when visiting D&L sites: nearly 7,892 jobs, generating nearly \$159 million in personal income and \$250 million in total value added to the economy.

“The system, remarkable in its time for its engineering, daring, and vision, is equally remarkable today for its endurance and integrity. The Corridor contains nationally significant and intact cultural, natural, and recreational resources that tell stories of the early social development in America, the anthracite coal mining era, the Industrial Revolution, the development of canal and rail transportation, and the regeneration of natural resources.

– *National Park Service, D&L Corridor Sustainability Study”*

Most of the trail has been completed. A segment in East Penn and Mahoning townships will be completed once the Turnpike Bridge construction is complete. A segment from the east side of the River to Downtown Jim Thorpe awaits the construction of a new pedestrian / bicycle bridge. A segment from White Haven to the northwest in Luzerne County is currently planned, which will eventually reach the Wilkes-Barre area.

Recent improvements to the Trail have included: a) the opening of the Nesquehoning Trestle, which connects the trailhead in Jim Thorpe to the trail along the eastern side of the River in the Lehigh Gorge State Park; and b) the improvement of the Trail in East Penn Township along the western side of the River.



Lehigh River Water Trail

Water trails are made for boating, canoeing, and kayaking as land trails are made for biking, walking and running. The Lehigh River Water Trail offers many scenic views, white water rapids and fishing opportunities.



Along the Lehigh River, there are a total of six boat launch sites in Carbon County. All boat launch areas within the County are for kayak, canoe and/or whitewater rafts. These boat launch areas are:

- White Haven (Luzerne County)
- Rockport
- Glen Onoko
- Jim Thorpe
- Parryville
- West Bowmanstown
- Lehigh Gap

The Pennsylvania Fish and Boat Commission (PFBC) maintains all boat launch sites and creates rules and regulations for the Lehigh River Water Trail to ensure proper safety measures. With assistance from PFBC, the Wildlands Conservancy maintains a website devoted to the Lehigh River Water Trail that has up-to-date information about water flows, maps and guides, located at <http://wildlandspa.org/lrwt/trailmap.html>.

Switchback Railroad Trail

The Switchback Railroad Trail is an 18-mile loop trail that connected the coal fields of Summit Hill to the Lehigh River. This trail is listed on the National Register of Historic Sites.

“The first railroad in Pennsylvania and the second railroad in the country (created in 1827) the Switchback Gravity Railroad is a significant piece of American industrial history. The Switchback was an integral part of the anthracite economy of northeast Pennsylvania, which helped to fuel the Industrial Revolution in the northeast by providing coal to the cities of Philadelphia and New York – Switchback Gravity Railroad Historic Landscape Preservation Study.”

The Switchback Trail starts in Jim Thorpe and heads up the mountain to the former Mt. Pisgah Engine House. It then runs west to Summit Hill Borough, before returning on the “downtrack” to Jim Thorpe. Along the downtrack section of the trail, the Switchback Trail passes through Mauch Chunk Lake Park.

Glen Onoko Run Trail

Glen Onoko Run Trail has parking located in Lehigh Gorge State Park. The 2.1-mile trail is located entirely in State Game Lands 141. Most of the trail is steep, rocky and often eroded. Although this trail is only suitable for sure-footed climbing enthusiasts, there are many scenic views. Great care needs to be used to avoid injuries, particularly during icy conditions. Seven distinct waterfalls, including three major ones over 30 feet high, tumble 900 feet in 1 mile through the narrow, hemlock filled gorge.

Beltzville State Park Trails

Beltzville State Park has a total of four identified and marked trails. These are:

- Sawmill Run is a 1.8-mile double loop between Old Mill Road and Pohopoco Drive on both sides of the stream, with a connecting footbridge part-way.
- Christman Trial is an easy walking loop, mostly wide and grassy that totals 1.85 miles.
- Wild Creek Trail is a 3.25-mile loop that connects with Christman Trail. Both hikes can be done at one time which would total 4.5 to 5 miles in total.
- Trinity Gorge and Preachers Camp Trails are on the southside of the lake and join a preachers camp.

This area also contains short nature trails that adds to the overall 15 miles of trails. Maps and information are located at the Visitor Center, as well as the DCNR website.

Lehigh Gorge State Park Trails

The D&L runs for 30 miles directly through Lehigh Gorge State Park, from Glen Onoko north to Rockport and eventually into White Haven. Along portions, the Lehigh River flows to the west and several cascading waterfalls are to the east. There are several picnic tables and historical interpretive signs along the way.

Hickory Run State Park Trails

Hickory Run State Park has a total of 43 miles of trails, according to PA DCNR. Every trail in the park can be hiked, but mountain biking is prohibited on all trails. The trails lead through areas rich in historic and scenic interest. Trails are designated for hiking, cross-country skiing (13 miles) and snowmobiling (21 miles). The following are a listing of the most significant trails:

- Beach Trail - 0.5-mile
- Bear Trail - 1-mile
- Blue Trail - 1-mile
- Boulder Field Trail - 3.5-miles
- Deer Trail - 0.6-mile
- Fireline Trail - 2.3-miles
- Fourth Run Trail - 5-miles
- Gamewire Trail - 2.8-miles
- Gould Trail - 1.5-miles
- Hawk Falls Trail - 0.7-mile
- Hickory Run Trail - 1.5-mile
- Lake Trail - 0.6-mile
- Leonardsville Trail - 0.3-mile
- Manor House Trail - 2.3-miles
- Orchard Trail - 1.6-miles
- Nature Loop Trail - 0.5-miles
- Pine Hill Trail - 3.8-miles
- Sand Spring Trail - 2.5-miles
- Shades of Death Trail - 1.5-miles
- Ridge Trail - 1.5-miles
- Skyline Trail - 3.4-miles
- Stage Trail - 4.5-miles
- Stone Trail - 1-mile

Conservancy Lands

The largest area of conservancy land is a 750-acre conservation easement in the boroughs of Jim Thorpe and Nesquehoning. The 750-acre tract extends from the Lehigh River west along the southern edge of PA Route 209. In Franklin Township, a 30 acre tract of land is also protected by a conservation easement. Both conservation easements are controlled by the Wildlands Conservancy. The Nature Conservancy owns a preserve called the John & Marry Wargo Preserve in Penn Forest Township, near Bear Creek Lake and north of Route 903.

Water Authority Lands

Water authority lands are owned by authorities located within and outside Carbon County. The Bethlehem Water Authority signed a 60-year term conservation easement with The Nature Conservancy protecting lands around Penn Forest Reservoir and Wild Creek Reservoir in Penn Forest and Towamensing Townships. A total of over 32,000 acres are owned by eight different authorities within the County:

- Bethlehem Water Authority
- Bowmanstown Borough Authority
- Hazleton City Authority
- Jim Thorpe Municipal Authority
- Lehighon Water Authority
- Nesquehoning Borough Authority
- Summit Hill Water Authority
- Tamaqua Area Water Authority

Golf Courses

Golf courses offer open space and recreational opportunities, but many courses are privately owned facilities. There are a total of five golf courses, three of which are in the northern portion of Kidder Township.

Private Recreation Areas

Private recreation areas consist of camps, campgrounds, Moseywood Girl Scout Camp and rod and gun clubs.

Commercial Recreation Areas

Commercial recreation areas are comprised of major ski resorts, paintball course, concert venue areas and other large-scale venues. Blue Mountain and Big Boulder/Jack Frost ski resorts offer recreational activities both in winter and summer. Skiing in winter months and water parks and mountain biking in the summer months are the largest attractions for these resorts. Skirmish, a large-scale paintball complex is located in Penn Forest Township. Penn's Peak, located in Penn Forest Township, hosts weekly concerts and offers scenic views.

Preserved Farmland

Carbon County’s farmland preservation program is described in the Natural Features and Agricultural Preservation Plan. The County’s largest tracks of preserved farmland are in the southern section of the County.

“Carbon County commissioners voted last week to include a 124-year-old Towamensing Township farm in the County's preservation program, ensuring the 12 acres owned by Roy Christman and his sister Kay C. Gilbert will never be touched by a developer's bulldozer – Morning Call, 2007.”

Agricultural easements restrict non-agricultural development on certain parcels. The landowner voluntarily agrees to be paid for development rights, and the easement is held by a governmental or nonprofit entity, such as a land trust or conservancy. The development restrictions are placed on the deeds, and apply in perpetuity. A waiting list exists to have land considered for agricultural easements because of the limited available funding.

Agricultural Security Areas

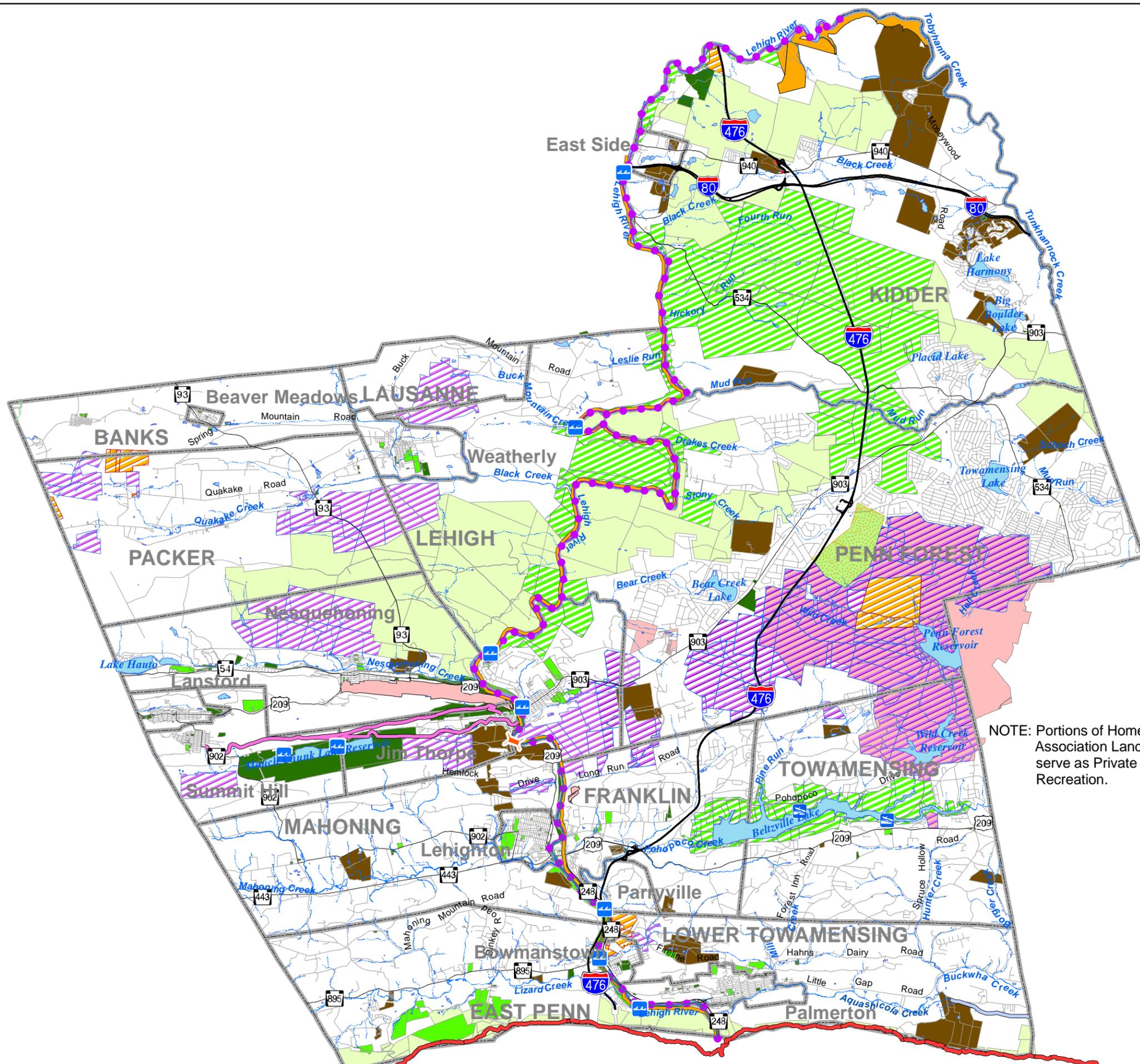
Agricultural security areas (ASAs) do not have legal binding restrictions and, therefore do not directly preserve land. However, ASAs represent the first step in the possible use of an agricultural easement. A landowner places the land in an ASA to indicate a non-binding intent to use the land for agriculture. At any time, the applicant may apply to the County to have the land be considered for the purchase of a conservation easement.



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Carbon County Comprehensive & Greenway Plan

Recreation, Open Space & Trails



NOTE: Portions of Homeowner Association Lands also serve as Private Recreation.

- Federal Lands
 - PA State Parks
 - PA State Game Lands
 - PA State Forest
 - County & Municipal Parkland
 - Conservation Easements
 - Public School
 - Water Authority Lands
 - Rod & Gun Clubs
 - Private & Commercial Recreation & Resorts
 - All Boat Access
 - Non-powered Boat Access
- Trails**
- Appalachian Trail
 - Buckwha Rails to Trails
 - D & L Trail & Lehigh Canal Park
 - The Lehigh River Water Trail
 - Planned Pedestrian Bridge
 - Switchback Railroad Trail

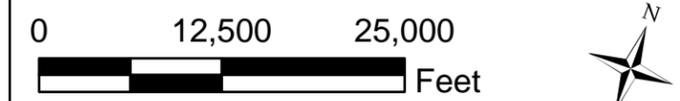
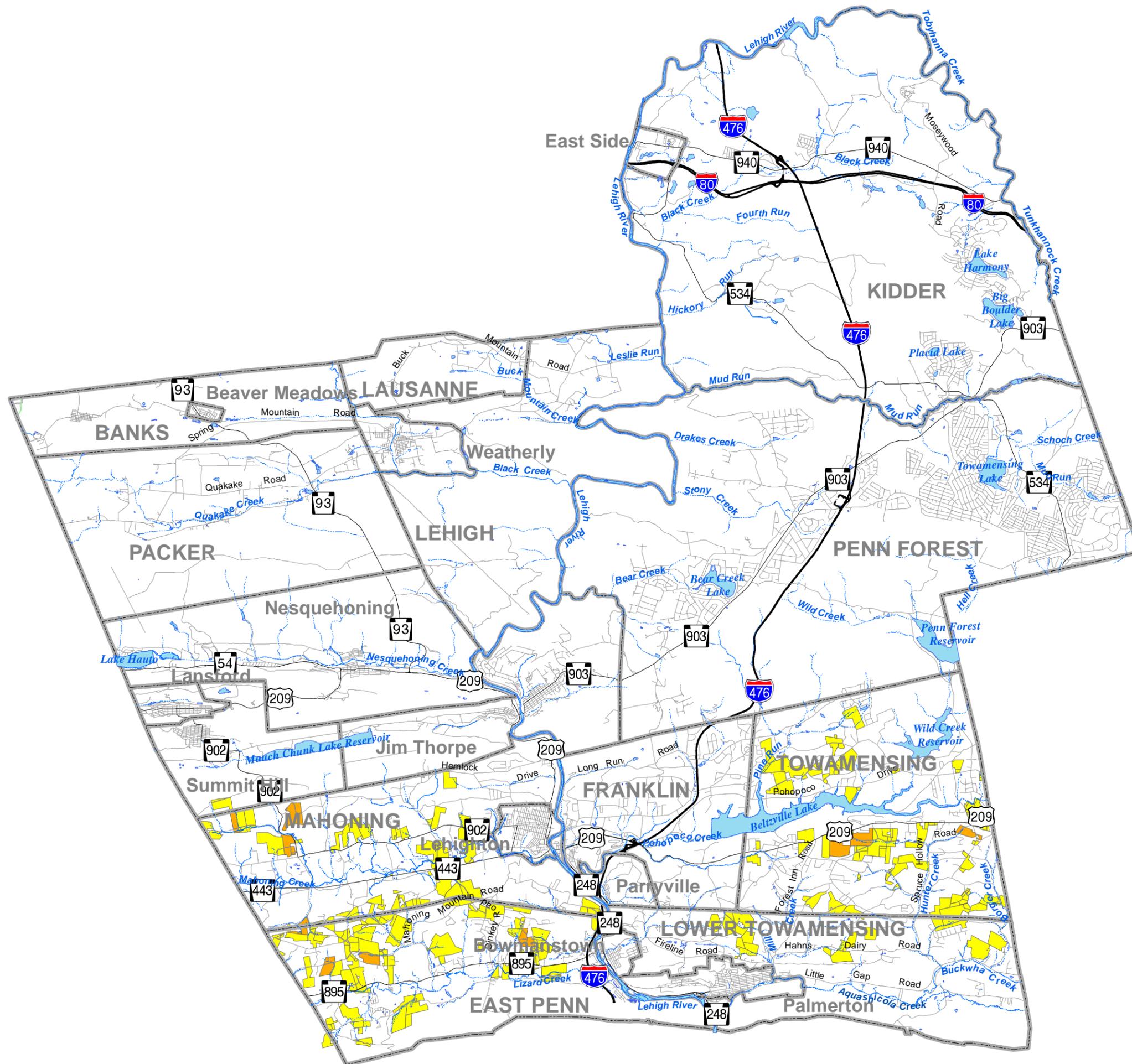


Source: PA DCNR, PASDA, Wildlands Conservancy, URDC

Carbon County Comprehensive & Greenway Plan

Preserved Farmland & Agriculture Security Areas

- Agricultural Security Areas
- Agricultural Easements
(Preserved Farmland)



COMMUNITY FACILITIES & SERVICES BACKGROUND

Community facilities and services include locations and services that are provided for the health, safety, and welfare of the general public. Educational and commerce facilities are cultural destinations—places where people work, shop and go to school. Educational centers can also include libraries, museums and government facilities, such as municipal buildings. The Educational Facilities Map and the Community Facilities Map show the locations of these facilities. Community facilities and services include:

- Educational Facilities
- Municipal Buildings
- Libraries
- Police, Fire and Emergency Medical Services

The Recreation Map shows the locations of recreation facilities, as well as water authority lands.

Educational Facilities

Colleges

Lehigh Carbon Community College (LCCC) has a satellite campus located on Locust St. in Nesquehoning. The main campus is in Schnecksville in northern Lehigh County. LCCC also includes the Morgan Campus in Tamaqua, which is convenient for many Carbon County residents. In addition to degree programs, the college offers programs for high school students and adult education programs.

Several other colleges are located within commuting distance from many portions of Carbon County, including:

- Cedar Crest College.
- East Stroudsburg University
- The Hazleton, Lehigh Valley and Schuylkill campuses of Penn State University
- Kings College
- Muhlenberg College
- Wilkes University

Private career or technical training is also available in Carbon County. For instance, the McCann School of Business and Technology has campuses in Allentown, Hazleton, and Pottsville.

Public Schools

Carbon County includes all or part of six school districts, as seen on the Educational Facilities Map. The Hazleton Area and Panther Valley School Districts extend into Luzerne and Schuylkill counties, respectively. According to enrollment trends and projections (Table 5.1) published by the Pennsylvania Department of Education (PDE), Jim Thorpe Area and Hazleton Area districts have grown rapidly from 2003 to 2010. All three other districts serving County residents lost enrollment during the same period.

Special education services are provided to the students by JTASD and the Carbon Lehigh Intermediate Unit #21. Vocational and technical education is provided by the Carbon Career and Technical Institute.

**Table 5.1
School District Enrollments & Projections
2003 - 2018**

| School District | Enrollment | | Percent Change, 2003–2010 | Projections | Percent Change 2010–2020 |
|---------------------------------|------------|-----------|------------------------------|-------------|-----------------------------|
| | 2003–2004 | 2009–2010 | | 2019–2020 | |
| Hazleton Area School District | 9,300 | 11047 | 18.8 | 13181 | 19.3 |
| Jim Thorpe Area School District | 1822 | 2188 | 20.1 | 2810 | 28.4 |
| Lehigh Area School District | 2451 | 2456 | 0.2 | 2749 | 11.9 |
| Palmerton Area School District | 1995 | 1935 | - 3.0 | 1877 | - 3.0 |
| Panther Valley School District | 1497 | 1663 | 11.1 | 2049 | 23.2 |
| Weatherly Area School District | 730 | 707 | - 3.2 | 660 | - 6.7 |

Source: PA Department of Education

Hazleton Area School District

The Hazleton Area School District (HASD) is the largest district serving Carbon County, with students coming not only from Carbon but from Schuylkill and Luzerne counties, as well. In the 2007-2008 school year the HASD had a total of 10,474 students, according to the PA Department of Education. The HASD is projected to increase by 2,134 students (19.3 percent) by the 2019-2020 school year. Among the municipalities in HASD, only Banks Township and Beaver Meadows are in Carbon County. HASD provides special education and adult education and is affiliated with Partners in Education (PIE).



www.bakeringram.com

The HASD is conducting a feasibility study to assess capacity issues and the need for major building improvements in the school district.

Jim Thorpe Area School District

The Jim Thorpe Area School District (JTASD) is the third largest district serving Carbon County and covers the municipalities of Jim Thorpe, Penn Forest Township, and a portion of Kidder Township (east of the PA Turnpike and south of I-80). According to the PA Department of Education, the total enrollment for JTASD was 2,188 in the 2009-2010 school year. Total enrollment is projected to increase by 622 students (28.4%).

The Jim Thorpe Area School District has been actively pursuing renovation and expansion to its facilities. Renovation of the high school, middle school and the Penn-Kidder Campus, was completed in the recent past. The school is now conducting a feasibility study for expansion. The JTASD has reached full capacity even though a K-8 building was constructed in 2003, and major renovations have been updated since 2000.

Lehigh Area School District

Lehigh Area School District (LASD) is the second largest school district in Carbon County. The district includes Lehigh and Parryville Boroughs and Franklin, East Penn and Mahoning Townships. The district had a 2009–2010 enrollment of 2,451 students and is projected to increase by 293 students (11.9 percent) by 2020.

The LASD is currently at full capacity in all schools. The district has had no significant growth over the past three years. The district is now conducting a feasibility study to examine capacity issues.

Palmerton Area School District

The Palmerton Area School District (PASD) is the fourth largest district serving Carbon County and consists of the boroughs of Bowmanstown and Palmerton, and the townships of Towamensing and Lower Towamensing. PASD is the fourth largest school district in Carbon County, with an enrollment of 1,935 in the 2009-2010 school year (Table 5.1). The district lost 60 students (3.0 percent) from 2003 to 2010 and is projected to continue losing students at the same rate (58 students, 3.0 percent) through 2020. Some students also attend Carbon County Vocational-Technical School during part of the day, and some area students attend the St. John Neuman Regional School or other private schools.



In 2005, the district had proposed building a new middle school in its main campus near the high school. As an alternative, the district renovated an historic building east of the Palmerton Park in downtown Palmerton. The renovated building is the Palmer-Franklin Education Center.

Panther Valley School District

Panther Valley School District (PVSD) consists of three municipalities in Carbon County—the Boroughs of Summit Hill, Lansford, and Nesquehoning—plus the Borough of Coaldale in Schuylkill County. PVSD was the fifth largest district in the 2009-2010 school year with an enrollment of 1,663 (Table 5.1). The district gained 166 students (11.1 percent) from 2003 to 2010. The 2019-2020 projected enrollment from the PA Department of Education is 2,049, which represents an increase of 386 students (23.2 percent) and which will make Panther Valley the third largest district serving Carbon County residents.

PVSD is seeing a rapid increase of students between the grade levels of K-5. The high school capacity is experiencing a declining student population. If the increase of K-5 students continues, PVSD will begin looking into major building improvements to accommodate through enrollment, space availability and feasibility studies.

Weatherly Area School District

The Weatherly Area School District has the largest geographic area and smallest student enrollment of any district serving Carbon County. Municipalities in the WASD include: East Side Borough, Kidder Township (partial), Lehigh Township, Weatherly Borough, Lausanne Township, and Packer Township. The area north of the intersection of I-80 and west of PA Route 476 is within the WASD. A total of 707 students were enrolled in the 2009-2010 school year (Table 5.1). Enrollment in 2019–2020 is projected to be 6.7 percent lower (660 students) than current enrollment.

Private Schools

Carbon County is also home to a total of eight private schools ranging in enrollment from 29 to 178 students (Table 5.2). Grades served vary by school. Adventure Learning Center and Educate Educational Services are the only two that do not offer any education below a sixth grade level.

Table 5.2
Private Schools (K-12)

| School | Municipality | # Students | Grade |
|----------------------------------|---------------------|-------------------|--------------|
| Adventure Learning Center | Jim Thorpe | 86 | 6-12 |
| Lighthouse Baptist School | Lehighton | 29 | K-12 |
| Carbon County Christian School | Palmerton | 69 | K-12 |
| Educate Educational Services | Weissport | 29 | 7-12 |
| St. Joseph Regional Academy | Jim Thorpe | 147 | K-8 |
| Our Lady of the Angels Academy | Lansford | 178 | K-8 |
| Ss Peter - Paul School | Lehighton | 110 | PK-8 |
| St. John Neumann Regional School | Palmerton | 141 | K-8 |

Source: Private School Review

Library Service

Libraries offer educational and historic benefits to the general public. Public library facilities provide informational resources that strengthen a community. Carbon County hosts four public libraries, located in the Boroughs of Palmerton, Lehighton, Weatherly and Jim Thorpe.

Museums

Museums allow the general public to learn about the history of social, economic and natural events of a local, regional, national, or worldwide scope. Carbon County includes seven museums:

- No. 9 Coal Mine & Museum
- Asa Packer Mansion
- Eckley’s Miner Village
- Hoover Mercantile Co. Museum
- Mauch Chunk Museum & Cultural Center
- Old Jail Museum
- Palmerton Heritage Center

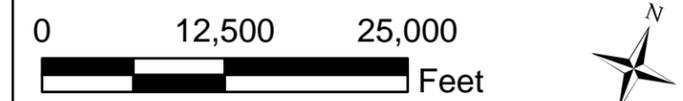
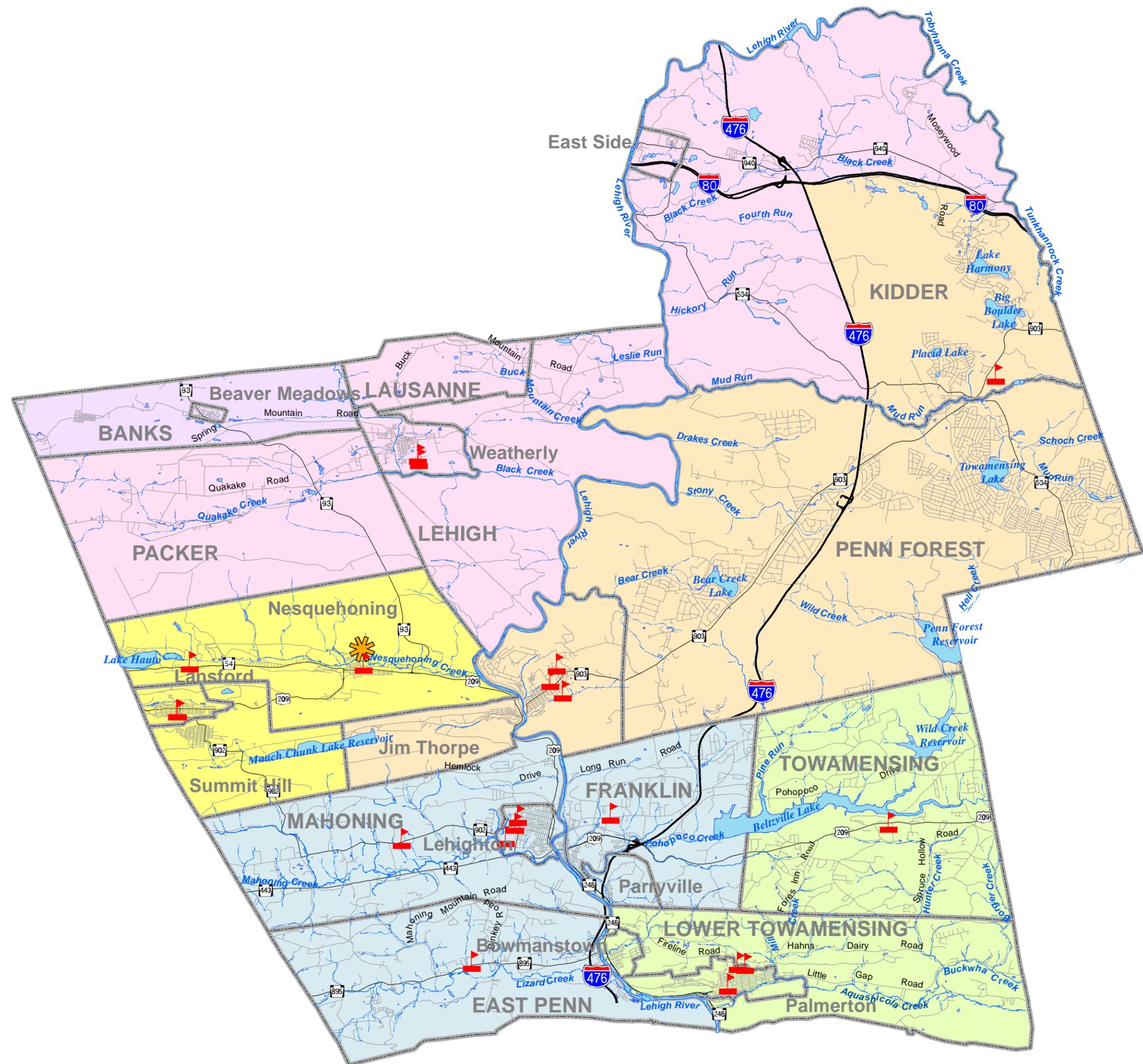
Carbon County Comprehensive & Greenway Plan

Educational Facilities

-  Public Schools
-  Lehigh Carbon Community College Campus

School District Areas

-  Hazleton Area S.D. (partial)
-  Jim Thorpe Area S.D.
-  Lehigh Area S.D.
-  Palmerton Area S.D.
-  Panther Valley S.D. (partial)
-  Weatherly Area S.D.



Source: PA DCNR, PASDA, Wildlands Conservancy, URDC

Municipal Buildings

Municipal building locations are shown on the Community Facilities Map. The buildings hold legal documents and the offices for governmental officials. Municipal buildings are also used as community facilities to hold public meetings.



Emergency Management Service

County emergency services are managed by the Carbon County Emergency Management Agency (EMA), located along Route 93 in Nesquehoning. The EMA is responsible for coordinating fire, police, emergency medical services (EMS), public works, volunteers, and other groups involved in emergency activities. Carbon County Safe Kids is a public safety initiative in which the EMA works with a nonprofit organization to conduct child seat checks, have monthly meetings, and host an annual safety fair. EMA responsibilities and activities are described below.

- The EMA is an active member of the Northeastern Pennsylvania Alliance (NEPA) Regional Counter-Terrorism Task Force, in cooperation with the Pennsylvania Emergency Management Agency (PEMA). Carbon County also has a Community Emergency Response Team (CERT) program that serves the County exclusively with more than 600 active members (2010). In addition, the mission of the Carbon County Citizen Corps, a local volunteer group, is to make Carbon County communities safer, stronger, and better prepared to respond to the threats of terrorism, crime, public health issues, and disasters of all kinds through education, training, and volunteer service.
- Along with the Citizen Corps, the County also provides a County Animal Response Team (CART), paralleling the State Animal Response Teams (SART). The Pennsylvania SART is a coordinated effort between several governmental, corporate, and private entities dedicated to the preparation, planning, and response to animal emergencies in Pennsylvania.
- Carbon County EMA collaborates with the Pennsylvania Bureau of Forestry for forest fire prevention and calls.
- The EMA updated the Carbon County Emergency Operations Plan, which was approved by the County Commissioners in 2009. The Carbon County Hazardous Mitigation Plan was completed in 2011.
- The County has a decontamination strike force for both mass and technical decontamination. Disposal of hazardous materials is contracted out to a private company.

Police Service

Eleven municipalities in Carbon County provide full-time police services:

- Beaver Meadows Borough
- Franklin Township
- Jim Thorpe Borough
- Kidder Township
- Lansford Borough
- Lehighon Borough
- Mahoning Township
- Nesquehoning Borough
- Palmerton Borough
- Summit Hill Borough
- Weatherly Borough

Nine municipalities are covered entirely by the Pennsylvania State Police. The only state police barracks located in Carbon County is within Towamensing Township (Map 5.1). Both East Penn Township and Weissport Borough have minimal municipal police services and are patrolled by the State Police when the municipal police are off-duty.

Fire Service



A total of 27 local fire companies serve Carbon County. The County is divided into 19 fire districts, with four districts—Palmerton, Jim Thorpe, Nesquehoning, and Penn Forest Township—having more than one fire company. The locations of fire stations are shown on the Major Community Facilities Map.

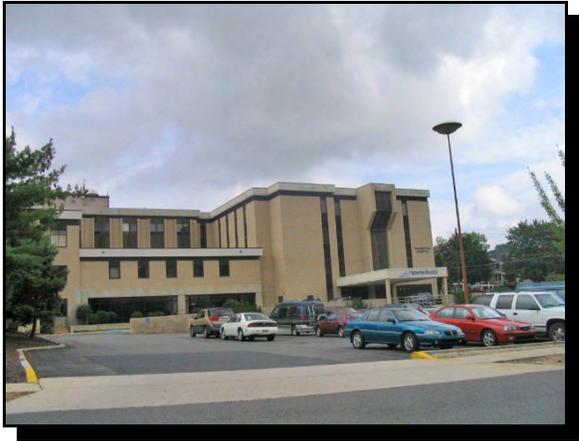
Carbon County’s Fire Chief Association has quarterly meetings with EMA staff. The Carbon County Fireman Association has monthly meetings that normally deal with training and equipment/purchasing issues.

Ambulance Service

Seven different ambulance companies located at ten different sites provide services in Carbon County. Although the majority of ambulance service travels to the hospitals located in Palmerton and Lehighon, ambulances also need to transport patients to hospitals in Hazleton, East Stroudsburg or the Lehigh Valley.

Hospitals

The Blue Mountain Health System, formed in 2004, includes both the Palmerton Hospital and Gnadent Huetten Hospital, located in Lehighon Borough. The Blue Mountain Health System services the residents of Carbon County and surrounding areas.



Solid Waste Disposal

The role of the Carbon County Department of Solid Waste is to administer the requirements of the PA Recycling and Waste Reduction Act. The department licenses trash haulers, enters into capacity agreements with landfills and creates, maintains recycling, waste reduction and educational programs, and operates a Countywide rural recycling program.

No landfills and/or transfer stations are located within the County, but they exist in adjacent counties.

Municipalities in Carbon County use one of three types of collection services (Table 5.1):

- Municipal, where the locality collects waste.
- Municipal contract, where the locality contracts with a private hauler to collect waste.
- Residence contract, where each individual residence contracts with a private hauler.

The rural makeup of Carbon County allows for lower municipal solid waste (MSW) generation to occur. Residents in rural areas may use on-site management and/or second-home users may take MSW to a different location, out of the County. In 2008, the reported total waste generated in the County was 40,080 tons. The projected increase in MSW is as follows:

- 2010 - 52,097 tons (+30.0% from 2008)
- 2015 - 53,610 tons (+2.9% from 2010)
- 2020 - 55,123 tons (+2.8% from 2015)

Yard Waste

Yard debris composting in Carbon is primarily limited to programs initiated by the municipalities obligated to collect yard debris separate from municipal waste— most specifically, leaf material in the fall. The County has four yard debris composting operations:

- Jim Thorpe
- Lehighon
- Palmerton
- Weatherly

Recently, the County acquired a leaf vacuum vehicle, which will be made available for an hourly fee to other municipalities that desire to have leaves collected separately from municipal waste.

Carbon County Comprehensive & Greenway Plan

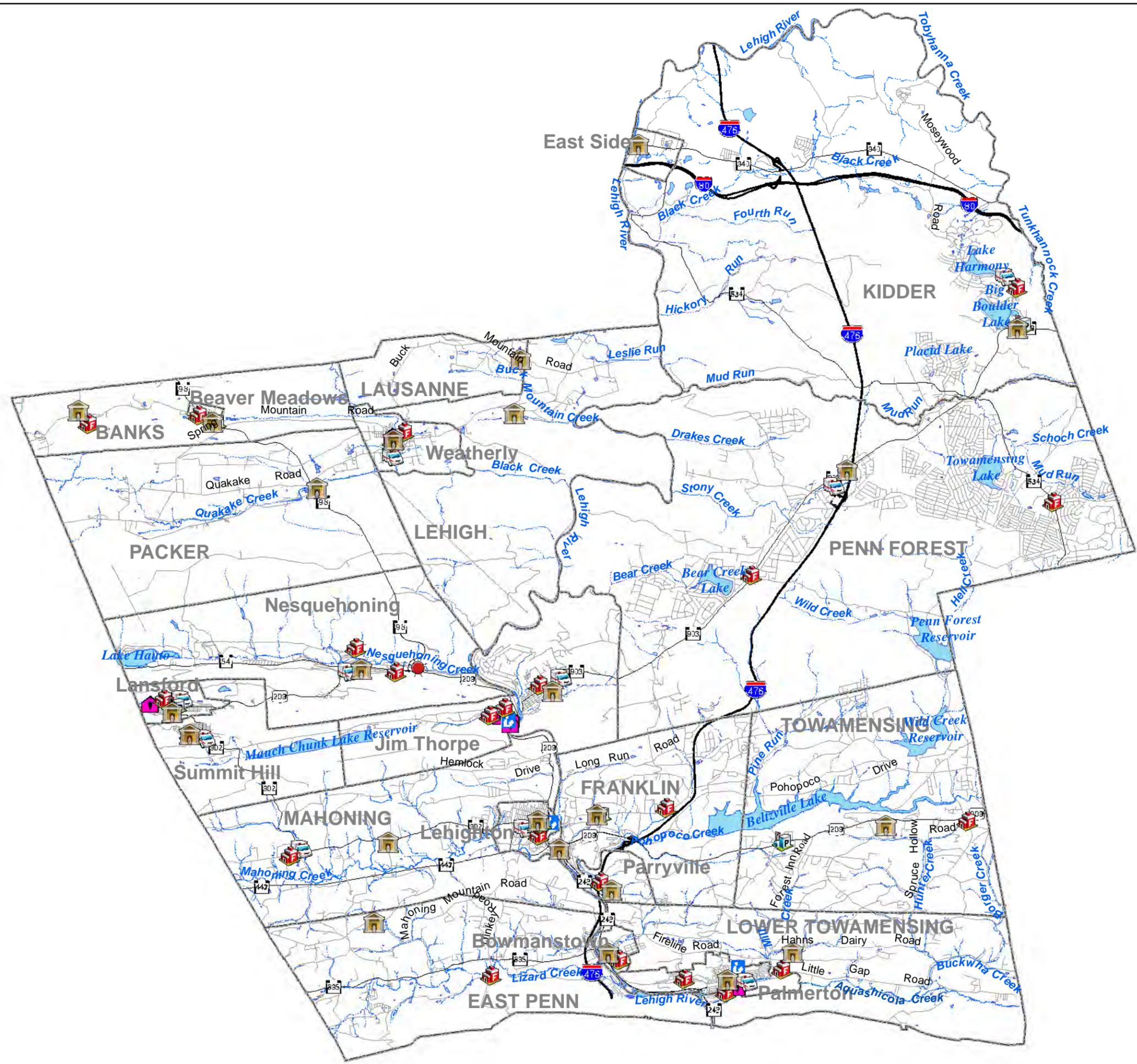
Major Community Facilities

-  Municipal Buildings
-  Police Departments
-  Fire Company
-  Ambulance Stations
-  Museums
-  Libraries
-  911 Communications Center

See Educational and Recreational
Facilities on separate map.



Source: PA DCNR, PASDA, Wildlands Conservancy, URDC



Infectious and Chemotherapeutic Waste

Pennsylvania includes infectious and chemotherapeutic waste (ICW) generated by hospitals, nursing homes, clinics, dental and medical offices as part of the municipal waste stream. Therefore, the County must ensure proper management for the ICW portion of the waste stream. In Carbon County, each facility makes individual arrangements for handling and disposition of ICW. In all nursing homes and the two hospitals, ICW collection and disposal is managed by outside contractors.

Residual Waste

Residual waste is waste generated as a by-product of an industrial process. The amount of residual waste generated annually in the County has not exceeded 3,150 tons per year from 2006 to 2008. Residual waste is appreciably less than the municipal waste tonnage and is not a significant factor in competing for municipal waste capacity.

Recycling

Carbon County has a rural recycling program consisting of 12 semi-permanent “blue bin” recycling drop-off sites located at various locations in the County. While the majority of drop-off sites are located on municipal property, some are located in commercial areas (Table 5.3). The same equipment used to service the drop-off containers is used to provide recycling to all County-owned buildings. The County also promotes recycling by sponsoring three events at no charge to residents:

- An outdated phone book collection.
- Elementary school-based competition.
- A two-day electronics recycling event (Spring and Fall).



According to the Northeast Recycling Council calculator, the environmental benefits of County, municipal and commercial recycling activities in Carbon County for 2008 included:

**Table 5.3
Municipal Solid Waste and Recycling Collection**

| Municipality | MSW COLLECTION | | | RECYCLABLES COLLECTION | | | | |
|-------------------------|----------------|--------------------|--------------------|------------------------|-----------------------------|-------------------------------|--------------------|-----------------|
| | Municipal | Municipal Contract | Residence Contract | Municipal Curbside | Municipal Contract Curbside | Residential Contract Curbside | Municipal Drop Off | County Drop Off |
| Bank Township | X | | | | | | | X |
| Beaver Meadows Borough | | X | | | | | | X |
| Bowmanstown Borough | | | X | | | X | | |
| East Penn Township | | | X | | | X | | |
| East Side Borough | | X | | | | | | X |
| Franklin Township | X | | | | | | | X |
| Jim Thorpe Borough | | X | | X | | | | |
| Kidder Township | | X | | | | | | X |
| Lansford Borough | | X | | | X | | | |
| Lausanne Township | | X | | | | | | X |
| Lehigh Township | | X | | | | | | X |
| Lehighon Borough | | X | | | X | | | |
| Lower Towamensing Town. | | X | | | | | | X |
| Mahoning Township | | | X | | | X | | X |
| Nesquehoning Borough | X | | | | | | | X |
| Packer Township | | X | | | | | | X |
| Palmerton Borough | | X | | | X | | | |
| Parryville Borough | | X | | | | | | X |
| Penn Forest Township | | | | | | | | X |
| Summit Hill Borough | | X | | | X | | | |
| Towamensing Township | X | | | | | | X | X |
| Weatherly Borough | | X | | | | | | X |
| Weissport Borough | | X | | | | | | X |

Source: Carbon County Department of Solid Waste

- Quantity recycled: 5,002.5 tons
- Net gas saved: 638,862.63 gallons
- Landfill space saved: 11,905.08 cubic yards
- Number of tree seedlings grown due to recycling paper : 181,893.40 seedlings

Sewage Treatment

Sewage (or wastewater) treatment facilities are one of the most important and expensive public services that a community provides. Central sewage facilities are mainly concentrated within the boroughs and immediately adjacent areas. Most other areas use individual on-lot septic systems.

The Pennsylvania Sewage Facilities Act (Act 537) was enacted to correct existing sewage disposal problems and prevent future problems. Act 537 is largely administered by individual municipalities, but may be administered by regional entities. In Carbon County, each municipality has an Act 537 plan, although many are not up-to-date (Table 5.4).

**Table 5.4
Act 537 Plan Dates - Municipal Official Sewage Facility Plans**

| Municipality | Plan Year Age | Municipality | Plan Year Age |
|------------------------|---------------|----------------------------|---------------|
| Bank Township | 10 - 20 | Lower Towamensing Township | 20 - 40 |
| Beaver Meadows Borough | < 40 | Mahoning Township | 10 - 20 |
| Bowmanstown Borough | 10 - 20 | Nesquehoning Township | 20 - 40 |
| East Penn Township | > 5 | Packer Township | < 40 |
| East Side Borough | 10 - 20 | Palmerton Borough | 20 - 40 |
| Franklin Township | 10 - 20 | Parryville Borough | 20 - 40 |
| Jim Thorpe Borough | > 5 | Penn Forest Township | 20 - 40 |
| Kidder Township | 5 -10 | Summit Hill Borough | 5 -10 |
| Lansford Borough | 5 -10 | Towamensing Township | 20 - 40 |
| Lausanne Township | < 40 | Weatherly Borough | 10 - 20 |
| Lehigh Township | < 40 | Weissport Borough | 5 -10 |
| Lehighon Borough | 5 -10 | | |

Source: PA DEP, March, 2010

The stated purpose of Act 537 is:

- To provide safe and efficient collection, treatment and disposal of existing and future sewage flows generated within the service area.
- To protect the health, safety and welfare of citizens.
- To prevent future sewage disposal problems.
- To protect the quality of groundwater throughout each municipality, County and state.

Private central sewage systems exist for resorts, private housing developments and rural schools. Non-municipal plants are locally owned and operated while still under regulation from the PA Department of Environmental Protection (DEP). Non-municipal plants are typically smaller in size when compared to public sewage facilities. Carbon County has a total of 15 permitted non-municipal sewage facilities (Table 5.6).

**Table 5.6
Carbon County Sewage Treatment Plants by Watershed**

| Watershed | Municipal Plants | Nonmunicipal Plants | Industrial Plants |
|--------------------------|---|---|--------------------------------|
| Aquashicola Creek | Palmerton Boro WWTP | Chestnut Ridge MHP | Zinc Corp of America |
| | | | Laroche Industrial, Inc. |
| | | | Horsehead Corporation |
| Beaver Creek | Beaver Meadows WWTP | (X) | (X) |
| Black Creek | Weatherly WWTP | (X) | (X) |
| Buckwha Creek | (X) | Blue Mountain Ski Area | (X) |
| Catawissa Creek | (X) | | Altadis USA Inc - McAdoo Plant |
| Dilldown Creek | (X) | Jim Thorpe Area School Dist. | |
| Hickory Run | (X) | Hickory Run State Park WWTP | |
| Lehigh River | Jim Thorpe WWTP | (X) | Zinc Corp of America |
| | Bowmanstown Borough WWTP | | |
| | Central Carbon Municipal Authority WWTP | | |
| UNT to Lehigh River | (X) | NIS Hollow Estates - East STP | (X) |
| UNT to Lizard Creek | (X) | Northside Heights Estates Inc. | (X) |
| Long Run | (X) | (X) | Lehighon Water Authority |
| Long Run Reservoir | (X) | (X) | Lehigh River RAW WWTP PMP STAT |
| Mahoning Creek | (X) | (X) | Lehighon Electronics Inc. |
| UNT to Mahoning Creek | | Country Club Estates | (X) |
| Nesquehoning Creek | Nesquehoning Regional STP | (X) | Ametek / West Chester Plastics |
| Pohopoco Creek | (X) | Beltville State Park WWTP | (X) |
| | | Ottos Blue Mountain RV & Camping Resort | |
| Porter Run | (X) | Blue Ridge Real Estate | (X) |
| Shingle Mill Run | (X) | Split Rock Lodge SUM | (X) |
| Stewart Creek | (X) | Mahoning Valley Nursing & Rehab | (X) |
| Stoney Creek | (X) | Hickory Run Service Plaza | (X) |
| | | Stoney Creek Hotel WWTP | |
| UNT to Tunkhannock Creek | (X) | Big Boulder WWTP | (X) |

Source: PA DEP, June 2010

“WWTP” = Wastewater treatment plant

Facilities serving industrial plants represent another type of sewage treatment. The majority of the industrial treatment plants are located on the site of the industrial facility and discharge effluent into local waterways. The PA DEP provides a separate category and permitting process for industrial sewage treatment.

Carbon County has 21 waterways and associated watersheds into which treated sewage effluent flows (Table 5.6).

Homes and small businesses in mostly rural areas throughout Carbon County that do not have access to public sewage treatment lines use private on-lot septic systems to treat and dispose of waste. When properly sited, designed, constructed and maintained, these septic systems can work well. However,

when improperly constructed or operated, septic systems can be a significant source of groundwater contamination and health risks.

Soil suitability for on-lot septic services

Soils are also grouped according to suitability for accommodating on-site septic systems, using characteristics such as depth to bedrock, depth to groundwater, and permeability. Septic systems in soils that percolate too rapidly can degrade groundwater because impurities are not sufficiently absorbed before reaching the water table. Conversely, soils that do not drain fast enough can cause unhealthy surface ponding of wastewater.

In areas with soil limitations, sand mounds may be required to allow an on-site septic system. As the name implies, a sand mound system requires wastewater to pass through an elevated mound of sand for additional filtration before the effluent passes into the septic tank.

Primary treatment in a properly functioning on-lot system takes place in the septic tank where the heaviest matter (sludge) settles to the bottom and must be pumped out periodically. Liquid matter exits the tank through pipes into a layer of gravel and then percolates through the soil where contaminants are largely neutralized.

Water Service

Places that have high and medium development densities rely more on public water facilities because the water must be distributed from the source to the final location. Conversely, rural locations rely upon private wells.

Carbon County has multiple reservoirs that provide water throughout the County and to the Bethlehem area to the south.

There are a total of ten public water providers within the County, which include four authorities, four municipal services and one joint authority (Table 5.7).

**Table 5.7
Public Water Service**

| Water Authority | Water Source | Total Maximum Daily Withdrawal (MGD) | Average Daily Withdrawal (MGD) |
|---|-------------------|--------------------------------------|--------------------------------|
| Beaver Meadows Water Authority | | | |
| Bowmanstown Boro Authority | Wells | 0.055 - 0.075 | 0.065 |
| Lansford-Coaldale Joint Water Authority | Wells | | |
| Summit Hill Water Authority | Wells | 0.220 | 0.200 |
| Jim Thorpe Water Department | Wells | N/A | 0.225 |
| | Mauch Chunk Creek | 0.425 | 0.250 |
| Central Carbon Municipal Authority | | | |
| Lehighon Water Authority | Reservoirs | 1.600 | 0.850 |
| Nesquehoning Water | Wells | | |
| Palmer Water Company | Wells | 0.833 | Vary |
| Weatherly Water | | | |

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TRANSPORTATION BACKGROUND

The goal is to create a safer and more efficient transportation system, while recognizing that funding for infrastructure improvements will continue to be very limited.

Steep ridgelines and the Lehigh River greatly limit the ability to create new through-road connections and to improve existing roads. Many roads have a cliff, wetlands, a creek or historic buildings on at least one side, that limits the ability to make major improvements.

Originally, many Carbon County communities arose along the Lehigh River, the Lehigh Canal, railroads, coal mining areas and factories (some of which needed to be located next to creeks). Most people needed to live within walking distance of their work. With the advent of modern roads, development patterns became more dispersed.

Transportation routes have evolved over time and has created easier access to Carbon County, particularly with the completion of the Northeast Extension of the Turnpike in 1957, as well as the completion of I-80 in the 1960s under the Interstate Highway system. I-80 is one of the major cross-country highways and carries heavy tractor-trailer traffic. The presence of I-80 helped to spur resort and second home development in northeastern Carbon County. Over time, a number of second homes have been converted into year-round homes.

Street and Highway System

The major transportation routes in Carbon County, Interstate 80 and 476, have limited access points within the County. The Turnpike has two accesses - in Franklin Township and in Kidder Township. Another exit of the Turnpike is planned in Penn Forest Township onto Route 903, which will require use of EZPass in order to enter or exit. I-80 only has one access point in the County, in Kidder Township near the Turnpike access point.

Road ownership plays a significant role in the responsibility for funding improvements and maintenance. There are a total of 720.4 miles of roadways within the County (Table 6.1). Many of the roadways are owned and operated by the local communities (404.6 miles) while PennDOT owns and operates nearly 270 miles of roadways.

**Table 6.1
Carbon County Road Mileage By Jurisdiction**

| Jurisdiction | Miles |
|----------------------------------|-------|
| PENNDOT | 268.7 |
| Pennsylvania Turnpike Commission | 26.9 |
| Other Federal and State Agencies | 20.2 |
| Local Municipalities | 404.6 |
| Total | 720.4 |

Source: PennDOT, 2008 Highway Statistics

The Highway Functional Classification System is a grouping of roads based on a road's function, service and capacity level. The American Association of State Highway and Transportation Officials (AASHTO) roadway classifications are used by PennDOT. The following are classifications served in Carbon County:

Expressways handle the highest levels of traffic volumes at the highest speeds (55 and above). An expressway is a multilane facility with access limited to interchanges which primarily serves to carry "through traffic" and to connect arterial roadways. Parking along expressways is prohibited. Interstates 80 and 476 are the only expressways within the County.

Arterial roads are typically two- to four lanes and are subjected to high traffic volumes at medium speeds (40 to 55 mph). Arterials serve primarily to convey traffic to and from the expressway interchanges but can also interconnect other arterial or collector roadways. A moderate degree of access control is usually encouraged along arterials, and parking is usually prohibited. Examples of arterials within Carbon County are PA Route 209 and 248.

Collector roads are two-lane roads that distributes traffic from the arterial roads amongst the individual areas served by the local road networks. Speeds are generally in the 30 to 40 mph range , and parking is usually permitted at least along one side of the roadway. Routes 903, 443, 54 and 93 are all examples of collector roads.

Local roads provide direct access to individual residences as well as to the smaller commercial and institutional uses. The maximum permitted speed is typically 25 mph. Access to local roads is unlimited, and roadside parking is usually permitted wherever space allows.

Travel Demand

PennDOT conducts traffic counts and estimates current traffic volumes where there has not been a recent count. The highest traffic volumes are along the Turnpike, with an average of 30,000 to 24,000 trips per day, as seen on the Traffic Volumes Map. Other significant traffic corridors, involving over 10,000 trips, include:

- Interstate 80 - 24,000 - 17,000 trips
- PA Route 248 - 21,000 - 4,300 trips
- PA Route 443 - 17,000 - 4,100 trips
- PA Route 209 - 13,000 - 5,600 trips
- PA Route 903 - 11,000 - 4,700 trips

Roads within the County have experienced a decline in the amount of traffic from 2004 to 2008, according to PennDOT. Overall a -4.8% of daily vehicle miles traveled was seen in the time period (Table 6.2).

Table 6.2
Carbon County Daily Vehicle Miles Traveled By Jurisdiction

| Jurisdiction | 2004 DVMT | 2006 DVMT | 2008 DVMT |
|----------------------------------|-----------|-----------|-----------|
| PENNDOT | 1,204,425 | 1,208,080 | 1,117,605 |
| Pennsylvania Turnpike Commission | 655,477 | 646,488 | 636,341 |
| Other Federal and State Agencies | 20,700 | 20,700 | 20,700 |
| Local Municipalities | 241,144 | 250,188 | 249,307 |
| Total | 2,121,746 | 2,125,456 | 2,023,953 |

Source: PennDOT, 2008 Highway Statistics

According to the U.S. Census, the highest percent change in time driven to work was 90 or more minutes. Data collected from the 2000 U.S. Census also indicates that 25.1% of motorists drive approximately 10 to 20 minutes to work. Similarly, 24.4% of workers drive more than 45 minutes to their workplace (Table 6.3).

Table 6.3
Time Driven to Work

| Travel Time | 1990 | 2000 | 2000 Percentage | Change 1990-2000 | |
|-----------------------|--------|--------|-----------------|------------------|------|
| | | | | # | % |
| Total: | 23,826 | 25,868 | N/A | 2,042 | 7.9 |
| Did not work at home: | 23,115 | 25,438 | | 2,323 | 9.1 |
| Less than 5 minutes | 1,416 | 1,274 | 5.0% | 142 | 11.1 |
| 5 to 9 minutes | 3,879 | 3,376 | 13.3% | 503 | 15 |
| 10 to 14 minutes | 4,045 | 3,495 | 13.7% | 550 | 15.7 |
| 15 to 19 minutes | 2,977 | 2,908 | 11.4% | 69 | 2.4 |
| 20 to 24 minutes | 2,314 | 2,443 | 9.6% | 129 | 5.3 |
| 25 to 29 minutes | 915 | 1,089 | 4.3% | 174 | 16 |
| 30 to 34 minutes | 2,009 | 2,578 | 10.1% | 569 | 22 |
| 35 to 39 minutes | 594 | 843 | 3.3% | 249 | 29.5 |
| 40 to 44 minutes | 1,077 | 1,219 | 4.8% | 142 | 11.6 |
| 45 to 59 minutes | 2,352 | 3,356 | 13.2% | 1,004 | 30 |
| 60 to 89 minutes | 1,289 | 1,665 | 6.5% | 376 | 22.6 |
| 90 or more minutes | 248 | 1,192 | 4.7% | 944 | 79 |
| Worked at home | 711 | 430 | 1.66% | 281 | 65 |

Source: U.S. Census Bureau 2000

Intelligent Transportation Systems (ITS)

Intelligent Transportation Systems include a wide range of information technologies such as travel safety, mobility and weather services. ITS improves transportation safety and mobility and enhances American productivity through the integration of advanced communications technologies into the transportation infrastructure and in vehicles. ITS has been used in the past through radio service but is a growing technological field. ITS is being used to identify traffic problems and better manage the transportation system.

The basic structure of an ITS system has been or is currently being developed throughout the County includes technologies such as:

- Video cameras along highways
- Digital message signs
- Advisory radio stations
- Emergency call boxes
- E-Z Pass stations
- Traffic light timing

The U.S. Department of Transportation has spearheaded the ITS initiative to increase the mobility, safety and/or productivity of the transportation system. The Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) established a Federal program to research, develop, and operationally test ITS and to promote their implementation. The program was designed to facilitate deployment of technology to enhance the efficiency, safety, and convenience of surface transportation, resulting in improved access, saved lives and time, and increased productivity. Increasing technological advancements in ITS is allowing for better data collection and distribution for analysis.

Pedestrian Travel

Walking is one of the most overlooked ways of transportation. Normally, people identify walking as exercise, but every trip begins and ends with walking. Drivers have to walk from their car and to their destination, public transportation riders need to walk to designated stops, and everyday shoppers walk from a parking lot to the store. Walking is a part of everyday life, but consistently overlooked. At the state and local levels, no state spends more than 5 percent of federal transportation funds on sidewalks, crosswalks, traffic calming, speed humps, multi-use paths, or safety programs for pedestrians and cyclists.

Walking in Carbon County is tough, even within the many small downtown areas. In these areas though, sidewalks are cracked, broken or even missing. In more rural areas, sidewalks do not exist and roadway shoulders are minimal. Bridges, throughout the County, are not all accommodating to pedestrian use.

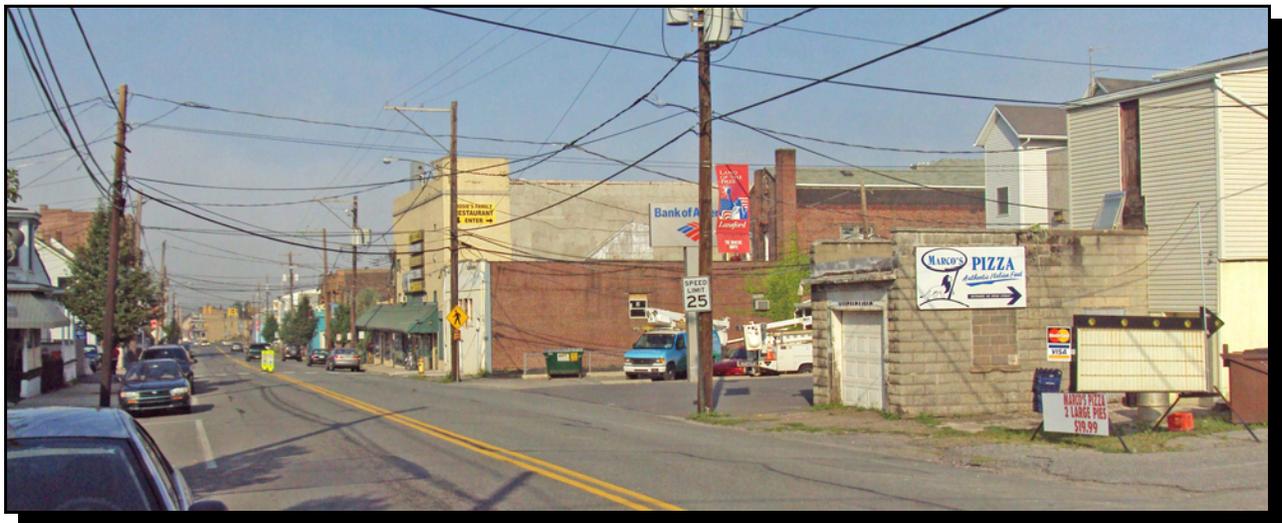
Problems existing with pedestrian mobility throughout the County are:

- Sidewalks that exist but don't connect with each other. These areas put pedestrians at risk by shifting them to the shoulder or onto the street.
- Missing or inadequate crosswalks. The most obvious locations are within the downtowns of the older boroughs but areas exist in the rural sections of the County.
- Poorly maintained sidewalks, inaccessible sidewalks for the handicapped or obstructed sidewalks.

According to the 2000 U.S. Census, only 3.2% of workers walked to work, while 93.7% drove a vehicle. Yet walking remains a strong interest.

Walking results in a healthier lifestyle and contributes to fighting diseases that can be avoided. A one-mile trip is a twenty-minute walk, or two-thirds of the daily exercise regime of 30 minutes recommended by the U.S. Surgeon General. At the same time, research shows that walking is fundamental to improving health, with a role in preventing obesity, some cancers, heart disease, diabetes and a host of other diseases.

Carbon County has the infrastructure in place to create walkable communities. Many of the boroughs have a Main Street that can become the center for attractions and businesses. In return, people will be able to walk to work, school and destinations from their homes.



Bicycle Travel

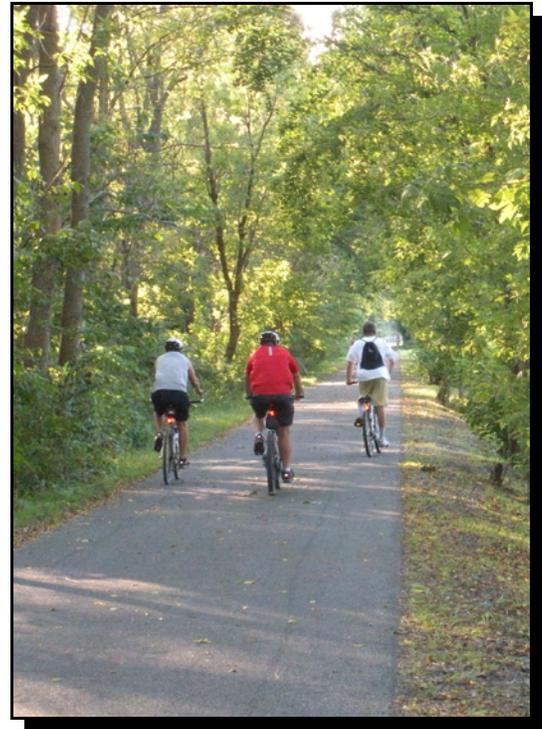
Although bicycling is routinely overlooked as a mode of transportation, it has become more in the limelight in the past decade. Federal, state and local contributions to bicycling as mode of transportation has increased in funding and the construction of bike paths, shared-use roadways and multi-use trail systems.

Carbon County includes major trail systems within public recreation lands, plus the D&L trail system. Carbon lacks the connectivity between many areas by safe bicycle routes. Among facilities statewide, bike lanes along roads and streets received more requests for quality improvement (60%) than any other recreational asset.

Although it is difficult to survey how many people bicycle to work or as their mean mode of transportation, a few facts will show the importance if biking became more prevalent:

- According to the 2001 National Household Travel Survey, 48 percent of all trips were three miles or less and 24 percent were one mile or less.
- Nationwide, 29 percent of commuters travel less than five miles each way to work – a distance comfortably ridden in about half an hour – or about the same length of time as the average American commute. According to the 2000 U.S. Census, 57.3 percent of residents within Carbon County have a 30 minute or less commute to work.
- Nationally, in 2000 about 20 percent of adults used a bicycle during warm weather, according to the Bureau of Transportation Statistics.
- A finding from the Trust for Public Land’s Economic Benefits of Parks and Open Space, and the Rails-to-Trails Conservancy’s Economic Benefits of Trails and Greenways concluded that in the Outerbanks, North Carolina, bicycling is estimated to have an annual economic impact of \$60 million and 1,407 jobs supported from the 40,800 visitors for whom bicycling was important reason for choosing to vacation in the area.

The current system of State-designated on-road bicycle routes uses many roads that are unsuitable. The main problem is a lack of smooth shoulders on roads that have narrow travel lanes, curves and hills. Therefore, those bicycle routes have not been included in this Plan.



Public Transit

The Lehigh and Northampton Transportation Authority (LANTA) manages transit service in Carbon County.

LANTA manages the Carbon County Community Transit (CCCT) service. Easton Coach operates CCCT service (shared-ride, door-to-door, and fixed route) under contract to LANTA. Service is provided within the County and to several points outside of the County, including the regional mall area in Whitehall Township, Lehigh County. All service occurs during off-peak hours.

Public transportation during off peak hours is provided to the main boroughs in Carbon County, Monday through Friday. There are three routes: Lynx 1 – operates on Tuesday and Thursday between the main boroughs and the Lehigh Valley Mall; Lynx 2 – operates Monday, Wednesday and Friday between the main boroughs and Walnutport, and Lynx 3 – provides service on Wednesdays between Tamaqua and Nesquehoning. The service is subsidized by federal funds managed by the state. Fares and local dollars provided by Carbon County make up the balance not covered by federal dollars. The County also provides the ‘local share’ for capital purchase (vehicles).

Aviation

Airports are primarily used for personal and recreational uses, transport of corporate business travelers and emergency medical services.

Carbon County has one public airport, Jake Arner Memorial Airport. The Carbon County Airport Authority owns the 137 acre site in Mahoning Township. The majority of the operations at Jake Arner Memorial are local flights, with a total of 21,150 in 2009.

There are also four privately-owned airports and heliports:

- Motola’s Helicopter Service Inc. – Heliport
- Gnaden Huetten Memorial Hospital – Heliport
- Grover Airport
- Beltzville Airport

Many of the residents use the Lehigh Valley International Airport (LVIA).

Freight

Carbon County has passenger train service and active freight rail lines. The Carbon County Railroad Authority has an important role in maintaining freight rail service in the western part of the County, in partnership with the C&S Railroad.

A main Norfolk-Southern freight line bisects the County, and connects to the smaller railroads. The Chestnut Ridge Railroad provides rail service in the Palmerton area.

The Reading and Northern Railroad Company provides passenger service from Carbon County to Schuylkill, Berks, Luzerne and Lackawanna Counties. The Lehigh Gorge Scenic Railway provides an 16-mile, narrated historic tour through Lehigh Gorge State Park from Jim Thorpe.

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ECONOMIC DEVELOPMENT BACKGROUND

The local economy is perhaps the most influential element of this Plan because the economy affects every county citizen—many in more ways than one. The following section illustrates the interconnection of the economy to other characteristics of the County presented elsewhere in the background studies.

Income

Income levels have a direct bearing on the prosperity of the County. Two principal measures of income are:

- Median household income (the income directly in the middle of all household incomes in the County).
- Percent of persons living below the poverty level.

In 2008, the median household income in the County was \$47,425 (Table 7.1), 6.5 percent below the statewide median income of \$50,702. In 2000, only three municipalities (East Penn, Franklin, and Towamensing Townships) had a higher median household income than the state as a whole. On the other hand, only six of the County's 23 municipalities had a higher percent of residents below the poverty rate.

Table 7.1
Carbon County Income and Poverty — 2000

| | Median Annual Household Income (\$) | Percent of Residents Below Poverty Level |
|---------------------------------------|-------------------------------------|--|
| Carbon County (2008: \$47,425, 11.0%) | \$35,113 | 9.4 |
| Pennsylvania (2008: \$50,702, 12.1%) | \$40,106 | 10.6 |
| Towamensing Township | \$49,524 | 4.7 |
| Franklin Township | \$43,106 | 4.3 |
| East Penn Township | \$42,147 | 3.4 |
| Lehigh Township | \$40,000 | 10.8 |
| Packer Township | \$39,038 | 7.2 |
| Weatherly Borough | \$38,219 | 9.8 |
| Summit Hill Borough | \$37,287 | 7.5 |
| Penn Forest Township | \$36,601 | 10.5 |
| Lower Towamensing Township | \$36,414 | 8.1 |

| | Median Annual Household Income (\$) | Percent of Residents Below Poverty Level |
|------------------------|-------------------------------------|--|
| Jim Thorpe Borough | \$35,976 | 10 |
| Nesquehoning Borough | \$35,902 | 9.5 |
| Mahoning Township | \$35,212 | 10.1 |
| Bowmanstown Borough | \$34,688 | 9.2 |
| Parryville Borough | \$33,958 | 6.1 |
| Kidder Township | \$32,583 | 9.6 |
| Banks Township | \$32,083 | 9.1 |
| Palmerton Borough | \$31,522 | 9.9 |
| Beaver Meadows Borough | \$31,058 | 7.6 |
| Lausanne Township | \$30,625 | 11.9 |
| Weissport Borough | \$30,139 | 14.1 |
| Lehighton Borough | \$28,566 | 14 |
| Lansford Borough | \$27,478 | 14.2 |
| East Side Borough | \$25,833 | 15.9 |

Source: U. S. Census

Major Employers

In 1993, Carbon County had 24 private-sector employers with 50 or more employees providing 3,571 jobs. Sixteen years later (2010), the County has only 11 mid- to large-size employers (50+ employees) that provide 2,305 jobs (Table 7.2). In other words, since the previous county economic development study 16 years ago, Carbon County has 54 percent fewer mid- to large-size employers providing 35 percent fewer jobs. The smaller size of the local economy may be due to a reduction in manufacturing jobs in general and, more specifically, the current economic downturn.



**Table 7.2
Carbon County Employers with 50 or more Employees, 2010**

| Name | Location | Employees | SIC Code |
|---------------------------------|--------------|-----------|--|
| Altadis USA, Inc. | McAdoo | 52 | 2621 mfgs. wrapping and packaging papers |
| Ametek, Inc. | Nesquehoning | 300 | 3621 mfgs. motors and generators |
| Blue Mountain Machine, Inc. | Lehighton | 75 | 3599 machine shop |
| J & R Slaw, Inc. | Bowmanstown | 90 | 3272 mfgs. precast concrete products |
| Kovatch Corp. | Nesquehoning | 400 | 3711 assembles complete fire dept. vehicles assembles complete automobiles, incl. specialty assembles complete trucks and tractor/trucks automotive body shop |
| Kovatch Mobile Equipment Corp. | Nesquehoning | 625 | 3711 assembles motor vehicle chassis assembles complete automobiles, incl. specialty assembles complete fire dept. vehicles |
| Pencor Services (Times News) | Lehighton | 125 | 2711 publishes newspapers without printing 2752 commercial lithographic printing |
| PSI Container, Inc. | McAdoo | 62 | 2653 mfgs. corrugated and solid fiber containers |
| Scotty's Fashion of Lehighton | Lehighton | 400 | 2337 mfgs. women's, misses', & juniors' suits/coats 2339 mfgs. women's & misses' outerwear 2391 mfgs. draperies & curtains |
| Silberline | Lansford | 100 | 2816 mfgs. inorganic pigments 2819 mfgs. inorganic chemicals |
| Weatherly Casting & Machine Co. | Weatherly | 76 | 3321 mfgs. gray iron castings 3369 mfgs. ductile iron castings 3543 nonferrous foundry; mfgs. industrial patterns |

Source: *Harris Industrial Directory, 2011*

Support Services

Many community services provide direct and indirect support for economic development. The community facilities element of the comprehensive plan provides information on several topics affecting economic development:

- Educational Facilities
- Sewage Treatment
- Potential Sewage Disposal Problem Areas
- Water Service

Educational Facilities and Programs

The community facilities section of the comprehensive plan provides information on the colleges and the six public school districts serving Carbon County.

In addition, the Carbon County Area Vocational-Technical School is located in Penn Forest Township and provides county students with specialized training in vocational and technical areas. The Hazleton Area Career Center in Hazle Township, Luzerne County serves Banks Township and Beaver Meadows Borough in Carbon County.

Carbon County residents have several post-secondary educational opportunities nearby. The main campus of Lehigh-Carbon Community College (LCCC) is located in Schnecksville (Lehigh County), close to the Carbon County border. The Carbon Center of LCCC is located in Nesquehoning.

The Pennsylvania Business Institute (PBI) is a private, for-profit school offering 2–4 year programs. The Carbon campus of PBI is located in Nesquehoning.

Carbon County is also near many colleges and universities located in neighboring counties. Full-service colleges and universities located in nearby counties include:

- Cedar Crest College (Allentown)
- East Stroudsburg University (East Stroudsburg)
- Kings College (Wilkes-Barre)
- Lafayette College (Easton)
- Lehigh University (Bethlehem)
- Moravian College (Bethlehem)
- Muhlenberg College (Allentown)
- Penn State University (Lehigh Valley, Hazleton and Schuylkill Haven campuses)
- Wilkes College (Wilkes-Barre)

Pennsylvania also provides an extensive system of training opportunities through the Commonwealth Workforce Development System. The system helps employers, individuals, and service providers by developing workforce skills and matching the skills to job needs. The system works through a network of CareerLink offices throughout Pennsylvania. CareerLink offices serving Carbon County are located in Jim Thorpe and in Lehighton.

In 2009, leaders from the business and education communities established the Carbon County Chamber of Commerce & Economic Development Office (CCCC/ED). The CCCC/ED is directed by a board of 16–22 members. The board members represent specific segments of the County business and education communities, such as CareerLink and the Career and Technical Institute.

The CCCC/ED has three major goals:

1. Collaborate with school districts to raise student achievement levels by aligning education with career preparation.
2. Identify key business needs and incorporate academic curriculum, models, or programs.
3. Educate businesses on the benefits of participating in the partnership.

More information about CCCC/ED is available at www.ccbep.org.

Transportation

Transportation issues are discussed in the Transportation background section and Plan portions of this report. Transportation improvements are particularly critical to handle tractor-trailer traffic and to improve the rail system.

Public transit is important for persons who cannot afford or choose not to use private transportation. The continued public awareness of health, fitness, and the environment has increased the use of walking and bicycling both to work and for leisure.

Employment/Unemployment

Since 2000, unemployment in Carbon County has been slightly higher than in Pennsylvania or the U.S. as a whole (Table 7.3). The higher incidence of unemployment locally may reflect the heavy reliance on manufacturing jobs, as shown in Table 7.2.

Table 7.3
Seasonally Adjusted Unemployment Rates

| Year | Location | | |
|------|----------|--------------|---------------|
| | U. S. | Pennsylvania | Carbon County |
| 2000 | 4 | 4.2 | 5.2 |
| 2001 | 4.7 | 4.7 | 5.7 |
| 2002 | 5.8 | 5.6 | 6.8 |
| 2003 | 6 | 5.7 | 7.4 |
| 2004 | 5.5 | 5.5 | 6.4 |
| 2005 | 5.1 | 5 | 6 |
| 2006 | 4.6 | 4.6 | 5.8 |
| 2007 | 4.6 | 4.3 | 5.3 |
| 2008 | 5.8 | 5.2 | 6.7 |
| 2009 | 9.3 | 8.1 | 10.1 |
| 2010 | 9.6 | 9.0* | 11.2* |

* through preliminary data for November
n/a data not available

Sources: U.S. Department of Labor
PA Department of Labor and Industry

Establishments

The total number of business establishments in Carbon County increased slightly (1.1%) from 2004 through 2008 (Table 7.4). The industries with the greatest number of new businesses were accommodation and food services (Industrial Classification code 72) and Professional, scientific, and technical establishments (Code 54). The industry losing the largest number of businesses during the period was retail trade (Code 44). The slight increase in the number of establishments from 2004 to 2008 together with an increased unemployment rate (Table 7.3 — 6.4% in 2004 and 6.7% in 2008) probably indicates that the average size of businesses decreased during the period.

Table 7.4
Carbon County Establishments by Industry — 2004, 2008

| INDUSTRY (WITH 2-DIGIT INDUSTRIAL CLASSIFICATION CODE) | 2008 | 2004 | CHANGE, 2004–2008 | |
|--|--------------|--------------|-------------------|-------------|
| | | | NUMBER | PERCENT |
| 11 Forestry, fishing, hunting, and agricultural support | 0 | 1 | (1) | (100.0)% |
| 21 Mining, quarrying, and oil/gas extraction | 3 | 0 | 3 | 100.0% |
| 22 Utilities | 1 | 2 | (1) | (50.0)% |
| 23 Construction | 156 | 157 | (1) | (0.6)% |
| 31 Manufacturing | 57 | 55 | 2 | 3.6% |
| 42 Wholesale Trade | 22 | 21 | 1 | 4.8% |
| 44 Retail Trade | 199 | 209 | (10) | (4.8)% |
| 48 Transportation and warehousing | 34 | 32 | 2 | 6.3% |
| 51 Information | 18 | 18 | 0 | 0.0% |
| 52 Finance and Insurance | 54 | 51 | 3 | 5.9% |
| 53 Real estate and rental and leasing | 37 | 33 | 4 | 12.1% |
| 54 Professional, scientific, and technical services | 70 | 61 | 9 | 14.8% |
| 55 Management of companies and enterprises | 1 | 5 | (4) | (80.0)% |
| 56 Administrative/Support and Waste Mgt. Remediation Svcs. | 33 | 35 | (2) | (5.7)% |
| 61 Educational services | 15 | 14 | 1 | 7.1% |
| 62 Health care and social assistance | 154 | 154 | 0 | 0.0% |
| 71 Arts, entertainment, and recreation | 25 | 27 | (2) | (7.4)% |
| 72 Accommodation and food services | 129 | 116 | 13 | 11.2% |
| 81 Other services (except public administration) | 160 | 162 | (2) | (1.2)% |
| 99 Industries not classified | 1 | 4 | (3) | (75.0)% |
| TOTAL ESTABLISHMENTS | 1,169 | 1,156 | 13 | 1.1% |

Source: U. S. Census Bureau

Current Economic Development Efforts

Economic development in Carbon County includes programs (such as technical support, funding, or other types of programs) and sites that can be prepared for future employers. Both topics are discussed below.

In an effort to strengthen economic development statewide, Pennsylvania has mandated that the recipient of state funds for economic development be a private (nonpublic) entity. Therefore, Carbon County is in the process of dismantling the Carbon County Bureau of Economic Development and merging resources with the Carbon County Economic Development Corporation (CCEDC), which is a private, nonprofit corporation.

The County is promoting entrepreneurship as a strong tool for economic development and job growth in the County. In addition, the County recently developed a Women in Business Group (WBG). In addition to CCEDC and WBG, other groups in the County that promote economic development include six Chambers of Commerce:

- Jim Thorpe
- Panther Valley
- Lehighton
- Weatherly
- Palmerton
- Penn-Kidder

Carbon County is also a member of three key economic development organizations:

- Northeastern Pennsylvania Alliance (NEPA)
- Manufacturer’s Resource Center (MRC), based at Lehigh University in Bethlehem
- Pocono Mountain Convention and Visitors Bureau

The County has also used the guidelines of Pennsylvania’s Business Retention and Expansion Program (BREP). The state program—regarded as among the most aggressive in the nation—resulted in the retention of 17 businesses in 2010.

Sites

The County’s top priority site for developing a new business park is an area known as Packerton Yards. The 59-acre brownfield site in Lehighton and Mahoning townships east of Route 248 was a railroad yard. The site is currently served by the Norfolk Southern Railroad. The site is designated a Keystone Opportunity Zone (KOZ), which provides tax incentives for employers to locate on the site.

The other site which the County is actively pursuing for future business development is the former Palmerton Zinc Company site. The Palmerton Zinc site is a brownfield being remediated through the federal Environmental Protection Agency.

The zinc site has two components: a west site and an east site. The east site has been successfully remediated and has several active businesses on-site. The east site has been designated a KOZ.

The west site is still undergoing re-mediation. The site highly visible in an excellent location. The west site is larger than the east site and includes rail access.

Environmental clean-up is gradually being completed at additional sites through the Superfund Amendments and Reauthorization Act (SARA). In 2009, Carbon County had 17 “superfund” sites under remediation. By the end of 2010, the number of sites being remediated was down to 13.

The County’s major current effort involves the redevelopment of the former Packerton Yard between Route 248 and the Lehigh River in Lehighton.

Other business development sites in Carbon County include the following industrial parks:

- ***Green Acres Industrial Park West*** – Located in the Borough of Nesquehoning, the 100-acre Green Acres site has six occupants, including a multi-tenant building. The entire park is zoned for industrial use and is a Keystone Opportunity Zone (KOZ), providing tax benefits and other considerations to tenants.
- ***McAdoo Industrial Park*** – The McAdoo park is located in Banks Township and is also a KOZ. The 172-acre site is owned by the CAN DO industrial development organization.
- ***South Carbon Business Park*** – Also a KOZ, the 61-acre South Carbon site is privately owned. The site includes electric, on-site septic, and on-site well.
- ***Semanoff Property*** – Owned privately, the 15-acre Semanoff property is located on Stanley Hoffman Boulevard in the downtown Lehigh area. The property has also been designated a KOZ property.

Kidder Township’s Comprehensive Plan also promotes the development of a new business park between Route 940 and I-80, approximately one mile east of the Turnpike interchange.

Tourism

Carbon County is one of the four counties that comprise the Pocono Mountain region. The region draws more than 23 million person-trips per year. The Pocono Mountains Vacation Bureau (PMVB) identifies the following numbers of activity sites within Carbon County:

- 26 cultural and historic sites
- 25 sporting and hiking adventures
- 7 “family fun” sites, including ski resorts and the Carbon County Fair
- 2 “entertainment/spectator” sites
- 6 fishing sites
- 3 golf sites
- 40 “outdoor adventure” sites
- 4 specific shopping sites
- 13 snow sports/winter recreation sites
- 11 tours and sightseeing opportunities
- 13 sites for water recreation and boating

Clearly tourism, outdoor recreation, and culture/history are major contributors to the Carbon County economy. Furthermore, Carbon County tourism sites benefit from the “spillover” effect of tourists in neighboring areas that are part of the Pocono Mountains Region—Monroe, Pike, and Wayne Counties—who take day trips and/or come to a specific activity in Carbon County.

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GREENWAY PLAN

WHAT IS A GREENWAY?

In his book “*Greenways for America*,” Charles Little described greenways as:

“1. A linear open space established along either a natural corridor, such as a riverfront, stream valley, or ridgeline, or overland along a railroad right-of-way converted to recreational use, a canal, scenic road, or other route. 2. Any natural or landscaped course for pedestrian or bicycle passage. 3. An open-space connector linking parks, natural reserves, cultural features, or historic sites with each other and with populated areas. 4. Locally, certain strip or linear parks designated as a parkway or greenbelt.”

Greenways also provide an important resource in the park and recreation system.

Open space allows many natural and environmental functions to occur unimpeded by the encroachment of development and also provides visual relief from the built environment.

Linear corridors of preserved public and private area, greenways can be either land- or water-based and serve a variety of functions and benefits, such as recreation, transportation, community revitalization and economic development, natural resource conservation, environmental protection, wildlife habitat and migration, and education. Greenway corridors often follow old railways, canals, ridge tops, rivers, and stream valleys.

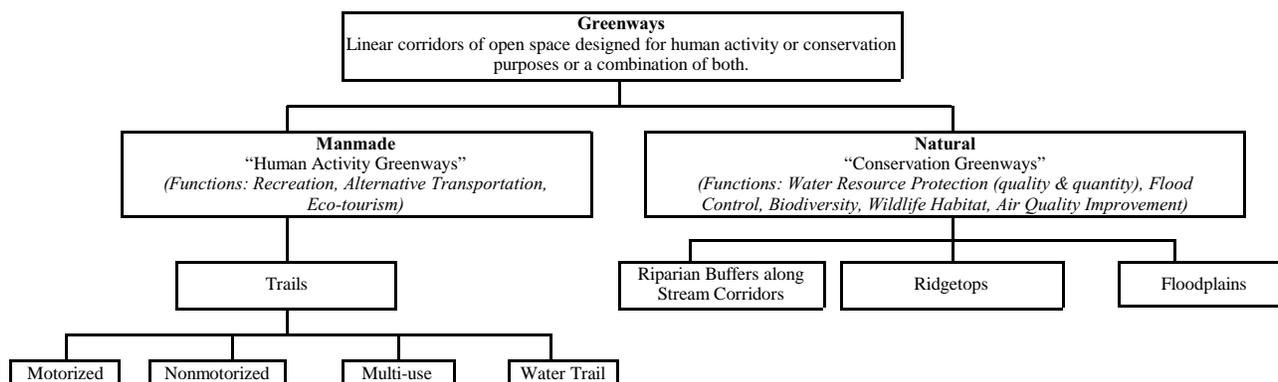
Open space can include stream valleys, ridge tops, lakes, woodlands, parks, agriculture land, and more. Open space serves many purposes, including:

- Providing recreation areas for a wide range of activities such as baseball, skiing, picnicking, soccer, wildlife observation, hiking, and biking.
- Conserving biodiversity and natural resources.
- Protecting natural areas that provide habitat for plants and animals and help purify air and recharge water by removing pollutants that originate in developed areas.
- Preserving historic landscapes, scenic quality, community character, and agricultural land.



View from the Appalachian Trail northeast over Palmerton Borough towards Beltzville StatePark

Table 9.1
Greenways Types



Source: PA Department of Conservation and Natural Resources (DCNR), available at: <http://www.pagreenways.org/greenwaysnetworks-types.htm>

GREENWAY BENEFITS

Greenways provide a variety of benefits for the residents of Carbon County. Some of the benefits also illustrate the need for greenways as both a recreation element in the County and a vehicle for land preservation. The following ten points present some of the general benefits of greenways.

Quality of Life

The environmental, health, recreational, biodiversity, and other benefits of greenways increase the quality of life in community. Virtually every greenway can provide some measure of benefit to the community, and most greenways provide several such measures.

Increased and Diversified Tourism

Public-access greenways can be a tourist attraction that draws visitors from a wide area, depending on the type of greenway and the extent of recreational amenities, such as fish and boat access points, trails, scenic roadway designations, or cultural/historic markers within urban greenways.

The Appalachian Trail, which is a large-scale preserved area, draws hikers from all over the United States. The trail runs from Maine to Georgia, along the southern border of Carbon County.

The Lehigh River Water Trail is a 75-mile greenway supported by a partnership of the Wildlands Conservancy and the Pennsylvania Fish and Boat Commission. The water trail extends from the Francis Walter dam in Carbon County to river's mouth at the Delaware River in Easton. Activities along the water trail include kayaking, motor boating, and canoeing.

The East Coast Greenway (ECG) is a planned, 2,950-mile trail that is approximately 21 percent complete and will eventually connect all major cities along the East Coast from Maine to Key West, FL. More information on the ECG is available at: www.greenway.org.

Recreation-related Spending

Active greenways can also increase recreation-related spending, which can provide a significant boost to the local economy. The *Western Maryland Rail Trail Economic Impact Study* indicated that the mean spending for a WMRT user in 2002 was approximately \$13 per visit. The corresponding mean spending per user in 2006 was approximately \$16 per visit. The *York County Heritage Rail Trail County Park 2007 User Survey and Economic Impact Analysis* (Interactive Marketing Solutions, June 2007) estimates that the average purchase of “soft goods” by trail users increased by 99.0 percent from 1999 (\$6.47 per trip) to 2007 (\$12.86 per trip). During the same period, the average purchase of “hard goods” by trail users increased by 9.1 percent from 1999 (\$337.14 per trip) to 2007 (\$367.77 per trip).

Reduced Future Flooding Potential

Many greenways are located adjacent to waterways and provide natural areas for overflow in times of flooding, which helps to minimize flood damage. Greenways are one tool that developers and local officials can use to reduce the potential for future flood damage.

Health Benefits

Public-access greenways provide an environment for people to walk, hike, jog, or bicycle while enjoying the experience of nature or simply a time of solitude and meditative contemplation, all of which contribute to physical and emotional health. Selected greenway segments can include fitness equipment along a trail to incorporate into trail use. Studies have shown a direct link between increased use of non-motorized trails (hiking / biking / walking) and decreased public health expenditures.⁷ Other evidence suggests that nature contact enhances emotional, cognitive, and values-related development in children.

Preservation of Natural, Historic, or Scenic Features

Most greenways contain natural, historic, or scenic features that add to the visual character of the community or are a part of the area’s history. With potential hubs like the borough of Jim Thorpe, greenways become an attractive use for land that provides many benefits for current and future residents and helps to preserve valuable community resources on both public and private land.

Protection of Water Resources

Greenways also help to preserve water resources by providing a vegetation buffer between streams and developed areas. Together with Best Management Practices, greenways help to control and purify stormwater runoff and to reduce soil erosion. Greenways can also help to conserve water supply and enhance water quality. Greenways and associated open spaces also provide recharge areas for groundwater aquifers, which are critical to drinking water supplies, especially in times of drought.

Environmental Education

Access to nature through greenways can inspire school classes, nonprofit organizations, and the general public to learn about and care for the environment. Greenways can also provide both basic and advanced research opportunities for plant and wild-life research.

Alternative Transportation

In view of the rising cost of gasoline and other fuels, greenways with trails can also provide an alternative form of transportation between activity centers. In areas where greenways and trails have become an established part of the community, bicyclists, walkers, and runners / joggers often use greenway trails to travel between home, work, school, shops, parks, and other destinations, rather than relying on roads and cars.

Potential Increased Property Value

Studies have documented the increased property value that comes from being located near or adjacent to parks, open space, and greenways. Greenways provide nearby recreation facilities and a knowledge that land preservation is an important value in the community. No studies have found a negative economic effect of greenways on adjacent property. In the vast majority of cases, proximity to a greenway has a positive economic effect on property value. (In a few rare cases, the greenway will have no effect on property value.)

GOALS

Goal 1: Develop a greenway system that includes both recreation and conservation greenways.

Connect activity centers, as identified in the background studies, using linear, natural corridors wherever possible.

Protect and expand existing open space as part of the Carbon County greenways network.

Goal 2: Expand the County's existing trail and open space system.

Work with stakeholders—including land owners, government agencies, conservation and recreation organizations, developers, volunteers, and others—to develop trail segments and preserve open space.

Encourage municipalities to require—through local zoning and subdivision ordinances—that developers incorporate trails and open space into all new developments.

Explore the use of utility corridors and railroad rights-of-way as part of the County trail network.

Goal 3: Protect environmentally sensitive, cultural, scenic, and historic areas of Carbon County.

Identify conservation greenways as a means of preserving lands for a variety of reasons throughout the County.

Use Jim Thorpe, Palmerton, Leighton and other historic centers as hubs within the greenways network.

Identify scenic vistas, such as the U. S. 209 South entrance into Jim Thorpe, that deserve special preservation efforts.

Goal 4: Enhance tourism in the County.

Use greenways and trails to reinforce the stories of Jim Thorpe and other historic areas of the County.

Promote greenways and trails as a natural attraction in the County.

Work with businesses to promote outdoor recreation activities for all ages along the Lehigh River.

Work with businesses in the PA 903 corridor to attract patrons from the second homes in the northern part of the County.

Promote connections and joint ventures with the ski resorts and other trails in adjacent counties.

GREENWAY PLAN MAP

Greenways consist of two major different types of categories: a)conservation greenways and, b) recreational greenways. Conservation greenways are devoted primarily to protecting natural resources and include waterways, natural areas, riparian buffers, and wildlife corridors. They often do not provide for public access. Recreation greenways serve the same purposes as conservation greenways, plus they also are intended currently or eventually to allow public access.

The Greenways Map highlights activity hubs and nodes. Hubs are major recreation areas or areas that serve as commercial and cultural centers. Nodes are smaller attractions along a greenway, such as trailheads and smaller downtowns. Hubs include boroughs such as Jim Thorpe, Palmerton and Lehighton, as well as Beltzville State Park, Hickory Run State Park and Mauch Chunk County Park. The linear greenways functions as spokes that extend from and connect the hubs, nodes and natural resources. The spokes are along trails, waterways and ridgelines in many cases. New spur trails should be completed over time to link to the main trails, and to offer “loops.”

The background studies for the *Carbon County Comprehensive and Greenway Plan* identified the many items to be considered in developing a greenway system, which include natural features, trails, dedicated open space and community facilities (*See Chapters 1-6*). Through the background work completed in previous chapters, the greenway plan map will include:

- Recreation and conservation greenways.
- Data from the Recreation, Open Space and Trails Map which identifies the ownership of the various types of public recreation land. There also are multiple loop trails within the larger public recreation lands, including hiking trails and many trails that are heavily used for mountain biking.
- Data from the Preserved Farmland and Agricultural Security Areas Map which highlights the locations of agricultural easements.

- Data from the Hydrology Map which identifies 100-year floodplains, streams, rivers, and known wetlands
- Data from the Topography Map which highlights very steeply sloped lands (greater than 25 percent). These areas are not suitable for development.
- Data from the Unique Natural Areas & Woodlands Map which identifies areas of concentrated designated natural areas and concentrations of woodland areas.

The Greenways Map also shows land that is in public ownership. These lands include:

- Federal, State, and County Lands – Land currently in federal, state, or county ownership is likely to remain so. Federal land in the County includes some of the area around the Francis E. Walter Dam, with other lands in Luzerne County.)

State lands include:

- Beltzville State Park
 - Hickory Run State Park
 - Lehigh Gorge State Park
 - Weiser State Forest
- Water Authority Lands – Carbon County includes a lot of land that is owned by various water authorities. However, there is no guarantee that land owned by water authorities will be permanently preserved, unless there is a conservation easement on the land. Use of the lands is restricted to preserve water quality. The water authority lands are owned by:
 - Bethlehem Water Authority
 - Bowmanstown Borough Authority
 - Hazleton City Water Authority
 - Jim Thorpe Municipal Authority
 - Lehighon Water Authority
 - Nesquehoning Borough Authority
 - Summit Hill Water Authority
 - Tamaqua Area Water Authority

RECOMMENDATIONS

The following are a listing of recommendations for the Greenway Plan

Recommended recreation greenways include:

Appalachian Trail and the Blue Mountain / Kittatiny Ridge – The Appalachian Trail is one of the most popular hiking trails in the country. It stretches from Maine to Georgia, including the segment along the top of the Blue Mountain along the southern border of Carbon and Monroe Counties. One of the most difficult portions of the trail is at the Lehigh Gap. The National Park Service purchased lands immediately adjacent to the Trail that were not already in public ownership.

Large areas along the north face of the Blue Mountain in Carbon County is in private ownership. Lands east of Lehigh Gap include those subject to environmental cleanup and the Blue Mountain Ski Area. In comparison, most of the south face of the Mountain in Lehigh and Northampton counties is owned by the State. In partnership with area conservancies and State agencies, public acquisition of additional areas of the Blue Mountain (other than the Ski Area) should be emphasized. Such acquisitions typically occur with assistance by the Wildlands Conservancy and the State Game Commission, with the Game Commission owning the land. Unfortunately, the State Game Commission has less funds available for land acquisition than was available in the past. It may be possible to tap into funds as part of the Federal “Highlands” program to preserve additional parts of the Blue Mountain.

Lehigh Gap Nature Center – This land is open to the public on the west/south side of the Lehigh River, north of the Appalachian Trail and east of the PA. Turnpike. It is owned by a local non-profit. Trails pass through the property to connect the D & L Trail with the Appalachian Trail, including a trail along a second former rail line. The property can be accessed from Mountain Road at the Lehigh River Bridge or from Riverview Road on the west side of the River south of Route 895. A new nature center was built immediately to the south of Carbon County.

Chestnut Ridge Greenway – This rails-to-trail extends from Little Gap to Kunkletown and runs along scenic areas and the Buckwha Creek. Additional parking should be provided. The Aquashicola and Buckwha Creeks lie at the base of Blue Mountain in southern Carbon County. The Buckwha flows into the Aquashicola, and the Aquashicola flows into the Lehigh River. Chestnut Ridge rises to the north from both creeks. The greenway provides a connection between the Lehigh River and Monroe County and connects to the Chestnut Ridge Greenway proposed in the Monroe County greenways plan.

Delaware & Lehigh Trail and Lehigh River Greenway – The D&L Trail will eventually connect Bristol (Bucks County) to Wilkes-Barre (Luzerne County). The trail is about 165 miles long adjacent to the Delaware and Lehigh Rivers. Approximately 37 miles of the trail is in Carbon County. The Lehigh River is popular for rafting, tubing and fishing and is identified in the statewide greenways plan as a major water trail. The greenway includes the Lehigh Gorge State Park and the Lehigh Canal, which connects from Franklin Township to the mouth of the Lehigh in Easton (Northampton County).

Switchback Railroad Trail – The historic Switchback Railroad Trail is an 18-mile round trip between Jim Thorpe and Summit Hill that traces the route of the famous Switchback Gravity Railroad. The Switchback was America’s second oldest railroad—built in 1827—before closing in 1933. A University of Pennsylvania study recommended that the historic railroad not be reconstructed, and that instead the trail emphasize passive recreation, historic interpretation and preservation of ruins.

Panther Valley Heritage Trail - This proposed trail is planned to extend from Tamaqua to Lansford to Nesquehoning using excess right-of-way along existing railroads. It will require the cooperation of several railroads in order to be completed. The trail then connects to the recently improved Nesquehoning Trestle across the Lehigh River north of Jim Thorpe. A feasibility study for the trail was completed several years ago.

Recommended conservation greenways include:

The conservation greenways identified in the Greenways Plan are focused on waterways and ridgelines. Both sides of each waterway should be preserved, if at all possible, to protect the quality and quantity of water supplies. Conservation greenways include, among others:

- Mauch Chunk Ridge
- Nesquehoning Mountain
- Areas between State Game Lands 40 and the Lehigh River in Kidder Township
- Black Creek Greenway
- Buck Mountain Creek Greenway
- Lizard Creek Greenway
- Mud Run Greenway
- Nesquehoning Creek Greenway
- Quakake Creek Greenway

Improve the locations and amenities at parks and playgrounds to become more efficient nodes of recreational needs.

The locations of existing recreation areas are shown on the Recreation, Open Space and Trails Map. A variety of recreation areas are valuable, with proper distribution to serve concentrations of residents. This variety should include playgrounds in denser areas, athletic fields, passive natural areas along creeks and other facilities. It generally is most efficient and most convenient to concentrate most new athletic facilities for organized sports in a few centralized parks, preferably adjacent to a public school.

Work to provide safer bicycling and walking opportunities throughout the County.

Wherever practical, new developments should be required to include pedestrian and bicycle connections with nearby parks, residential developments and existing trails. These trail easements are particularly valuable to connect the end of one cul-de-sac street with another cul-de-sac street. This allows bicyclists and pedestrians to travel on wider low-traffic roads within newer developments, as opposed to being forced to walk and bicycle along older heavily traveled through-roads.

In addition to serving local residents, trails can be valuable in attracting tourists to the region, particularly considering the dramatic increase in the popularity of mountain biking.

- Most roads in the County have narrow or no shoulders for safe cycling. Many roads lack white edge lines, which serve as visual barriers that help motorists and cyclists maintain their own domain.
- The municipalities should seek that PennDOT or adjacent developers construct shoulders along key roads (that do not have curbs) where there is bicycle or pedestrian traffic. The municipalities should construct shoulders on township or borough roads in similar situations. The shoulders should be clearly separated from the travel lanes by white lines, to try to keep vehicles off of the shoulders. The shoulders are not only valuable for pedestrians and bicyclists, but also provide a margin of error for motorists. In addition, the shoulders provide some room for persons picking up their mail, for mail delivery vehicles and for trash collection. Particularly on hilly and curvy roads with limited visibility of the approaching

road segment, roads without shoulders are hazardous to many people. The curves and hills limit a motorist's ability to see bicyclists, pedestrians, mail trucks and garbage trucks.

- Road and trail improvements for cyclists should consider different groups:
 - Higher speed cyclists who always use existing paved roads,
 - Lower speed and less experienced leisure riders, who may use roads or bike paths,
 - Children, who would be best directed onto separate bike paths within parks and school sites with few road crossings, and
 - Mountain bikers that seek unpaved trails.
- Bicycle trails can be an assortment of dirt, gravel, and paved trails, and could exist in floodplains, utility right-of-ways, and other locations where it is easier to obtain permission for the trails because the areas cannot be developed. The Blue Mountain could include mountain bike trails, with a range of difficulties.
- The townships could require developers to include paved paths along collector and arterial streets in their subdivision plans. These paths are very attractive to other bicyclists, joggers and walkers. It may be necessary for a township to eventually expend municipal funds to complete key missing links that are unlikely to be the subject of a subdivision. Developers can also be required to provide paths from one development to another, particularly to connect together cul-de-sac streets or to provide a connection from a residential to a commercial or recreational area.

Cooperate regionally with other surrounding Counties to connect trails and greenways in other locations.

The goal is to improve paths to connect upon key destinations (such as residential areas, parks, schools and shopping areas). The appropriate pedestrian and bicycle links should be sought between these destinations, taking in consideration both physical limitations. Some improvements, such as trails within municipal park land, could be initiated immediately, while others would be a collaboration with PennDOT, private owners, and other entities. PennDOT may be more willing to “fill in the gaps” if they are presented with a formal plan for a workable and useful path network. The end result would be an interconnected network of trails, paths and bike lanes that would serve both recreational and alternate transportation needs.

Work with state and federal officials on the development of all terrain vehicle and snowmobile accessible trails.

Most trails prohibit all terrain vehicles. It would be desirable to have some all terrain vehicle trails on less sensitive State-owned lands in the surrounding area in order to provide a lawful location for them. The goal is to increase outdoor recreational and tourism activities while reducing unlawful and/or trespassing by designating an allowed area. State grants are available to develop these trails.

Enhance trailheads and wayfinding systems Countywide.

Trailheads throughout the county are difficult to find and lack essential amenities. Trailheads should allow for users to locate themselves locally and regionally. Creating a systematic wayfinding system at each trailhead location, land or water, will help establish the overall recreational amenities located within the County.

Propose a modification of the route of the State-designated Bike Route.

The State Department of Transportation has advertised a set of bicycle routes that travel across the State. One of those routes, Route L, passes from the western suburbs of Philadelphia, north through Carbon County, and then to the New York State Line. The current route travels across the Blue Mountain/Kittatiny Ridge on Blue Mountain Drive, then west on Little Gap Road, north on Forest Inn Road, west on Fireline Road, and then north on Cherry Lane Road.

The municipalities should consider proposing an alternative route that would not use curving and narrow roads, such as Forest Inn Road. Instead, the route could be proposed to pass on wider and more scenic roads, such as Pohopoco Road and/or connect into Downtown Palmerton to support those businesses.

Where a bicycle route along an unsuitable road is not moved, then PennDOT should be urged to construct an appropriate shoulder. Bicyclists (especially visitors who do not know the local roads) should not be encouraged to use a route that is unsuitable.

Work with local, state and federal partners to close trail gaps in Jim Thorpe, Lehigh, Weissport and East Penn Township in order to complete construction of the D&L Trail through Carbon County.

Most of the D&L Trail through Carbon County is now complete. Improvements are planned to the Trail north of White Haven in Luzerne County, while there is not a trail along the east side of the river in Carbon County. Trail users currently must walk sidewalks through the center of White Haven, which does provide commercial services to people. The trail then exists as a rolled cinder trail along the length of the Lehigh Gorge State Park along the west side of the Lehigh River. The trail crosses to the east side of the river at the trailhead at Glen Onoko and then crosses to the west side over the recently renovated Nesquehoning Trestle, which allows access to downtown Jim Thorpe.

A major need is to complete the planned new pedestrian/bicycle bridge across the Lehigh River south of Jim Thorpe, near the Jim Thorpe wastewater treatment plant. Currently, the trail dead-ends on the east and west sides of the river because this link does not exist.

The towpath trail exists along the east side of the river from three miles north of Weissport to Parryville. Sections of the towpath trail south of Weissport are being upgraded and opened to the public as a result of the completion of the new Turnpike bridges. The trail will connect along the west side of the Lehigh River in Lehigh from Lehigh Gap to Lehigh and Weissport with the potential to connect with neighborhoods and businesses.

The D&L trail is being completed along the west side of the Lehigh River from Lehigh to Lehigh Gap. Portions of the D&L Trail are being upgraded and reopened to the public as a result of the completion of the new Turnpike bridges, while other sections in East Penn Township and through Lehigh Gap are already open. The trail then continues south to a trail head in Washington Township and Slatington Borough, Lehigh County, and will eventually connect to Whitehall, Northampton, Catasauqua and Allentown. From Allentown, the towpath trail exists to Bethlehem and Easton, and then along the Delaware River to Bristol.

Work with municipalities, state and federal agencies, and non-profits to explore linkages with the D&L Trail and the Appalachian Trail.

Currently, the main link with the Appalachian Trail from west-to-east of the Lehigh River is only accessible across Route 248, a highly-traveled highway. Reaching Palmerton from the D&L Trail along the west side of the Lehigh River is particularly problematic because there are no bridges across the river between the bridge south of the Lehigh Gap and the bridge at Bowmanstown. The Lehigh Canal towpath on the east side of the river was eliminated when Route 248 was constructed. It may be possible to eventually construct a switchback trail from the Appalachian Trail down the north side of the Kittatiny Ridge / Blue Mountain to reach downtown Palmerton. A cooperation of agencies should complete a study which would fund and enhance safest connecting route.

Palmerton provides valuable services to trail users, including showers in the Borough Hall and services by commercial businesses. Economic development of downtown Palmerton would be aided by better pedestrian and bicycle linkages

Promote the protection of ridgelines, scenic views, and historic resources through educational programs with property-owners, careful reviews of proposed developments and updated local development regulations.

These issues are discussed in the Natural Features and Agricultural Conservation Plan section of this report.

Promote the formation of Environmental Advisory Councils at the municipal level.

Local governing bodies are allowed to form volunteer Environmental Advisory Councils to provide advice to municipal officials and property-owners. Environmental Advisory Councils can be particularly beneficial to assist with land preservation efforts, reviewing proposed developments, and providing public educational programs.

Consider municipal measures to provide additional revenue for open space preservation, farmland preservation and recreation improvements.

Many of these measures are discussed in the Appendix to this Plan, such as requiring that new residential developers either dedicate recreation land or pay a fee for recreation improvements. As discussed in the Natural Features and Agricultural Conservation Plan section, a municipality may also ask their voters for approval of an additional tax that is specifically dedicated for land preservation. This type of tax is often a one-quarter of one percent additional earned income tax, although an additional real estate mileage is also allowed. The funds can only be used for buying land or conservation easements.

These alternative sources of revenue may become particularly important as state funding for land preservation and recreation are proposed for continued major reductions. Local funds are also valuable to serve as a local match for other funding sources.

Follow guidelines for the Appalachian Trail Conservancy Policy On Side/Connecting Trails.

The following outlines adopted procedures by the ATC Board of Managers in 1988, and amended by the ATC Board of Managers in 1995, and amended by the ATC Board of Directors in 2008.

A. Procedure for Recommending Approval of New Hiking Trails Entering The Appalachian Trail Corridor

All new hiking trails entering the Appalachian Trail corridor should be approved by the local Trail club, the landowning agency, the appropriate ATC regional partnership committee and ATC in accordance with the ATC Policy for Review and Approval of Management Plans and Project Proposals Approval by the regional partnership committee and ATC will be based on the criteria set forth below in part C and any additional criteria provided in the local management plan(s) for the area.

B. Procedure for Recommending Action by the Secretary of the Interior or Agriculture for Formal Federal Designation of a Side or Connecting Trail

Formal designation of side or connecting and coaligned trails requires action by the secretaries of the interior or agriculture or their designee(s). Any proposal for formal designation shall be reviewed by the regional partnership committee, which will forward its recommendation to the Stewardship Council. The Council will review the recommendation and, with input from the ATC regional director, develop a final recommendation for the appropriate secretary. In addition, review and recommendation processes may occur within the National Park Service, the U.S. Forest Service, and/or state agencies as appropriate. ATC review and recommendations shall be based on the criteria set forth below in part C and any additional criteria identified in the local management plan(s) for the area.

C. Criteria for:

- (1) Recommending Approval of New Hiking Trails Entering The Appalachian Trail Corridor, or*
- (2) Recommending Action by the Secretary of the Interior or Agriculture for Formal Designation of A Side or Connecting Trail*

1. The trail will only enhance or improve the Appalachian Trail.
2. The Appalachian Trail is preeminent over the new or designated trail.
3. The trail will allow only foot traffic.
4. The trail will provide significant access to the Appalachian Trail or between the Trail and significant scenic, natural, or cultural resources and/or Trail facilities.
5. The Appalachian Trail will take precedence on trail signing and marking.
6. Dual marking will be avoided on any new coaligned trail; however, other trails may be identified on A.T. signs. ATC also will work to establish this standard for existing coaligned trails.

7. A.T. managers will cooperate in developing standards for construction, design, and maintenance of trails that intersect the Appalachian Trail. ATC will encourage adoption of standards that protect resource values and prevent environmental damage in a manner consistent with resource protection on the Appalachian Trail.

Continue work and promotion of the acquisition of land along the Kittatiny Ridge for conservation purposes.

Continued efforts with state, federal and non-profit agencies should continue for the acquisition of land to conserve the Kittatiny Ridge. Efforts have protected an estimated 15,000 acres to date. Partnering with agencies will continue to lead to successful efforts to protect this natural area.

Work to promote the sustainable forestry practices on existing Water Authority Lands.

Lands under control of various water authorities offer development regulations but also should continue efforts to protect the overall environment. Managing these large tracts of land can be a significant positive for drinking water but also a benefit to the local and regional area. Sustainable practices in the past have been controlling the development of the area, while recent new practices such as wind / solar farms have been studied, these initiatives need to be implemented in the highest of standards.

Promote the continuing efforts for Acid Mine Drainage (AMD) efforts to successfully rehabilitate streams into environmentally stable greenways.

Within the large mining regions of Carbon County and surrounding areas, AMD is a major environmental concern. Areas within Carbon County have undergone this process, helping reduce AMD into local streams and eventually into the Lehigh River. Locations where AMD are being leaked into water supplies should be rehabilitated finding the source of the pollution to control these efforts.

Continue the conservation and promotion of the Lehigh River Corridor.

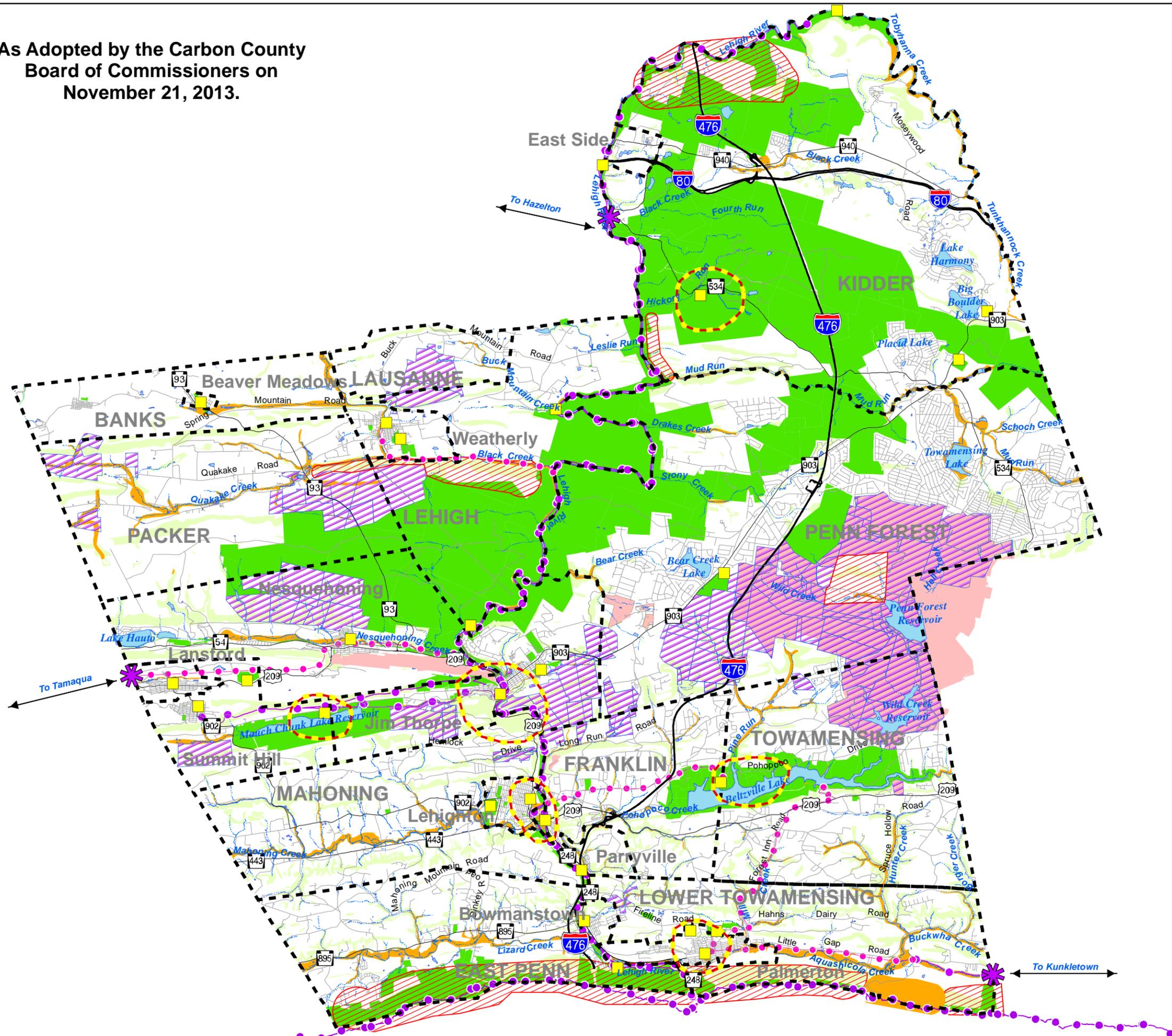
The Lehigh River corridor is the one the most well-know amenities with Carbon County. Services which promote the environmental, economical and tourism aspects of the corridor should be continued and promoted.

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As Adopted by the Carbon County Board of Commissioners on November 21, 2013.

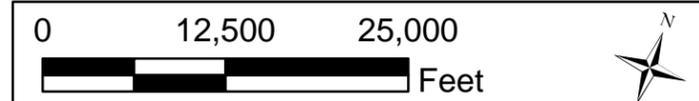
Carbon County Comprehensive & Greenway Plan

Greenway Concept Plan



- Existing Public Recreation Land
- Environmentally Sensitive Areas
- Water Authority Lands
- Preserved by Conservation Easement
- Conservation Greenway
- Recreation Greenway
- Existing Recreational Trails
- Proposed Recreational Trails
- Major Hubs
- Nodes

NOTE:
Entire length of the Lehigh River corridor is considered a recreation and conservation greenway.



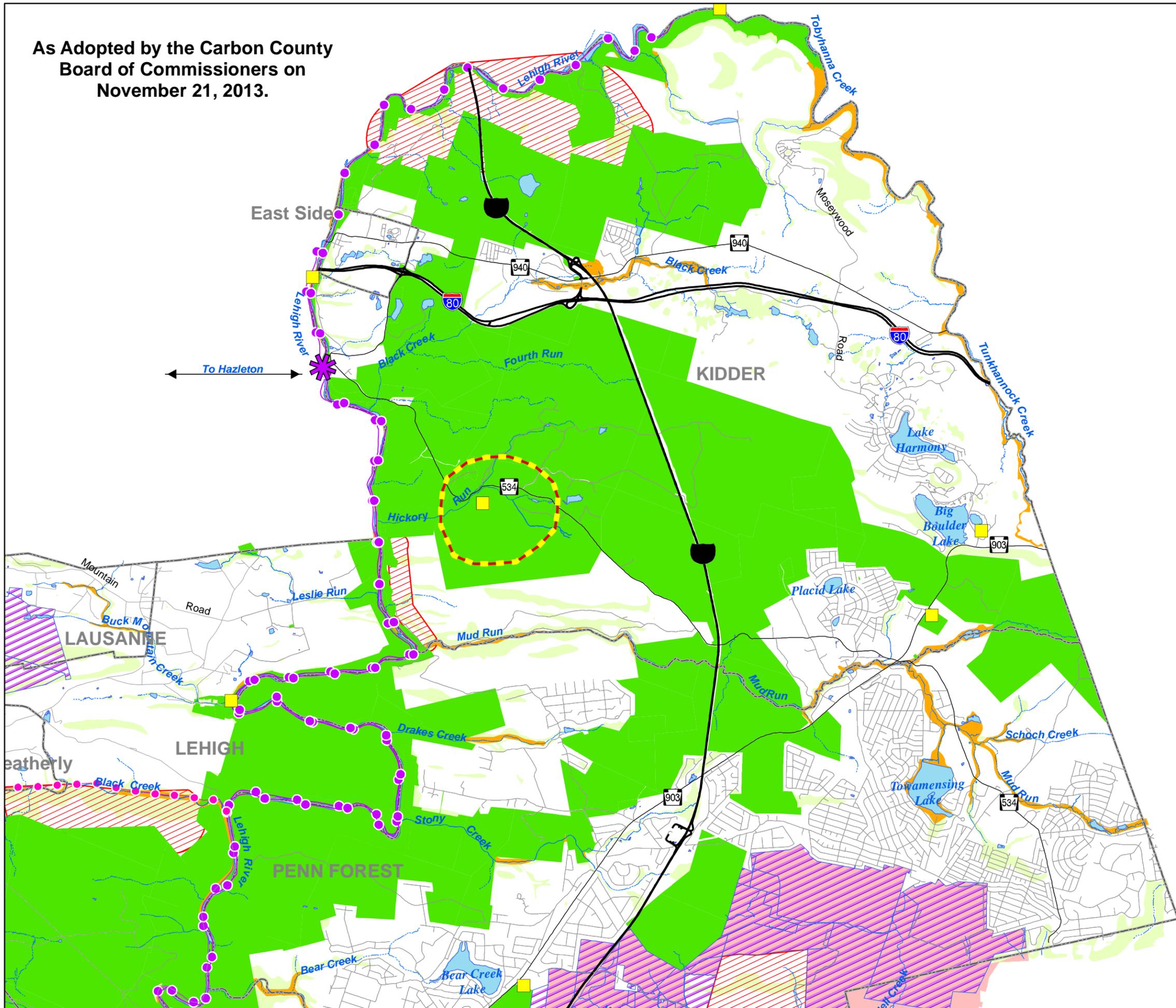
Source: Carbon County, PA DCNR, Wildlands Conservancy and The Nature Conservancy.

As Adopted by the Carbon County Board of Commissioners on November 21, 2013.

Carbon County Comprehensive & Greenway Plan

Greenway Concept Plan

Northeast Section



-  Existing Public Recreation Land
-  Environmentally Sensitive Areas
-  Water Authority Lands
-  Preserved by Conservation Easement
-  Conservation Greenway
-  Recreation Greenway
-  Existing Recreational Trails
-  Proposed Recreational Trails
-  Major Hubs
-  Nodes

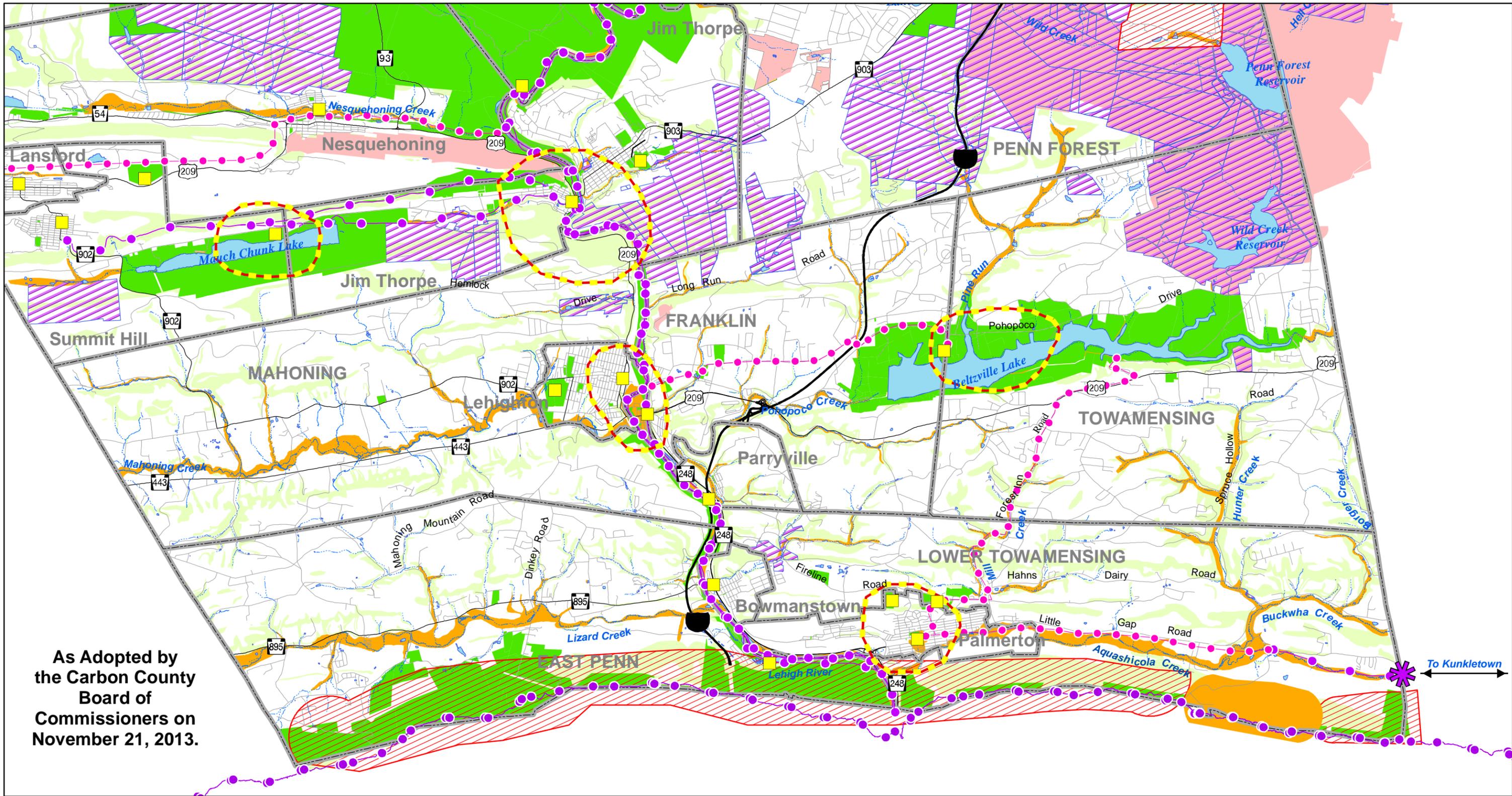
NOTE:
Entire length of the Lehigh River corridor is considered a recreation and conservation greenway.



Source: Carbon County, PA DCNR, Wildlands Conservancy and The Nature Conservancy.



Community Planning Consultants
Urban Research & Development Corporation
 28 West Broad Street Bethlehem, Pennsylvania 18018 610-865-0701



As Adopted by
the Carbon County
Board of
Commissioners on
November 21, 2013.

0 7,000 14,000 Feet

Source: Carbon County, PA DCNR, Wildlands Conservancy and The Nature Conservancy.

Community Planning Consultants
Urban Research & Development Corporation
URDC 28 West Broad Street Bethlehem, Pennsylvania 18018 610-865-0701

| | | |
|------------------------------------|-----------------------|------------------------------|
| Existing Public Recreation Land | Conservation Greenway | Existing Recreational Trails |
| Environmentally Sensitive Areas | Recreation Greenway | Proposed Recreational Trails |
| Water Authority Lands | Major Hubs | |
| Preserved by Conservation Easement | Nodes | |

Note:
Entire length of the Lehigh River corridor is considered a recreation and conservation easement.

Carbon County Comprehensive & Greenway Plan

Greenway Concept Plan

Southern Section

As Adopted by the Carbon County Board of Commissioners on November 21, 2013.

Carbon County Comprehensive & Greenway Plan

Greenway Concept Plan

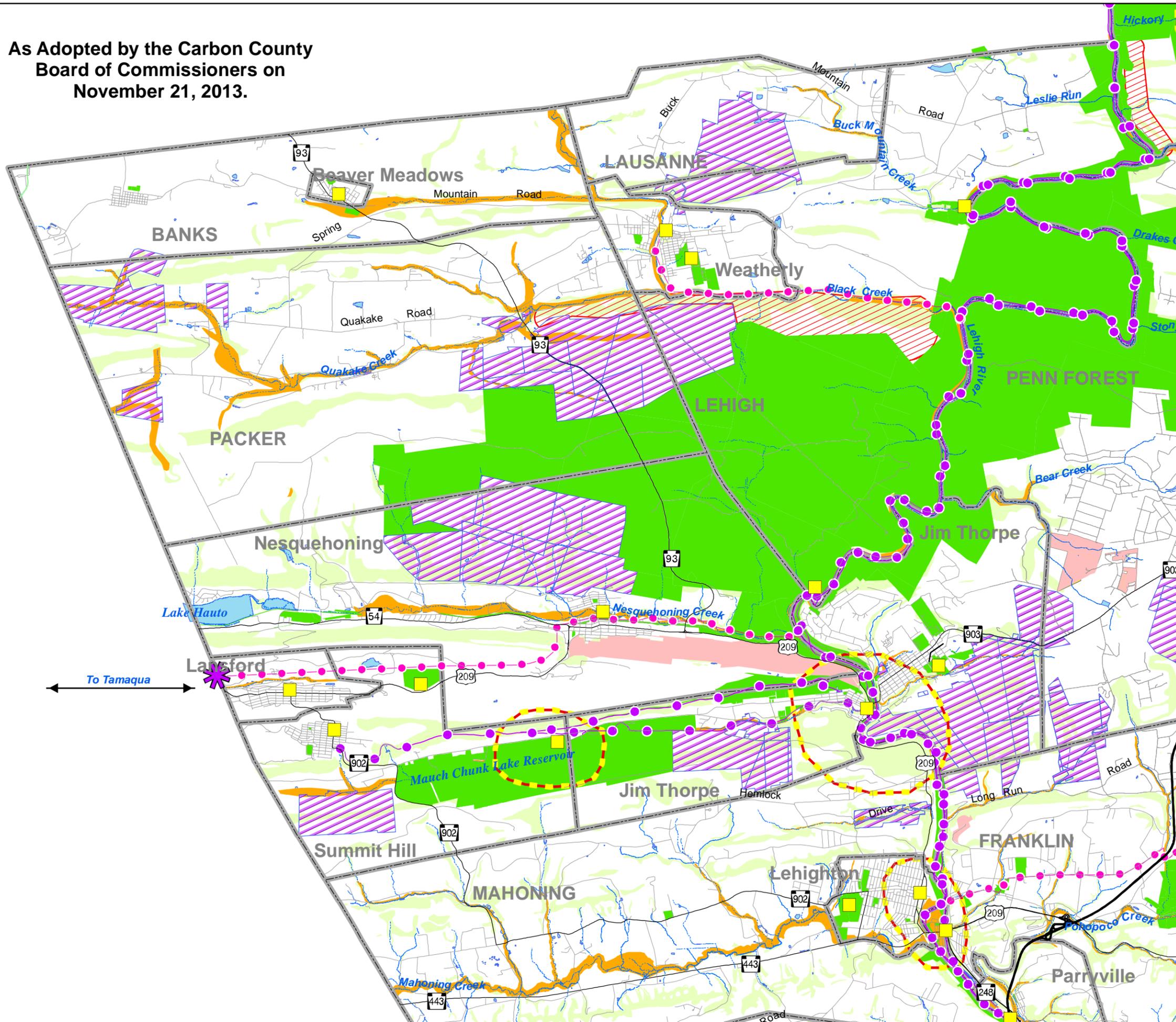
Central Section

-  Existing Public Recreation Land
-  Environmentally Sensitive Areas
-  Water Authority Lands
-  Preserved by Conservation Easement
-  Conservation Greenway
-  Recreation Greenway
-  Existing Recreational Trails
-  Proposed Recreational Trails
-  Major Hubs
-  Nodes

NOTE:
Entire length of the Lehigh River corridor is considered a recreation and conservation greenway.



Source: Carbon County, PA DCNR, Wildlands Conservancy and The Nature Conservancy.



GREENWAY IMPLEMENTATION

The Greenway portion of the *Action Program* (in Part 17 of this report) concludes with an action program in support of the County's greenways and open space system. The Action Program recommends important actions and policies, including timing/priority, key stakeholders for each action, and, if appropriate, provides cost estimates.

Appendix C identifies potential funding sources for various activities in developing a greenways and open space system.

The recommendations include a priority in the form of a time frame and a lead agency(ies) to pursue each action. Time frames for the priorities are:

- Immediate: 2011–2012
- Short Range: 2012–2015
- Long Range: 2015–2020
- Ongoing

Stakeholders and Roles

Greenway implementation requires cooperation from many diverse interests, including groups in both the private and public sectors. Many successful greenway efforts start at the “grassroots” level. Interested groups and citizens work together and focus local efforts developing ideas to present to government officials, businesses, and others with the resources to assist in implementation. Successful greenways in Carbon County will be developed with the support and assistance of local government, both municipal and county. Most often, at the local level, one person, or a small group of people, have identified greenways as a personal passion and take a leading role in the organizing effort. Throughout the pursuit of the greenway system, numerous stakeholders should be involved.

Municipalities – Municipal offices, parks and recreation boards, homeowners associations, and other agencies—will be the focus of support for the Carbon County greenway system. Successful greenway systems depend on a strong base of support, which should begin building at the local level.

One of a municipality's first tasks with regard to greenways will be to review and, where necessary, adopt or update local planning and zoning documents to strengthen provisions for environmental protection. Through zoning ordinances, SALDOs, comprehensive plans, open space plans, and official maps, municipalities can maintain conservation greenways by regulation rather than acquisition. For example, a borough or township can require in the zoning ordinance and SALDO that all 100-year floodplains, 50-foot stream buffers, wetlands, steep slopes, and riparian woodlands remain as open space. The documents can also include provisions on historic preservation.

Municipalities will also be the focus of land acquisition for publicly accessible greenways. In Pennsylvania, municipalities have local jurisdiction over land within municipal borders and are responsible for providing local services, such as police protection, local road maintenance, recreation, and trash collection.

Municipalities can also help with education and outreach efforts to promote land conservation. Local newsletters, posters, and pamphlets can help landowners and residents understand land preservation issues and environmental preservation practices.

Some municipalities create Environmental Advisory Councils (EACs) to advise the governing body regarding conservation, regulation, and development. An EAC is typically a volunteer group with environmental professionals and other residents that lend knowledge and experience to better guide the actions of the municipal government. A municipality can receive up to \$5,000 in grant money from the Pennsylvania Environmental Council to establish an EAC.

Carbon County – Carbon County government is an important partner in preserving land and providing leisure services.

- Parks – The County operates a major multi-use park: Mauch Chunk Lake Park. Because of budget limitations, decreasing grants, and the presence of expansive areas of State and Federal recreation lands, this Plan does not envision the County undertaking the acquisition of extensive new recreation lands.
- Open Space – The County should provide technical assistance to municipalities regarding land preservation, including aid with ordinance provisions. The County can also work with conservancies to help landowners make the decision to preserve valuable land in the County. The County could also advise municipalities that may wish to consider a municipal bond issue for the purpose of acquiring permanent open space.
- Greenways – This Plan provides a framework for more detailed studies at the local level. In addition, County staff can provide guidance to local officials in obtaining and preserving land as part of the County greenway system. Many agencies will be important partners in conserving greenways, including:
- Carbon County Conservation District – The conservation district plays an important role in the environmental conservation and land preservation aspects of greenways. In general, conservation districts promote the conservation of natural resources, particularly soil and water. Staff professionals:
 - Review development plans to check for threats to soil stability and water quality.
 - Educate farmers on best management practices.
 - Actively work with other agencies and watershed groups to enhance water quality Countywide.

The conservation districts are important partners in the management of private land holdings along the conservation greenways, particularly in agricultural areas, recommending and monitoring riparian buffers, streambank restoration, and other management practices that result in better water quality and enhanced greenways along streams. The conservation districts are also the primary link for landowners interested in enrolling in federal conservation programs.

- Carbon County Agricultural Land Preservation Board – The Carbon County Agricultural Land Preservation Board is appointed to oversee the selection and purchase of agricultural conservation easements in the County. The board, which works closely with the Conservation District, can help farmers apply for an easement and see how individual farms will rate against other applicants. As the facilitator of farmland preservation, the board has an important role in preserving contiguous belts of farmland throughout the County.

- *Carbon County Office of Planning and Development* – The Carbon County Office of Planning and Development (OPAD) will be an important partner in developing the greenway system. In addition, OPAD staff can provide guidance to local officials in obtaining and preserving land as part of the greenway system.
- *Carbon County Parks and Recreation Department* – The Carbon County Parks and Recreation Department operates the Mauch Chunk Lake County Park. The department can provide landowners and other stakeholders with valuable information and assistance in developing and maintaining greenways.
- *Carbon County Office of Economic Development* – The Carbon County Office of Economic Development should promote the greenway effort for the potential to increase both tourism and quality of life in the County. Increased quality of life helps to maintain and attract citizens of all ages, and also attracts potential employers to the area.

Conservation and Recreation Groups – Conservancies and recreation organizations often provide the hands-on activism and volunteers needed to realize the greenway vision. Conservancies are focused on the issue of land preservation and can solicit support and organize resources targeted to the specific cause. Recreation groups provide an invaluable pool of volunteer effort and typically have goals compatible with those of land conservation efforts. Both types of groups will be instrumental in establishing greenways by:

- Advocating conservation on private land.
- Raising funds.
- Writing grant applications.
- Increasing public awareness of conservation through events and publications.
- Providing volunteer resources for trail and other conservation projects.
- Coordinating local and governmental entities.

Some of the groups that may become involved at some point during implementation include the following:

- Appalachian Mountain Club
- Highlands Coalition
- PA Environmental Council (PEC)
- Sierra Club, Pennsylvania Chapter
- Trout Unlimited, Western Pocono Chapter
- Wildlands Conservancy

Landowners – Effective greenway planning and implementation must involve all affected landowners. Any proposed action, such as riparian restoration, conservation easements, hiking trails, water trails, or bike routes, can have an impact on a landowner’s well-being and interests. Landowners should be encouraged to support any greenway effort, especially at the conceptual stage, through public surveys, public meetings, and inclusion in steering committees.

Homeowners Associations – One of the unique features of Carbon County is the large number of gated communities throughout the County. Developments such as Bear Creek Lake, Lake Harmony, and Foxfire Condominiums have governing organizations established by the homeowners in the respective development. Greenways that pass through developments with homeowner associations will need the cooperation of the association and the residents of the development.

State Agencies – The following are state agencies that can provide assistance in carrying out this Greenways Plan:

- *PA Dept. of Conservation & Natural Resources (DCNR)* – DCNR is the lead agency responsible for implementing the State Greenways Action Plan to complete a network of linear open space and trails. The greenways proposed in this County Plan have the potential to connect to become part of a larger network of statewide greenways, including the Appalachian Trail, the Lehigh River, and the Highlands Region greenways.
- *PA Game Commission (PGC)* – The PGC oversees all hunting regulations statewide and manages all state game lands, as described in the Recreation Background section.

One matter of controversy has involved PGC’s limitations on the days when mountain biking is allowed and where it is allowed.

The PGC will be an important contact when pursuing recommended greenways near or on game lands. In addition, the PGC will be responsible for enforcing hunting regulations on any open space, public or private, where hunting is permitted.

- *PA Fish & Boat Commission (PFBC)* – The PFBC regulates recreational fishing and boating on all Pennsylvania streams and lakes and provides access points with parking. The PFBC will be an important contact for helping establish any additional access points that may be desired along greenways, waterways and lakes.
- *PA Dept. of Environmental Protection (DEP)* – DEP enforces environmental regulations that involve stormwater, wastewater management, mineral extraction, waterway crossings, and development within wetlands. DEP has an important role in helping to protect waterways and sensitive areas from erosion, contamination and harmful alteration.
- *PA Dept. of Transportation (PennDOT)* – The construction and maintenance entity of all state-owned roads will be a major stakeholder when pursuing trails, auto, and bike touring routes, and parking areas. PennDOT approval is necessary when considering trail crossings or bike lanes in state road rights-of-way. The agency also oversees the distribution of certain grant monies for trail and path construction.
- *PA Dept. of Community & Economic Development (DCED)* – The DCED can provide guidance and funding for community revitalization and redevelopment projects in the County as well as historic rehabilitation and interpretation efforts. Grants from DCED can also be used for establishing auto touring routes or any other tourism-related project. DCED would also be an important partner and funding source if pursuing the redevelopment of brownfield sites.
- *PA Historical & Museum Commission (PHMC)* – PHMC is responsible for the collection, conservation, and interpretation of Pennsylvania’s heritage. The agency also maintains a comprehensive database of historic resources statewide, and is involved in approving new historic districts and National Register nominations.

Federal Agencies – Two federal agencies may become involved in the implementation of this *Greenways Plan*.

- *Delaware River Basin Commission (DRBC)* – The DRBC was created to oversee a unified approach to coordinate the water resource efforts of the federal government and the four states through which the Delaware River flows. The commission acts on applications for projects using water, adopt regulations, and direct planning and management activities affecting the basin's water resources. Matters affecting the Lehigh River and its tributaries are under the jurisdiction of the DRBC.
- *Environmental Protection Agency (EPA)* – The EPA is an appropriate contact in the event of major environmental cleanup. As an example, the EPA is overseeing the remediating of the Zinc Piles site outside Palmerton.

Other Key Organizations / Individuals – Many other organizations and individuals will play key roles in supporting this Plan. The following examples illustrate the breadth of interests that greenways can attract.

- *Local Businesses and Corporations* – Local businesses are often a good source of cash donations and volunteer efforts. Many local businesses are also important members of the community, and the approval of local businesses is often just as important to successful greenway efforts as the support of individual landowners. Local businesses are very attuned to the quality of life in Carbon County, which the greenway system can enhance significantly. The potential benefits of a successful greenway system include an increase in the County's quality of life, which can generate new business through increased tourism and new residents.
- *Chambers of Commerce and Tourism Bureaus* – The Jim Thorpe Chamber of Commerce (www.jimthorpe.org), the Pocono Mountain Visitors Bureau (www.800poconos.com), and other local merchant groups and business associations are strong partners that can help to publicize greenway elements, such as hiking trails, water trails, and driving tours. Like DCED on the statewide level, a chamber of commerce publicizes amenities at the local level to foster economic growth. Tourism bureaus promote the same amenities to draw visitors to the area. Occasionally, the organizations will provide funding for efforts that support economic growth.
- *Volunteer Organizations* – During and after the development of greenways in the County, volunteer efforts will be critical to help build and maintain trails and assist with interpretive materials and events. Many groups can be enlisted for supporting projects, including the conservation and recreation groups listed above as well as youth organizations, such as the Boy Scouts, Girl Scouts, church groups, and extracurricular school groups.
- *Land Developers* – Throughout the development review process, municipal officials, conservation groups, and the general public should meet with developers to assure that new developments:
 - Respect sensitive natural features.
 - Leave ample buffers along streams.
 - Adequately control storm water and erosion.
 - Allow for connectivity of open space.

- Facilitate the building of any proposed recreation trails.

OPAD and other agencies should also help to educate developers on innovative, environmentally-conscious practices, such as open space development and traditional neighborhood developments.

LAND PRESERVATION TECHNIQUES

One of the most important purposes of greenways, as noted throughout the Carbon County greenway plan, is to preserve land. The techniques used to preserve the land must be both available to and feasible for the landowner. Since landowners have many different financial needs and circumstances, techniques that are appropriate for some owners will not be useful to others. The following section describes many of the tools that can be effective in preserving land in Carbon County.

Fee Simple Acquisition

The most effective means of preserving land is through fee simple purchase. Fee simple purchase gives the owner complete control of the land, including all public access and conservation practice decisions. In most situations, fee simple acquisition is also the most expensive method of land control. Therefore, many entities interested in land preservation, particularly public agencies or land conservancies with limited budgets, will explore other, less expensive options for land control.

Other Easements

Conservation easements may be used to preserve many types of resources. For example, easements may be placed on historic lands or buildings, open space, forests, or farmland. Conservation easements are frequently used for environmental preservation without providing for public use of the land. However, a conservation easement can also be combined with a *pedestrian easement* or *right of public access easement* to allow public access for walking, hiking, horseback riding, bicycling, and other activities using established rules and restrictions. With a combined easement, the landowner is not held liable for any injuries, crimes, or death associated with public use of the land.

Another easement type—the *joint-use easement*—accommodates multiple uses under one easement. Joint-use easements are particularly appropriate for public utility corridors. Electric transmission lines, sanitary sewer lines, petroleum or gas pipelines, and other such corridors often contain a cleared pathway, making the easement ideal for trail connections. Joint-use easements are advantageous because landowners will know the exact purposes of the single easement, rather than dealing with multiple easements.

Agricultural conservation easements may be appropriate in areas with prime farmland adjacent to greenways. The easement preserves additional contiguous land and helps to maintain the scenic character of both the greenway and the area as a whole. Local, county, or state governments may purchase easements from owners of prime farmland if the owner agrees to keep the land in agricultural use. The land must meet certain acreage, soil, and production criteria to qualify for the program.

The Pennsylvania Land Trust Association (PALTA) is the statewide organization of nonprofit, land conservation groups. PALTA has developed model easements that are available on the association website (<http://www.conserveland.org>). The model easements include:

- Pennsylvania Conservation Easement
- Riparian Forest Buffer Protection Agreement
- Trail Easement Agreement
- Fishing Access Agreement
- Water Quality Improvement Easement

Purchase and Leaseback or Resale

An entity interested in preservation, such as a local government or conservancy, can purchase land in fee simple, place restrictions on the deed prohibiting certain uses (e.g., residential development), and sell or lease the land to interested parties. The original buyer gains the potential for future use at the current price and may recover some or all of the purchase price through leasing. The land is maintained in open space and may be developed as a park if and when future demand warrants. Resale of some or all of the land with deed restrictions may maintain open space, relieve the municipality of maintenance obligations, and return the land to the tax rolls.

Donations

Frequently, land can be acquired through donations from private owners, organizations, and corporations. Local governments should encourage land donations by promoting advantages such as federal income and estate tax benefits and valuable public relations. Prior to accepting a donation, a municipality should consider two points:

- Location of the parcel and the anticipated development and maintenance costs. If the location is poor and/or projected costs will be excessive, the municipality should strongly consider accepting a fee rather than the land.
- If the land is suitable, the municipality should encourage the donor to provide an endowment fund along with the land to assist with development and/or maintenance costs.

In addition to land, corporations and other private parties often provide cash donations for worthy causes, including land preservation.

Land Exchange

A land exchange, or “land swap”, is useful when a development interest and a conservation interest both own a piece of land more appropriate to the mission of the other entity. For example, a residential developer may own a wetland area next to a park, while a township government owns a vacant tract near an existing developed area. With the land exchange, the environmentally sensitive land is preserved by the township, and the developer builds houses in an appropriate location. Any mismatches in land value can be negotiated.

Municipal Ordinances

Municipal zoning ordinances and subdivision and land development ordinances (SALDOs) offer one of the least expensive methods to protect environmentally-sensitive land. Appendix C provides suggestions for using development regulations to protect natural features and carry out greenway plans.

Public Dedication

The Pennsylvania Municipalities Planning Code enables municipalities to require that residential developers dedicate land, or fees in lieu of land, for public recreation. Municipalities must have an adopted recreation plan and an adopted ordinance relating to public dedication before land or fees can be accepted. The amount of land required must be related to the demand for recreation land typically created by new development. The required land dedication should be in addition to the preservation of natural features on the land, such as floodplains, wetlands, steep slopes, woodlands, or other sensitive areas.

Purchase of Development Rights (PDR)

Under a PDR arrangement, a farmland owner voluntarily sells the development rights to a government agency or private land trust and receives compensation in return for the restrictions placed on the land. The farmer retains title to the land and can sell or pass along the farm, but the land can only be used for farming and open space. An easement is placed in the landowner's deed and “runs with the land”, either in perpetuity or for a period of time specified in the easement document. The easement typically prohibits residential development except for the owner, the owner's children, or farm labor. Public access is not normally allowed, nor is the dumping of garbage or the removal of soil. Normal agricultural practices and structures that comply with state and federal statutes are permitted.

Official Map

The Official Map is described in the Action Program. It is a tool that can be used to effectively give a municipality the right of first refusal for up to a year to buy land for a trail or public parkland.

ADJACENT COUNTY GREENWAY PLANS

All five counties surrounding Carbon County have completed Countywide greenway plans. The following information summarizes the plan proposals that connect to major Carbon County corridors.

- ***Open Space, Greenways, & Outdoor Recreation Master Plan, Lackawanna and Luzerne Counties***, April 2004 — Luzerne County abuts Carbon to the northwest. The plan acknowledges State Game Land 149 and a youth forest camp as existing resources in Luzerne County directly abutting the Carbon County line. The plan further identifies two high priority areas for conservation adjacent to Carbon County:
 - Stockton Barrens Natural Area, through which the proposed Greater Hazleton Rail Trail passes
 - Pismir Ridge Natural Area, located south of the City of Hazleton and through which Interstate Route 81 passes

In addition, the Greater Hazleton Rails to Trails is to be completed, running parallel to the Banks Township border. It is intended to be connected to the historic Eckley Miners’ Village.

- ***Monroe County Open Space Plan, An Action Guide to Preserving and Enhancing Monroe County’s Green Infrastructure***, June, 2001 — Monroe County, located east of Carbon

County, completed the first Countywide greenway plan in the state. Figure 7.8 of the plan identifies potential greenway corridors, including one current east-west greenway (Appalachian Trail) and three potential east-west greenways (Chestnut Ridge, Pohopco Creek, and the Penn Forest Pipeline) that may provide connections into Carbon County. Furthermore, in addition to “potential greenway corridors” noted above, the plan identifies the Pohopoco Ridge Corridor as a Priority Conceptual Greenway that may connect into Carbon County.

- ***Lehigh Valley Greenways Plan, 2007*** — The southern border of Carbon County is adjacent to the northeast border of Lehigh County and the northwest border of Northampton County. The Lehigh Valley Planning Commission prepared a greenways plan for both Lehigh and Northampton Counties in 2007. The Blue Mountain/ Kittatinny Ridge and Appalachian Trail form the entire southern border of Carbon County. The plan identifies the entire length along the Carbon County border as a priority “conservation greenway”.
- ***Schuylkill County Open Space and Greenway Plan, 2006*** — Schuylkill County adjoins Carbon County to the southwest. The “Open Space and Greenway Plan” map identifies three projects to be coordinated with Carbon County:

Short Term: — Tamaqua/Summit Hill Trail, generally following the alignment of U.S. 209.

— Preservation of the Owl Creek Wetlands, located south of the Borough of Coaldale.

Mid Term: — Blue Mountain Ridge Greenway

Long Term: — Lehigh Valley and New England Rail Trail, which enters Carbon County paralleling PA Route 895.

In addition, the “Open Space Conservation & Environmental Resources Protection Plan” map identifies several areas along the Carbon/Schuylkill border as “Parks, Permanent Open Space, and Preserved Areas”.

NATURAL FEATURES AND AGRICULTURAL CONSERVATION PLAN

Land in Carbon County varies greatly in its suitability for different intensities of development. Some areas, such as flood-prone creek valleys, very steep sloped lands and wetlands, are not suitable for any development. Other areas are only suitable for very low-intensity development, such as moderately steep areas. Still other areas are appropriate for intensive development.

Open space can be preserved in public, semi-public or private ownership. It is important to preserve open space to:

- recharge groundwater supplies,
- protect the quality of creeks and the groundwater,
- provide an important visual relief between developments,
- preserve areas of scenic beauty, including scenic views,
- avoid development on lands that are prone to erosion or are otherwise not physically suitable for development,
- provide land for recreation, and
- preserve habitats and cover for birds, fish and wildlife.

Use a range of methods to fund land conservation.

Conservancy organizations can work with individual landowners to find ways to preserve their land. This often includes purchasing a property for a price that is lower than market value, and then helping the property-owner receive a Federal income tax deduction for the difference between the market price and the sale price. Conservancies also often work with landowners to find ways to sensitively develop part of their property, while permanently preserving other parts.

"Conservation easements" can be used to permanently preserve land without outright purchase of the land. With a conservation easement, the land remains privately-owned. The easement involves the property owner voluntarily agreeing to donate or sell the right to develop his or her land. The property owner agrees to place a restriction in the deed of the property which becomes binding on all future owners of the land. The easement can be written in many different ways to restrict or not restrict certain types of activities. Most conservation easements prohibit the construction of new buildings and subdivision of the land. Conservation easements also may prohibit intensive forestry and re-grading of the land. A conservancy organization is often paid to oversee the easement.

Often, a property-owner can receive Federal income tax benefits from donating a conservation easement. This could include a complete donation of the easement, or a sale of the easement for a price that is less than the value of the easement. For example, if an area of land is worth \$1 million, the development value might be \$800,000. The remaining \$200,000 would be the residual value of the property after the easement. If the landowner donates a conservation easement, it may be possible to deduct \$800,000 from his or her taxable income. If the landowner sells the easement for \$200,000, he or she may be able to deduct \$600,000 from his or her taxable income - \$800,000 of value minus the \$200,000 purchase price. This is known as a "bargain sale." The same type of deduction could apply if the land is sold outright to a municipality or conservancy for less than its market value.

A program exists to purchase conservation easements for agricultural land, through Carbon County, as described later in this Plan.

A variety of State funds also available through the State Department of Conservation and Natural Resources for purchase of recreation land or conservation easements. Those programs typically require a 50-50 match with other sources of funding, and are competitive. One portion of the money is specifically set aside for applications sponsored by conservancy organizations.

Municipalities have additional alternatives to raise money for purchase of recreation land and preservation of open space. A municipality is also allowed to use its own funds to buy easements on agricultural land. Township programs to preserve farmland are particularly worthwhile to preserve farms that do not rank highly under the County's easement program. These alternatives to raise funds should particularly be considered to provide matching dollars with State and County grants.

One alternative is to require developers to provide recreation land within new developments, or to pay recreation fees "in lieu of" providing recreation land. These types of requirements are allowed under the State Municipalities Planning Code. The Land Use and Housing Plan also describes incentives that can be used in zoning to result in higher percentages of open space within new development.

A second alternative is to set aside funds from the general fund budget or to issue a municipal bond for land purchase and preservation.

A third option is to ask voters if they wish to have the municipality issue a bond for land purchase and preservation. This referendum may also involve asking voters to approve an additional tax that would be dedicated to land purchase. A bond is typically issued, with the annual payments on the bond paid from the tax receipts. State law allows voters to approve an increase in their earned income tax (up to 0.25 percent) or an increase in their real estate tax millage (up to 2 mills).

Use a new State law to promote greater use of easements.

Act 4 of 2006 is a State law that can be used to promote the preservation of additional land through permanent easements. The municipalities, school district and County can jointly agree to freeze real estate taxes on preserved lands. This provides a strong incentive for landowners to seek to have their easements purchased by the County, and may even encourage some landowners to voluntarily donate their easements.

Work to protect creek corridors, with thick vegetation along creeks.

Land along creeks can be preserved in private ownership, in public ownership or by homeowner associations. Land along creeks is particularly valuable for public passive recreation, particularly for hiking trails and picnic areas. This can build, for example, upon the trail system that is being developed along the Lehigh River and the existing trail system along the Beltzville State Park.

The primary goal is to maintain thick natural vegetation along creeks, and to re-plant areas along creeks where thick vegetation does not exist. This thick vegetation is essential to provide high quality habitat for fishing and to filter out eroded soil and pollutants from storm water runoff. At best, to maintain the

proper temperature of creeks and filter out pollutants, there should be mature canopy trees over a creek, plus thick underbrush.

To comply with State requirements, the municipalities have regulations that limit buildings within flood-prone areas. These regulations apply within the “100-year floodplain.” The 100-year floodplain includes areas forecast to be flooded during the worst flood expected in an average 100-year period. Based upon recent experience when three serious storms occurred in two years, it appears that the 100 year floodplain may be understated. The townships' provisions could be strengthened by prohibiting any new principal buildings in the 100-year floodplain, as opposed to the current policy of allowing new buildings in parts of the floodplain if they are flood-proofed. However, that type of provision is not recommended in the boroughs, because it may adversely affect revitalization efforts.

The municipal zoning ordinances could also be strengthened by requiring a setback of approximately 25 to 100 feet from the bank of major perennial creeks. A perennial creek carries water throughout the year, except possibly during drought conditions. These setbacks should vary by zoning district. A relatively narrow width (such as 25 feet) may be necessary in denser areas of the boroughs. A larger setback (such as 100 feet from the Lehigh River, 75 feet from major perennial creeks in the townships and 50 feet from perennial creeks in other cases) would be appropriate in less densely developed areas. This setback should apply for buildings, parking areas and business storage. These distances may be required to be measured from the top of the primary bank, the centerline of a creek, or the average water level.

Within watersheds that are classified High Quality or Exceptional Value under State regulations, State Department of Environmental Protection (DEP) requires a 150 feet wide buffer on each side of the waterway, as of 2011.

The preservation and creation of vegetated drainage swales should be encouraged. These types of channels slow runoff, allow recharge and filter out pollutants.

The Wildlands Conservancy prepared a watershed plan for the Lehigh River Watershed. It has worked with property-owners to stabilize stream banks, plant vegetative buffers along the creek and improve fish habitats. The Wildlife Information Center has been involved in conservation efforts, particularly in the Lehigh Gap area. The Nature Conservancy has worked to try to permanently preserve lands owned by the Bethlehem Water Authority around its reservoirs and other land holdings in Towamensing and Lower Towamensing Townships and townships in Monroe County.

As part of a Source Water Assessment and Protection study, the locations of potential chemical hazards to water supplies have been mapped. Local fire companies should be aware of these hazards and be well-trained and prepared to quickly address any potential leaks, spills or other emergencies.

Continued efforts are needed to educate owners of properties with on-lot septic systems about the need for proper operation and maintenance of these systems to avoid groundwater pollution. The municipalities should continue to work to identify malfunctioning septic systems and inadequate cesspools and require their repair or replacement. Lower income homeowners can be linked with low interest loans from PennVEST to help fund repairs.

Promote proper management of forested areas.

Major forested areas are shown on the Woodlands Map. Most forested areas of the County are located on areas that were too steep, too wet or too rocky for crop farming. The woodlands in the County add character to the landscape, help preserve the water quality of creeks and provide important wildlife habitats. Trees also are important to purify the air and control erosion. Forestry must be allowed under State law. However, clear-cutting of woods should be prohibited, proper erosion controls should be in place for any large-scale tree-cutting, and other appropriate forest management practices should be used. In development plans, developers should be required to show that they have minimized the removal of woods as part of their project. Great care should be used during construction to minimize the number of trees that are removed. Trees can add substantial value to a residential lot. During construction, temporary wood fences should be placed around trees to prevent the compaction of root systems by equipment and to prevent damage to tree trunks.

Efforts have been underway over the past few years to re-vegetate the scarred portions of the north face of the Blue Mountain/Kittatiny Ridge. A similar condition exists in some areas east of Aquashicola.

Certain additional areas of the County should be considered for re-forestation – particularly steep lands and lands along creeks. Funding for tree-planting programs are available from a few sources, including the Federal Urban Forestry Program, the Federal Transportation Enhancement Program (along a major highway) and Federal and State water quality programs. Some programs are limited to public lands, while others provide funding to private property owners. A Federal conservation program also provides funding to farmers who take steep areas and areas along creeks out of crop production.

Preserve wetlands.

It is extremely important to protect wetlands to protect water quality, control flooding, provide aquatic habitats and recharge groundwater. Wetlands are defined based upon the soil types, depth of the water table and types of vegetation. Wetlands not only include swamps, but also areas that are typically wet during parts of the year. The municipalities and local residents need to help State and Federal agencies make sure that there is compliance with wetland regulations. An attached map shows the locations of known wetlands. In addition, attention is needed regarding areas with “hydric soils” that are likely to include wetlands. Within suspect areas, an applicant for development should be required to provide a study by a qualified professional to determine whether wetlands will be impacted.

Each township should consider requiring a setback of at least 20 feet between a designated wetland and a proposed new building. This setback is valuable to help keep construction equipment out of the wetlands and to avoid other alterations to wetlands after construction. A larger setback may be suitable for larger and more ecologically important wetlands. An exception could be included for wetlands that were man-made. It is much more difficult to establish wetland setbacks in a borough, but it is advisable in conservation-oriented portions of a borough, especially where the area affects public water supplies.

Limit development on steeply sloped lands.

The Topography Map in the Natural Features Background section shows the locations of steeply sloped lands.

A 15 percent slope has a rise of 15 feet for every 100 feet of horizontal distance. Moderately steeply sloped lands (15 to 25 percent) are generally only suitable for low intensity development. Very steep

lands (over 25 percent) are generally not suitable for any development. It is important to limit development on steep slopes to avoid the following: erosion problems, high speed storm water problems, overly steep roads and driveways, excessive costs to construct and maintain roads and utilities, and destruction of scenic natural resources.

Consideration should be given to strengthening zoning regulations to control development on steeply sloped lands. For example, if a new principal building would be proposed on steep slopes, larger lot sizes could be required. These additional requirements would not apply if a portion of a lot was steeply sloped but was not proposed for any development. An alternative is to regulate the amount of steep slope areas that may be disturbed. Another alternative is to base the density of a tract of land upon the slopes present on the entire tract, which is currently used in Towamensing Township. However, that provision by itself may not effectively keep buildings off of the steep slopes.

For example, in the townships, it would be desirable to require a minimum lot size of at least one or two acres if a principal building would be built on 15 to 25 percent slopes, and two to five acres if the building would be built on slopes over 25 percent. Some municipalities prohibit all construction of new principal buildings on slopes over 25 percent.

Maintain open space corridors for wildlife.

Ideally, corridors along steeply sloped areas and along creeks would be permanently preserved as inter-connected open space. In addition to the benefits of preserving natural features, these inter-connected corridors also provide cover for wildlife to move throughout the region. It is particularly important to have areas with woods or other thick natural vegetation that connect large areas that have been preserved. Too often, land preservation involves fragmented areas that do not allow for wildlife travel.

Seek to preserve concentrations of prime agricultural soils.

The Prime Agricultural Soils Map shows areas with the best soils for corn and similar crops, as estimated in the County Soils Survey. The very best agricultural soils are called "Class I and II." These soils are mainly concentrated in the southern parts of Carbon County. Class III soils are also considered prime for agriculture, but are typically more sloped and less productive than Class I and II soils.

The Land Use and Housing Plan includes recommendations to seek to use zoning to preserve key concentrations of prime agricultural soils.

Encourage landowners to join agricultural security areas.

Large areas of farmland in the County have been designated as "Agricultural Security Areas." These are shown on the Agricultural Features Map. Farmers voluntarily ask the Township Supervisors to include their land as a Security Area. A Security Area does not result in any additional regulations upon a private property owner, nor upon private development. Once designated, the landowners become eligible, if they wish, to ask to have their land preserved under an Agricultural Easement (as described below). Moreover, a Security Area provides a farmer with extra protection against nuisance lawsuits, municipal regulations of agriculture and government condemnation.

Promote additional agricultural easements to preserve farmland.

The most effective method to permanently preserve farmland is through purchasing the “development rights” of the land. The goal is to preserve large contiguous areas of farmland over time, as opposed to smaller isolated farms. This program uses funds from the State and the County to pay property owners to preserve their land. Property owners voluntarily apply to the County for consideration. The farms are then ranked according to a set of standards, such as the quality of the soils for crops and the proximity to other farms that have been preserved. Within the funds available each year, the highest ranked farms are selected. Those lands are appraised, and then offers are made to the landowners. If the landowner agrees to the sale, he is paid the difference between the market value of the land and the value as farmland.

A landowner can voluntarily agree to a payment that is less than this value, particularly if insufficient funds are available to the County for the full amount. In that case, the landowner can deduct the difference on their Federal income tax as a charitable donation. A permanent “Conservation Easement” is then placed on the land that permanently prevents its use for non-agricultural uses. The land remains privately owned and can be sold to other farmers. The easement does not require that access be provided to the public onto the land.

The locations of preserved farmlands are shown on the Prime Farmland Map.

There are limited funds available each year to buy easements to preserve farmland, and many farmers must sit on a waiting list for years. During the time it takes a farmer to rise up on the list, he/she may face pressure to sell for development. Also, some farms may not rank high enough according to the standards to be funded, particularly if a farm does not have the best soils for crop farming.

The State now allows the County to make installment purchases of farmland easements. This guarantees farmers that they will receive certain payments in future years – which should increase participation. It also helps landowners to spread out the income over more than one year, which can reduce the tax rates. Installment sales are also valuable to get a property under contract at the present time, particularly if a large property is involved and sufficient funds are not available to preserve it in one year.

Allow additional farm-based businesses.

Many farmers cannot earn a full-time living on their farm work. Instead, many farmers need supplemental jobs. To encourage the continuation of farming, the townships’ zoning ordinances should offer reasonable flexibility to farmers on larger tracts to have small businesses. These businesses could include small engine repair, sharpening services, wood crafting, farm equipment repair, sale of seeds and fertilizers and similar activities. The number of employees and the sizes of the businesses should be limited to prevent them from becoming major commercial businesses. These activities can also be useful to encourage the repair and reuse of old barns.

Farm-based tourism is also valuable to increase revenue to farmers, and thereby help farmers afford to farm. These activities can include Summer camps, Halloween events (such as haunted hayrides and corn mazes), bed and breakfast guest rooms, and other activities.

Furthermore, State law requires municipalities to allow farmers to conduct retail sales of their agricultural products on their property. These types of sales should be encouraged to help farmers capture a higher percentage of the retail value of their products.

LAND USE AND HOUSING PLAN

Existing Land Uses and Existing Zoning

Maps in the Land Use and Housing Background section show: a) the existing land uses in the County, and b) the existing generalized zoning, according to County records.

Comprehensive Plan Maps

Maps on the following pages show the land use and housing recommendations in the County. The categories on those maps are described in the following sections.

Land Use and Housing Plan Recommendations

This Plan sets overall land use and preservation policies for the County.

In addition to the overall goals of this Plan, the Land Use and Housing Plan is primarily intended to:

- a) protect existing residential neighborhoods,
- b) moderate the rate of housing construction to avoid overloading the public school systems, roads, utilities and groundwater supplies,
- c) coordinate development across municipal borders,
- d) avoid serious traffic congestion and safety problems, particularly by avoiding new commercial strip development along major roads,
- e) promote new business development in appropriate locations, particularly by strengthening older business areas, with careful attention towards controlling very intense new businesses allowed in areas near homes, and
- f) make sure development properly relates to the natural features of the land, particularly to protect steeply sloped areas and creek/river valleys.

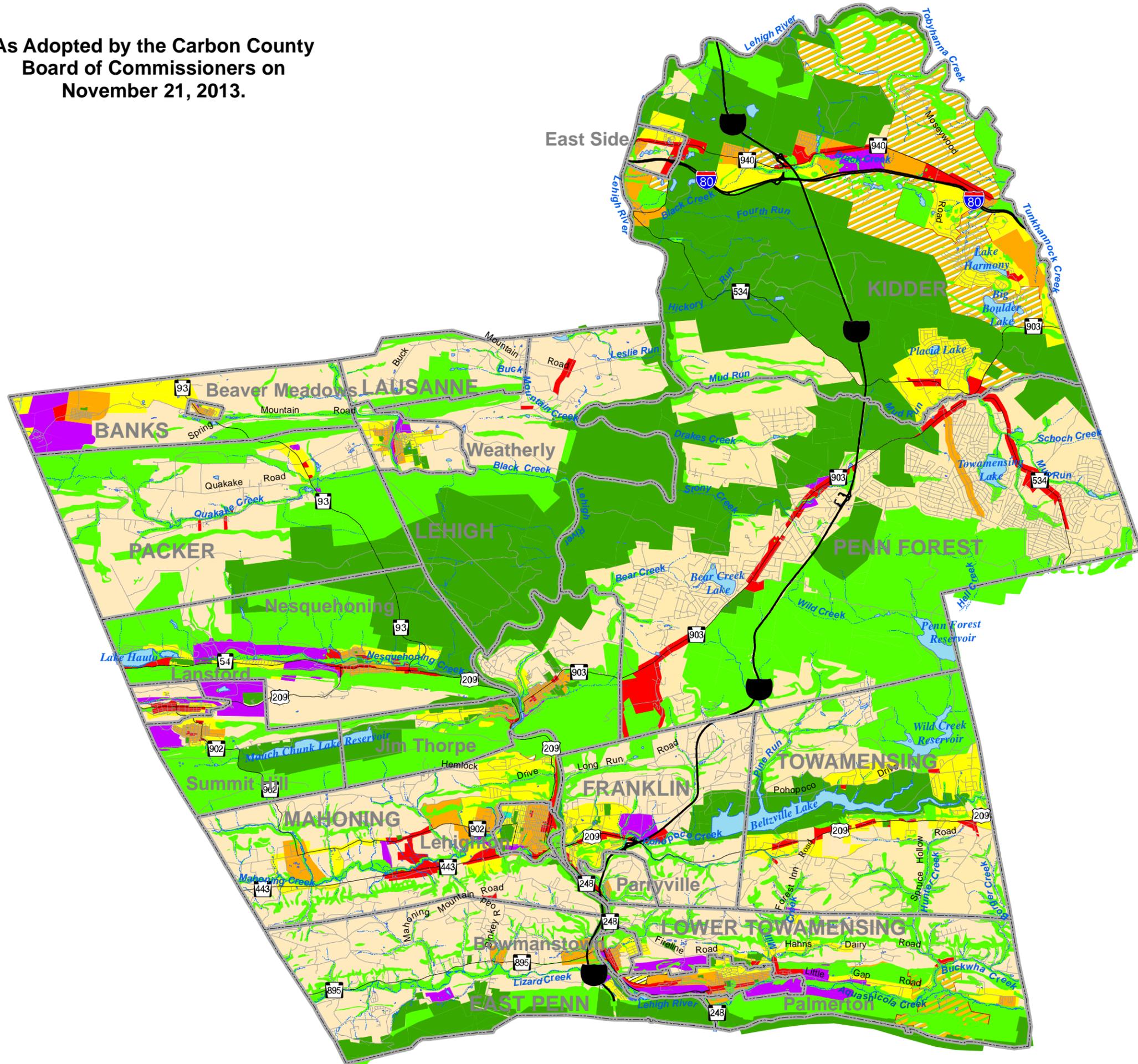
Policies Affecting Many Land Use Categories

- In many residential areas, it would be desirable to provide a density bonus if housing is limited to persons age 55 and older.
- Within many downtowns, it may be desirable to allow taller building heights (such as 5 stories) if an apartment building is limited to persons age 55 and older and if fire safety issues are fully addressed. In most other cases, a maximum building height of 3 stories is recommended.
- To promote home ownership and neighborhood stability, and to avoid parking problems, the conversions of existing one family homes into additional numbers of housing units should be prohibited or very strictly regulated in most of the region.
- If any lot is not served by both central water and central sewage service, then a minimum lot size of at least one acre is recommended. Where higher densities are described in this Plan, they assume that both central water and central sewage services would be provided. If a new lot will be served by an on-lot septic system, the lot should be approved for both a primary and an alternative drain field location before the lot is created.
- It is recommended that places of worship (such as churches) and public and primary schools be allowed in most areas, except possibly some conservation and agricultural conservation areas. (Note - Federal and State law control the ability of a municipality to limit locations of religious activities. There are differing court opinions about whether a municipality can limit the location of a public school).
- To promote use of Transfer of Development Rights (described below), it would be appropriate to consider reducing the maximum densities of some of the residential districts in the townships if transfer of development rights is not used. The lower base densities should generate stronger interest in using TDRs.
- Interconnecting recreation trails should be sought, particularly to connect into the trails along the Lehigh River corridor, Beltzville State Park, the Switchback Trail, Hickory Run State Park and similar areas. Trails should extend from neighborhoods into the downtowns, parks and schools. These trails will not only be beneficial for recreation, but also could be useful for bicyclists to reach work. An emphasis should be placed on developing off-road trails that run parallel to roads that are unsafe for pedestrians and bicyclists, where that road cannot be easily improved.
- Thick natural vegetation should be preserved or planted along creeks to filter out pollutants from runoff, avoid erosion and maintain good water quality.

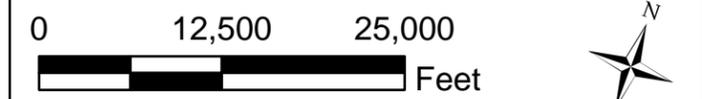
As Adopted by the Carbon County Board of Commissioners on November 21, 2013.

Carbon County Comprehensive & Greenway Plan

Future Land Use Plan

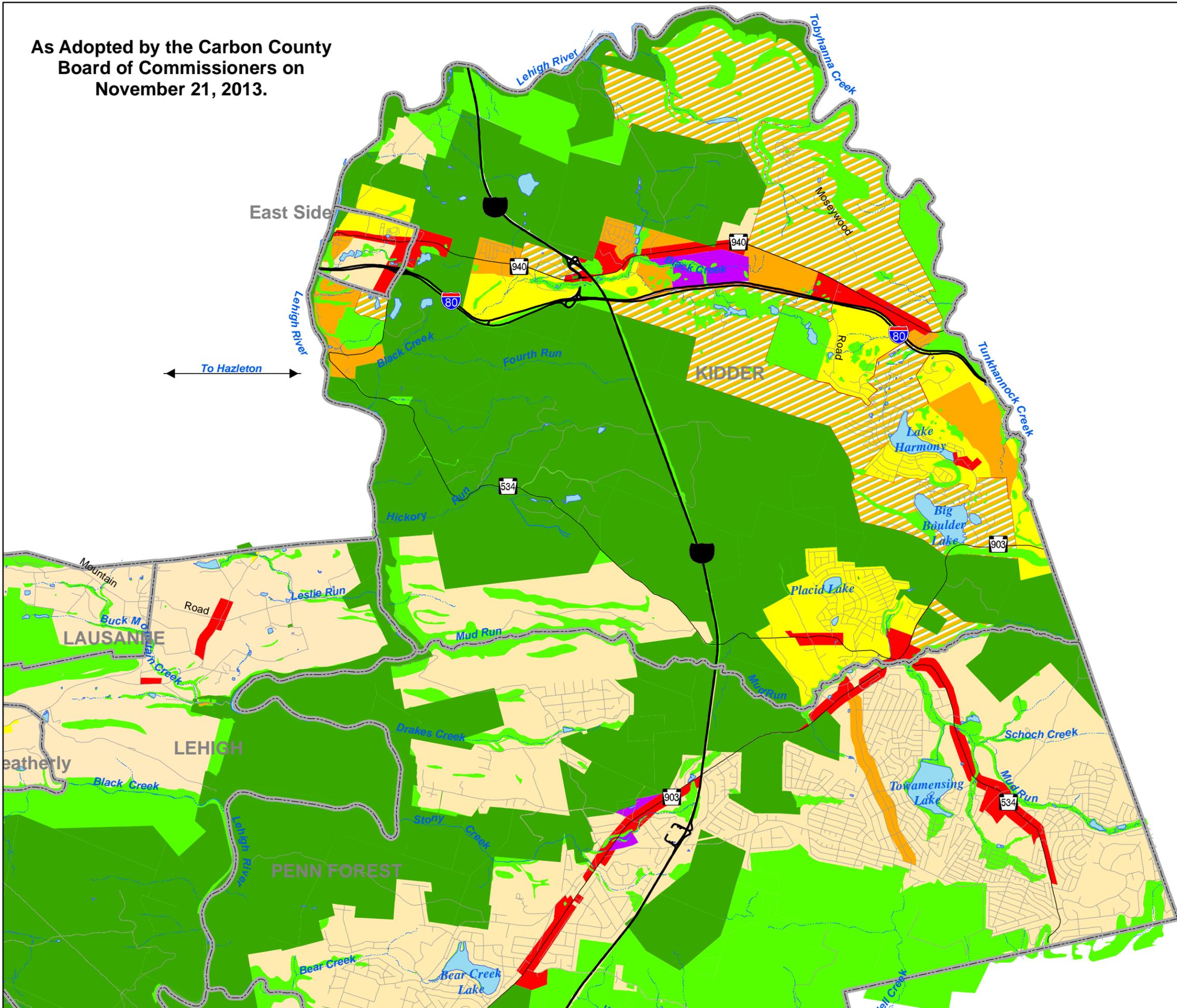


- Conservation
- Rural
- Low Density Residential
- Medium-High Density Residential
- Commercial
- Hospital & Related
- Industrial and Industrial/Commercial
- Resort & Commercial Recreation
- Existing Public Recreation Land



Source: PA DCNR, PASDA, Wildlands Conservancy, URDC

As Adopted by the Carbon County Board of Commissioners on November 21, 2013.

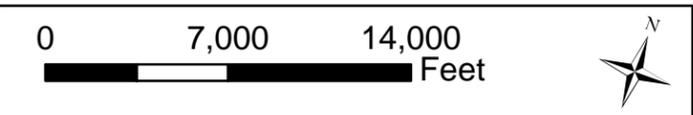


Carbon County Comprehensive & Greenway Plan

Future Land Use Plan

Northeast Section

- Conservation
- Rural
- Low Density Residential
- Medium-High Density Residential
- Commercial
- Hospital & Related
- Industrial and Industrial/Commercial
- Resort & Commercial Recreation
- Existing Public Recreation Land



Source: PA DCNR, PASDA, Wildlands Conservancy, URDC



Community Planning Consultants
Urban Research & Development Corporation
 28 West Broad Street Bethlehem, Pennsylvania 18018 610-865-0701

As Adopted by the Carbon County Board of Commissioners on November 21, 2013.

Carbon County Comprehensive & Greenway Plan

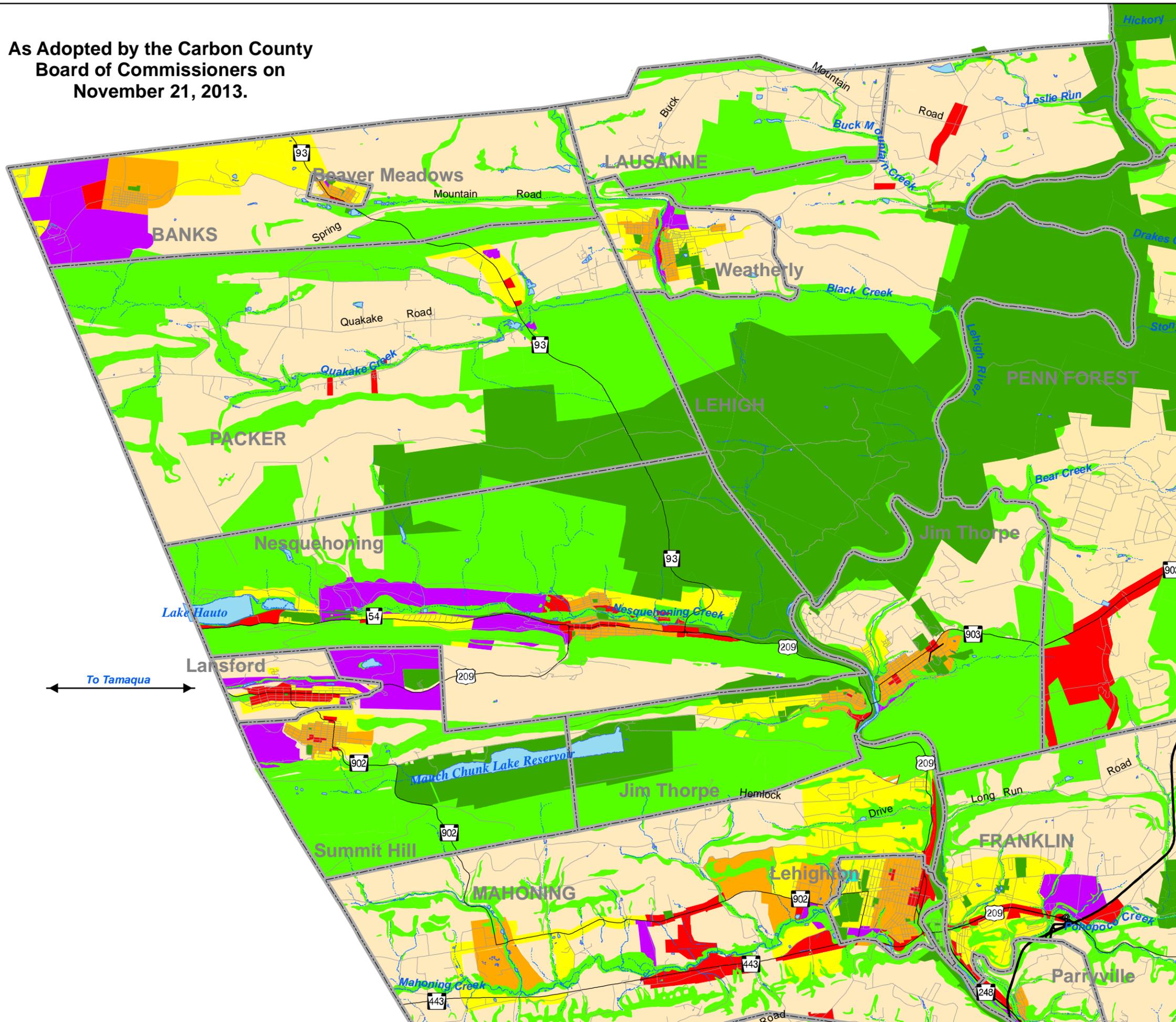
Future Land Use Plan

Central Section

-  Conservation
-  Rural
-  Low Density Residential
-  Medium-High Density Residential
-  Commercial
-  Hospital & Related
-  Industrial and Industrial/Commercial
-  Resort & Commercial Recreation
-  Existing Public Recreation Land



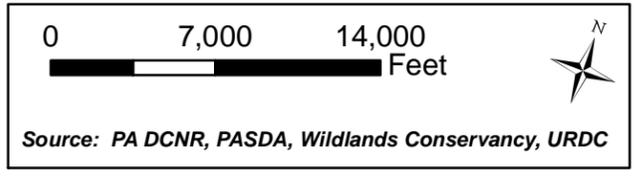
Source: PA DCNR, PASDA, Wildlands Conservancy, URDC





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November 21, 2013.

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- Conservation
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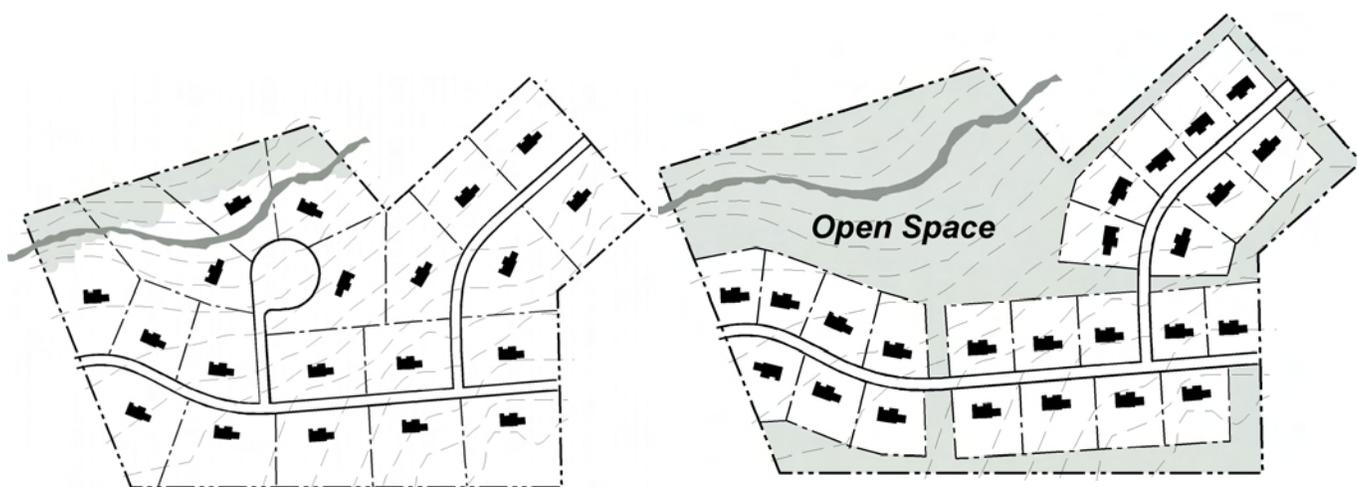
Carbon County Comprehensive
&
Greenway Plan

Future Land Use Plan

Southern Section

Open Space Residential Development

Open Space Development involves allowing homes on smaller lots in return for permanent preservation of a substantial percentage of the tract of land in some form of open space. The use of Open Space Development should be strongly encouraged, including strong incentives to promote the permanent preservation of substantial portions of a tract in open space. Homes should be clustered on the most suitable portions of a site, and important natural areas should be planned for preservation before any lot lines are proposed. Great attention should be paid to the standards for the open space - to avoid narrow and unusable areas counting as open space. Conservation easements are a legal tool that would be used to make sure the open space could never be subdivided or developed in buildings.



Example of Conventional Development

Example of Open Space Development

Many Open Space Developments are designed with 25 to 60 percent of the total land area of a development preserved in some form of open space. Open Space Development typically allows smaller lots and smaller setbacks than would be allowed under conventional development without open space. This concept is also known as Conservation or Cluster Development.

The use of Open Space Development should be strongly encouraged with attractive incentives and strong disincentives for developers. The overall number of homes possible on a tract is intended to be slightly higher (such as 20 percent higher) in an Open Space Development than what is possible under conventional development. This modest density bonus is valuable to encourage developers to choose to preserve the open space.

To make sure that Open Space Development is not mis-used to result in a dramatic increase in the number of homes allowed on a tract, a "Yield Plan" should be used. This involves requiring a developer to submit an accurate sketch plan showing the number of homes that would be possible under conventional development. The accuracy of this Plan would be subject to acceptance by the municipality. Once the Yield Plan was accepted, then the developer would be allowed to build a certain percent increase in density - such as 20 percent higher than was possible under the conventional development. Proper standards are also needed to make sure that the open space serves a public purpose, as opposed to simply being fragments of "leftover" lands with little development or recreation value.

If a density incentive is not provided, developers may decide to propose conventional subdivisions with little or no open space, and with all lots being the same size and shape regardless of the features of the land.

The areas of the tract that are to be preserved as open space should be determined very early in the site design process—not as an afterthought. Great attention should be paid to the standards for the open space—to avoid narrow and unusable areas counting as open space.

Advantages of Open Space Developments - The following are some of the major advantages of Open Space Developments:

- *Important natural features can be preserved.* Open Space Developments should include standards that direct buildings away from steep slopes, wetlands, waterways and other important natural features. As a result, homes are placed on portions of the tract that are most environmentally suitable for development—as opposed to being evenly spread across the land. Large contiguous areas can remain in woods and other natural vegetation—which are important as wildlife corridors. Thick natural vegetation can be preserved along creeks—which is essential to filter out eroded soil and other pollutants from runoff before it enters the creek. This vegetation along creeks is also important to maintain high quality fishing habitats.
 - In comparison, if an entire tract is divided into lots, it is likely to mostly be in mowed grass—which is a “mono-culture” that does not have the same environmental benefits.
 - With open space preservation, stormwater runoff can be managed in a more natural manner that encourages recharge into the groundwater.
- *Scenic features can be preserved.* Open Space Developments can place homes on less visible portions of a tract, while maintaining scenic views. For example, many open space subdivisions setback homes from main through-roads and limit placement of homes on major ridgelines. As a result, the main angle of vision along major roads involves green space.
 - Mature woods can be preserved in locations that hide views of development. The preservation of open space also provides visual relief from seeing continuous development.
 - Stormwater runoff can also be managed in a more attractive manner—as opposed to within deep man-made channels and detention basins.
- *Recreational opportunities can be increased.* Open Space Developments typically include attractive areas for walking, jogging, cross-country skiing and nature study. In some cases, active recreation facilities can be included. These open space can also increase interaction among neighbors.
- *Developers can achieve lower costs* for grading, lengths of roads, lengths of utilities and other improvements.
 - Developers may also be able to save time and money by avoiding wetland alterations and waterway crossings.
 - Open Space Developments can provide the flexibility in layout to move homes off of steep slopes, which are more expensive to build upon. Avoiding steep slopes can also reduce the need for blasting.

- By allowing flexibility in placement of buildings, it is easier to find suitable sites for septic systems.
- *The municipalities can save on maintenance costs.* Shorter lengths of roads, utilities and other improvements mean there is less to maintain. It is expensive to maintain and plow snow from steeply sloped roads. Open Space Developments can result in roads being placed at more modest slopes.
- *Developers can often achieve higher sales prices.* More and more developments are stressing in their advertising that homes are adjacent to preserved open spaces. Developers can often receive a premium price for lots that are adjacent to or overlook preserved open space. The presence of trails and other open space amenities can also spur sales.
 - Studies have also shown that homes near preserved open space are likely to increase in value faster than other homes.
- *Reliable central water and sewage services* can be extended. It is usually uneconomical to provide central water and sewage services with lot sizes of 2 acres or larger. However, if homes are clustered on a tract, then it is often possible and/or necessary to provide central water and sewage services. Public water and sewage services typically are more reliable than individual wells and septic systems.
 - Central sewage service avoids the threat of groundwater contamination from failing malfunctioning septic systems. Central water service avoids the risks of well water contamination from various sources.

Proper standards are needed to make sure that the preserved open space is well-located and improved so that it serves important public functions. In many cases, mature woods, steep slopes and creek valleys should simply be preserved in their natural state. In other cases, the open spaces may be intended for active recreation. In still other cases, trees should be planted in the open spaces and trails should be installed. The key is to avoid a process in which the “open space” is simply the land that is left over after the most economical set of lots and roads are laid out. Narrow strips of open space should be avoided, unless they would preserve a scenic tree line or provide an important trail link.

Use a four-step process to result in conservation-oriented design in development.

The Natural Lands Trust promotes a four-step process in the design of new development in order to emphasize land conservation principles. The townships’ development regulations and procedures should require that this general type of process be followed. These steps should be accomplished at the sketch plan stage - before any detailed engineering is completed.

1. Identify Lands that Should Be Preserved.

The mapping should not only consider the area proposed for development, but also any future phases of development, plus the areas that are immediately adjacent to the development site on other lots.

First, the areas that are most worthy of preservation should be mapped, including wetlands, flood-prone areas, creek valleys, and very steeply sloped lands. These are known as the Primary Conservation Areas.

Then, other features that are important for conservation should be mapped, such as woodlands, tree lines, scenic views, historic buildings, and prime farmland. These are known as the Secondary Conservation Areas.

Then, the most important areas for preservation should be identified. The areas with the fewest important natural, scenic and historic features should be considered the “Potential Development Area.”

2. Locate Home Sites.

Next, the most appropriate locations for homes should be chosen. The zoning ordinance should establish a maximum overall density for the site, but should not include overly strict lot requirements that would prevent reasonable flexibility in the site layout. Home sites should be chosen to avoid the important features mapped in the first step. Home sites should also work to take advantage of scenic views within the tract.

3. Locate Roads and Trails.

After the home sites are selected, then a road system should be designed that serves those homes. A trail system should also provide links between homes and to destinations outside of the tract.

4. Draw in the Lot Lines.

The last sketch plan step is to draw in lot lines. In conventional development, with strict standardized minimum lot requirements, this is often the first step - before any consideration of natural features of the site.

Use great care in the design and location of preserved open space areas within development.

In addition to preserving agriculture, a priority of this Plan is to have substantial amounts of permanently preserved open spaces that create a true feeling of open space. The goal is to have open space that truly serves a public purpose, as opposed to areas that are simply “leftover” after a developer’s preferred pattern of roads and lots are laid out.

Valid public purposes for open space include:

- To preserve land for agriculture, hayfields, orchards and tree farms.
- To preserve environmental sensitive areas, particularly creek valleys and concentrations of mature woods.
- To manage stormwater in a more attractive and naturalistic manner that protects water quality, as opposed to engineered channels and traditional fenced-in detention basins.
- To provide usable recreation areas and important links in a trail system.
- To preserve large contiguous swaths of open space in visible locations that maintain a feeling of open space and that provide a visual relief between developments. At best, some open space would be preserved along exterior roads.

In most cases, at least half of the required open space should be in one contiguous area. Isolated areas (such as less than one acre) and narrow areas of land (such as less than 75 feet wide) should not be counted as open space. However, more narrow stretches may be suitable as open space if they truly serve as part of a regional trail system. Detention basins should not be considered open space unless they are designed as a major scenic asset (such as a natural appearing pond) or are clearly suitable for recreation. Roads and parking should not count as open space, even if the parking is intended to serve recreation uses. Narrow buffers should not count towards open space, but wider buffers may be appropriate. It may be appropriate to establish a maximum percentage of open space that can be covered by impervious surfaces.

To count towards the required open space, land should need to:

- be landscaped in trees, shrubs and other attractive vegetation,
- be maintained in agricultural uses, which may include a tree farm,
- be preserved in woods or natural wetlands vegetation,
- not be used for commercial recreation, other than a golf course, and/or
- be developed as recreational facilities, but not including buildings (other than pavilions).

Open Space should be interconnected with common open space areas on abutting parcels where possible, including provisions for public trails to link trail systems. Where the adjacent lands are undeveloped, then open space should be located towards the edge of the tract where it can be combined with future open space on the next tract.

Open space can also be used to buffer new homes from industrial uses, intensive agricultural activities or busy highways. The greater the distances between new homes and livestock and poultry operations, the less potential there is for severe conflicts.

Contaminated Lands

A number of former industrial areas and adjacent lands suffer from environmental contamination.

Much of the north face of the Blue Mountain/Kittatiny Ridge was severely damaged by air pollution from the former New Jersey Zinc industrial smelting operations. The natural vegetation died, which resulted in large scale erosion of the mountainside. The highest concentrations of contaminants were found nearest the West and East Plants. Also, a large amount of slag and other residue material was deposited onto a 100 to 200 feet high cinder pile along the south side of Little Gap Road east of the East Plant. The cinder pile includes 33 million tons of material including hundreds of thousands of tons of zinc and lead, as well as cadmium.

The lands were designated as a Federal Superfund site in 1983, which offered Federal funds for extensive studies and cleanup. As a result, the U.S. Environmental Protection Agency has had jurisdiction to require cleanup.

Contaminants, including zinc, cadmium and copper, have been washed into the Aquashicola Creek and the Lehigh River. Elevated levels of lead have been found among some children in the area. High concentrations of lead and cadmium have also been found in horses and cattle that grazed in the area. Monitoring is in place to check for groundwater contamination.

A Public Health Hazard assessment was completed. One of the major hazards involves exposure to cadmium, which can cause hazards at even low levels if it extends over a period of time. The State Department of Health has conducted educational efforts to help residents minimize their exposure, such as avoiding contact with soil that may be contaminated, and not growing vegetables in soil that may be contaminated. The Department of Health also conducted programs to educate health professionals of the threats.

Sampling of soil was conducted at over 1,500 residential properties in Palmerton. Of these, 180 were found to have sufficient contamination that cleanup was needed, which occurred.

Four wells for the Palmerton water supply are located near the East Plant of Horsehead and the fifth well is located at the former West Plant of New Jersey Zinc lands. The Borough Manager reports that there has been no evidence of contamination of the water. Reportedly, most of the contamination has been found relatively close to the surface, while the Borough's wells are mostly 300 to 400 feet deep.

Roads were cut into the property in the early 1990s that were used for trucks to carry a mix of sewage sludge, lime and fly ash to the land to allow its re-vegetation. Efforts to plant trees were not as successful as had been hoped.

Approximately 2,000 acres of the Blue Mountain/Kittatiny Ridge are being re-vegetated. Several environmental organizations are assisting efforts to plant natural vegetation on the mountainside using manure but not sewage plant sludge. This new effort uses grassland types of vegetation that can grow in shallow soil and that does not uptake the contaminants into the plants. The goal is to produce vegetation, while keeping the zinc contained on-site in the soil. This method is being used on many areas of the Blue Mountain and Stoney Ridge.

The Horsehead Corporation installed a system to divert runoff from around a large cinder bank and to treat contaminated runoff before it reaches the Aquaschicola Creek.

Land Use Plan Categories

Conservation

Most of the Blue Mountain/Kittatiny Ridge (other than the Blue Mountain Ski Area), Mauch Chunk Ridge, Bear Mountain, the Black Creek Valley, Mauch Chunk Ridge, and similar areas should be categorized as Conservation. For conventional development, these areas should continue to require a 3 to 5 acre minimum lot size, and mainly allow single family detached houses. An Open Space Development option should be offered that would allow homes to be clustered on 2 acre minimum lots, provided at least 50 to 60 percent of the land was permanently preserved as open space. This open space would be valuable to buffer adjacent industrial areas and farms and to add land to State Game Lands, State Parks and other public lands.

Rural

Most of the undeveloped land areas that are not in the Conservation category should be classified as Rural areas. For conventional development, a minimum lot size of approximately 2 acres is recommended. Larger lots may be appropriate in areas with concentrations of very steep slopes. An Open Space Development option should then be offered, with minimum lot sizes of one acre, if a majority of the land area is permanently preserved.

For example, a 2 acre minimum lot size might apply for conventional development. Then one acre minimum lots could be allowed as an option if a minimum of 40 percent of the total land area was preserved in open space.

Quarries and landfills should be limited to industrial districts.

The Rural areas are not anticipated to be served by central water or central sewage systems.

In portions of the Rural areas that have prime agricultural soils, landowners should be strongly encouraged to apply to have the County purchase their development rights. This program is described in the Natural Features and Agricultural Conservation section. Landowners may also wish to voluntarily participate in a Transfer of Development Rights (TDR) program, as described later in this chapter.

Low Density Residential

These areas should mainly provide for single family detached houses (and possibly side-by-side twin homes and townhouses) at an average of 1 to 3 homes per acre. In the townships, where central water and sewage services are provided, an Open Space Development option would be appropriate. Increased densities (such as an increase from 2 to 4 homes per acre) may be appropriate in the townships through a Transfer of Development Rights Option.

For example, a one acre minimum lot size could continue to apply for conventional single family development. If a project involves central water and sewage services, and a minimum of 40 percent of the total land area would be preserved as open space, then 1/3 acre lots may be appropriate.

Medium and High Density Residential

These areas should provide for a variety of housing types at an average of 4 or more homes per acre. Increased densities (such as an increase from 4 to 6 homes per acre) may be appropriate in the townships through a Transfer of Development Rights (option).

The highest density areas should continue to be in the centers of the Boroughs. Higher densities and taller heights may be desirable for apartments that are limited to residency by older persons. Upper story apartments should be encouraged above downtown businesses.

Resort and Recreation

This category includes the Blue Mountain Ski Area, the Jack Frost and Big Boulder resorts, a portion of the Flagstaff property, and similar areas. The intent is to provide for hotels, single family homes, twin homes, townhouses, apartments, recreation uses and entertainment uses. A portion of a development should allow retail and service businesses. In return for flexibility in placement of homesites, a minimum percentage of the total tract should be required to be preserved in open uses (which may include a golf course and similar privately-owned recreation areas).

This Plan recommends that the highest densities only be possible for housing that is limited to seasonal or time share use.

Village

The Future Land Use Plan Map does not show Village areas in detail. Most are shown in the broad “Commercial” category.

Municipalities should consider promoting compatible development within and around other villages.

New development should occur in a manner that is consistent with older patterns of development. For example, at best, parking would be located to the side or rear of buildings.

These areas should provide for less intense types of commercial uses that would be compatible with nearby homes and that would not create traffic conflicts along the narrow twisting roads. These uses may include small retail stores, personal service uses, offices, day care centers, places of worship and banks. Where public sewage service would be provided, a mix of housing types should be possible, such as at a density of up to 6 homes per acre.

Commercial

The downtowns of the boroughs should be treated differently from the more highway-oriented commercial areas. The goal is to provide for types of commercial development that are compatible with nearby homes and that are less likely to spur large scale demolition of older buildings. These uses may include retail stores, personal service uses, offices, day care centers, places of worship and banks. A variety of housing should also be encouraged, especially apartments above first floor commercial uses.

In the downtowns, the goal is to promote patterns of commercial uses that will be more pedestrian-friendly. The Downtown Plan provides more recommendations.

The more highway-oriented commercial areas are proposed to provide for a wide range of commercial uses, including intense types of uses such as gas stations, auto repair and 24 hour businesses.

Commercial zoning along major arterial highways (such as Routes 209, 93 and 443) should continue to be limited to areas where there already are concentrations of commercial uses. The intent is to avoid a further extension continuous commercial strip along portions of highways where it does not currently exist, while supporting businesses where they have historically existed. Only less intense types of commercial uses are appropriate along sections of major roads that also include many homes. The curvy features of Route 209 east of the Turnpike limit the road's ability to handle heavy truck traffic from the Turnpike exit. A balance is needed between providing opportunities for new business growth vs. allowing the road to handle through-traffic. Access management methods should be used in the location and design of any new commercial areas.

Industrial

The topography and highway system of Carbon County limits the potential of developing expansive brand new industrial areas. The emphasis should be placed upon the continued development and redevelopment near existing industrial areas, such as the former West Plant site on Route 248 in Palmerton, in Nesquehoning along Route 54, in the McAdoo Industrial Park, in the Packerton Yards site along Route 248, and similar areas. Most of Carbon County's industrial lands have rail access, including sidings.

Industrial development is being promoted in the South Carbon Business Park along the north side of Little Gap Road east of Aquashicola. The site includes a cul-de-sac road serving 61 acres. One of the main limitations of the site is that it relies upon individual wells and on-lot septic systems. That limits the number of employees and the types of industrial processes that can be accommodated.

A major emphasis should be placed upon extending central sewage service to industrially zoned areas, in order to attract new employers. Adjacent roads should also be improved with better shoulders so that it can handle truck traffic.

Because the market for new industrial uses is limited, municipalities should also seriously consider which types of commercial uses should also be allowed in various industrial areas. However, care is needed to make sure that a prime industrial site is not entirely consumed by retail uses, which may also harm a nearby downtown.

Mixed Uses

In some areas, a mix of light business and residential uses would be appropriate. This has a benefit of allowing persons to live close to their work, and promotes walking. The intent was to give flexibility to have this land be developed residentially or commercially, provided that it occurred in a coordinated and unified manner.

Transfer of Development Rights (TDRs)

This concept should be a voluntary option in the Zoning Ordinances of the townships. TDRs offer incentives for private developers to pay to preserve land. If a developer of one tract of land pays an owner of another tract to permanently preserve his or her land, then the developer could receive

approval to build at a higher density on the developer's tract. The tract that receives the higher density would need to be in an area that the township has designated as being suitable for a higher density. The tract that would be permanently preserved would need to be in an area that the township has targeted for preservation. The developer and the owner of the open land would negotiate on their own to determine how much the developer pay to the other landowner for the preservation.

- This method allows development to be shifted from locations where preservation is desired to allow a higher density on other tracts in a township that are well suited for development.
- The township would then approve the development at a higher density at the same time as a conservation easement went into effect to preserve the other land. The preserved land would remain privately owned but could never be developed. The preserved land could be re-sold and could be used for agriculture or certain open space uses.
- For example, this process might allow preservation of land in a Conservation or Rural District, in return for allowing a higher density in a Low Density Residential or Medium Density Residential District. Or, density might be transferred from one part of a Rural District to another part of the Rural District.
- The number of homes that could be transferred from one tract to another tract would be based upon a "Yield Plan." This sketch plan would show how many homes would have been permitted on the tract that is to be preserved. Once the township accepts this Yield Plan, that number of homes could be transferred from one tract to another tract. However, there would still be limits on the density of the tract being developed to make sure that it is not excessive.
- TDR can also be used in combination with commercial development. For example, for every housing unit that is transferred from one area of a township, an additional amount of building coverage or impervious coverage could be allowed in a business district.

Extend the best features of older development into newer development.

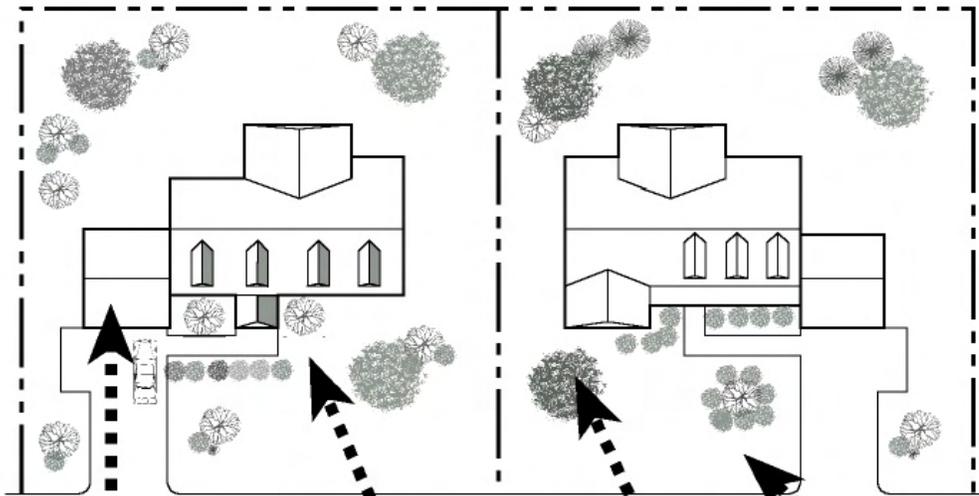
Consideration should be given to strongly encouraging forms of "traditional neighborhood development." This involves extending the best features of the older areas into new neighborhoods. As discussed later in this Chapter, this concept also involves making sure that development or redevelopment of lots within older neighborhoods occurs in a way that fits within the "urban fabric." This concept is illustrated on the sketch on page 42. Traditional neighborhood development primarily involves the following:

- Street trees should be planted to eventually provide a canopy of shade over streets. Studies show that mature street trees can increase the value of homes up to 10 percent. If it is not appropriate to have shade trees in the right-of-way, they can be required immediately outside of the right-of-way.
- Requiring that new street lights meet a certain design standard that is similar to older styles of street lights. Any street lights should be shielded to prevent glare and night glow into the sky, and should have a limited height.

- Sidewalks should be provided (or asphalt paths along main roads in rural areas). There should be an orientation to pedestrians, with an ability to walk or bicycle to stores, schools and parks. Overly wide residential streets and intersections should be avoided to discourage speeding and to make it easier for pedestrians to cross the street.
- A modest density should be encouraged that is similar to the typical development that occurred during the 1930s through 1940s. This density should make best use of available land, while avoiding overly dense development and parking problems. In most cases, this will require use of central water and sewage services. However, a traditional village type of development can also occur with on-lot septic systems if there are very deep lots extending back from the road.
- Whenever practical, parking should be located to the rear or side of buildings, so that the front yard can be landscaped. At best, parking and garages would be placed to the rear of lots, with access using alleys. This design avoids conflicts between sidewalks and vehicles backing into the street, and allows the entire curbside to be available for on-street parking.
 - If rear access to garages is not practical, then garages should enter onto the side of homes whenever possible, particularly on corner lots. If a front-entrance garage is proposed, it should be designed so that it is not an overly prominent part of the street. For example, a one lane driveway can pass along the side of a house and then widen to enter a two-car garage that is setback from the front of the house. "Snout" houses should be avoided that have a front entrance garage as the home's most prominent feature.

Suburban vs. Neotraditional Design

Suburban Design

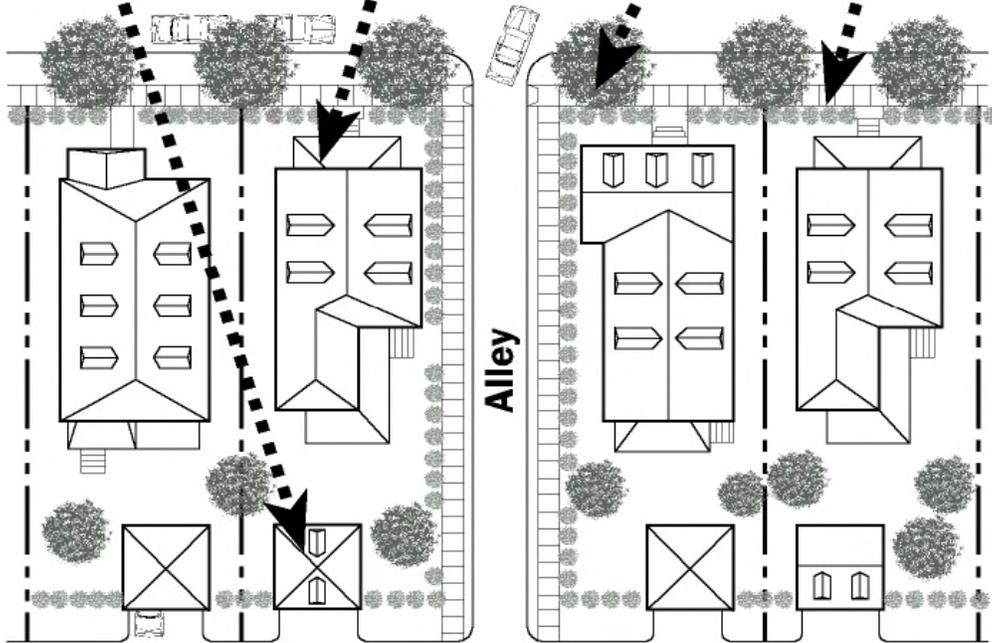


Garages forward
Garages on alleys

Deep front yards
Shallow yards, porches

Trees in yards
Trees along street

No Sidewalks
Sidewalks



Alley

Neotraditional Design

- Care is needed to discourage new twin and townhouse development that has numerous driveways entering directly onto a street from the front. Garage doors should not be an overly prominent part of the views of housing from the front. Where garages and parking cannot be avoided in the front yard, larger lot widths should be required to make sure that there is green space in the front yard. Regulations are needed to make sure that the majority of the front yards of housing developments are not covered by paving.
- Buildings should be placed relatively close to the street, with front or side porches, to encourage interaction among neighbors. On a corner lot, a side porch can have the same effect. If residents spend time on their front porch, they can help oversee the neighborhood and report suspicious activity to the police.

Under the State Planning Code, a municipality can require some of these features in zoning ordinances. For example, in older areas, a maximum building setback could be established from the front lot line along a street. Driveways and garages could be required to have access from an alley, where it is available. New vehicle parking can be prohibited in locations that are between a new building and a pedestrian-oriented main street. That provision pushes most parking to the rear or side of buildings.

In addition, a municipality could offer density incentives for this type of traditional development in entirely new development areas through use of an optional “overlay” district. Traditional Neighborhood Development can be particularly attractive to developers by allowing single family lots that are more narrow than would otherwise be allowed. This reduction in lot width can result in dramatic reductions in the average costs of improvements per housing unit. Allowing relatively narrow single family detached lots can also provide an alternative to building townhouses - at the same density.

Traffic Access Control

If traffic access onto a major road is properly managed, the road will be able to safely handle large volumes of traffic. However, if a road combines a large number of business driveways entering a road at many locations, there will be right-hand turns and left-hand turns at many locations. The constant stopping and starting from these turns greatly affect the smooth flow of vehicles and create safety hazards. This is known as “strip” commercial development. Great care should be used to avoid long new extensions of strip commercial development along roads such as Routes 209, 903, 940 and 443 where it currently does not exist.

At best, intense business development should be concentrated in well-planned developments with internal roads that access a major road with a traffic signal and turn lanes. Where a traffic signal is not warranted at the present time, there should still be a plan for where traffic signals are intended to be built in the future. This will allow driveways and street intersections to be directed towards those intersections so that the traffic signal will be well-placed in the future. Where traffic signals are not appropriate, adjacent commercial uses should have shared driveways and interconnected parking lots. The interconnected parking lots are particularly valuable so that a person can visit more than one adjacent business without having to enter and re-enter a major road.

Traffic Impacts of Various Types of Development

Various types of development generate differing amounts and types of development. For example, the average apartment or townhouse generates less traffic than the average single family detached dwelling. The average age-restricted housing unit generates less traffic than a home that is not age-restricted.

The amounts of traffic generated from development is typically measured as peak hour traffic and total average weekday traffic. Some uses, such as shopping centers and places of worship, may generate their own peak traffic during weekends. Peak hour weekday traffic deserves the most attention. Business offices typically have some of the highest peak hour traffic generation.

Particular care needs to be taken in the location of industrial uses. Most industrial uses generate tractor-trailer truck traffic, which consumes a great amount of capacity on the road system and at intersections. Also, tractor-trailers need sufficient maneuvering space to turn at intersections. Because of the inadequacy of the road system and the many areas with steep slopes, few new land areas are proposed in this Plan for new industrial development where it did not historically exist.

Ordinances should require a traffic impact study for all major developments. That study should also address traffic safety hazards, and require that the applicants state whether they agree to fund or construct any road improvements.

Strengthening Older Residential Areas

This section recommends actions to stabilize and improve older residential neighborhoods. Stable neighborhoods are not only important to provide desirable places to live, but also to protect the health of nearby business areas. If the residential areas deteriorate, they will cause crime and vandalism problems that will discourage business activity. If the surrounding residential areas are strengthened, they will provide a strong base of customers who will hopefully find the downtowns a convenient place to serve their shopping and service needs.

To maintain its economic health, it is important to continually work to attract and retain middle-income households in older areas. This is particularly true because there will always be existing residents moving into newer houses, and because there will always be older residents who will be moving to nursing homes, personal care centers or retirement communities. To maintain the same owner-occupancy rate, there needs to be a continual stream of new home-buyers.

Promoting Home Ownership – Many households could afford the monthly costs of owning a home, but do not have sufficient savings for the closing costs and downpayment. These households need to be linked with available programs to help them achieve home ownership, such as programs of the PA. Housing Finance Agency and the Federal Housing Administration.

Maintaining Housing Conditions – It is important to prevent blight and deterioration before it occurs. A single problem property can encourage responsible residents of nearby properties to move out of the neighborhood and can discourage new home-buyers from investing in the neighborhood. A problem property can also discourage homeowners from investing in improvements to their home because they do not believe they will be able to see any return on their investment if they sell.

To promote home ownership and neighborhood stability, and to avoid parking problems, the conversions of existing one family homes into additional numbers of housing units should be prohibited

or very strictly regulated in most areas. Owner-occupied housing typically has a much higher level of property maintenance than older renter housing. Types of new housing should be promoted that are most likely to be owner-occupied, such as singles, side-by-side twin homes and townhouses, as opposed to apartments or one unit above another unit. Exceptions could be provided in zoning regulations to allow limited conversions of unusually large existing homes.

The boroughs must continue to emphasize enforcement of the basic property maintenance codes to require property-owners to: a) properly maintain their buildings or b) sell the buildings to another party who will make the needed improvements. The goal in code enforcement must be to intervene before buildings deteriorate to the point where it is no longer cost effective to repair them. If property-owners are forced to complete basic maintenance and repairs in a timely manner, severe deterioration can be avoided.

Emphasize housing rehabilitation – Most housing efforts primarily involve low-interest loans to rehabilitate homes owned by households with low or moderate incomes. Expanded marketing efforts are needed to make sure that eligible owners of properties in need of rehabilitation are aware of the financing programs that are available. Particular attention needs to be paid to low-income resident owners of property who need to make improvements to comply with municipal codes. For example, buyers of older homes should be encouraged to take advantage of the Federal Housing Administration's 203(k) program. This allows a homebuyer to receive a single loan to purchase a home and to complete a major rehabilitation of it.

Densities – This Plan does not recommend providing areas for new high density residential development. Instead, the intent is to maintain a moderate density in most of the older areas. Higher densities should only be considered for: a) housing developments that are limited to senior citizens and the physically handicapped, and b) the conversions of older non-residential buildings into condominiums or apartments, particularly if the building is near existing residential areas.

Density bonuses should be considered for developments limited to persons age 55 and older and their spouses, with no children under age 18. These density bonuses are logical because the typical household of older persons generates less traffic, less need for parking and less water and sewage usage compared to other types of housing. Housing for older persons also does not generate additional public school students, thereby avoiding negative impacts upon school finances.

Compatibility in Uses – It is important to protect older residential areas from incompatible development. This is a particularly a concern in older areas where there is typically a relatively dense mix of commercial, industrial and residential uses, with small setbacks.

In commercial areas near neighborhoods, the types of commercial uses should be carefully controlled. Most commercial areas near neighborhoods should not allow for heavy commercial uses, such as gas stations, 24 hour convenience stores, taverns, nightclubs and auto repair. Where practical, the hours of operation and hours of trucking activities should be controlled (such as conditions upon any zoning hearing board approval that is needed). Other problem uses should be very carefully controlled or prohibited, such as after hours clubs that are open after 2 a.m. The zoning hearing boards should carefully review changes to existing business uses in residential zoning districts (which are called "nonconforming uses") to make sure they will not harm the neighborhood.

ECONOMIC DEVELOPMENT AND DOWNTOWN PLAN

Strengthen efforts to attract new employers and retain current employers in the County.

These efforts should continue the consolidation of the Carbon County Bureau of Economic Development into the Carbon County Economic Development Corporation (CCEDC). A single County-wide entity should continue to be devoted to economic development.

Continue networking with area companies through local organizations dedicated to serving and promoting local employers.

Carbon County is part of three key organizations dedicated to serving area employers:

- Northeastern Pennsylvania Alliance (NEPA), located in Pittston.
- Manufacturers Resource Center (MRC), based at Lehigh University in Bethlehem.
- Pocono Mountains Visitors Bureau, located in Stroudsburg,.

Staying active in all three organizations, and finding others to join, helps to develop a network of contacts that can help the County assist local employers in finding potential employees and compatible matches for business ventures.

The County and its representatives should meet regularly with top officials from every major employer to identify ways in which CCEDC can help the local economy. Follow-up efforts should then be held to address problems that may be able to be addressed locally to promote retention and expansion of employers.

Help current and potential employers obtain the services necessary to conduct business and maintain an active workforce.

These efforts should involve work with local employers to share information and obtain grants and loans to build or expand necessary water, sewer, transportation, and other infrastructure.

Employers should also be connected with resources about ways to reduce energy costs.

Consider providing a periodic business/job fair to help match employers with potential employees that have the necessary skill sets.

The County has sponsored fairs in the past. The current economic downturn makes the concept of matching jobs to potential employees more important than ever.

Sponsor a regularly scheduled forum of economic stakeholders to discuss items of mutual concern.

The County recently formed a Women and Business Group. The concept of a regularly scheduled (perhaps quarterly) business forum to discuss mutual concerns might also include a broader range of stakeholders, including:

- Chambers of Commerce
- developers
- educational institutions
- government agencies
- investors
- landowners
- major employers
- private, nonprofit development groups
- small businesses
- utilities
- vendors / suppliers

Continue working closely with the CCB/EP with the goal of providing residents the necessary skills to obtain available jobs.

The Carbon County Business / Education Partnership (CCB/EP) is a strong tool to help match work-force skills to available jobs. Headed by a variety of community leaders, the partnership deserves County support wherever possible. The CCB/EP also fosters close working relationships between the County and the Lehigh Carbon Community College.

Work with both public and private landowners to offer economic development sites with varying characteristics.

Each employer has unique needs, and the CCEDC should try to provide sites that accommodate any new or expanding employer's needs. Large sites, small sites, buildings of all sizes, rural and in-town working environments all serve different needs of different employers.

The CCEDC should maintain information on all sites available for economic development as part of its coordinating function.

Work closely with the Delaware and Lehigh National Heritage Corridor Commission (D&L) to ensure that development of any portion of the Lehigh River for industry is compatible with plans for historic and/or recreational development along the corridor.

The D&L corridor is a national landmark and prized attraction for both tourism and recreation. The County should coordinate any plans for development along the corridor with the D&L to ensure that development does not harm the scenic, historic, or recreational attributes of the corridor.

Determine the current feasibility of future business development on various sites.

The 1994 Carbon County Economic Development Plan study identified eleven sites for possible economic development. Many of those sites have moved forward. Each site should be further reviewed to identify the potential.

- Bulk Transfer Site
- Harrity Road Site
- I-80/Turnpike Interchange Site
- Routes 534/940 Site
- Seneca Road Site
- Weatherly Steel Plant Site

Continue to be an active participant in the Pocono Mountains Vacation Bureau (PMVB).

Tourism is a major part of the Carbon County economy, particularly related to skiing, snowboarding, tubing, golfing, biking, hiking, fishing, paintball, campgrounds and other forms of outdoor recreation. The PMVB is the major marketing and promotional organization for Carbon, Monroe, Pike and Wayne Counties. Carbon County must remain a strong member of the organization to continue promoting sites and activities in the County. In addition, joint promotional efforts are critical with the D&L Corridor Commission, Discover Lehigh Valley and other neighboring organizations.

The goal is to encourage visitors to stay longer in the area, to generate additional economic activity. Persons visiting one type of attraction must be made aware of other nearby attractions. Moreover, joint packages should be offered, so that campgrounds, motels, restaurants, resorts and other attractions can benefit from each other's customers. In addition, by jointly marketing attractions with neighboring areas, there is much greater ability to attract new visitors to the area.

The Nature Conservancy has named the Pocono region one of the Last Great Places on earth.

Explore options to connect visitors to the Jim Thorpe area to various other attractions.

Commercial development and historic sites are scattered throughout the Borough. The major downtown parking lot is near the former train station and close to one of the commercial areas, but other worthwhile destinations in the Borough are located some distance from the major parking area. The borough and county should explore circulation alternatives, including shuttle service, to allow tourists maximum access to local attractions.

The former steel plant in Weatherly or the No. 9 Anthracite Coal Mine Museum in Lansford are two examples of attractions outside the Jim Thorpe area that are worthy of promotion.

Strengthening the Downtowns

This Plan seeks to strengthen the downtowns of the boroughs as the business, cultural and civic centers for the regions. The Nationwide Main Street Program can serve as a model for revitalization. It stresses four major approaches:

- Organization and Cooperation – To have a strong organization of all interested parties working cooperatively in partnership to carry out needed actions. A staff-person with the Delaware and Lehigh Corridors Commission provided organizational assistance to boroughs in the area. However, that funding is uncertain.
- Design and Renewal – To improve the physical environment including the “streetscape” and the attractiveness of the fronts of buildings (particularly through rehabilitation of historic features), and providing adequate parking.
- Economic Development – To recruit and retain businesses and investors to expand job opportunities and generate additional local tax revenue. To provide information to support new business development. To maintain regular contacts with existing businesses to help them remain and grow in the downtown.
- Promotion – To market the downtowns, each with a unified identity. To use special events to attract new customers and businesses. To emphasize high-quality distinctive products and services, including businesses serving a special market niche that is not served by mass-market discount retailers.

Improving Appearance – The appearance of the downtown can impact the ability to attract businesses and customers. Appearance is particularly important for destination-oriented businesses, such as antique shops, gift shops and clothing stores. Special attention is needed to the major entryways to the downtown—because first impressions matter. For most people, the main street of each borough represents the most highly visible “face” of the town and the region.

The boroughs should seek State and/or Federal funding to install decorative streetlights and other improvements in the center of town, in phases as funds allow.

A set of public improvements should be selected, such as street lights, street trees, traffic signal poles, benches, trash cans and sidewalk paving accents. This could allow some features to be replaced gradually over time, following a pattern that will eventually be consistent. For example, if an existing unpainted aluminum traffic signal post needs to be replaced in the future, it should be replaced with a post that is coated with a dark color. On their own property, property-owners can also be encouraged to plant species of trees and install light fixtures that follow the overall scheme.

A Facade Improvement Program involves working with private property-owners to encourage them to improve the appearance of the fronts of their buildings. In the past, Palmerton has had funds available to offer matching grants or low-interest loans for this purpose. It would be desirable to reactivate this program with new funds. The funding typically is provided by a State grant, a loan pool by banks or a donation from a corporation. The improvements typically must be approved by local committee. A set of design standards for towns along the Delaware and Lehigh Heritage Corridor, including more specific policies for certain towns. The emphasis should be placed upon improvements that restore or uncover historic architectural features or that are generally consistent with the historic architecture of the corridor. The goal is not only to make buildings more attractive, but also to make business entrances

more inviting to customers. Many types of facade improvements can be made with a low cost, such as a well-chosen color scheme or addition of awnings.

Additional decorative banners can add a great deal of color and help to provide a sense of unified identity.

Street Trees – Street trees are important to make older areas more attractive and to make walking more pleasant during the Summer. Species of street trees can be carefully chosen that do not obstruct the visibility of businesses and do not cause damage to sidewalks.

In some places, there may not be enough room within the right-of-way to plant new trees. In these cases, cooperative efforts could be made with property owners to plant trees just outside of the right-of-way.

One way to carry out a street tree planting program at little public expense would be to ask adjacent property-owners to pay the purchase price of street trees. The borough would then buy the trees in bulk, select the best locations for the trees considering underground utilities, and then have a contractor do all of the planting at one time. This would minimize the costs and paperwork for each homeowner. It also would ensure that the street trees would be located where an adjoining property-owner is interested in helping to maintain the tree - because that landowner volunteered to pay for it.

Pedestrian Safety – At some times of the day, it is difficult for pedestrians to cross heavily traveled streets in many of the downtowns. Pedestrian crossings are particularly troublesome for senior citizens and persons with disabilities who cannot walk very fast. Some vehicles making right-hand turns do not even look to see if a pedestrian is crossing. Unfortunately, few motorists comply with the State law regarding pedestrian crossings.

Crosswalks should be highly visible. Where the most pedestrian crossings occur, it is desirable to use different paving patterns to make the crosswalks very visible. This may include patterned asphalt, such as asphalt that has the appearance of brick. The color increases the visibility and the texture makes a noise that discourages speeding.

Sidewalks – This Plan does not recommend multi-million dollar expenditures on entirely new brick sidewalks and placing utilities underground. However, if a sidewalk does need to be replaced, consideration should be given to adding some decorative paving patterns, such as a row along the curb that has the appearance of red brick. (Note - In downtowns, patterned concrete or patterned asphalt is often used in place of actual brick pavers, to increase durability.)

Parking – It is essential to not only provide sufficient amounts of parking, but also to properly manage the spaces that are available. Parking demands along various parts of the downtowns should be periodically re-examined to determine if there are needs for various maximum time limits. Some spaces might be limited to very short time limits, such as 15 minutes, if they are in front of a business with many people making short visits. In other areas, a 2 hour maximum limit may be appropriate. In areas with less demand, there may not be any need for any time limits. The goal is to make sure that the spaces that are most in demand are available for continual turnover by many customers. If prime parking spaces are allowed to be occupied by one vehicle for an entire day, persons wishing to visit a downtown business for a quick trip will turn away and not return.

The boroughs should not try to replicate suburban parking or it will destroy the historic character and streetscape that makes the town special. However, there may be additional opportunities over time to provide additional parking, particularly by demolishing accessory buildings and underused rear

extensions of buildings in the inside of blocks. This is a method to increase parking supply without harming the “face” of the downtown along main streets.

Marketing and Promotion – Marketing efforts are needed to persuade persons visiting the area to visit downtown businesses. Additional marketing is needed to convince visitors to the area to also visit the downtowns. Persons working nearby should be encouraged to visit downtown businesses during lunch-times and immediately after work. Persons who are already visiting another business in a downtown, should be encouraged to visit additional businesses.

It is difficult for a business to be successful if it is not open during the hours when most people have free time to shop - which is evenings and weekends. At the same time, operators of small family businesses often are over-extended with long hours. One option on weekdays would be to shift from 10 a.m. to 5 p.m. to 11 a.m. to 6 p.m. business hours. Moreover, it may be possible to emphasize a single weekday shopping night when most businesses would be open.

Special Events – Special events are important to bring people into the downtowns so that they can see what is available. Even if these visitors do not purchase many goods or services on the day of the event, they are much more likely to come back another day. Many area residents have gotten out of the habit of shopping in a downtown. Special events can provide the motivation for them to return. Special events featuring children are particularly valuable in attracting their parents and other relatives to the downtown.

Organization and Promotion – It is important that downtown businesses and property-owners be organized, particularly to put together joint promotions, joint marketing and special events. Many individual businesses have little money to advertise individually, but when their resources are pooled, they can afford joint advertisements and flyers and other promotions. This type of advertising is particularly important because the goal is to get customers to visit more than one downtown business at one time.

Financing – Any grants and low-interest loan programs should be geared towards physical improvements that will have long-term benefits, regardless of what business occupies a particular space. Low interest loans and grants are particularly valuable for improvements that are appearance-oriented, such as historic rehabilitation.

Financing programs can be valuable to spur intensified use of upper story spaces, such as for market-rate apartments or offices. Large expenses can be needed to meet fire safety requirements if the use of upper story space is changed. For example, if storage space is proposed to be converted to apartments, then a second fire-safe stairwell and fire-resistant wall and ceiling separations are often needed.

Moderate the Supply of Commercial Zoning – If an excessive amount of commercial zoning is allowed at one time, it may encourage sprawled development, with businesses simply relocating from one business site to a new site, leaving the old site vacant. However, if the supply of commercially zoned land is held to a moderate amount, it will encourage rehabilitation and redevelopment of older commercial sites.

HISTORIC PRESERVATION PLAN

Carbon County was incorporated in 1843 from parts of Northampton and Monroe Counties. Jim Thorpe, the County seat, was originally incorporated in 1850 as the borough of Mauch Chunk, an Indian name meaning “Bear Mountain”. The Borough was later renamed in 1954 (after a merger with East Mauch Chunk) for the famous Native American athlete. Jim Thorpe’s remains are buried in the Borough, at a site marked with a monument telling the story of the remarkable athlete.

Carbon County’s history is tied to natural resources. Before the County was incorporated, the Lehigh Coal and Navigation Company was already in place. The company extracted anthracite coal from local mines and used the Lehigh River and Lehigh Canal to transport the coal downstream, eventually to Philadelphia markets.

The anthracite coal market helped to produce some of the period’s richest men in the United States. Asa Packer, who started as a canal boat operator, became one of the ten richest men in the country prior to his death. Packer founded boatyards, construction and mining companies, the Lehigh Valley Railroad, and Lehigh University, located in Bethlehem.

Historic Sites

Local governments in Carbon County have been active in preserving the historical structures, as seen on the Historic Sites and Districts Map. The County has a total of twelve sites (including the historic district in Jim Thorpe) that are officially listed on the National Register of Historic Places, according to the Pennsylvania Historic and Museum Commission (PHMC). Efforts are also underway to establish a National Register Historic District in Palmerton.

Listing on the National Register of Historic Places makes buildings eligible for certain federal income tax benefits (mainly for rehabilitation of commercial or investment properties), but does not limit changes to a building by a private property owner.

National Register Listed Sites

Carbon County Jail – Jim Thorpe Borough

Carbon County Section of the Lehigh Canal – Franklin & Lower Towamensing Townships; Bowmans-town, Jim Thorpe, Palmerton Parryville & Weissport Boroughs

Central Railroad of New Jersey Station – Jim Thorpe Borough

Harrity Covered Bridge – Franklin Township

Little Gap Covered Bridge – Lower Towamensing Township

Mauch Chunk and Summit Hill Switchback Railroad – Jim Thorpe & Summit Hill Boroughs

Former Nesquehoning High School – Nesquehoning Borough

Old Mauch Chunk Historic District – Jim Thorpe Borough

Packer, Asa Mansion – Jim Thorpe Borough

Packer, Harry Mansion – Jim Thorpe Borough

St. Mark’s Episcopal Church – Jim Thorpe Borough

Former Summit Hill High School – Summit Hill Borough

Carbon County has many more historic sites and districts that have the potential to be listed on the National Register of Historic Places (Table 13.1)—sites known as “eligible” for the National Register. To become listed, a site or district must go through a research and review process. The research involves a description of the site/district and an explanation of the site/district’s importance. The nomination is submitted to PHMC for certification. Designation as “eligible” has certain impacts upon projects involving federal funding.

**Table 13.1
Historic Sites Determined to be Eligible
for the National Register of Historic Places**

| Site Name | Municipality |
|---|--|
| Bowmanstown Borough Hall | Bowmanstown Borough |
| Bridge No.6 over Lizard Creek | East Penn Township |
| Bridge Street | Lehighon Borough |
| Center Street Historic District | Jim Thorpe Borough |
| Iron Exchange Hotel | Parryville Borough |
| L.V.R.R./Steel Mill | Weatherly Borough |
| Lansford Community Center | Lansford Borough |
| Lansford Historic District | Lansford Borough |
| Lehigh & Susquehanna Railroad | Franklin & Lower Towamensing Twps., Parryville Bor |
| Lehigh Valley Railroad | Jim Thorpe Borough |
| Lehighon Area Junior High School | Lehighon Borough |
| Leisenring Property | Jim Thorpe Borough |
| PA Turnpike | Franklin Township |
| PA Turnpike Bridge - NE Ext. - NB-526 | Parryville Borough |
| PA Turnpike Bridge - NE Ext. - NB-610 | Penn Forest Township |
| Palmerton Borough Hall | Palmerton Borough |
| Palmerton Historic District | Palmerton Borough |
| Palmerton Library | Palmerton Borough |
| Parryville Historic District | Parryville Borough |
| Rockport Hotel | Lehigh Township |
| Ruddle, George, Property | Jim Thorpe Borough |
| Scenic Dr.; Area Workshop Bridge; SR 7935 | Kidder Township |
| Stone Arch Bridge | Kidder Township |

Source: PA Historical and Museum Commission

Consider historic zoning provisions to protect the most important historic buildings.

Some form of zoning provisions should be considered by each municipality to protect important historic buildings. This could include historic building provisions that would create a layer of provisions in addition to standard zoning. These provisions could be created under the authority of the State Municipalities Planning Code (MPC), as opposed to the State Historic District Act (which is much more difficult to use).

Unlike a historic district ordinance, zoning regulations on demolition would not regulate changes to buildings, such as window replacements or installation of siding. These zoning provisions also would not regulate the architecture of new construction or building additions. Instead, these historic zoning provisions could be limited to only regulating demolitions of the most important buildings. For example, the zoning ordinance could require that any demolition of a very significant historic building

Carbon County Comprehensive & Greenway Plan

Major Historic Sites & Districts

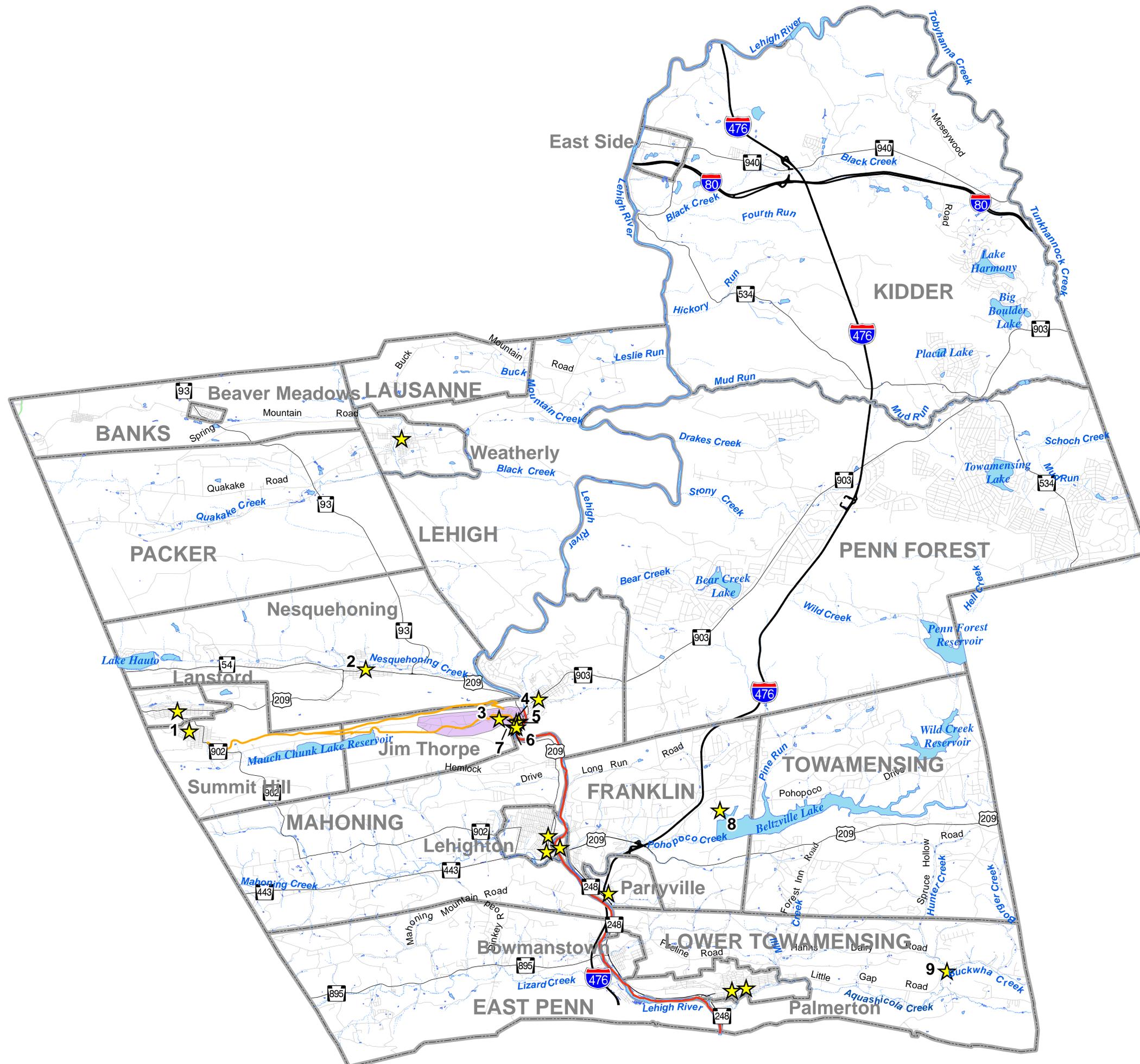
★ Historic Sites

1. Summit Hill High School
2. Nesquehoning High School
3. Carbon County Jail
4. Harry Packer Mansion
5. Asa Packer Mansion
6. Central Railroad of New Jersey Station
7. St. Marks Episcopal Church
8. Harrity Covered Bridge
9. Little Gap Covered Bridge

Old Mauch Chunk Historic District

Historic Trails

- Lehigh Canal Park
- Switchback Railroad Trail



need zoning approval from the Board of Supervisors or Borough Council as a "conditional use" or from the Zoning Hearing Board as a special exception use. The demolition would only be allowed if the applicant proved that the building could not be economically reused or that the demolition is necessary to allow a project of special public importance (such as an intersection improvement needed to improve public safety). This prohibition on demolition would only apply to buildings listed by the municipality as the most significant.

In addition, a municipality's ordinance could require that any application for a proposed subdivision, land development, conditional use or special exception use must include a full description of any historic building on the property and how the application may adversely affect the building. The Zoning Hearing Board could also be authorized to consider impacts upon historic buildings in determining whether to approve a special exception use or a variance.

An alternative to regulating demolition could involve a simple delay of up to 90 days from the time a person applied for a demolition permit until it could be approved. This delay would only apply to a list of important historic buildings. This delay is intended to provide time for interested persons to convince a property owner that there are alternatives for demolition. For example, a new buyer might be found who would be willing to restore the building, or the owner might be persuaded to incorporate the building into his or her plans for the property.

In any case, an exception should be allowed where a building inspector certifies that a building needs to be demolished because of an imminent public safety hazard.

Consider zoning incentives for rehabilitation of historic buildings.

If a designated building is preserved and rehabilitated in a sensitive manner, the zoning ordinance could allow the building to be used for certain additional uses beyond those uses that are normally allowed under zoning. Therefore, for example, an historic building in a non-commercial zoning district should be allowed to be used as a bed and breakfast inn, office, day care center, antique store, funeral home or similar light commercial use. This should help create a stronger market to encourage investment in the restoration of these buildings. These uses would only be allowed within existing buildings, plus modest-sized building additions that are designed to be compatible with the historic building as viewed from the road.

The zoning provisions could require an applicant to submit plans prepared by a registered architect showing that the important features of the building that are visible from a public road will be preserved and rehabilitated. Modern features could be added in areas that are not visible from a public road or street.

Promote increased interest and awareness in historic resources, and more detailed identification of historic buildings.

Increased public interest in historic buildings can help spur interest in persons buying and rehabilitating historic properties.

There are multiple historic organizations in the County. These groups collect information on the history and of their region and compile historic materials and photos.

Efforts should be considered to list additional buildings and districts on the National Register of Historic Places. Listing on the Register does not by itself involve any additional regulations upon a private property owner. It does offer public recognition of the importance of a building, and can provide limited Federal income tax benefits as part of a major historic rehabilitation of an investment property. Listing on the National Register provides protection against actions involving Federal or State funds in ways that would adversely affect the building.

Encourage property-owners to follow proper standards in making changes to older buildings.

It is important to make property-owners aware of appropriate ways that old buildings can be modernized or rehabilitated in ways that retain their historic appearance as viewed from a road or street. The following are recommended advisory guidelines (not regulations) for older buildings in the region:

1. Modern uses should be found for historic buildings that require minimal changes to the exterior features of the building that define the building's character.
2. Historic exterior materials and features should be preserved and not be removed or covered.
3. A new building in a historic area does not need to appear old, but should include features that respect nearby historic buildings, such as similar massing, materials, window openings and scale.
4. If deteriorated historic features cannot be repaired, they should be replaced with new features having the same appearance.
5. Chemical or physical treatments, such as sandblasting, that cause damage to historic materials should not be used. The surface cleaning of structures, if appropriate, shall be undertaken using the gentlest means possible.
6. The proportional relationship between the width and the height of the front of historic buildings should be maintained.
7. If doors or windows are replaced, the window and door openings should remain the same size.
8. Any rhythm of solid wall areas vs. windows and doors should be maintained.
9. Any new construction or additions should seek to continue setbacks from a road that are similar to nearby historic buildings.
10. Any rhythm of building projections should be maintained.
11. Materials should be used (such as brick, stone and older styles of siding), that is similar in appearance to authentic materials of surrounding buildings.
12. Roof shapes and roof lines should be maintained, and new buildings should have similar roof lines to nearby historic buildings.
13. Barn walls should be maintained in wood, preferably painted red, white or other historic colors.
14. Views of outdoor storage from roads and residential properties should be minimized.

THE PLAN FOR TRANSPORTATION

GOAL: PROVIDE A SAFE AND EFFICIENT NETWORK THAT IS VERY CLOSELY COORDINATED WITH THE PLANS FOR LAND USES.

The County's road system forms the framework for development. The location and types of roads influence the directions and types of development. The intent is to maximize safety and minimize congestion.

Road Classifications

The region should continue to carefully plan road patterns and access from development according to the function each road is intended to serve within the overall road network. Roads in the region are classified by three major types: Arterial Roads, Collector Roads and Local Roads. In addition, the Northeast Extension of the Turnpike is considered an Expressway.

Arterial Roads – These roads provide access between major commercial developments and different towns. Arterials are designed for high volumes of traffic at moderate speeds. Examples of arterial roads include Routes 248, 903, 443 and 209.

Collector Roads – These roads provide connections between arterial roads, connect together residential neighborhoods and gather traffic from local roads. Collector roads are intended to provide for moderate volumes of traffic at low speeds.

Local Roads / Streets – These roads / streets provide direct access from many adjacent properties, and channel traffic towards collector roads.

A map in the Transportation Background section shows estimated average daily volumes of traffic on major roads in the County.

Seek cost-effective solutions for problem road segments, in cooperation with PennDOT and adjacent landowners/developers.

Total traffic volumes have greatly increased, and can be expected to continue to increase. The traffic volumes are not only caused by increased development and population, but also by the following factors:

- A dramatic increase in the miles driven by every person on the average, which is part of a national trend. This trend is caused by longer commutes to work and increased percentages of the population holding jobs (particularly including women).
- An increase in the number of vehicles per household on the average, which is part of a national trend, and which results in an increased number of trips with only one person in a vehicle.
- An increase in the geographic area covered by development, with development being much more dispersed. This results in longer trips and decreased ability to take a bus, ride a bike or walk to a destination.

As traffic congestion increases on main roads, more and more drivers seek alternative routes. Many of these alternative routes involve narrow winding rural roads or roads through residential areas, which creates noise and safety problems. Many roads are seeing much more traffic than they were ever designed to handle. Many rural roads are difficult or impossible to improve because of the closeness of homes, historic buildings, steep cliffs, creeks and wetlands.

Very few new through-roads have been built over the last 60 years. Instead, most developments involve cul-de-sacs or looped streets that do not serve through-traffic. Many developments do not include any road inter-connections, which requires a driver to go back onto a main road to travel from one subdivision to an adjacent subdivision, or from one commercial business to an adjacent commercial business. While this trend does help to reduce volumes and speeds on residential streets, it allows few alternative routes.

The road network should provide at least two methods to move between any two areas so that no one route becomes congested and so there are alternatives in case of construction or accidents.

- Minimizing Through-Traffic on Residential Streets – Road/street patterns need to be designed so that local residential streets handle lower-speed lower-volume traffic, while through-traffic and truck traffic is directed to more suitable routes. This involves making sure that the through-roads are sufficiently free-flowing—so that motorists are not encouraged to seek alternative routes through residential neighborhoods. Local residential streets should continue to be designed in a fashion that does not allow higher-speed direct through-routes and thereby discourages through-traffic. However, an excessive amount of cul-de-sac streets should be avoided.

In residential areas, new collector roads can be appropriate if the road is designed with that intent from the very beginning. This should include designing the new through-road with sidewalks or pedestrian/bicycle paths so that there are fewer conflicts with traffic. New homes should be designed with their driveways entering local internal roads, as opposed to the new through-road. The rear or sides of residential lots can then be landscaped along the through-road, preferably with any rear fencing on the inside of the landscaping provided by the developer. Earth berms can also be combined with landscaping along the through-roads to provide a noise barrier.

- Speeding – One of the most common complaints in the region concerns excessive speeding. For those municipalities that have local police protection, it is very difficult to enforce speed limits without the ability to use radar. A bill has been introduced in the State Legislature to allow full-time municipal police officers to use radar to enforce speed limits.
- Signal Timing and Coordination – Along Delaware Avenue, the way to maximize capacity of the current road system is to refine the timing of traffic signals and to make sure the timing of signals is fully coordinated along a corridor.
- Intersection Improvements – Wherever feasible, developers of new projects should be required to complete improvements to immediately adjacent road segments, or at least to provide the needed right-of-way. In some cases, turn lanes or wider shoulders or a less sharp turning radius could increase traffic safety and greatly reduce congestion. Developers should also provide needed turn lanes and traffic signals whenever feasible.

Great care is needed to use “traffic calming” along through-roads in downtowns and residential areas, as opposed to allowing high speeds.

Emphasize Key Problem Areas

The following road segments are of particular concern:

1. Most of the problem road segments involve steep curvy roads crossing steep land areas that cannot be resolved. The best that can be achieved in these situations is often to provide as wide a shoulder as possible so there is a margin of error, especially during icy conditions. These steep roads include Blue Mountain Drive, Route 903 south of Summit Hill, Route 93 and Route 248 south of Jim Thorpe.
2. Shoulders Along Multiple Roads – Many roads need improved shoulders, to improve safety. Shoulders are particularly important for roads with heavy truck traffic, and also benefit bicyclists.
3. Route 443 in Mahoning Township experiences congestion through the commercial areas. Additional turn lanes are needed, as well as proper controls to minimize additional unplanned commercial driveway entrances.
4. Access to the former West Plant Site – This land in the west end of Palmerton north of Route 248 has great potential for new business redevelopment. However, the main road access is from the Delaware Avenue ramps of Route 248, and then turning north on Mauch Chunk Road. Mauch Chunk Road is not suitable for large amounts of traffic, and trucks would need to pass by many homes. A more direct route is needed, particularly to access the western part of the site. A new at-grade intersection is recommended on Route 248 to provide direct access into the site. This would require an exception from PennDOT to allow a break in the median. The intersection should be signalized and include turn lanes.
5. Forest Inn Road – The length of Forest Inn Road is a series of problems, from an awkward intersection with Little Gap Road to a series of sharp turns and an awkward high volume intersection at Route 209. The road serves as a major short-cut. The road also is icy during Winter conditions. Unfortunately, the topography, the presence of homes close to the road and flood-prone areas and wetlands make it almost impossible to improve the road. Over time, as adjacent land is developed, alternatives should be considered to construct a new road link or improve an existing road to provide an alternative route to portions of Forest Inn Road. As traffic increases, a traffic signal may be justified at the intersection of Forest Inn Road and Route 209, which could help to moderate speeds along the road. Also, it may be appropriate to realign this intersection to form more of a “T” and/or to improve sight distances.
6. Trachsville – The intersection of Route 209 and Trachsville Hill Road is a problem because of limited sight distance from the east. The situation is aggravated because of a hill on the north side of the intersection and the presence of vehicles towing boats to and from Beltzville Lake. The topography does not allow any easy solution. As traffic increases, a traffic signal may be justified. An alternative would be a four way stop.

7. Route 209 – Towamensing Township and PennDOT should work together over the years to obtain additional right-of-way to provide for improvements along this highway, such as turn lanes and wider shoulders. If PennDOT is not willing to accept additional right-of-way at the time of subdivision approval, then the Township should require that the approved plans state that the additional right-of-way is set aside for future dedication. Buildings should be required to be setback from the road to provide room for future improvements. When feasible, rear or side access should be provided to lots, to access a common driveway at a location with good sight distance.
8. Outdated Bridges – There are several narrow and outdated bridges that are being replaced as funds allow. A new Route 903 bridge is to be built in Jim Thorpe and Turnpike bridges are nearing completion.
9. Route 903 Interchange – A new set of ramps is to be constructed from the Turnpike onto Route 903 in Penn Forest Township. These ramps will be limited to use by persons using EZ Pass. Analysis will be needed to determine whether improvements will be needed to handle the resulting traffic, especially during major auto races.
10. Route 54 Curve – A long planned project is to improve Route 54 at the curve in Nesquehoning.

Current Transportation Projects Scheduled for State and Federal Funding

PennDOT prepares a 12 Year Transportation Plan that is intended to project the funding for various major transportation projects in various years. PennDOT works with the Northeastern Pennsylvania Alliance (NEPA) to program which projects should be considered to have the highest priorities. Those projects are then proposed to be funded in different budget years, based upon the funding that is expected to be available.

Each municipality can propose projects for funding on the 12 Year Plan. Across Pennsylvania, the projects that are most likely to be funded are those that:

- a) have the most cost-effective improvements in safety and congestion relief,
- b) promote highly visible economic development projects (such as redevelopment of the unused former New Jersey Zinc lands), and/or
- c) involve a municipality taking a leadership role in proposing the project, by hiring a traffic engineer to prepare a detailed study and cost estimate.

Take the initiative in municipal funding of engineering of needed road improvements.

More detailed engineering studies are needed to design specific improvements to the problem intersections and road segments. It is important for municipalities to take the lead in identifying needed improvements on State roads. An improvement to a State road is much more likely to be funded by PennDOT in a timely manner if the municipality or a developer takes the initiative to pay for the initial engineering of improvements. A project is even more likely to receive State funding if the adjacent property owners donate the needed right-of-way. In such case, the value of the engineering and the donated right-of-way count as a “local match” that allows a project to receive priority for State funding. Also, donated right-of-way avoids the time-consuming process by the State to purchase right-of-way.

If a portion of the construction costs are provided by a municipality or a developer, that also makes a project more likely to be funded on a timely manner by PennDOT.

As part of new subdivisions, many townships seek that subdividers provide additional right-of-way to provide for future needs. For example, a 33 foot wide right-of-way for an existing road may be increased to 50 feet (25 feet on each side). However, along State roads, PennDOT often will not accept the additional right-of-way. Therefore, at times, the municipality may need to temporarily accept the additional right-of-way until such time as PennDOT may realize it is needed. The adjacent landowner would still be responsible for mowing and other maintenance. Another option is to require that the additional right-of-way be set aside for future dedication if it is determined to be needed. It is possible that a person proposing a subdivision with little new traffic may be able to argue that their project does not create any need for additional right-of-way. However, that should not be a problem with subdivisions involving multiple new lots.

If a building older than 50 years old needs to be removed to make the project work, then the municipality or a landowner should take the lead in removing the building before applying for Federal and State funding. That greatly simplifies the process.

However, wherever practical, a road improvement should be completed without using State funds. This is because a project can typically be completed in a fraction of the time and at less total expense if the project is funded by a developer and/or municipality.

Carefully manage access of traffic onto major roads, especially Routes 209, 443, 903, 940 and 248.

Special attention needs to be paid to controlling the number, design and location of driveways onto major roads. PennDOT controls the actual engineering of a driveway onto a State road after a lot is created or a use is allowed by the municipality. However, the municipality has the primary control over where different uses are allowed and how land is allowed to be subdivided. This authority can be used to control traffic access management onto major roads.

For example, rear or side driveway access should be used where practical to reduce the number of turning movements directly onto major roads. This method works best when uses are able to gain access to a traffic signal. Connections between adjacent uses should be completed parallel to main roads to allow traffic to enter the road at carefully designed locations, where feasible.

The municipalities should seek inter-connections between adjacent non-residential uses along major roads, including interconnected parking lots or use of a rear service road. These interconnections allow motorists to visit more than one use without needing to enter and re-enter major roads. These interconnections can be required for a new development. If an existing adjacent use will not allow an inter-connection, then the new development should be required to provide the link as a stub. This stub can then be opened in the future when any development approval is sought on the adjacent lot.

Seek new collector roads through major new developments.

When a tract of land is proposed for a new development, the municipality should consider whether a new collector road is needed in that area. If a new through-road connection is needed, the municipality should work with the developer (preferably at a sketch plan stage) to seek that the road be constructed as part of the new development. In most cases, the goal of a collector road is to get from point A to point B, with the developer being able to choose the most appropriate route through the developer's property. New collector roads through business development can be especially valuable to provide alternative routes around bottlenecks.

If a new collector road is intended to serve significant new traffic, ideally, residential driveways should not enter directly onto the collector road. Instead, new homes should enter onto a local street, and the rear of homes should be adjacent to the collector road. In this case, substantial landscaping should be used to buffer the new road from the rears of the homes.

Promote public transit use.

Opportunities should be sought to continue to expand bus service, including to connect to the LANTA bus system in the Lehigh Valley. This is not only important to reduce traffic, but also to increase access to jobs. Public transit is particularly important for persons who cannot afford to maintain their own car (including families with more drivers than cars), for persons who are unable to drive (such as persons with disabilities, persons with suspended licenses and some elderly persons), for young people who have not yet learned to drive, and for people who prefer alternatives (such as bicyclists who can attach their bikes on the front of a bus). Public transit is also important to serve residents of the increasing number of nursing homes, assisted living centers and age-restricted housing developments in the region, as well as residents who have "aged in place." Public transit also reduces traffic congestion, energy consumption, parking needs and air pollution.

Public transit services are organized by the Lehigh and Northampton Transportation Authority (LANTA) system. The system is named the Carbon County Community Transit. The fixed route service is described in the Transportation Background section. LANTA also operates a fixed bus route from the K-Mart in Walnutport to Downtown Slatington, the Lehigh Carbon Community College in Schnecksville, the Lehigh Valley Hospital and Center City Allentown. In Center City Allentown, transfers are available to many other destinations.

In addition, flexible "para-transit" service is available through Carbon County Community Transit. The service is available to anyone. However, subsidies are only available to older persons, persons on medical assistance and persons with disabilities. Therefore, the costs are too high for most members of the general public. Although there are no restrictions on the purposes of the trips, this system is particularly valuable to help persons reach medical offices, human services and other necessary services. Door-to-door services are provided, although advance reservations are required.

Consideration should be given to carefully locating a public transit stop that is easily accessible by buses whenever a major new development occurs. At higher volume stops, municipalities should allow the placement of a shelter for passengers, which is funded by the advertising signs on it.

Promote use of carpooling.

Federal funds should be sought for additional park and ride lots. These parking lots are the easiest way to encourage carpooling of persons to work. Park and ride lots are also valuable to promote use of the public bus system. The need for park and ride lots is driven by the high numbers of local residents who work outside of the region. The most appropriate places for park and ride lots are near the Route 209 interchange of the Turnpike and near Route 248.

Zoning incentives could be offered to developers of new commercial projects to provide parking areas that could be used as park and ride lots. This use would be feasible because the peak parking demand for a retail use is on weekends, not during weekday mornings and afternoons when there would be the main demand for a park and ride lot.

Promote safe bicycle and pedestrian travel.

The Greenway Plan section addresses recreation trails for bicycling and walking. In addition, bicycling and walking can also be important methods of transportation.

Efforts are needed to improve opportunities throughout the region for safe bicycle and pedestrian travel. In new developments along the more heavily traveled roads, sidewalks or asphalt paths should be required. However, where sidewalks or paths are not practical, new development should include cleared flat grass pathways along roads that are suitable for safe walking.

Roads should have sufficient width to provide room for bicyclists. Where curbing is not provided, shoulders should be provided that are wide enough and smooth enough for bicyclists. Cooperative efforts are needed with PennDOT to seek shoulders along the most heavily traveled State roads. Shoulders should be separated from the travel lanes by white lines to avoid conflicts between vehicles and bicyclists and to discourage speeding by motorists.

COMMUNITY FACILITIES AND SERVICES PLAN

Community facilities include parks, fire stations, municipal buildings, public schools and similar facilities. Community services include police and fire protection, sewage and water services and municipal government.

GOAL: Provide high-quality community facilities and services in the most cost-efficient manner, including addressing needs for future growth.

Provide central water and sewage services in the most cost-efficient manner, with particular attention upon providing central sewage service to areas with malfunctioning systems.

Care is needed to avoid pollution of water supplies, including areas around wells of central water systems. Recommendations to protect existing groundwater supplies and creeks are included in the Natural Features Plan section. Extensions of a public water system are particularly valuable for firefighting.

Central sewage service should generally be avoided in rural areas of the region unless it is necessary to support an Open Space Development that will preserve the majority of the land. Unless there is no logical alternative, new private sewage and water systems in isolated locations should generally be avoided because of concerns that they may not be financially viable and properly operated over the long-term. Where a new private water or sewage system is allowed, it should be designed so that it could be incorporated into a larger public system in the future, where feasible.

The following statements are required to be included in the Comprehensive Plan under State law:

1. This Plan is generally consistent with the State Water Plan and water resources planning of the Delaware River Basin Commission.
2. Lawful activities, such as extraction of minerals, impact water supply sources. Such activities are governed by statutes regulating mineral extraction that specify replacement and restoration of water supplies affected by such activities.
3. Commercial agriculture production and livestock operations may impact water supply sources.

Extend central sewage service to areas with failing septic systems. Also, extend central sewage service to promote economic development in this area.

One example of an area with widespread malfunctioning septic systems is in Aquashicola, Walkton and Little Gap in Lower Towamensing. The problem could be addressed by extending the Palmerton or Little Gap sewage systems. Many lots with malfunctioning systems are actually cesspools that predated modern septic system standards.

Most available state funding for sewage systems consists of low interest loans, as opposed to grants. However, a limited amount of grants may be available to assist with the costs of low income homeowners.

Make sure that on-lot septic systems are adequate.

Most properties in the rural areas of the townships rely upon on-lot septic systems. Public education is important to make sure that residents know how to properly take care of on-lot septic systems. Many residents have moved from suburban areas where they had public sewers and do not understand their septic systems. Of most importance, property-owners need to understand the need to have their septic systems pumped regularly (typically at least once every three years). If a system is not pumped regularly, the drain field eventually will need to be replaced.

In addition to education, enforcement is needed to make sure that inadequate or failing on-lot septic systems are repaired or replaced. Residents should be encouraged to have their well water tested regularly and to report any contamination that has been found to the township. These well water results can be used to identify areas of failing septic systems. In areas where there are a concentration of failing septic systems, the township should consider an ordinance that requires that the owner provide evidence that the system has been pumped and inspected at least once every three years. This is known as a Sewage Management Ordinance, which could apply within a defined district.

Every new lot that will be served by an on-lot septic system should be required by a municipal ordinance to have two separate locations that are tested and approved for a septic drain field. This is important to make sure that a suitable area will be available in case the initial drain field malfunctions. The back-up location should be required to be kept open and undisturbed.

Work to protect water supplies.

Great care is needed to provide adequate water services and to protect the water quality of groundwater and creeks. For the vast majority of the region, drinking water supplies come from groundwater within the region. This includes many public water supply wells, as well as individual wells serving homes, farms and businesses.

The underground geology greatly affects the vulnerability of water supplies to contamination. Once contamination occurs, it can be extremely expensive to clean up, and may require that a well be abandoned. The following recommendations should be carried out to protect water supplies:

- The public and private central water systems should prepare "Wellhead Protection Plans" to protect the quality of water near major water supply wells. A State grant program is available that could help to fund these efforts. A wellhead protection plan identifies the land areas around a well that are most likely to contribute towards contamination of the well, considering the underlying geology. The plan then recommends methods that can be used to avoid contamination in these areas, such as purchasing a conservation easement around the water supply to keep the land in open space or to limit the types or intensities of development. This type of planning is particularly important for future well sites in areas that have not yet been developed.
 - The primary area of concern is a 400 feet radius around a well. The secondary area of concern around a well is typically determined by a hydro-geological study.
 - The goal is to avoid uses near wells that are most likely to cause contamination. If a source of contamination cannot be avoided, then the goal is to make sure that structures and procedures are in place to contain and address any spills. Generally,

industrial uses and uses of hazardous substances should be avoided within proximity to major wells. The uses with the greatest hazards include underground injection wells, pesticide dealers and distributors, land application of sewage sludge, mining and chemical manufacturers.

- Opportunities should be considered to combine acquisition of land for public recreation with purchase and/or preservation of public well sites. Where it does not make sense to acquire land, a "conservation easement" could be donated or purchased that would prevent most types of development of the land while it remains privately owned.
- High intensity development should be prohibited in areas that are particularly important as water supplies. Instead, in key locations, types of land uses should be promoted that have a low percentage of the lot being covered by buildings and paving.
- Because of possible drought conditions and the threat of contamination, each water system needs excess water supplies. Ideally, each water system would have wells that are constructed but held in reserve until they are needed and/or have an emergency interconnection with a system with plentiful excess capacity. It is essential that every water system be able to serve its customers if one or more of its water sources would not be available. Well sites should also be sufficiently scattered so that a contamination problem would not threaten more than one well. The amount of storage is also critical to avoid shortages in case a short-term problem arises, such as a mechanical problem.
- Wherever feasible, each private and public central water system should have an emergency interconnection with another water system. These emergency interconnections are essential to make sure that another water source is available in case a primary water source is limited because of drought or contamination.
- Water systems and fire companies should update their emergency response and emergency operations plans, and complete related training. This is particularly important to know how to respond in case of a spill of a hazardous substance that could contaminate groundwater or a creek, especially near a public water source.
- The most likely sources of potential water contamination should be identified so that proper measures can be instituted with the business owner to avoid problems.
- Open Space Development is described in the Land Use and Housing Plan section. This involves providing incentives so that homes are clustered on a portion of a tract of land, with large percentages of the tract being permanently preserved in some form of open space. This approach can be beneficial to provide a natural recharge and protective area near proposed well sites.
- When a new development proposes to connect into a central water system, attention should be focused upon whether the system will have enough capacity and pressure. If not, the developer should be required to fund improvements to the system. For example, a developer might be required to provide a new well that provides sufficient capacity (particularly during droughts) to serve the additional development, or to fund improvements to increase the pressure.

- Whenever a new water or sewage system is approved, it should be required to be designed so that it could be efficiently incorporated into a larger system in the future. For example, easements should be provided to allow future connections from neighboring properties.
- Where a development will involve a substantial use of groundwater, a hydrogeological study can be required. This may include a test well that is constructed prior to subdivision approval. The goal is to show that sufficient water will be available for the development and that adjacent existing wells will not be adversely affected.
- It is desirable to use types of wastewater treatment that recharge water into the ground, after the water is treated. This particularly includes spray irrigation or drip irrigation (which involves underground hoses to distribute the treated water). These methods keep the water in the same watershed. This method also helps to preserve large areas of land, and works particularly well with a golf course. In comparison, most central sewage systems result in water being transported out of the watershed. For example, most water is pulled out of the ground by wells, used by homes and businesses, and then transported to the Lehigh River. This effectively transports millions of gallons of water a day from groundwater out of the watershed - without recharging the groundwater.
- Stormwater runoff should be considered a resource, instead of something to be disposed of. This includes maximizing recharge of stormwater runoff into the groundwater. However, many infiltration methods require regular maintenance in order to properly function over time.
- Each township should adopt a well construction ordinance. This is important to make sure that new wells are properly constructed, including proper grouting to prevent contaminants from entering the well. As of 2007, there are no State regulations on the construction of a well. This Ordinance should also require that proper measures be used to seal a well that is no longer used - to prevent pollutants from entering the groundwater.
- For large private water withdrawals (such as water bottling companies), the municipalities should consider requiring municipal approval. For a larger development, this should include a "draw down" test using a test well, and comparing changes in water levels in neighboring wells.
 - If a water study shows some negative impacts, consideration should be given to measures to reduce the impacts. For example, a use could commit in advance to reduce water use during drought conditions (Note - The State normally does not apply this restriction to a water bottler, which may continue to use millions of gallons of water a day during a drought.) Or a use could commit to provide an improved water supply if a neighbor's well goes dry (which typically involves drilling a deeper well). Or, a use could be required to permanently preserve a large area of land with a conservation easement so that there will be sufficient land area for recharge of the groundwater.
 - Large water bottling operations for off-site use should be controlled to the maximum extent allowed by the law. It is generally understood that they cannot be completely prohibited because of pre-emption by the Delaware River Basin Commission. Some communities treat these uses as industrial uses and limit some activities to an industrial district, because they involve large amounts of tractor-trailer trucks and loading and unloading operations. Other communities allow

these uses with special exception approval, but require water studies and very large minimum lot size requirements. These lot size requirements are intended to make sure that land will be preserved to allow recharge.

- The County should take the lead, with State grant funds, to collect hazardous materials from households, so they can be sent for proper disposal. The municipalities can play important roles in publicizing this program.
- Educational programs are needed to make homeowners aware of actions they can take to avoid water contamination. These include minimizing the use of lawn chemicals and household chemical products, recycling used motor oil, keeping animals away from stream banks, and planting thick vegetation along creeks.
- The County Conservation District should continue to work with farmers to institute proper conservation measures to avoid water pollution, particularly from pesticides and manure.
- The County Conservation District and municipalities should continue to inspect land developments to make sure that proper soil erosion control measures are carried out.
- Contamination of water by high levels nitrates is also a public health concern. The health risks are particularly high for pregnant women and children. Nitrates are most commonly generated by spreading of manure upon fields or from runoff from livestock and poultry operations. In certain cases, where there are high existing nitrate levels in groundwater, State environmental regulations have required large lot sizes when new on-lot septic systems are proposed. The intent is to avoid increasing the nitrate levels by having a high concentration of septic systems.
- The municipalities should investigate alternatives to road salt that could be used for de-icing of roads. Road salt washes into creeks and affects fish habitats.

Support high-quality library service.

State funding to public libraries was drastically reduced in recent years. As a result, the libraries are more dependent upon municipal contributions, fundraisers, fines and volunteer labor in order to balance their budgets.

Work to Coordinate With the School District in Planning for Residential Growth and in Providing Recreation.

Municipalities should regularly communicate with the staff of the local school district about the timing and amounts of proposed residential development.

The most cost-effective way of providing public recreation services is often through cooperation with the public school system. For example, recreation groups and municipalities can jointly fund the construction of recreation improvements on school district lands or immediately adjacent sites. Those facilities can then be used by school students during certain hours and other groups during non-school hours.

Emphasize full coordination of municipal and emergency services across municipal borders.

Continued efforts are needed to make sure that fire, police and emergency medical services are fully coordinated across municipal borders. This includes joint training, and coordinating the provision of expensive specialized equipment and apparatus. The Putting this Plan into Action section describes several alternatives to increase inter-municipal cooperation in providing emergency services. As described in the "Putting this Plan Into Action" section, shared police services make it much more cost-efficient to provide 24 hour coverage than if each municipality having its own police department.

Most fire companies are having difficulties attracting sufficient numbers of trained volunteer firefighters. The greatest shortage is during weekday mornings and afternoons, when many volunteers work outside of the immediate area. It may become necessary in the future consider hiring a limited number of paid firefighters, particularly to drive fire apparatus to the scene of the incident on weekdays mornings and afternoons. This can reduce response times.

The municipalities should investigate ways to attract and retain additional numbers of volunteer emergency workers. This includes encouraging municipal employees to serve as volunteer firefighters and ambulance workers, and allowing them to leave work with a municipal vehicle when practical for emergency calls. Also, financial incentives should be considered, such as a pension program for long-time volunteers.

Most of the local ambulance/emergency medical services are staffed with a mix of paid personnel and volunteers. Advanced life support units with paramedics are also available for the more serious calls, from the Lehighon Ambulance Association's stations.

PUTTING THIS PLAN INTO ACTION

This section describes methods that should be considered to implement this Plan.

GOAL: Promote substantial citizen input, including making sure residents are well-informed about community issues and encouraging volunteer efforts to improve the community.

The volunteer efforts of neighborhood and civic organizations and individuals are essential to further improve the region and to carry out this Plan. The objective is to strengthen community pride and emphasize volunteer efforts for residents and property-owners to improve their surroundings.

It is essential to keep citizens informed and provide opportunities for meaningful citizen input, while making use of new technologies for communication.

Each municipality should have an internet site that is regularly updated with information that will help spur public interest, enthusiasm and involvement. This should include information on recreation programs and agendas for upcoming municipal meetings. Opportunities for citizen involvement should also be highlighted through the newspaper and other media.

GOAL: Continually work to put this Plan into action - through a program of updated planning and many short-term actions within a long-range perspective.

Planning is an on-going process. The Comprehensive Plan should be implemented through a continuous process of follow-up planning and action. The most immediate action will be updating as needed of each municipality's development regulations.

Maximize communications, coordination and cooperative efforts between the municipalities, the School District, adjacent municipalities, the County, PennDOT and other agencies and organizations.

To be effective, community development efforts need wide participation. A close working relationship is needed with Federal, State and County agencies and adjacent municipalities.

The municipalities cannot implement this Comprehensive Plan alone. Involvement is needed by residents, neighborhood organizations, civic groups, businesses, institutions, property-owners and many other groups.

This Comprehensive Plan should be consistently used as an overall guide for land use and transportation decisions. In addition, the Plan needs to be reviewed periodically and, if necessary, updated to reflect changing trends.

Use a Full Set of Tools to Implement this Plan

This Comprehensive Plan establishes overall policies for guiding the future development and conservation of the region. However, this Plan is not a regulation. The following major tools are available to help implement this Plan:

- the municipal Zoning Ordinances,
- the municipal Subdivision and Land Development Ordinances,
- an Official Map,
- computerized mapping,
- Capital Improvements Planning,
- the municipality's annual spending, and
- seeking Federal, State and County grant funds to accomplish important projects.

Construction Codes

State law requires enforcement of construction codes in each municipality. To promote historic preservation and reuse, a Codes Appeal Board should be willing to consider alternatives in older buildings.

A municipal Property Maintenance Code is an essential part of controlling blight. That code needs to be adopted separately, because it is not part of the mandatory Statewide codes.

Official Map

The State Municipalities Planning Code grants municipalities the authority to adopt an "Official Map." An Official Map can designate proposed locations of new streets, street widenings, intersection improvements, municipal uses and parks. The Map may cover an entire municipality, or only certain areas. This process may be particularly useful, for example, to reserve right-of-way for a future street widening.

Once an Official Map is officially adopted by the governing body, then the municipality is provided with a limited amount of authority to reserve land for the projects on the map. If the land affected by the proposed project is proposed for development, then the municipality would have one year to either purchase the land for its fair market value or decide not to go forward with the project. This one year period is intended to provide time to raise funds to acquire the land, and avoid lost opportunities. If this one year period is not in effect, a person could obtain a building permit almost immediately in many cases and construct a building that could obstruct an important project. An Official Map also serves to provide notice to property-owners about the municipality's future plans.

Computerized Mapping

The County operates a modern computerized mapping/ “Geographic Information System (“GIS”). This system has been used for the maps in the Plan. Increased efforts are needed to fully integrate this system with operations of municipal agencies. For example, regular mapping of traffic accident locations can be helpful to identify hazardous conditions that need to be resolved, such as sight distance problems.

Capital Improvements Planning

Each municipality should have a system in place to continually plan and budget for major capital expenditures. “Capital” improvements are projects involving a substantial expense for the construction or improvement of major public facilities that have a long life span and that are not annual operating expenses. Examples of capital projects include major street improvements, acquisition of parkland, major storm sewer construction projects and new bridges.

A municipal Capital Improvements Program (CIP) can help identify projects that will be needed, prioritize the projects, identify possible funding sources and then budget for their completion. A typical CIP looks five years in the future. A CIP should identify major street reconstruction projects that will be needed over the next few years, which can help coordinate the reconstruction with underground construction projects by various utilities. This avoids the need to cut into a street after it has been recently repaved. Through a CIP, many different projects can be combined into a single bond issue, which avoids the high administrative costs of multiple bond issues. A CIP also can allow a municipality to carefully time any bond issues to take advantage of the lowest interest rates.

Other Implementation Tools

Many other tools are available to carry out the Comprehensive Plan, including the following:

- priorities decided as part of each municipality’s annual budget, and the the annual setting of tax rates, which affect decisions of businesses and residents on whether to remain or move into a municipality, and
- aggressively seeking Federal, State and County grants to reduce the burden upon local taxpayers.

GOAL: Update municipal development regulations to carry out this Plan, and periodically update the Plan and regulations as needed.

Zoning Ordinance

The municipalities’ Zoning Ordinances are the primary legal tool to regulate the uses of land and buildings. Each Zoning Ordinance includes a Zoning Map that divides the municipality into different zoning districts. Each district permits a set of activities and establishes a maximum density of development. Each Zoning Ordinance and Map should be updated as needed to be generally consistent with this Comprehensive Plan, to modernize standards and to address local concerns.

In addition to regulating land uses and densities, zoning also controls the following:

- the heights of buildings,
- the percentage of a lot that may be covered by buildings and paving,
- the minimum distances that buildings may be placed from streets and property lines,

- the minimum size of lots,
- the maximum sizes and heights of signs, and
- the protection of important natural features.

Subdivision and Land Development Ordinance

Each municipality is regulated by its own Subdivision and Land Development Ordinance. These Ordinances mainly regulate the creation of new lots, the construction of new streets by developers, and the site engineering of new commercial, industrial and institutional buildings.

GOAL: Maximize communications, coordination and cooperative efforts between the municipalities, the school district, adjacent municipalities, the County, PennDOT and other agencies and organizations.

This Plan helps to establish a framework for further cooperative ventures among the municipalities in the region, and between municipalities and the County. Intergovernmental cooperation can not only decrease the costs of many services, it can also improve the quality of services. The Pennsylvania Intergovernmental Cooperation Act provides broad and flexible authority to organize joint efforts as municipalities deem appropriate. In general, the Act allows two or more municipalities to jointly accomplish anything that an individual municipality is allowed to do. In most cases, the Act promotes the use of ordinances that are adopted by each municipality to formalize an agreement. One option involves one municipality providing a service to a second municipality through a contract.

These same concepts can also apply between a municipality and a school district. For example, a municipality may agree to plow snow from school parking lots and driveways in return for free municipal use of some school facilities.

In order to obtain the fullest protections against zoning challenges, an Intergovernmental Agreement should be considered by each municipality to assist in carrying out this Plan.

A State law also provides that State agencies must treat a Council of Governments in the same manner as a municipality in any funding program.

The following types of alternatives should be considered to promote inter-governmental cooperation:

- ***Shared Services and Shared Staff-persons*** – Shared staff-persons can be particular beneficial for specialized staff, such as different types of construction inspectors or zoning officers. Two or more municipalities could hire the same person to do the same job, with so many hours assigned to each municipality. This allows each municipality to hire a highly qualified person who is working full-time, as opposed to each trying to find a part-time person. This can reduce turnover, which reduces training costs and reduces the potential for mistakes being made by inexperienced staff. In addition, sharing staff makes staff-persons available during more hours of the day, which is beneficial to residents and business-persons. It also provides greater coverage during periods of illness or vacation. Some municipalities also have a joint application and testing program for police officer applicants, which reduces costs and results in a larger pool of applicants.

- ***Shared Consulting Staff*** – There are also great efficiencies when adjacent municipalities choose the same consultants, such as municipal engineers, sewage engineers or solicitors. This promotes good communications between municipal governments. It also reduces the costs of having different professionals having to become educated about complex issues and having to spend time meeting with consultants of other municipalities to share information.
- ***Shared Recreation Programs*** – When municipalities share and coordinate recreation programs, it greatly increases the types of programs that can be offered. For example, one municipality may offer a gymnastics program, while another municipality offers basketball programs, with residents of each municipality being allowed to participate in each at the same cost per person. There has been great success in parts of Pennsylvania with multi-municipal recreation programs, where each municipality contributes funds towards one set of programs. These programs are often organized in partnership with a school district.
- ***Joint Yard Waste Collection and Composting*** – This is a very cost-effective way of handling the disposal of yard waste, which requires significant land and expensive equipment.
 - The toughest issue in joint municipal services is determining a fair allocation of costs. The State Department of Community and Economic Development has several publications that can assist in these issues.
- ***Snowplowing*** – There may be cases where two municipalities must each send out a snowplow to clear different segments of the same street. It may be beneficial to trade responsibility for different street segments, so that a single snowplow can be used to clear the entire length of a street.
- ***Joint Purchasing*** – Joint purchasing can reduce the costs to each municipality of preparing bid documents and legal ads. It also can result in lower costs because larger volumes are being purchased. This process is particularly useful for annual purchases of standardized materials, such as road salt. The State also has arrangements that allow municipalities to "piggyback" upon State purchases. State law allows a similar process of "piggyback" bids between municipalities and a County. The State Intergovernmental Cooperation Act includes rules for joint municipal purchasing. Under State law, one municipality can be the lead municipality in purchases, without requiring multiple municipalities to seek bids. Municipalities can also join together to jointly purchase insurance, to hire traffic signal maintenance services, or to jointly contract for solid waste collection. Joint auctions can also be used to sell surplus vehicles and equipment.
- ***Sharing of Equipment*** – This sharing is most beneficial for expensive equipment that is needed by each municipality for only portions of the year, such as paving, rolling or grading equipment. The equipment could be jointly owned, or be owned by one municipality and leased to other municipalities. Or an arrangement could allow trading of equipment.
- ***Joint Tax Collection*** – The Local Tax Enabling Act allows municipalities and to school districts to contract with each other to have one office jointly collect local taxes.
- ***Councils of Governments (COGs)*** – A COG can provide municipal services if authorized by municipalities. For example, some COGs take care of code enforcement. Other COGs primarily serve to promote good communications between municipal officials, to study issues, and to lobby for State or Federal funding for projects.

- **Joint Authorities** – Municipalities can create formal joint municipal authorities to address many types of matters.
- **Joint Planning Commissions** – Municipalities can appoint joint planning commissions. These joint commissions could serve in place of municipal planning commissions, or in addition to them.
- **Cooperation Between or Merger of Fire Companies** – Consideration should be given to promoting additional cooperation between or merger of fire companies. Merger or cooperation are particularly beneficial to make the best use of extremely expensive fire apparatus, such as rescue trucks, hazardous materials equipment, tanker trucks and aerial ladder trucks. Merger or cooperation are also important to make the best use of the limited number of volunteers.
- **Joint Police Forces** – A joint police force involves two or more municipalities establishing one police force that is directed by commission members appointed by each municipality. Another option is to have one municipality contract for police services from a second municipality, which then manages the force. A joint police force makes it easier to provide 24 hour service and specialized services, such as for investigations and youth. A joint police force can result in increased training and professionalism, which can reduce liability costs. A joint force also makes it easier to investigate crime that crosses municipal borders.
- **Incentives for Intergovernmental Cooperation in Grants** – Many competitive State grant programs provide preference to projects that involve cooperation between more than one municipality. Therefore, if two similar projects are in competition for a grant, and one involves cooperation between two municipalities, the two municipality project is most likely to be funded.

Role of the Planning Commissions

Some of the greatest responsibilities of each municipal Planning Commission are to oversee the preparation and implementation of the Comprehensive Plan and the preparation of Zoning and Subdivision Ordinance revisions. On a monthly basis, the Planning Commissions also review proposed developments. The Planning Commissions also have a role in reviewing proposals of other government agencies.

The County Planning Commission's main role is to provide reviews of proposed subdivisions, as well as draft municipal comprehensive plans and development regulations.

Role of the Boards of Supervisors and Borough Councils

The final decision on nearly all matters affecting the growth and preservation of each municipality rests with its Borough Council or Board of Supervisors. Therefore, close communications and cooperation between the Planning Commissions, the municipal staff, and the elected officials will be essential in continuing to improve quality of life in Carbon County.

ACTION PROGRAM

The following table summarizes the major recommendations of this Plan. Certain items are recommended as high priorities. The timing of each recommendation is listed, as well which agencies should have the primary responsibility to carry out the recommendation.

Abbreviations for the Prime Responsibilities for each recommended action are listed as follows:

Abbreviations of Responsible Agencies/Groups:

- Governing Bodies = Borough Councils and Township Boards of Supervisors
- PC = Municipal Planning Commissions
- ZHB = Zoning Hearing Boards
- Adj. Mun. = Adjacent Municipalities
- Co. PC = Carbon County Planning Commission and Staff
- Co. Com. = Carbon County Commissioners
- D&L = Delaware and Lehigh Heritage Corridor Commission
- PennDOT = Pennsylvania Department of Transportation
- PHFA = Pennsylvania Housing Finance Agency
- PHMC = Pennsylvania Historical and Museum Commission
- CCB / EP = Carbon County Business / Education Partnership

NATURAL AND AGRICULTURAL CONSERVATION PLAN

| Recommended Action | High Priority? | Timing | Prime Responsibilities |
|---|----------------|-------------|---|
| Encourage landowners to join Agricultural Security Areas to make more land eligible for easement purchase and to protect farmers against nuisance challenges. | | Short-range | Governing Bodies, PC, property-owners, Conservation District. |
| Encourage additional landowners to apply for the County for purchase of the right to develop their farmland. | ✓ | Continuous | Governing Bodies, PC, property-owners. |
| To promote voluntary land preservation, utilize State Act 4 of 2006 to have the townships, school district and the County freeze the real estate taxes of land that has been permanently preserved. | ✓ | Short-term | Governing Bodies, School Board, County Commissioners |

| Recommended Action | High Priority? | Timing | Prime Responsibilities |
|--|----------------|------------|--|
| <p>Seek additional sources of funding to supplement the existing State-County agricultural preservation program, including to preserve land that is less likely to be funded under the existing program. This might include asking voters in the townships to approve an 0.25% increase in the earned income tax or an increase in the property tax, with all of the proceeds used for land preservation.</p> | | Continuous | Governing Bodies and PC |
| <p>Encourage municipalities to adopt zoning provisions that provide strong incentives to preserve farmland and natural areas, particularly through “Open Space Development” (clustering) and promoting the optional transfer of development rights to more suitable portions of a township.</p> <ul style="list-style-type: none"> - Near active farms, if the resulting preserved open space is not suitable for agriculture, use it as a buffer between new homes and farms. - Make sure that any preserved open space is designed to serve a valuable public purpose, as opposed to being leftover land of little value. | ✓ | Continuous | Supervisors , PC, property-owners. |
| <p>In agricultural areas, encourage zoning provisions to permit a range of accessory activities that allow opportunities for supplemental income for farmers on larger tracts of land. These are known as “Farm-Based Businesses.” Promote retail sales of products by farmers.</p> | ✓ | Continuous | Supervisors ,& PC, Property-owners |
| <p>Promote reasonable controls on very intense Concentrated Animal Feeding Operations, particularly to include large setbacks from major water supplies and concentrations of existing homes. Recognize that State law limits the ability of townships to over-regulate agricultural activities.</p> | ✓ | Continuous | Supervisors and PC |
| <p>Promote the strengthening of zoning regulations on important natural features, particularly to:</p> <ul style="list-style-type: none"> - Limit the intensity of development of steeply sloped lands. - Require building and paving setbacks from streams to protect water quality and fishing habitats. A smaller width is appropriate in boroughs, while a larger width should be required in the townships. - Carry out the Best Management Practices in stormwater management, including to protect water quality and encourage recharge into the groundwater. - Establish a minimum setback from wetlands and require wetland studies whenever a development site is suspected of including wetlands. | ✓ | Continuous | Supervisors and PC |
| <p>Encourage landowners to plant and maintain thick vegetation and trees along creeks.</p> | | Continuous | Supervisors , PCs, Conservation District |

| Recommended Action | High Priority? | Timing | Prime Responsibilities |
|---|----------------|-------------|---|
| To protect water quality and fish habitats, carefully enforce State regulations on erosion control through on-site inspections. | ✓ | Short-range | Governing Bodies, PCs, Conservation Districts |
| Minimize unnecessary removal of trees during construction, and make sure temporary fencing is used to avoid damage to tree trunks and root systems. | ✓ | Short-range | Twp. Supervisors , PC |
| The townships should consider prohibit new buildings in the entire 100 year floodplain, and to require studies by developers where there is any question that an unmapped floodplain may exist. The boroughs should continue to carefully regulate but allow building in the floodplain in conformance with State and Federal regulations. | | On-going | Governing Bodies, PCs, property-owners |
| Seek Federal Floodplain Mitigation funds to offer to buy and remove the most flood-prone buildings and turn the land into permanent open space. In some cases, this may open up opportunities to reduce sharp curves in roads and reduce the costs of public sewage extensions. This type of action may also help implement a set of greenways throughout the County. | | Mid-range | Governing Bodies, PCs, property-owners, business owners, Carbon County Planning |
| See that municipalities use mandatory dedication provisions in subdivision ordinances to require dedication of open space or payment of recreation fees as part of major new residential developments. | | Short-range | Governing Bodies, PC, property-owners |

LAND USE AND HOUSING PLAN

| Recommended Action | High Priority? | Timing | Prime Responsibilities (see abbreviations at end of this table) |
|---|----------------|------------|---|
| Encourage the updating of each municipality's development regulations to carry out the Land Use Plan. The most significant changes are proposed within Lower Towamensing Township, particularly to reduce the sizes of areas that allow medium density or higher density housing. | ✓ | Short-term | PCs, Governing Bodies |
| Emphasize redevelopment of older industrial areas such as the Packerton Yards and the former West Plant site for new business uses. | ✓ | Short-term | Governing Bodies, Co. Commissioners, PennDOT, Chamber of Commerce |
| Seek the permanent preservation of the bulk of the Blue Mountain (other than the ski area), preferably in public ownership, such as by the State Game Commission. Carry out the natural feature and agricultural preservation initiatives described on the previous pages. | ✓ | Continuous | Supervisors, PC, Conservancies, property-owners |
| Work to maintain the character of older villages. Seek that new development includes similar setbacks, site layouts and uses to what exists today. | | Continuous | Twp. Supervisors, PCs, property-owners. |
| Promote the use of zoning regulations to provide disincentives and incentives that direct most housing away from areas planned for agricultural preservation and important natural areas. Provide moderate densities on areas that can be served by existing public water and sewage services - to minimize the total amount of land consumed by development. | ✓ | Continuous | Governing Bodies, PCs. |
| Avoid the creation of new strip commercial areas along major roads (such as undeveloped or residential portions of Routes 209, 443 and 940). Concentrate most commercial uses within existing commercial areas. | | Continuous | Twp. Supervisors, PCs, |
| Promote the further development of the ski areas as year-round resort with lodging facilities and additional recreational attractions. Promote the use of time-share units as opposed to year round housing, through density incentives. | | Continuous | Supervisors and PCs, property-owners. |

| Recommended Action | High Priority? | Timing | Prime Responsibilities (see abbreviations at end of this table) |
|---|----------------|-------------|---|
| Promote the updating of zoning ordinances to make sure that all desirable types of businesses are allowed in appropriate business zoning districts. Hold requirements for special zoning approvals to a reasonable minimum, minimize business lot sizes, and minimize setbacks between adjacent businesses. These steps are important to promote economic development, increase tax revenues to the school district and widen choices for close-to-home employment. | | Short-range | Governing Bodies, PCs |
| Seek the updating of zoning ordinances to carefully control the types and locations of intense business uses near neighborhoods. This particularly includes gas stations, 24 hour stores, adult uses and similar uses that may cause nuisances for neighboring homes. | ✓ | Short-range | Governing Bodies, PCs |
| Limit new mining activities to areas where they currently exist, with reasonable room for expansion. Emphasize setbacks from residential areas. | | Short-term | Twp. Supervisors, PCs. |
| Work with adjacent municipalities to ensure that compatible land uses and road patterns are in place across municipal borders. Provide adjacent municipalities with an opportunity to comment upon proposed zoning amendments and major development plans that may have impacts across municipal borders. | | Short-range | Governing Bodies, PCs, Adj. Mun. |
| Emphasize code enforcement to avoid blight in neighborhoods. Consider a systematic housing inspection program for older rental units in the boroughs. | | Continuous | Governing Bodies |
| Help to link residents that are in need of assistance with the resources that are available, including housing rehabilitation programs and home energy conservation programs. | | Short-range | Municipal staffs and non-profit organizations. |
| Work to increase home ownership, including linking prospective homebuyers with homebuying counseling programs and programs to help persons afford closing costs of home purchases. | ✓ | Continuous | Co. agencies, financial institutions, PHFA. |
| Make sure that local regulations and permit processes are as streamlined as is reasonable, to avoid unnecessary delays and higher housing costs. This is particularly important to be welcoming of new and expanding employers. | | Short-range | Governing Bodies, PCs, ZHBs, Municipal Staffs |

ECONOMIC DEVELOPMENT & DOWNTOWN PLAN

| Recommended Action | High Priority? | Timing | Prime Responsibilities (see abbreviations) |
|--|----------------|------------|--|
| Help employers connect with job training programs and other resources to allow their expansion. | ✓ | Continuous | Econ. Dev., LCCC, CCB/EP |
| Provide a periodic jobs fair to help match employers with potential employees. | ✓ | Continuous | Econ. Dev., Chambers |
| Emphasize continued preparation of “shovel ready” business sites, such as Parkerton Yards. | ✓ | Continuous | Econ. Dev., Co. Com. |
| Work with Pocono Mountain Visitors Bureau to jointly promote attractions to seek longer stays by visitors. | | Continuous | PMVB, Econ. Dev., Chambers |
| <p>Strengthen the downtowns of the boroughs as the business, entertainment, cultural and civic centers for the region.</p> <ul style="list-style-type: none"> - Stress key markets for downtown businesses, including persons who work or live nearby, and persons skiing and attending special events in the area. - Work to recruit new businesses. | ✓ | Continuous | Local merchants, property-owners, Borough Council, Chamber of Commerce |
| <ul style="list-style-type: none"> - Stress greater coordination among hours of businesses in the downtowns. Encourage weekend hours and longer evening business hours - especially to at least 6 p.m. Aggressively market downtown businesses to customers, particularly through joint promotions among nearby businesses. These joint promotions are more cost-effective than each business buying its own advertising. - Use special events to attract additional numbers of visitors, customers and businesses to the downtowns. | | Continuous | Merchants, Chamber of Commerce, Visitors Bureau |
| <ul style="list-style-type: none"> - Complete streetscape and pedestrian safety improvements in the Borough Downtowns. | | Continuous | Borough Councils and Staffs, downtown property-owners |
| <ul style="list-style-type: none"> - Promote a balanced mix of uses in older commercial areas in the downtowns, including street level retail/restaurant/service businesses. Promote additional market-rate apartments and offices in upper stories. | ✓ | Continuous | Chamber of Commerce, Borough Council, PC. |

| Recommended Action | High Priority? | Timing | Prime Responsibilities (see abbreviations) |
|--|----------------|------------|--|
| <ul style="list-style-type: none"> - Improve the appearance of the fronts of buildings that have not yet been restored. Add additional landscaping in rear parking areas and street trees in the front. Work to improve pedestrian safety of main streets in the downtowns, including highly visible crosswalks with “stop for pedestrians” signs. | | Continuous | Borough Councils, Borough Police, PC, Property-owners, Chamber of Commerce |
| <ul style="list-style-type: none"> - Promote the location of many government and non-profit offices as possible in the downtowns, to help generate foot-traffic and employment that will provide customers for private businesses. | | Continuous | County, State and Federal agencies. |
| <ul style="list-style-type: none"> - Properly manage parking to serve different needs, with an emphasis upon making sure the most convenient spaces on key commercial blocks of downtowns are available for high turnover by customers parking for less than 2 hours. | | Continuous | Borough Staff |
| <ul style="list-style-type: none"> - Consider financial incentive programs to attract private investment into the downtowns, such low-interest funding for facade rehabilitation and fire safety improvements. Through the building code of appeals process, consider reasonable modification of requirements to recognize the problems of reusing older buildings. | | Continuous | Borough Council, Co. Community Dev. Staff, PA. DCED, area banks. |
| <ul style="list-style-type: none"> - Emphasize a feeling of security in the downtowns, including a highly visible police presence and controls on disruptive behavior. | | Continuous | Borough Councils, Police |

HISTORIC PRESERVATION PLAN

| Recommended Action | High Priority? | Timing | Prime Responsibilities (see abbreviations) |
|---|----------------|-------------|---|
| Identify the most important historic buildings in each municipality that are worthy of preservation. Enact zoning provisions to require special zoning approval by the governing body or zoning hearing board before demolition is allowed. This alternative would not regulate architecture or routine changes to buildings. | ✓ | Continuous | Governing Bodies, PCs Historic organizations |
| Provide information to owners to older buildings to promote sensitive rehabilitation and to increase their awareness of the significance of their buildings. Promote greater interest in the region's history and historic buildings. | | Continuous | Municipal Staff, Historic organizations |
| Add zoning incentives to promote the preservation of historic buildings. This could include allowing certain uses within restored historic buildings that otherwise would not be allowed in the zoning district. For example, a restored historic building in a residential district might be allowed to be used as an office or bed and breakfast inn. | | Short-range | Governing Bodies, PC |

TRANSPORTATION PLAN

| Recommended Action | High Priority? | Timing | Prime Responsibilities (see abbreviations) |
|---|----------------|------------|--|
| Work with PennDOT to resolve traffic congestion bottlenecks and traffic safety problems (as described in plan text). Seek funding through the 12 Year Plan to resolve traffic problems in the region. | ✓ | Continuous | PennDOT, Co. Planning, Governing Bodies. |
| Design residential streets to discourage use by through-traffic, limit truck traffic on residential streets where feasible, and improve major roads to relieve congestion so traffic will not be diverted to residential streets. | | Continuous | PennDOT, Co. Planning, PCs, Governing Bodies, Adj. Mun. |
| Encourage municipalities to adopt an "Official Map" to design locations where additional land will be needed to improve existing roads or to build new road connections. This type of Official Map allows a municipality to reserve land for improvements for a limited period of time. | | On-going | Governing Bodies, PC |
| Require developers to improve immediately adjacent segments of roads, such as providing shoulders. Emphasize well-marked shoulders improvements along heavily traveled roads to: provide a safety factor (particularly in snowy and icy conditions), provide for mail deliveries, allow room for bicyclists and pedestrians, and allow room for farm equipment. | | Continuous | PennDOT, Supervisors, PCs |
| Improve pedestrian and bicycle access and encourage greater use of public transit (with easier transfers to fixed route service in adjacent counties), and construction of park and ride lots to promote carpooling. | | Continuous | PennDOT, LANTA,, Co. Planning, Governing Bodies, Adj. Mun. |

COMMUNITY FACILITIES AND SERVICES PLAN

| Recommended Action | High Priority? | Timing | Prime Responsibilities (see abbreviations) |
|--|----------------|------------|---|
| Improve existing parks and playgrounds to meet a wide variety of recreational needs. Seek to make best use of school district facilities, and investigate opportunities for municipal recreation area next to schools that can be used by school students and by the public during non-school hours, with shared parking. Concentrate most active recreation at a few sites. | | Continuous | Governing Bodies, Any Parks and Recreation Commissions, School District |
| Provide trail links that will connect to regional trails along the Lehigh River, within Beltzville State Park and the Appalachian Trail (which is along the top of the Blue Mountain). | | Continuous | Governing Bodies, PCs, Any Parks and Recreation Commissions, D&L |
| Emphasize high-quality police, emergency medical and fire protection services, with joint training and cooperation between providers, including those in adjacent municipalities. Provide incentives and recognition to recruit and retain volunteers. | ✓ | Continuous | Emergency providers, Governing Bodies, Adj. Mun. |
| Continually explore ways to minimize local government expenses, particularly through sharing of services or staff among municipalities. Aggressively seek Federal and State grants to address local needs. | | Continuous | Governing Bodies, Borough Staff |
| Place an emphasis on providing central sewage service to areas with concentrations of failing septic systems, such as Aquashicola. | ✓ | Continuous | Township Supervisors |
| Protect water supplies from contamination and make sure that alternative supplies are available in case a source is no longer suitable. | | Continuous | Governing Bodies, Water Authorities |
| Work with the School District to provide information on proposed new housing to plan for growth and to meet recreational needs. | | Continuous | PCs, School District |

GREENWAY PLAN

| Recommended Action | Priority ** | Lead Entity(ies)*** |
|---|-------------|-------------------------------------|
| Prepare local greenways plans that further this Plan, with more detailed trail connections and acquisition and improvement programs in stages. | O | Municipalities, OPAD |
| Adopt official maps as a tool to help preserve needed parkland and trail links. | O | Municipalities |
| Establish/stabilize riparian buffers with support from grants and volunteer efforts by local landowners and conservation groups. | O | Landowners, WC, LGNC |
| Promote the concept of land preservation by educating landowners about the benefits of “conservation development” (or “cluster development”), Best Management Practices for agriculture, and the benefits of local volunteerism. | O | OPAD, CCCD |
| Expand programs for educating local farmers regarding best management practices with support from grants and volunteer efforts by local landowners and conservation groups. | O | OPAD, LGNC, CCCD, WC |
| Prepare a river conservation plan for every water-based greenway in the <i>Carbon County Greenway Plan</i> to identify the unique characteristics and threats posed to each waterway as well as appropriate protection measures and key parcels for preservation. | L | WC, CCCD, OPAD |
| Provide educational and technical assistance to municipalities and landowners regarding the benefits and methods of land conservation with a specific focus on the value of conservation easements. | O | OPAD, CCCD, WC, AMC |
| Provide clear signage to assist trail users in locating existing and future trails and amenities along trails, such as nearby business districts. | O | Municipalities, PennDOT |
| Provide clear signage from the Appalachian Trail, through Lower Towamensing Township, and into the Borough of Palmerton, which has amenities in the borough hall specifically for trail users. | I | AMC, L. Towamensing Palmerton |
| Help to implement the recommendations from the feasibility study of a potential trail linkage between Nesquehoning and Jim Thorpe. | S | Municipalities, OPAD, Landowners |
| Work with Kidder Township to help implement the trails section of the township’s comprehensive plan, including connections to the Hickory Run State Park trail system, state game lands, the Lake Harmony area, and the Jack Frost/Big Boulder area. | L | Kidder Twp., OPAD |
| Inform municipalities about the recently enacted law requiring zoning ordinances to include provisions to protect the Appalachian Trail (HB 1281, PA Act 24, 2008, The Appalachian Trail Protection Act). | I | AMC, OPAD |
| Protect environmentally sensitive areas through education/information programs, local ordinances, and a focus on priority natural areas. | O | Municipalities, OPAD, WC, TNC, CCCD |

| Recommended Action | Priority ** | Lead Entity(ies)*** |
|--|-------------|---|
| Work with affected agencies, municipalities, and other interests to form a committee dedicated to a unified approach for tourism and outdoor recreation in and around Carbon County. | O | DCED, PFBC, DCNR, PGC, LGNC, TNC, Municipalities OPAD, WC |
| Provide public boat access to the Lehigh River in either Lehighton (west bank) or Weissport (east bank). | S | PFBC, OPAD, Landowners |
| Work to provide safer bicycling and walking opportunities throughout the County. | O | Governing Bodies, PennDOT |
| Cooperate regionally with other Counties to connect trails and greenways in other locations. | O | Governing Bodies, PA DCNR |
| Work with state and federal officials on the development of all-terrain vehicle and snowmobile accessible trails | S | Governing Bodies, PA DCNR |
| Promote the formation of Environmental Advisory Councils at the municipal level. | S | Governing Bodies |
| Continue work and promotion of the acquisition of land along the Kittatiny Ridge for conservation purposes. | O | Governing Bodies, PA DCNR, PFBC |
| Work to promote the sustainable forestry practices on existing Water Authority Lands. | L | Governing Bodies, PA DCNR |
| Promote the continuing efforts for Acid Mine Drainage (AMD) to successfully rehabilitate waterways into environmentally stable greenways. | L | Governing Bodies, PA DCNR, PFBC |
| Develop the Panther Valley Heritage Trail to connect Jim Thorpe to Tamaqua through Nesquehoning, Summit Hill, Lansford, and Coaldale. | L | DLCC, Landowners |
| Work with municipalities to provide for trails in local zoning and subdivision/land development ordinances. | O | OPAD |

** Priorities/time frames:
 I Immediate
 S Short
 L Long
 O Ongoing

*** Lead entities:
 AMC Appalachian Mountain Club
 CCCD Carbon County Conservation District
 DLCC Delaware and Lehigh National Heritage Corridor Commission
 LANTA Lehigh and Northampton Transportation Authority
 LGNC Lehigh Gap Nature Center
 OPAD Carbon County Office of Planning and Development
 PA DCNR Pennsylvania Department of Conservation & Natural Resources
 PCs Municipal Planning Commissions
 PFBC Pennsylvania Fish and Boat Commission
 PGC Pennsylvania Game Commission
 PHFA Pennsylvania Housing Finance Agency
 PennDOT Pennsylvania Dept. of Transportation
 TNC The Nature Conservancy
 WC Wildlands Conservancy
 ZHB Zoning Hearing Board

Population in a majority of Carbon County municipalities experienced a range of changes from small growth to significant decrease. Carbon County experienced an 11.0 percent increase in population from 2000 to 2010. During the same period, the population of Penn Forest Township, Carbon County’s fastest growing municipality, increased by 76.2 percent (Table A.2). Major factors contributing to Penn Forest’s growth are:

- Access to major highways,
- Outdoor recreation amenities,
- Increase in resort style and second home housing, and
- Influx of New York and New Jersey residents.

**Table A.2
Municipal Total Population 1990-2010**

| Municipality | Total Population | | | Percent Change | |
|-------------------------|------------------|--------|---------------|----------------|--------------|
| | 1990 | 2000 | 2010 | 1990 - 2000 | 2000 - 2010 |
| Banks Township | 1,485 | 1,359 | 1,262 | -8.5 | -7.1 |
| Beaver Meadows Borough | 985 | 968 | 869 | -1.7 | -10.2 |
| Bowmanstown Borough | 888 | 895 | 937 | 0.8 | 4.7 |
| East Penn Township | 2,091 | 2,461 | 2,881 | 17.7 | 17.1 |
| East Side Borough | 330 | 290 | 317 | -12.1 | 9.3 |
| Franklin Township | 3,706 | 4,243 | 4,262 | 14.5 | 0.4 |
| Jim Thorpe Borough | 5,048 | 4,804 | 4,781 | -4.8 | -0.5 |
| Kidder Township | 1,319 | 1,185 | 1,935 | -10.2 | 63.3 |
| Lansford Borough | 4,583 | 4,230 | 3,941 | -7.7 | -6.8 |
| Lausanne Township | 237 | 218 | 237 | -8 | 8.7 |
| Lehigh Township | 500 | 527 | 479 | 5.4 | -9.1 |
| Lehighton Borough | 5,914 | 5,537 | 5,500 | -6.4 | -0.7 |
| Lower Towamensing Town. | 2,948 | 3173 | 3,228 | 7.6 | 1.7 |
| Mahoning Township | 4,198 | 3,978 | 4,305 | -5.2 | 8.2 |
| Nesquehoning Township | 3,364 | 3,288 | 3,349 | -2.3 | 1.9 |
| Packer Township | 918 | 986 | 998 | 7.4 | 1.2 |
| Palmerton Borough | 5,394 | 5,248 | 5,414 | -2.7 | 3.2 |
| Parryville Borough | 488 | 478 | 525 | -2.1 | 9.8 |
| Penn Forest Township | 2,895 | 5,439 | 9,581 | 87.9 | 76.2 |
| Summit Hill Borough | 3,332 | 2,947 | 3,034 | -11.6 | 3 |
| Towamensing Township | 3,111 | 3,475 | 4,477 | 11.7 | 28.8 |
| Weatherly Borough | 2,640 | 2,612 | 2,525 | -1.1 | -3.3 |
| Weissport Borough | 472 | 434 | 412 | -8.1 | -5.1 |
| Carbon County | 56,846 | 58,802 | 65,249 | 3.4 | 11 |

Source: U.S. Census

The Pennsylvania State Data Center projects that Carbon will see moderate increases in population through 2030, while higher increases are projected in Monroe County to the east and Lehigh and Northampton Counties to the south (Table A.3) New projections have not yet been completed based upon the 2010 Census.

Four of the five counties with a population growth greater than 50 percent were in the northeastern part of the state bordering New Jersey and New York.¹ Both the Counties of Luzerne and Schuylkill are projected to lose total population, in relation to the 2000 census. Access to I-80 and PA 476, the possibility of rail transit connecting from Monroe County to the New York metropolitan area, and migration of residents and businesses from New York and New Jersey will have direct effects on increases in the projected populations for these counties.

**Table A.3
Population Projections 2000-2020**

| <i>County</i> | <i>2010 Population</i> | | | <i>Percent Change 2000-2030</i> |
|--------------------|------------------------|-------------|-------------|-------------------------------------|
| | | <i>2020</i> | <i>2030</i> | |
| Carbon County | 65,249 | 64,599 | 69,098 | 17.5 |
| Lehigh County | 349,497 | 327,295 | 381,738 | 22.3 |
| Luzerne County | 320,918 | 317,870 | 287,943 | -9.8 |
| Monroe County | 169,842 | 212,009 | 239,824 | 72.9 |
| Northampton County | 297,735 | 303,586 | 342,081 | 28.1 |
| Schuylkill County | 148,289 | 145,994 | 146,078 | -2.8 |

Source: U.S. Census, Pennsylvania State Data Center

The number of residents in various age groups affects housing demand and many community services, including parks, recreation programs, senior center programs, and emergency medical services. The following points illustrate recent changes in the age composition of the Carbon County population (Table A.4).

- The boroughs, on average, had the highest concentrations of children under 5 and adults over the age of 65. Many seniors have lived in the boroughs for decades. Many families with young children reside in the boroughs because they typically have the most affordable housing..
- School-age children (ages 5–19) are spread throughout Carbon County. Lehigh Township had the highest percentage (23.1), while Parryville Borough (15.9) and Bowmanstown Borough (15.5) had the lowest percentages, compared to the Carbon County average of 19.1.
- Regarding the percentage of residents age 20–24, the Boroughs of Weissport (7.6 percent), Palmerton (6.3 percent), and Parryville (6.1 percent) had higher concentrations than the Carbon County average of 4.7 percent.

¹ Pennsylvania State Data Center. Penn State Harrisburg. Research Brief - Pennsylvania County Population Projections, November 3, 2008.

**Table A.4
Age Cohorts, 2010**

| Municipality | Under 5 | | 5 - 19 | | 20 - 24 | | 25 - 44 | | 45 - 54 | | 55 - 64 | | 65+ | | Total | Median Age |
|-----------------------|---------|-----|--------|------|---------|-------|---------|------|---------|------|---------|------|-------|------|-------|------------|
| | # | % | # | % | # | % | # | % | # | % | # | % | # | % | | |
| Banks Township | 70 | 5.5 | 195 | 15.7 | 75 | 5.9 | 275 | 21.8 | 216 | 17.1 | 162 | 12.8 | 266 | 21.1 | 1262 | 45.7 |
| Beaver Meadows Bor | 52 | 6 | 157 | 18.1 | 58 | 6.7 | 190 | 21.9 | 137 | 15.8 | 97 | 11.1 | 178 | 20.6 | 869 | 43.2 |
| Bowmanstown Borough | 56 | 6 | 141 | 15.1 | 46 | 4.9 | 248 | 26.5 | 149 | 15.9 | 133 | 14.2 | 164 | 17.6 | 937 | 43.5 |
| East Penn Township | 121 | 4.2 | 432 | 15 | 133 | 4.6 | 630 | 21.9 | 554 | 19.3 | 487 | 16.9 | 524 | 18.2 | 2881 | 47.5 |
| East Side Borough | 14 | 4.4 | 57 | 17.9 | 21 | 6.6 | 72 | 22.7 | 59 | 18.6 | 31 | 9.8 | 63 | 19.8 | 317 | 44.4 |
| Franklin Township | 205 | 4.8 | 724 | 17.0 | 184 | 4.3 | 1,074 | 25.2 | 682 | 16.0 | 680 | 16.0 | 713 | 16.9 | 4,262 | 4.8 |
| Jim Thorpe Borough | 244 | 5.1 | 848 | 17.7 | 208 | 4.4 | 1,190 | 24.9 | 812 | 17.0 | 711 | 14.9 | 768 | 16.0 | 4,781 | 43.8 |
| Kidder Township | 83 | 4.3 | 283 | 14.6 | 78 | 4.0 | 342 | 17.6 | 326 | 16.8 | 343 | 17.8 | 480 | 24.8 | 1,935 | 50.4 |
| Lansford Borough | 288 | 7.3 | 701 | 17.8 | 266 | 6.7 | 939 | 23.9 | 573 | 14.5 | 451 | 11.4 | 723 | 18.3 | 3,941 | 40.7 |
| Lausanne Township | 16 | 6.8 | 37 | 15.6 | 13 | 5.5 | 45 | 19.0 | 63 | 26.6 | 10 | 24.0 | 16 | 39.0 | 237 | 45.9 |
| Lehigh Township | 17 | 3.5 | 61 | 12.8 | 22 | 4.6 | 87 | 18.2 | 83 | 17.3 | 92 | 19.2 | 117 | 24.4 | 479 | 51.9 |
| Lehighon Borough | 370 | 6.7 | 979 | 17.8 | 297 | 5.4 | 1,406 | 25.5 | 775 | 14.1 | 644 | 11.7 | 1,029 | 18.8 | 5,500 | 40.6 |
| Lower Towamensing Twp | 144 | 4.5 | 551 | 17.1 | 137 | 4.2 | 776 | 24.1 | 610 | 18.9 | 457 | 14.1 | 553 | 17.1 | 3,228 | 45.1 |
| Mahoning Township | 213 | 4.9 | 681 | 15.9 | 188 | 4.4 | 972 | 22.6 | 758 | 17.6 | 608 | 14.1 | 885 | 20.5 | 4,305 | 46.3 |
| Nesquehoning Borough | 166 | 5.0 | 506 | 15.1 | 186 | 5.6 | 811 | 24.2 | 496 | 14.8 | 445 | 13.3 | 739 | 22.0 | 3,349 | 45.1 |
| Packer Township | 40 | 4.0 | 178 | 17.8 | 47 | 4.7 | 209 | 20.9 | 211 | 21.1 | 138 | 13.8 | 175 | 17.5 | 998 | 46.3 |
| Palmerton Borough | 361 | 6.7 | 1,015 | 18.8 | 328 | 601.0 | 1,523 | 28.1 | 771 | 14.2 | 541 | 11.9 | 775 | 14.3 | 5,414 | 38 |
| Parryville Borough | 27 | 5.1 | 76 | 14.5 | 22 | 4.2 | 139 | 26.5 | 87 | 16.6 | 85 | 16.2 | 89 | 16.9 | 525 | 44.8 |
| Penn Forest Township | 492 | 5.1 | 1,886 | 19.6 | 355 | 3.7 | 2,233 | 23.2 | 1,613 | 16.8 | 1,539 | 16.0 | 1,463 | 15.3 | 9,581 | 43.7 |
| Summit Hill Borough | 169 | 5.6 | 521 | 17.1 | 166 | 5.5 | 733 | 24.2 | 468 | 15.4 | 434 | 14.3 | 543 | 17.9 | 3,034 | 43.2 |
| Towamensing Township | 213 | 4.8 | 832 | 18.6 | 203 | 4.5 | 1,040 | 23.2 | 840 | 18.8 | 665 | 14.9 | 684 | 15.3 | 4,477 | 44.4 |
| Weatherly Borough | 99 | 3.9 | 453 | 17.9 | 125 | 5.0 | 544 | 21.6 | 380 | 15.0 | 293 | 11.6 | 631 | 25.1 | 2,525 | 46.1 |
| Weissport Borough | 27 | 6.6 | 71 | 17.2 | 24 | 5.8 | 125 | 30.3 | 72 | 17.5 | 50 | 12.1 | 43 | 10.5 | 412 | 38.5 |
| Carbon County | 3487 | 5.3 | 11388 | 11.7 | 3182 | 4.9 | 15603 | 23.9 | 10735 | 16.5 | 9210 | 14.1 | 11644 | 17.9 | 65249 | 43.9 |

Source: U.S. Census

- Lehigh Township has the highest percentage of persons aged 45-54 and persons aged 5-19.
- As of 2000, 29 percent of Carbon County residents were age 55 and older, and 19 percent of county residents were age 65 or older. Carbon County had a higher percentage of senior citizens than the state and national averages.

Housing

Carbon County contains the fewest number of housing units compared to all surrounding counties. Much of Carbon County is rural in character, and a large amount of land in the county is in public ownership. However, Carbon County had a 12.5 percent increase in housing units during the 2000s, behind only Monroe and Northampton Counties (Table A.5).

During the 2000s, the townships of Penn Forest (37.9 percent), East Penn (28.5 percent), and Franklin Township (26.1 percent) all experienced a significantly larger percentage increase in housing units than the county as a whole (Table A.6). Increases in second home and resort-oriented units and the immigration from New Jersey and New York caused the increase in the northeastern part of Carbon County.

Table A.5
County Housing Units 1990-2010

| <i>County</i> | <i>Total Housing Units</i> | | | <i>Percent Change</i> | |
|--------------------|----------------------------|-------------|----------------|-----------------------|--------------------|
| | <i>1990</i> | <i>2000</i> | <i>2010</i> | <i>1990 - 2000</i> | <i>2000 - 2010</i> |
| Carbon County | 27,380 | 30,492 | 34,299 | 11.4 | 12.5 |
| Lehigh County | 118,335 | 128,910 | 142,613 | 8.9 | 10.6 |
| Luzerne County | 138,724 | 144,686 | 148,748 | 4.3 | 2.8 |
| Monroe County | 54,823 | 67,581 | 80,359 | 23.3 | 18.9 |
| Northampton County | 95,345 | 106,710 | 120,363 | 11.9 | 12.8 |
| Schuylkill County | 66,457 | 67,806 | 69,323 | 2.0 | 2.2 |

Source: U.S. Census

Table A.6
Municipal Housing Units 1990-2010

| <i>Municipality</i> | <i>Total Housing Units</i> | | | <i>Percent Change</i> | |
|-------------------------|----------------------------|-------------|---------------|-----------------------|--------------------|
| | <i>1990</i> | <i>2000</i> | <i>2010</i> | <i>1990 - 2000</i> | <i>2000 - 2010</i> |
| Banks Township | 619 | 620 | 611 | 0.2 | -1.5 |
| Beaver Meadows Borough | 427 | 458 | 446 | 7.3 | -2.6 |
| Bowmanstown Borough | 371 | 417 | 429 | 12.4 | 2.9 |
| East Penn Township | 775 | 996 | 1,253 | 28.5 | 25.8 |
| East Side Borough | 149 | 146 | 150 | -2.0 | 2.7 |
| Franklin Township | 1442 | 1819 | 1,873 | 26.1 | 3 |
| Jim Thorpe Borough | 2098 | 2,193 | 2,290 | 4.5 | 4.4 |
| Kidder Township | 2045 | 2197 | 2,845 | 7.4 | 29.5 |
| Lansford Borough | 2215 | 2,228 | 2,161 | 0.6 | -3 |
| Lausanne Township | 101 | 109 | 117 | 7.9 | 7.3 |
| Lehigh Township | 216 | 237 | 227 | 9.7 | -4.2 |
| Lehighon Borough | 2469 | 2546 | 2,499 | 3.1 | -2 |
| Lower Towamensing Town. | 1123 | 1296 | 1,407 | 15.4 | 8.6 |
| Mahoning Township | 1617 | 1693 | 1,860 | 4.7 | 9.9 |
| Nesquehoning Township | 1527 | 1599 | 1,701 | 4.7 | 6.4 |
| Packer Township | 356 | 407 | 440 | 14.3 | 8.1 |
| Palmerton Borough | 2254 | 2,365 | 2,436 | 4.9 | 3 |
| Parryville Borough | 202 | 222 | 270 | 9.9 | 21.6 |
| Penn Forest Township | 3484 | 4,806 | 6,676 | 37.9 | 38.9 |
| Summit Hill Borough | 1431 | 1451 | 1,458 | 1.4 | 0.5 |
| Towamensing Township | 1272 | 1458 | 1,840 | 14.6 | 26.2 |
| Weatherly Borough | 994 | 1,033 | 1,123 | 3.9 | 8.7 |
| Weissport Borough | 193 | 196 | 187 | 1.6 | -4.6 |
| Carbon County | 27380 | 30492 | 34,299 | 11.4 | 12.5 |

Source: U.S. Census

More than three out of five (68.5 percent) of the housing units within Carbon County are single-family detached units (Table A.7). Most of the single units are in the townships. The boroughs include a much higher percentage of attached housing and apartments.

**Table A.7
Units in Structure, 2000**

| <i>Units in Structure</i> | <i>Carbon County</i> | |
|---------------------------|----------------------|------|
| | # | % |
| 1-unit detached | 23,153 | 68.5 |
| 1-unit attached | 6,169 | 18.3 |
| 2 -4 units | 1,732 | 5.1 |
| 5 or more units | 1255 | 3.7 |
| Other | 1486 | 4.4 |

Source: 2010 U.S. Census

Carbon County’s rich history in coal mining, lumber, and farming generated the initial locations of housing in the county. More than 52 percent of the housing units were constructed before 1970, while only 7 percent have been built from within the 2000’s.

**Table A.8
Year Structure Built, 2000**

| <i>Year Structure Built</i> | <i>Carbon County</i> | |
|-----------------------------|----------------------|------|
| | # | % |
| 2005 or later | 1,023 | 3.0 |
| 2000 - 2004 | 1,419 | 4.2 |
| 1990 - 1999 | 3,580 | 10.6 |
| 1980 - 1989 | 5,975 | 17.7 |
| 1970 - 1979 | 4,183 | 12.4 |
| Before 1970 | 17,615 | 52.2 |

Source 2000 U.S. Census

The tenure (owner vs. renter) of the county’s housing units has changed slightly within the past decade (Table A.9). Owner-occupied housing units have increased, while renter-occupied units have decreased. New development is generally focused on owner-occupied housing units in the outlying areas of the townships. The rental units—normally found in boroughs due to the density required to provide central water and sewer service—have slowly declined within the 1990’s as more people purchase homes.

**Table A.9
Ownership of Housing Units, 2000 - 2010**

| <i>Ownership and Vacancy Characteristics</i> | <i>Carbon County</i> | | | | <i>Percent Change 2000 - 2010</i> |
|--|----------------------|------|-------------|------|-----------------------------------|
| | <i>2000</i> | | <i>2010</i> | | |
| | # | % | # | % | |
| Occupied Housing Units | 23,701 | 77.7 | 26,684 | 77.8 | 12.6 |
| Owner-Occupied Units | 18,529 | 78.2 | 20,643 | 77.4 | 11.4 |
| Renter-Occupied Units | 5,172 | 21.8 | 6,041 | 22.6 | 16.8 |
| Vacant Housing Units | 6,791 | 22.3 | 7,615 | 22.2 | 12.1 |

Source: U.S. Census

Although the percent of the county’s housing stock that is vacant remained steady during the 1990s, the actual number of vacant units increased from 6,791 to 7,615—a total of 824 additional vacant units (Table A.9). Vacant housing units allow for a healthy housing market if the vacancy rate is about 4–7 percent of the total housing stock. Not only is the vacancy increasing in absolute terms, but the vacant units represent a relatively large 22.2 percent of the housing stock. Part of the vacancy rate increase may be explained by an increase in second home units.

Table A.9
Ownership of Housing Units, 2000 - 2010

| Ownership and Vacancy Characteristics | <i>Carbon County</i> | | | | Percent Change 2000 - 2010 |
|--|----------------------|------|-------------|------|-----------------------------------|
| | <i>2000</i> | | <i>2010</i> | | |
| | # | % | # | % | |
| Occupied Housing Units | 23,701 | 77.7 | 26,684 | 77.8 | 12.6 |
| Owner-Occupied Units | 18,529 | 78.2 | 20,643 | 77.4 | 11.4 |
| Renter-Occupied Units | 5,172 | 21.8 | 6,041 | 22.6 | 16.8 |
| Vacant Housing Units | 6,791 | 22.3 | 7,615 | 22.2 | 12.1 |

Source: U.S. Census

The term “household” refers to all persons living in a single housing unit. Average household size is another indicator of population changes.

Household size in Carbon and surrounding counties remained relatively constant from 2000 to 2010 (Table A.10). The largest change was an increase of 0.06 persons per unit (2.48 to 2.54) in Lehigh County. Smaller households are a common trend across the country as people wait longer to have children, spend more time in educational institutions, and put more time into the work environment.

Table A.10
Average Household Size, 1990 - 2010

| <i>County</i> | <i>Average Household Size (persons per unit)</i> | | |
|--------------------|--|-------------|-------------|
| | <i>1990</i> | <i>2000</i> | <i>2010</i> |
| Carbon County | 2.55 | 2.44 | 2.42 |
| Lehigh County | 2.51 | 2.48 | 2.54 |
| Luzerne County | 2.47 | 2.34 | 2.34 |
| Monroe County | 2.69 | 2.73 | 2.72 |
| Northampton County | 2.62 | 2.53 | 2.53 |
| Schuylkill County | 2.47 | 2.36 | 2.35 |

Source: U.S. Census

Income

Income affects many facets of Carbon County’s economy and housing market. Income levels in Carbon County are more closely aligned to the rural counties of Schuylkill and Luzerne than the more urban counties of Lehigh, Monroe, and Northampton (Table A.11). The urban counties include cities with higher-paying jobs and/or have a population of resident commuters to the New York / Northern New Jersey metropolitan area.

**Table A.11
County Median Household Income**

| <i>County</i> | <i>Median Annual Household Income (\$)</i> | |
|--------------------|--|-------------|
| | <i>1989</i> | <i>1999</i> |
| Carbon County | 25,501 | 35,113 |
| Lehigh County | 32,455 | 43,449 |
| Luzerne County | 23,600 | 33,771 |
| Monroe County | 32,465 | 46,257 |
| Northampton County | 32,890 | 45,234 |
| Schuylkill County | 23,028 | 32,669 |

Source: U.S. Census

PRESERVING GREENWAYS THROUGH DEVELOPMENT REGULATIONS

OVERVIEW OF METHODS

A variety of methods can be used in zoning ordinances, subdivision and land development ordinances (SALDOs) and floodplain ordinances to assist in preserving greenways. This appendix describes a menu of choices, which can be combined as appropriate.

Zoning vs. SALDO Provisions - Some natural feature protection provisions can be placed in either the zoning ordinance or the SALDO. In most cases, placement in a zoning ordinance is preferable because it will address more types of development. Also, a developer may attempt to avoid a SALDO requirement by destroying natural features before they submit a SALDO plan to the municipality.

Floodplain—The 100-year floodplain is the area expected to be flooded during the worst flood in an average 100-year period. By limiting development in the floodplain, the municipality not only increases safety by reducing the potential for flood damage, but also gains the additional benefits of maintaining open land along waterways.

Most municipal floodplain regulations allow construction to occur within the portions of the floodplain that are not within the main flood channel. Typically, new buildings have to be elevated and floodproofed. However, elevated buildings can still displace floodwaters and raise flood levels on other properties.

Townships should consider prohibiting the construction and placement of any new building within the entire 100-year floodplain. Exceptions could be included for small accessory sheds or redevelopment sites.

In addition, most floodplain regulations allow the construction of parking lots in the 100-year floodplain. As a result, the entire floodplain can be paved, which destroys natural vegetation and prevents groundwater recharge. Vehicles can also be carried by floodwaters, which can create hazards. One alternative is to prohibit new parking lots for three or more motor vehicles on any lot within the floodplain, within a township.

Within a borough, less restrictive floodplain regulations in regards to parking and new buildings often are appropriate to avoid creating difficulties for redevelopment.

Creek and River Buffers — The natural vegetation along a creek or river is extremely important to filter out pollutants and eroded soil. Thicker vegetation is preferable than thinner to filter out more pollutants, ideally including a combination of mature trees and thick, understory shrubs. (Grass has only a limited benefit in protecting water quality.) A municipal zoning ordinance can require that existing vegetation along a creek that is removed as part of a development must be replaced with new vegetation that will have a similar or better ecological benefit. A variety of free publications are available on the internet from nonprofit and governmental organizations that recommend ways to design vegetation buffers along creeks, also known as “riparian buffers.”

Creek and River Setbacks — A minimum setback can be established for all new buildings, parking lots, and business outdoor storage areas from any perennial creek. A perennial creek is a creek that usually has year-round flows, except during droughts. USGS mapping is often used as the source to separate perennial from intermittent creeks. The setback can vary by importance of the creek—a creek with great ecological important should have a wider setback than a creek with less value for recreation and fishing.

Allowed Uses and Densities—Zoning typically involves varying land uses and densities in different zoning districts. Zoning uses incentives and disincentives to encourage development to be placed in certain areas, as opposed to areas where preservation is encouraged. For example, business uses and higher densities of housing are allowed in growth-oriented zoning districts, while only very low density residential, agricultural, and open space-oriented uses are allowed in more conservation-oriented zoning districts. Where greenways are being encouraged, municipalities should consider prohibiting intense commercial uses and reducing the densities of residential development.

A municipality may wish to create a “conservation” zoning district to encompass an area with a concentration of natural features, such as flood-prone land, wetlands, and/or steep slopes. That conservation district could allow a limited number of uses, at a low density, with a strict maximum on the percentage of the lot that can be covered by buildings, paving, and other surfaces that are impervious to water.

Varying Densities Based Upon Natural Features—In many locations where greenways are desirable, land is often not suitable for development. The total density on a tract of land can be based upon all of the natural features on the tract. In other words:

- The total lot area of the development would be calculated first.
- Areas within wetlands, flood-prone areas, and very steep slopes would be deleted.
- A certain percentage of other natural features would be deleted. For example, 50 percent of areas with moderate slopes could be deleted. Sometimes, areas with electric transmission lines are deleted.
- The resulting net tract area is divided by a minimum lot area to determine the number of homes allowed on the tract.

A tract with fewer natural constraints would be allowed a higher number of homes than the same sized tract with many natural constraints. A similar requirement could state that wetlands, flood-prone areas, and very steep slopes would not be allowed to count towards the minimum lot area. For example, a zoning district may require a minimum *buildable* lot area of one acre. Then, a lot would need to include at least one acre *after deleting* all wetlands, floodprone areas, and very steep slopes.

Forestry and Tree Removal—The Pennsylvania Municipalities Planning Code (MPC) requires that forestry be allowed by right in all zoning districts and that it cannot be “unreasonably regulated.” However, municipal regulations have been upheld that regulate forestry. For example, one township ordinance, upheld in a court decision, prohibited large clearcutting and prohibited forestry close to creeks and on very steep slopes. A municipality can also require that a forest management plan be prepared to show how erosion is being minimized and that the forestry is being carried out to allow long-term productivity on the forested land.

A municipality can also regulate unnecessary removal of mature woodlands as part of a development. Where trees are proposed to be preserved, temporary fencing should be placed around the root system to prevent damage to the tree trunks and compaction of the soil during construction.

Steep Slopes—A municipal zoning ordinance can:

- Limit the amount of steep slopes to be disturbed.
- Require that natural vegetation be maintained in place on most steep sloped areas to minimize erosion.
- Require larger lot sizes and lower impervious coverages if a new principal building is proposed on steep slopes, which encourages a builder to place the home on the less steep portions of a lot. However, the provision also requires that the outer extent of the proposed building location be shown on the subdivision plan.

Wetlands—Municipalities should require a professional wetland delineation and certification whenever a wetland is suspected on-site. Applicants can be required to certify that a site contains no wetlands. A municipality can require that new buildings and new parking areas be setback from wetlands. At a minimum, a 20-foot wide setback is valuable to avoid intrusion into the wetland by construction equipment.

Transfer of Development Rights (TDR)—The optional TDR process can be included in a zoning ordinance. Certain rural areas are designated as “sending areas” where the goal is to encourage permanent preservation. Other areas are designated as “receiving areas” that are suitable for a higher density. The ordinance would allow a developer in a receiving area to buy a conservation easement from an owner of land in a sending area. The developer would privately negotiate a price for the easement with a willing seller in the sending area. The developer then transfers the number of homes that would have been allowed on the sending parcel to achieve a higher density on the receiving parcel. For example, if 10 homes would otherwise be allowed on the receiving parcel, and 8 homes would have been allowed on the sending parcel, the receiving parcel could be developed with 18 homes.

TDR is valuable land preservation process because:

- The TDR process is voluntary.
- TDR helps preserve land in a way that fairly compensates property owners.
- The TDR process helps to concentrate development in more suitable locations.
- TDR directs development away from important natural areas and farmland.
- The TDR process, as currently structured in Pennsylvania, preserves land without any expenditure of tax dollars.
- TDR does not increase the total number of homes allowed in a municipality.
- TDR greatly minimizes the land consumed by each new home.

TDR can also occur across municipal borders if authorized by both municipalities.

Recreation Land and Fee Requirements — The MPC provides municipalities with the authority to require that new developments include public recreation land. If agreed by the municipality and the developer, fees can be required in place of land. The fees can only be used to acquire recreation land or to construct recreation facilities. A recreation plan must be adopted by resolution before land or fees can be required, although the plan is not required to be detailed or elaborate.

When feasible, recreation land should be required to be placed at the edge of a new development next to a potential future development site. External placement allows the first recreation land to be combined with future recreation land when the adjacent site is proposed for development.

Proper standards are vital to make sure that required recreation land is suitable for recreation. A municipality can require that more recreation land be provided if the developer proposes land that is not prime for active recreation. For example, if most of the land is flood-prone, then the municipality could require, say, three times the amount of recreation land as would apply if the land was not flood-prone.

Trail Requirements—Some municipalities include requirements in a SALDO for developers to install recreation trails as part of subdivisions. The trail requirement is often in place of a sidewalk requirement. Sometimes the trail is designed with a more rural setting behind houses. In other cases, the trail may involve an asphalt bicycle path that runs parallel to a road, but is separated from the road by a green strip. When trails are planned as part of a residential development, construction of the trail should be required before any adjacent homes are sold. Otherwise, new residents may try to interfere with trail construction.

MODEL ORDINANCE PROVISIONS

The following are examples of model zoning and SALDO provisions that should be considered by the municipalities to help carry out this Plan and to protect important natural areas. The rationale for these provisions is discussed at the beginning of this Appendix.

FLOODPLAINS (Flood-prone areas).

Note: Municipalities have a choice of placing their regulations upon flood-prone areas in the Zoning Ordinance or in a separate ordinance. The PA. Department of Community and Economic Development has a recently updated model ordinance for regulating floodplains, which is available on their website.

If a township wishes to go beyond the minimum provisions, it should consider adding the following provision to its zoning ordinance:

“In no case shall any new principal building be placed, constructed or otherwise located within the one hundred year floodplain.”

AGRICULTURAL PRESERVATION

“Additional Requirements in the AC Agricultural Conservation District:

1. Minimum lot area - 1 acre, except 20 acres for any lot that is beyond the number of lots allowed under Section 307.D.7.
2. Maximum lot area - For a single-family detached dwelling that is not on a principal agricultural lot - 2 acres maximum lot area. The maximum lot area shall not apply if the applicant can demonstrate by credible evidence that the area proposed for the lot: 1) does not include more than 2 acres of Class I, II and/or III soils, as identified in official Federal soils mapping or a more accurate professional study, 2) where additional lot area is needed to improve septic or water supply facilities for the lot, in the determination of the Sewage Enforcement Officer, or 3) where a larger lot size is required because of a State or Federal regulation.
 - a. The largest amount of Class I, II and III agricultural soils that is feasible shall be included on one principal agricultural lot.
3. Minimum lot width - 150 feet.
4. Minimum yards for principal and accessory buildings, except for Raising of Livestock and Poultry, see Section 402:
 - a. Front - 40 feet.
 - b. Each of 2 sides - 15 feet.
 - c. Rear - 30 feet.
 - d. However, an accessory storage building with a maximum floor area of 600 square feet and a maximum height of 15 feet may be located a minimum of 10 feet from the side or rear lot line.
 - e. The minimum lot width may be met at the proposed principal building setback line instead of the minimum building setback line if the applicant proves that such modification would result in a greater amount of preservation of agricultural land than would otherwise occur.
5. Maximum impervious coverage - 15 percent, except sales of farm equipment and places of worship shall be allowed to have a 60 percent maximum impervious coverage.
6. Maximum height - 3 stories or 40 feet, whichever is more restrictive. No maximum height shall apply to agricultural structures.
7. Limitations on Subdivision and Land Development in the AC District.
 - a. To preserve agricultural tracts, the AC District regulations limit the subdivision of lots from farms and establishes a maximum lot size to allow the retention of tracts of sufficient size

to be productive for agriculture. This Section is based upon Section 604(3) and other provisions of the Pennsylvania Municipalities Planning Code.

- b. Each tract existing on _____ (*date of enactment*) shall be permitted to subdivide new lots from the tract or establish new principal uses on the tract based upon the lot area of the tract as it existed on such date, as follows:

| Lot Area (Acres) | | Maximum Number of Total Lots of Less |
|------------------|-----------|---|
| At Least | Less Than | 20 Acres Each Which Shall be Allowed (including the pre-existing lot) |
| 2 | 10 | 2 |
| 10 | 30 | 3 |
| 30 | 40 | 4 |
| 40 | 50 | 5 |
| 50 or more | | 6, plus one lot for every 10 acres over 60 |

- c. The condition of the tract on _____ (*date of enactment*), or on the date on which the tract was first zoned AC District, shall be the basis from which the maximum development set forth in Section D.7. above shall be calculated.
- d. No subdivision shall be permitted which shall increase the lot size of a lot used for residential purposes in excess of the maximum lot size, except as provided in Section D.2.
- e. A subdivision, the sole purpose of which is to transfer land to increase the size of a tract being used for agricultural purposes, where both the tract from which the land is taken and the tract to which the land is added will be 20 acres or greater after such subdivision, shall not be included when computing the permissible number of lots to be subdivided from a tract as set forth in Section D.
- f. A subdivision to create a lot which will be transferred to the Township, or a municipal authority created by the Township, or that is deed restricted or restricted by a conservation easement so that the lot can never be used for a principal use shall not be included when computing the permissible number of lots to be subdivided from a tract as set forth in Section D. above. For example, if a lot is created solely for the purposes of stormwater management or a water supply well, it shall not be limited by Section D.
- g. Any subdivision or land development plan hereafter filed with the applicable approving body for subdivision or land development of a parent tract shall specify which lot or lots shall carry with it a right of further subdivision or establishment of principal uses, if any such right remains from the quota allocated to the parent tract on _____ (*enactment date*), or on the date when such land was first included within the AC District. The right of further subdivision or establishment of principal uses shall also be included in the deed for the newly-created lot. If the designation of the right of further subdivision or establishment of principal uses was not included on a subdivision or land development plan of a parent tract, it shall be conclusively presumed that the largest lot remaining after subdivision shall carry the right of further subdivision or establishment of principal uses.
- i. In the event that a tract which was not classified as part of the AC District on _____ (*enactment date*), or was thereafter classified as part of the AC District, the size and ownership of the tract and the development existing on the tract on the effective date of the change in zoning classification shall determine the number of lots which may be subdivided from, or the number of principal uses which may be established on such tract.

- j. The number of lots which may be created or principal uses which may be established shall be fixed according to the size of the parent tract. This number shall not be increased by the subdivision of such parent tract. Any subsequent owner of a parent tract, land remaining in the parent tract after subdivision or land which was formerly part of a parent tract shall be bound by the actions of his predecessor.
- k. In submitting an application for a subdivision/land development for a dwelling unit within the AC District, the applicant shall demonstrate that measures have been used to:
 - 1) Minimize the loss of valuable farmland;
 - 2) Cluster residential lots on the subject property and, if applicable, with those lots contained on adjoining farms;
 - 3) Minimize the length of property lines shared by all residential lots and adjoining farms;
 - 4) Assure adequate vehicular access to future residences not currently proposed;
 - 5) Assure that the proposed plan can comply with the Township's Subdivision and Land Development Ordinance.
- l. Agricultural Nuisance Disclaimer - All lands within the AC District are located within an area where land is used for commercial agricultural production. Owners, residents and other users of this property may be subjected to inconvenience, discomfort and the possibility of injury to property and health arising from normal and accepted agricultural practices and operations including but not limited to noise, odors, dust, the operation of machinery of any kind including aircraft, the storage and disposal of manure, the application of fertilizers, soil amendments, herbicides and pesticides. Owners, occupants and users of this property should be prepared to accept such inconveniences, discomfort and possibility of injury from normal agricultural operations, and are hereby put on official notice that Section 4 of the Pennsylvania Act 133 of 1982 "The Right to Farm Law" may bar them from obtaining a legal judgment against such normal agricultural operations."

WETLANDS, LAKES, STEEP SLOPES AND WATERWAY CONSERVATION.

- A. “Wetland Studies. It shall be the responsibility of each applicant to determine whether land areas proposed for alteration meet the Federal or State definition of a wetland prior to submittal of development plans to the Municipality. If the Zoning Officer has reason to believe that wetlands may be present on a site proposed for development or subdivision, the Zoning Officer may require that the applicant provide a suitable wetland delineation study prepared by a qualified professional.
- B. Wetland and Lake Setbacks. A minimum setback of 20 feet shall be required between any new principal building for which a building permit is issued after the effective date of this Ordinance and any "wetland" or natural lake or pond.
- C. Steep Slopes. No principal building shall be constructed or placed on an area with a natural slope of 25 percent or greater. If a new lot will involve a principal building being constructed on slopes of 15 to 25 percent, then the minimum lot size shall be one acre, unless a larger lot size is required by the zoning district. These steep slope provisions shall not apply to slopes that were clearly man-made prior to the adoption of this Section.
- D. Setback from River/Riparian Areas. No new principal building, no new off-street parking space and no new commercial or industrial outdoor storage shall be allowed within 75 feet from the top of the primary bank of the _____ River and 50 feet from the top of the primary bank of any other perennial creek. Where trees and other natural vegetation is removed within this setback, it shall be replaced with new trees and vegetation that serve the same environmental purposes.”

OPEN SPACE DEVELOPMENT.

- A. Purposes. To allow flexible development of areas with sensitive natural features in such a way as to: a) avoid severe soil erosion and sedimentation, b) avoid severely increased storm water flows and speeds, c) steer development to those areas that are more physically suited for it, d) avoid construction of steep roads that are difficult, time-consuming, and expensive to maintain and snow plow, e) avoid increased use of steep roads and driveways that are dangerous to drive upon in snow and ice, f) to conserve forested areas that are an important part of the ecological cycle, providing for groundwater recharge, air pollution reduction and wildlife habitats and g) reduce construction costs while h) allowing each property owner a reasonable use of their land, related directly to the natural features and location and accessibility of the land.
- B. Applicability. This article allows an applicant the option to reduce the minimum lot areas on tracts of land if the applicant proves to the satisfaction of the Township that there will be compliance with all of the requirements of this Section.
1. The term "Open Space Development" shall mean a residential development meeting the requirements of this Section and which is approved as provided in Section ____.
 - a. Uses. A Open Space Development shall only include single family detached dwellings, nature preserves, Township-owned recreation, a golf course and their customary permitted accessory uses. A mobile/ manufactured home park shall not qualify as a Open Space Development.
 2. A tract may be eligible for approval for a Open Space Development if it includes a minimum of 6 acres of land area in common ownership. Such land area shall be contiguous, except that portions of the tract may be separated only by existing or proposed streets or creeks.
 - a. These provisions are intended to allow flexibility in the placement of individual dwelling units, in order to locate homes away from important natural areas and other community assets.
 - b. The amount of common open space shall be based upon the total lot area of all lots within the development, prior to subdivision, and prior to deletion of rights-of-way of future streets and before deleting the area of any environmental features.
 - 1) Areas that were preserved by a conservation or agricultural preservation easement *prior* to the submittal of the subdivision shall not be counted towards the area of the tract in calculating common open space or allowed density.
 - c. Areas used for a principal non-residential use (other than uses approved by the Township to be part of the preserved open space, such as a barn) shall not be included within the land area used to calculate residential density.
 - d. Conservation easements shall be established on lots as necessary to make sure that the maximum density requirement is met over time. Such conservation easements shall prevent the re-subdivision of lots in a manner that would violate this Section.
 3. A Open Space Development shall be designed as a unified, coordinated residential development, and shall be approved within a development plan controlled by a single development entity. After final subdivision approval and within an approved development agreement(s), a developer may sell individual lots to different builders or home buyers, provided that the developer or his/her successor remains responsible for ensuring the compliance with the approved development plan.
- C. Density, Open Space and Lot Standards.

1. A Yield Plan shall be presented by the applicant. The Yield Plan shall accurately show the maximum number of dwelling units that would be possible under current Township ordinances if the Open Space Development provisions would not be used. This Yield Plan shall be completed to an accurate scale, including accurately showing tract boundaries, steep slopes, 100 year floodplains and wetlands. The Yield Plan shall show potential lots and streets. However, the Yield Plan is not required to meet the detailed engineering requirements of a preliminary subdivision plan. The Board of Supervisors or its designee shall require sufficient septic probes to prove that on-lot septic systems would be possible in marginal areas. If the probes are not intended to be used for actual construction of septic systems, such probes may be conducted by any State-certified sewage enforcement officer.
2. Such Yield Plan shall be reviewed by the Zoning Officer, with advice by the Township Engineer, to determine whether each represents a reasonably accurate estimate of the number of dwelling units possible on each site, both physically and legally. If such estimates are determined to not be accurate, the applicant shall be required by the Zoning Officer to revise such Yield Plan.
3. The maximum number of dwelling units allowed on the tract through Open Space Development shall be 25 percent greater than the number of dwelling units that is determined by the Township to be possible under the approved Yield Plan.
4. Within a Open Space Development, the only allowed dwelling units shall be single family detached dwellings. The following minimum lot areas shall apply, provided that the total maximum density for the tract is not exceeded:

Note - The minimum lot sizes and minimum amounts of open space will need to vary depending upon the lot sizes that are required under development without open space. The goal is to provide as much open space as is reasonable, while still making sure that open space development is an attractive option to a developer.

- a) Conservation District - The minimum lot area shall be reduced to 1 acre and the minimum lot width shall be reduced to 150 feet. A minimum of 40 percent of the total lot area of the tract (prior to subdivision) shall be preserved as Common Open Space. The majority of the required common open space shall be in one contiguous tract, except that it may be separated by one street. The only allowed dwellings shall be single family detached dwellings.
 - b) Rural District - The minimum lot area shall be reduced to 1 acre and the minimum lot width shall be reduced to 150 feet. A minimum of 25 percent of the total lot area of the tract (prior to subdivision) shall be preserved as Common Open Space. The majority of the required common open space shall be in one contiguous tract, except that it may be separated by one street. The only allowed dwellings shall be single family detached dwellings.
 - c) Low Density Residential District - The dwellings shall need both Township-approved central water and central sewage services. The minimum lot area may be reduced to 10,000 square feet and the minimum lot width to 80 feet. A minimum of 35 percent of the total lot area of the tract (prior to subdivision) shall be preserved as Common Open Space. The majority of the required common open space shall be in one contiguous tract, except that it may be separated by one street. The only allowed dwellings shall be single family detached dwellings.
6. Utilities. Any lot of less than one acre shall be served by Township-approved central sanitary sewerage service and central water service.
 7. Subdivision of Part of a Tract. This subsection "7" addresses a situation in which only part of a lot is proposed to be subdivided, and the applicant at the present time does not intend to subdivide for the maximum number of dwellings allowed by this Section. In such case, the applicant shall establish a permanent conservation easement covering common open space to

comply with this Section. Because only part of the tract is being subdivided, it may not be necessary to meet the common open space requirement based upon the area of the entire tract.

- a) The land under the conservation easement shall be a regular rectangle in shape and shall be located in such a manner as to allow it to adjoin land that could be added under a conservation easement in the future.
- b) The following hypothetical example assumes a lot includes 50 acres, and the Yield Plan determines that the applicant for a Conservation Development is allowed a total of 30 new dwellings. In this example, the applicant only wishes to subdivide lots for 10 new dwellings at the present time, which is one-third of the total number of allowed dwellings. If the entire lot would be subdivided to the maximum allowed, a conservation easement would need to be placed on 30 percent of 50 acres, or 15 acres. Because only one-third of the allowed dwelling units are being subdivided, then the conservation easement at this time would only need to apply to 5 acres. The 5 acres under the conservation easement would need to be placed on the tract at a location where it could be joined by the remaining 10 acres of land under a conservation easement if the applicant in the future decided to subdivide lots for the remaining 20 dwelling units that are allowed.

D. Conditions for Approval. In addition to the specific requirements of this Section, a Open Space Development shall only be approved if the applicant proves to the satisfaction of the Board of Supervisors, based upon review by the Planning Commission, that the following conditions will be met:

1. That the Open Space Development would clearly serve a valid public purpose that would result in a development that would be superior to what would result if the land would be development as a conventional development. Such valid public purposes include but are not limited to the following:
 - a. The permanent preservation of dense forests, steep slopes, wetlands, creek valleys, highly scenic areas or other sensitive natural features.
 - b. The permanent preservation of a substantial area of land in agricultural uses, in a tract of proper size and configuration that allows for efficient agricultural use and that properly considers the issue of compatibility between the agricultural uses and homes.
 - c. The dedication of public parkland at a site deemed appropriate by the Board of Supervisors and that involves land that is clearly suitable for active and/or passive recreation.
 - d. The Open Space of homes in a location that will be substantially buffered from highly-noxious nuisance-generating uses, such as an expressway or major arterial street.
2. The applicant shall prove that the proposed Open Space Development has been designed in full consideration of important natural features, including mature woodlands, creek valleys, steep slopes and wetlands.
 - a. At a minimum, the applicant shall prove that areas along perennial creeks shall be preserved in their natural state, except for landscaping, erosion control improvements, public recreation improvements and needed utility, street and driveway crossings.
 - b. The natural features of the site shall be a major factor in determining the siting of dwelling units.

E. Open Space.

1. Open Space. Land within a Open Space Development may be permanently preserved as public, semi-public or private "Common Open Space." See definition in Section ___ of "Open Space, Common or Preserved." The common open space requirements of this Section

shall be in place of the common open space land or fee requirements of the Township Subdivision and Land Development Ordinance.

2. Open Space Standards. Any preserved open spaces shall meet all of the following requirements:
 - a. Such open space shall be permanently deed-restricted or protected by an appropriate conservation easement to prevent the construction of buildings or the use for any non-agricultural commercial purposes or the use of the land for clearcut forestry. Land approved as required open space shall only be used for non-commercial active or passive recreation, a Christmas Tree Farm, a golf course, a nature preserve, a wholesale plant nursery and/or Township-approved agricultural uses.
 - b. A Open Space Development shall still meet any recreation land dedication or recreation fee requirements that may apply under the Subdivision and Land Development Ordinance. The same area of land may be used to meet the SALDO recreation land and the zoning open space requirements, if the land meets the requirements for each.
 - c. The Township may require the use of conservation easements within a Open Space development to limit the disturbance of natural slopes over 15 percent, wetlands, mature forests, creek valleys and other important natural features.
 - d. Improvements to Open Spaces. Where open space is proposed to be used for recreation and/or dedicated to the Township, the application shall include a detailed and legally binding (if approved) description of what improvements the applicant will make to any land intended to be publicly dedicated open space to make it suitable for its intended purpose.
 - 1) Examples of such improvements for areas intended for passive recreation include preservation and planting of trees, development of nature, bicycle or jogging trails, the stabilization of creek banks and the removal of undesirable vegetation.
 - 2) Examples of such improvements for areas intended for active recreation include rough grading of land to create land suitable for free-play fields for youth.
 - 3) Type of Maintenance. Where the open space would not be dedicated to a government entity, the subdivision plan shall state the intended type of maintenance of the open space.
 - e. All proposed Preserved Open Space shall be cleared of construction debris, materials from illegal dumping and any rocks that were not naturally on the land, unless those rocks are incorporated into landscaping improvements.
 - f. The applicant shall prove that all required Open Space would be suitable for its intended and Township-approved purposes. The Township may require the provision of a trail easement and/or the construction of a trail through common open space. If a developer is required to install a trail, it shall be completed prior to the final sale of any adjacent residential lots.
 - g. Lots and open spaces shall be located to promote pedestrian and visual access to preserved open spaces whenever possible. A non-motorized recreation trail shall be shown on the plans through common open space and shall be built by the developer prior to the sale or construction of any adjacent homes, unless the Board of Supervisors determine that a trail is not appropriate in the particular situation.
3. Open Space Ownership. The method(s) to be used to own, preserve and maintain any preserved open space shall be acceptable to the Township. The Township shall only approve a Open Space Development if the applicant proves there will be an acceptable method to

ensure permanent ownership, preservation and maintenance of land that will not be included in individual home lots.

- a. The method of ownership and use of any required preserved open space shall be determined prior to preliminary subdivision or land development approval. The Township should be given right of first refusal at the time of such review to accept proposed open space as public open space. Required open space shall be permanently preserved by one or a combination of the following methods:
 - 1) Dedication to the Township as public open space, if the Board of Supervisors agree in writing to such dedication.
 - 2) Dedication to the County as public open space, if the County Commissioners agree in writing to such dedication.
 - 3) Dedication to the School District if such Board of Education agrees in writing to accept such dedication and to use and maintain the land for public school buildings and/or related open space.
 - 4) Dedication to a homeowners association as preserved open space, with the homeowners legally bound to pay fees for the maintenance and other expenses of owning such land, and with such homeowners association being incorporated with covenants and bylaws providing for the filing of assessments and/or municipal liens for the non-payment of maintenance costs for preserved open space that is not publicly-owned.
 - (i) Such responsibilities shall be specified as part of each deed prior to sale of each lot or dwelling unit. The Township may delay a dedication of maintenance responsibilities by a developer to a homeowners association until such association is incorporated and able to maintain such land.
 - 5) Dedication of the land to an established nature conservation organization acceptable to the Board of Supervisors.
 - 6) Dedication of a permanent agricultural preservation easement to the County Agricultural Land Preservation Board, with the land utilized for allowed agricultural uses.
 - 7) Dedication to the State Game Commission, State Fish and Boat Commission or similar public agency, if such agency agrees in writing in advance to accept the dedication and to maintain the land for public recreation.
 - 8) Operation as a bonafide golf course, with a minimum lot area of 50 acres. Areas including buildings or vehicle parking shall not count towards the minimum average lot area.
 - 9) Retention as part of one or more private lots, with an appropriate Township-approved conservation easement. This option (9) shall only be available in locations where the applicant proves to the Board of Supervisors that none of the above options are feasible or appropriate. This option (9) is primarily intended for situations where less than 2 acres of common open space would result (which may include a situation where only part of a tract is being subdivided).
- b. Legal documents providing for ownership and/or maintenance of required preserved open space shall be reviewed by the Township Solicitor and be subject to approval by the Board of Supervisors prior to recording of the final plan.
- c. A legally binding system shall be established to oversee and maintain land that will not be publicly-owned. Any homeowner association should generally follow the provisions of Section 705.f. parts (1) and (2) of the Pennsylvania Municipalities Planning Code, as amended. Proper notations shall be required on the Recorded Plan. For example, if the preserved open space is intended to be owned by a homeowner association as recreation land, a statement should be included that the designated open space "shall

not be further subdivided and shall not be used for the construction of any non-recreation buildings.”

- F. Steep Slopes. Within a Open Space Development, no principal building shall be placed on slopes of over 25 percent.
- G. Phasing. The development shall include a phasing system that shall be approved by the Board of Supervisors. Such phases shall ensure that the requirements of this Article would be met after the completion of any one phase, and that the development could properly function without the construction of additional phases.
- H. Landscaping Plan. An application for a Open Space Development involving over 15 acres shall include a landscape planting and preservation plan prepared by a registered landscape architect.
 - 1. Such plan shall show the locations, general species and initial sizes of landscaping to be planted within the preserved open space and throughout the tract.
 - 2. Such plan shall also show that existing substantial healthy trees will be preserved to the maximum extent reasonable. The methods to ensure preservation during construction shall be described.
 - 3. Landscaping shall also be used as appropriate to filter views of denser housing from any adjacent housing that is less dense.”

RECREATION AREAS AND FEES.

- “ A Purposes. To provide adequate open spaces, recreational lands and recreational facilities to serve new inhabitants/occupants of new developments, for both active and passive recreation. To recognize and work to carry out the Recreation Plan for _____, which is hereby adopted by reference as the Recreation Plan for the Municipality, or by a successor document that may be adopted as the Recreation Plan for _____.
- B. Applicability. This section shall apply to any subdivision or land development for which a preliminary plan or a combined preliminary/ final plan is submitted after the enactment date of this amendment.
 - 1. This Section shall not apply to plans that the Municipality determines only involve adjustments or corrections to an approved preliminary plan or a preliminary plan that was actively before the Municipality for consideration as of the date of the adoption of this Section, provided the adjustments do not increase the number of proposed dwelling units.
- C. Limitations on Use of Fees.
 - 1. Any fees collected under this section shall be placed within the Municipality Recreation Escrow Fund, or its successor account.
 - 2. To make sure that the lands and facilities are accessible to the inhabitants of the developments that paid fees towards their cost, such fees should only be used within a 5-mile radius of the boundaries of the subdivision or land development that paid the fees, unless the fees are used within a recreation area open to the public that the Municipality intends to serve the entire Municipality.
 - 3. Such fees shall only be used for the following: acquisition of public open space/recreation land and related debt payments, development of public recreational facilities, landscaping of public open space and necessary engineering and design work.

D. Land to be Preserved. Any subdivision or land development regulated under this Section shall be required to preserve the specified amount of recreation land, unless the Municipality Council and the applicant mutually agree that recreation fees shall be required in-lieu of land.

1. As a general non-binding guideline, it is the intent of this Section that smaller developments (such as 10 or fewer dwelling units) that do not include land that is adjacent to existing publicly-owned land should be required to pay a recreation fee in lieu of dedicating land. However, if the applicant refuses to pay such fees, then recreation land shall be required to be preserved.
2. The land and fee requirements of this section shall be based upon the number of new dwelling units that would be allowed on the lots of a subdivision or land development after approval.
3. Prime Recreation Land. For the purposes of this section, the term “Prime Recreation Land” shall mean land proposed to be established as recreation land that would meet all of the following standards:
 - a. less than 6 percent slope,
 - b. not a “wetland” under Federal and/or State regulations,
 - c. be part of a contiguous tract of at least 2 acres (which may include existing adjacent recreation land), and
 - d. not be within the “100 Year Floodplain” as defined by official floodplain maps of the Municipality.
4. Amount of Recreation land. If a subdivision or land development is required to include recreation land, the following amounts for each permitted new dwelling unit shall apply:

| Percentage of the Total Required Recreation Land that Would Land that Would Meet the Definition of “Prime Recreation Land”: | Minimum Required Recreation Land Per Permitted Dwelling Unit |
|---|--|
| 0% to 25.0% | 5,000 square feet |
| 25.1% to 99.9% | 2,500 square feet |
| 100% | 1,250 square feet |

E. Fees. If the Governing Body determines that a proposed subdivision or land development is required to pay fees-in-lieu of dedicating recreation land, this fee shall be \$_____ for each new dwelling unit, unless such fee is updated by future action by the Governing Body.

F. Decision on Land vs. Fees. The Governing Body shall determine whether a land dedication would be in the public interest, or whether the payment of fees is required. This initial determination should, but is not required to, be made at the time of sketch plan review. The Municipality should, at a minimum, consider the following in this decision:

1. Whether the land in that location would serve a valid public purpose.
2. Whether there is potential to make a desirable addition to an existing public or School District recreation area or to create a greenway along a creek.
3. Whether the proposed land would meet the objectives and requirements of this section and any relevant policies of the Comprehensive Plan and any Recreation or Open Space Plan.
4. Whether the area surrounding the proposed development has sufficient existing recreation and open space land, and whether it is possible for pedestrians and bicyclists to reach those lands.
5. Any recommendations that may be received from the Planning Commission, the Municipal Engineer, the local School Board or School District staff and the Municipal Parks and Recreation Board.

G. Recreation Land to be Preserved.

1. Suitability. Recreation land shall be suitable for its intended purpose, in the determination of the Governing Body. The applicant shall state in writing what improvements, if any, he/she will commit to make to the land to make it suitable for its intended purpose, such as grading, landscaping, or development of trails. Such land shall be free of construction debris at the time of dedication. Proposed recreation land shall be suitable to meet the needs of the residents of the development.
2. Ownership. Required recreation land shall be dedicated to the Municipality, unless the Governing Body agree to accept a dedication to any of the following: the School District, the County, a State agency charged with maintaining recreation land, a similar governmental agency, an incorporated property-owner association (such as a homeowner or condominium association) or an established environmental organization acceptable to the Governing Body. In the case of a rental development, the Municipality may permit the recreation land to be retained by the owner of the adjacent principal buildings.
 - a. If recreation land is to be owned by a property-owner association, the developer shall be required to establish such association in a form that requires all property owners within the development to annually contribute to the maintenance of the recreation land.
 - 1) Any property-owner association agreements regarding required recreation land shall be subject to acceptance by the Governing Body, based upon review by the Municipal Solicitor.
 - 2) Prior to the sale of any dwelling unit or lot, all deeds shall require each property-owner to pay fees on a regular basis for the maintenance and other expenses of owning such land. The property-owners shall be incorporated with covenants and bylaws providing for the filing of assessments. After providing notice to affected owners, the Municipality shall have the authority to establish municipal liens upon all properties in the association to fund maintenance of the land and Municipal legal costs if the property-owners association does not fulfill its responsibilities.
 - 3) An orderly process shall be established for the transfer of the land to the association. The dedication of maintenance responsibilities by a developer to a property-owners association shall not occur until such association is incorporated and able to maintain such land.
 - 4) The property-owners association shall be established in full compliance with applicable State law, including the Uniform Planned Community Act.
 - b. Transfer to another Entity. If the approved plan states that ownership of and/or responsibilities to maintain the recreation land are given to a particular entity, then any transfer of ownership or responsibilities to another entity shall require pre-approval by the Governing Body. Where land is to be owned by a conservation organization, a process shall be established for the land to transfer to a different organization if the first organization is not able to fulfill its obligations.
 - c. The Governing Body shall have the authority to refuse to accept an offer of dedication of recreation land to the Municipality, and/or to determine that an offer does not meet Municipal requirements.
3. Easements. Any required recreation land dedication shall include a conservation easement to permanently prevent its development for buildings, except buildings for approved types of non-commercial recreation or to support maintenance of the land. Such conservation easements shall, at a minimum, be enforceable by the Governing Body. The Governing Body may require that the easements also authorize their enforcement by a suitable third party.

4. Priorities. Priority shall be given to dedication of land that would be suitable for a) additions to existing public schools and public parks, or b) preservation of woods, steep slopes or other important natural features or land along a creek, or c) for centralized active recreation.
 5. Suitability. Land that is not suitable for active or passive recreation shall not be permitted to meet the requirements of this section. Any land area used to meet the requirements of this Section shall meet the definition of “Recreation Land.” Portions intended for active recreation shall be well-drained, of less than 6 percent average slope and not require filling in of a wetland for use.
 6. Access and Contiguosness. Recreation land within a subdivision or land development shall be contiguous, except as may be specifically exempted by the Governing Body, if necessary considering the unique features of the site, and shall have a minimum of 20 feet of road frontage at a location that allows access for maintenance and by pedestrians.
 7. Other Ordinances. Any required land dedication or fees under this Section shall be in addition to any land dedication or improvement requirements of any other Municipal ordinance.
 - a. However, the Governing Body may allow common open space provided under a zoning ordinance provision to also count towards the recreation land requirement if the land will be improved for recreation, capable of meeting all of the requirements of this Section, and be available without charge on a daily basis to the public.
 8. Residual Lands. If only a portion of a larger tract of land is currently proposed to be subdivided, or the applicant owns one or more adjacent tracts that are not currently proposed to be subdivided, the applicant shall provide a sketch of a possible future land dedication on these adjacent lands. The intent is to coordinate current plans with any future development, even in the long-term.
 9. Coordination With Future Adjacent Dedication. The Governing Body may require that a required land dedication within a property currently being subdivided be placed along an edge of the property so that it may, in the future, be combined with a recreation land/ open space dedication on the edge of an adjoining property when that adjoining property is subdivided or developed.
- H. Combination of Land and Fees. Upon mutual agreement of the Governing Body and the applicant, the Municipality may accept a combination of recreation land and fees-in-lieu of land to meet the requirements of this section for a subdivision or land development. This combination shall be based upon the recreation land requirement applying for a certain number of dwelling units and the fee-in-lieu of land requirement applying for the remaining development.
1. For example, if a development included 25 dwelling units, recreation land could be required for 15 dwelling units and fees could be required for 10 dwelling units.
- I. Timing of Residential Fees. Fees required by this Section for all of the dwelling units shall be paid prior to the recording of the final plan, except as follows:
1. If the required fee would be greater than \$4,000, and the applicant and the Municipality mutually agree to provisions in a binding development agreement to require the payment of all applicable recreation fees prior to the issuance of any building permits within each clearly defined phase or sub-phase of the development, then fees are not required to be paid prior to recording of the final plan but may instead be paid within the requirements of that development agreement.
 2. If the applicant agrees to pay such fees in installments, then all such fees shall not be considered to be “paid” for the purposes of any applicable time limitations for utilization

under the Municipalities Planning Code until all such fees are paid in full, including all installments and phases.

- J. Facilities in Place of Land or Fees. An applicant may submit a written request for a modification of the requirements of this section by offering to construct substantial permanent recreation facilities within the proposed subdivision or land development or on public parkland. Such modification shall only be approved if the applicant clearly proves to the satisfaction of the Governing Body that the facilities will serve a valid public purpose, will be designed following modern standards in a durable manner and will have a higher market value than the land or fees that would otherwise be required.
1. A modification of these requirements may also be approved by the Governing Body if the applicant donates or sells appropriate public recreation land to the Municipality or the School District. In such case, the applicant shall provide a written appraisal from a qualified professional that the market value of the donation or price reduction is greater than the value of the fee or land requirement that is waived. In such case, the land shall be determined to be suitable for public recreation by the Governing Body.

SIDEWALKS, PATHWAYS AND DRIVEWAY APRONS.

- A. Sidewalks built to Municipality specifications shall be required where the average residential density exceeds 3 dwelling units per acre or where the Governing Body determine they are necessary for safe pedestrian movement, such as near a school.
1. As a modification under Section ----, an applicant may propose an alternate system of pathways, such as a crushed stone or bituminous pathway, that serve the same purposes as sidewalks and which guarantee public access, but which are not necessarily within a street right-of-way, if approved by the Municipal Engineer.
- B. Pathway or Bikeway.
1. If deemed necessary for the convenient and safe circulation of bicycles and pedestrians, the Governing Body, upon the recommendation of the Planning Commission, may require that a major subdivision or land development include the construction of a pathway or bikeway.
 2. A bikeway/pathway shall have a minimum width of 6 feet and a maximum width of 12 feet. It may be required to be placed within a street right-of-way in place of a sidewalk, or may be placed elsewhere on a lot within an easement or other right-of-way.
- C. Location and Width of Sidewalks.
1. Sidewalks, where required or provided, shall be located within the street right-of-way. Any area between the sidewalk and curb shall be planted in an attractive vegetative ground cover, such as grass. This strip shall only be paved at driveway entrances.
 2. Any required sidewalks shall have a minimum width of: a) 5 feet along arterial streets or along routes used to access primary or secondary schools and b) 4 feet along collector or local streets in other locations.
- D. Construction.
1. Sidewalks shall meet construction specifications in PennDOT Publication 408.
 2. Bikeways/pathways shall be constructed of a one inch bituminous surface course, a 1.5 inch bituminous binder course, and 6 inches of compacted gravel or crushed stone, unless an alternative standard is pre-approved by the Municipality. To the maximum extent feasible considering topography, pathways should be accessible to persons in wheelchairs. Stop signs should be posted along bikeways where they meet streets.
 3. ADA Ramps. Ramps shall meet the requirements of the Americans With Disabilities Act and accompanying Federal regulations. Note - Additional PennDOT regulations apply along a State road.

SUMMARY OF POTENTIAL FUNDING SOURCES

State, federal and county governments provide various opportunities for funding assistance. Grants and loans from various sources should be used to help fund revitalization activities and other plan implementation items. Since funding sources are always changing, with new programs being added and older programs being revised or deleted, it will be important to continually keep abreast of current funding opportunities.

| Name of Program | General Description of Program | Administering Agency |
|---|---|--|
| Business in Our Sites Grants and Loans | Empowers communities to attract growing and expanding businesses by helping them build an inventory of ready sites. | PA Dept. of Community and Economic Development (PA DCED) |
| Communities That Care (CTC) | Communities That Care (CTC) is a community empowerment strategy that emphasizes assessment and planning as the basis for program development and implementation. CTC is a violence and delinquency prevention program that provides communities with a process to mobilize the community, identify risk and preventive factors, and develop a comprehensive prevention plan. | PA Commission on Crime and Delinquency |
| Community and Business Development Program | The Community and Business Assistance Program provides grants for community and business assistance projects that, in the judgment of the Department of Community and Economic Development (DCED), are consistent with the authorizing legislation and these program guidelines, and meet all requirements of the DCED Single Application for Assistance. | PA DCED |
| Community and Municipal Facilities Assistance Program | The Community and Municipal Facilities Assistance Program provides grants for community and municipal facility projects that, in the judgment of the Department of Community and Economic Development (DCED), are consistent with the authorizing legislation and these program guidelines, and meet all requirements of the DCED Single Application for Assistance. | PA DCED |
| Community Conservation and Employment Program | The Community Conservation and Employment Program provides grants for community and economic development projects that, in the judgment of the Department of Community and Economic Development (DCED), are consistent with the authorizing legislation and these program guidelines, and meet all requirements of the DCED Single Application for Assistance. | PA DCED |
| Community Development Block Grant (CDBG) | Offers grants for a wide variety of activities, provided the applicant proves by survey or census that the project will benefit low and moderate income persons or handicapped persons or eliminate “blighted” conditions in officially designated areas. For example, funds can be used for housing rehabilitation, handicapped accessibility, street and sidewalk improvements, parks / recreation / trail linkages, planning, and historic rehabilitation. | Carbon County Community Development Office |
| Community Economic Development Loan Program | Low-interest loans for projects in distressed communities. | PA DCED |

| Name of Program | General Description of Program | Administering Agency |
|--|---|---|
| Community Services Block Grant (CSBG) | Federal grants to support programs that promote economic self-sufficiency of low-income individuals. Designated Community Action Agencies serving individuals whose income is at 125% of the federal poverty level are eligible for funding. Funds may be used for: case management, job training, food and nutrition, transportation, education, housing, drug and alcohol, and economic development. | Carbon County |
| C2P2 - Community Conservation Partnerships Program | Provides 50% matching grants to municipalities to: develop plans for parks / recreation / trails; prepare park / greenway master plans; acquire parkland / nature preserves / greenways; and rehabilitate and improve public recreation areas / greenways. | PA Dept. of Conservation and Natural Resources (PA DCNR) |
| Downtown Revitalization Assistance | The Pennsylvania Downtown Center (PDC) promotes and supports the vitality of Pennsylvania's downtowns and traditional neighborhood business districts by providing local groups with the techniques and strategies needed to recapture or sustain their downtowns as a vibrant civic, social and economic center of activity. | Pennsylvania Downtown Center (PDC) |
| Economic Development Administration | <p>The Economic Development Administration (EDA) offers grants and technical assistance for economic development. Some of the major EDA programs are listed below:</p> <ul style="list-style-type: none"> • <u>Public Works and Economic Adjustment Assistance Programs</u> – Public Works and Economic Development investments help support the construction or rehabilitation of essential public infrastructure and facilities necessary to generate or retain private sector jobs and investments, attract private sector capital, and promote regional competitiveness, including investments that expand and upgrade infrastructure to attract new industry, support technology-led development, redevelop brownfield sites and provide eco-industrial development. • <u>Community Trade Adjustment Assistance Program</u> – EDA's Community Trade Adjustment Assistance (Community TAA) Program, which was created by the American Recovery and Reinvestment Act of 2009, is aimed at helping to create and retain jobs by providing project grants to communities that have experienced, or are threatened by, job loss resulting from international trade impacts. • <u>Planning Program</u> – The Planning Program helps support planning organizations in the development, implementation, revision or replacement of comprehensive economic development strategies (CEDS), and for related short-term planning investments designed to create and retain higher-skill, higher-wage jobs, particularly for the unemployed and underemployed in the nation's most economically distressed regions. | Economic Development Administration (EDA) / U.S. Department of Commerce |
| Elm Street Program | Grant funds for planning, technical assistance and physical improvements to residential and mixed use areas in proximity to central business districts. Elm Street is a 5-year program. A Plan that meets the Elm Street Plan required must be prepared prior to designation. Planning Grants (\$25,000) are available from PA DCED. Operational grants (\$50,000 maximum per year), and Residential Reinvestment grants (\$250,000 maximum per year) should be pursued annually over the five years. Elm Street involves five specific program areas: 1) organization; 2) promotion; 3) design; 4) neighborhoods and economy; and 5) clean, safe and green activities. | PA DCED |

| Name of Program | General Description of Program | Administering Agency |
|---|--|---|
| Historic Preservation – Certified Local Government Grants | Provides modest-sized matching grants to provide technical assistance to municipalities that have official historic districts and meet other criteria to be “certified”. | Federal, administered by PA Historical and Museum Commission (PHMC) |
| Historic Preservation Survey and Planning Grants | Matching grants for historic surveys, historic preservation planning and National Register nominations. Available to municipalities and nonprofit organizations. Cannot be used for construction. | Federal, administered by PHMC |
| Historic Preservation Tax Credits | Offers federal income tax credits for a percentage of the qualified capital costs to rehabilitate a certified historic building, provided the exterior is restored. The program is generally limited to income-producing properties. | National Park Service |
| HOME | U. S. Department of Housing and Urban Development (HUD) program that provides municipalities with funding and technical assistance to expand the supply of decent and affordable housing for low and very low moderate income persons. Uses may include: rehabilitation; new construction; acquisition of rental or sales housing and rental assistance. | Carbon County Community Development Office |
| Home Ownership Choice Program (HCP) | An initiative of the Pennsylvania Housing Finance Agency (PHFA) to finance new, single-family home construction in blighted areas of the Commonwealth. | PA Housing Finance Agency (PHFA) |
| Home Town Streets and Safe Routes to School | The Home Town Streets Program provides funding for a variety of streetscape improvements that are aimed at reestablishing downtown and commercial centers. The Safe Routes to School Program provides grants and is designed to work with both school districts and pedestrian and bicycle safety advocates to make physical improvements that promote safe walking and biking passages to schools. Both programs require a 20% local match. | PennDOT |
| Housing and Redevelopment Assistance | Provides state-funded grants for community revitalization and economic development activities at the local level. The program assists the community in becoming competitive for business retention, expansion and attraction. | PA DCED |
| Industrial Sites Reuse Program, PA (“Brownfields”) | Provides grants of up to 75% and low-interest loans for assessment of environmental contamination and remediation work at former industrial sites. Available to private companies, nonprofit economic development agencies, or authorities that own the land. Mainly targeted towards cities. Financing is not available to the company that caused the contamination. | PA DCED in cooperation with PA DEP |
| Keystone Historic Preservation Funds | Provides 50% matching grants to fund analysis, acquisition, or rehabilitation of historic sites. The site must be on the National Register of Historic Places or officially determined to be eligible for listing. The site must be accessible to the public after funding. Grants can be made to public agencies or nonprofit organizations. | PHMC |
| Keystone Recreation, Park and Conservation Fund | State grants to improve the physical facilities of public libraries. | PA DCED |

| Name of Program | General Description of Program | Administering Agency |
|---|--|---|
| Land Use, Transportation, and Economic Development Initiative (LUTED) | This program includes the former Land Use Planning and Technical Assistance Program (LUPTAP). The revised program began with planning efforts in regions throughout the state. Carbon County is part of the Northeast Region. The report for the region is online at: http://www.newpa.com/sites/default/files/uploads/northeastreportwilkesbarre.pdf | PA DCED |
| Land and Water Conservation Fund | The Land and Water Conservation Fund (LWCF) provides matching grants to state and local governments for the acquisition and development of public outdoor recreation areas and facilities. | National Park Service in cooperation with PA DCNR |
| Local Banks | Local banks in the area can contribute funding and financing toward Plan implementation, including making donations for revitalization projects. | Local Banks |
| Local Government Capital Projects Loan Program | This Program provides low-interest loans for equipment and facility needs of small governments with populations under 12,000. | PA DCED |
| Main Street Initiatives Streetscape Amenities Grant | Provides 50% grants up to \$8,000 for banners, benches, trash receptacles, plants, bike racks, signage and street trees. | Lehigh County Dept. of Community & Economic Development |
| Main Street Program (PA) | The Pennsylvania Main Street Program offers grants to local governments to fund “Main Street Managers” to coordinate downtown revitalization strategies and commerce activities. Includes: Anchor Building Grants, which assist in the renovation of integral buildings that are vital to the downtown’s health; and Downtown Reinvestment Grants, which provide financial incentives to municipalities for development projects to help eliminate decline. | PA DCED |
| National Recreational Trails Funding (Symms NRTA) | Provides grants for the acquisition and development of recreation trails (which may include trails for motorized vehicles). A 50% local match is required. Applications may be made by federal, state or local government agencies or organizations. | Federal, administered by PA DCNR |
| Neighborhood Partnership Program (NAP / NPP) | <p>Corporate tax liability credit for businesses that sponsor a neighborhood organization to develop and implement a neighborhood revitalization plan by contributing a substantial amount of cash per year over an extended period of time.</p> <p>Programs must serve clients who are low-income and residents of economically distressed neighborhoods specified by the neighborhood organization. Projects must fall under one of the following categories: housing; education; health and social services; community development; job training; crime prevention; and community participation.</p> | PA DCED |
| PA Infrastructure Investment Authority (PennVest) | Offers low-interest loans for construction and improvement of drinking water and wastewater systems. 100% grants may be available for highly-distressed communities. Mainly intended for public systems, but some private systems may be approved. Water projects are funded through the Drinking Water Revolving Loan Fund. Sewage projects are funded through the Clean Water Revolving Fund. PennVest is also authorized to provide loans for projects to control existing stormwater problems, such as separating stormwater from sanitary sewage. The “Advance Funding Program” provides low-interest loans for feasibility studies and engineering of systems if the utility cannot fund such work itself. | PennVest, PA DEP (Bureau of Water Supply Management) – Involves both U.S. EPA and state funds |

APPENDIX C

| Name of Program | General Description of Program | Administering Agency |
|---|--|--|
| PA Weed and Seed Program | The Weed and Seed program, modeled after the federal program, is a two-pronged approach to addressing the negative, or criminal, elements of a targeted area while supporting and enhancing the positives, or available resources, through the introduction of programming and specialized initiatives. | PA Commission on Crime & Delinquency, and the Office of the Governor |
| Pennsylvania Community Transportation Initiative Program | Grants are available from PennDOT as part of the Pennsylvania Transportation Initiative Program. Funds can be used for a variety of transportation projects and initiatives. | PennDOT |
| PennDOT's Local Technical Assistance Program | The Pennsylvania Department of Transportation provides technical assistance for Walkable Communities Program studies and other studies. | PennDOT |
| Rails to Trails, PA | Provides grants for feasibility studies, master site plans, acquisition, and improvement of former railroad lines for recreation trails. A 50% local match is required. Open to municipalities, authorities, and non-profit. | PA DCNR |
| Save America's Treasures | Save America's Treasures Grants are available for preservation and/or construction work on National significant artifacts and historic structures and sites. A dollar for dollar, non-federal match is required. The maximum grant request for all projects is \$700,000. | National Park Service |
| TEA-21 Transportation Enhancements Program (part of federal Transportation Efficiency Act) | The Transportation Equity Act for the 21 st Century (TEA-21) authorizes Federal surface transportation programs for highways, highway safety, and transit. | U.S. DOT funds administered by PennDOT |
| Urban Development Program (UDP) | Provides grants for urban development and improvement projects. Funds may be used for: construction or rehabilitation of infrastructure, building rehabilitation; acquisition and demolition of structures / land; revitalization or construction of community facilities; purchase of upgrade of machinery and equipment; planning of community assets; public safety; crime prevention; recreation and training. | PA DCED |
| Urban Forestry Grants / Tree Improvement Program / Mini-Grant for Planting Trees / PA Community Forest Grants | Several DCNR grants provide funding for tree planting projects on public property or along streets. There is also a Federal "America the Beautiful" grant program for tree planting. | PA DCNR |

Population in a majority of Carbon County municipalities experienced a range of changes from small growth to significant decrease. Carbon County experienced an 11.0 percent increase in population from 2000 to 2010. During the same period, the population of Penn Forest Township, Carbon County’s fastest growing municipality, increased by 76.2 percent (Table A.2). Major factors contributing to Penn Forest’s growth are:

- Access to major highways,
- Outdoor recreation amenities,
- Increase in resort style and second home housing, and
- Influx of New York and New Jersey residents.

**Table A.2
Municipal Total Population 1990-2010**

| Municipality | Total Population | | | Percent Change | |
|-------------------------|------------------|--------|---------------|----------------|--------------|
| | 1990 | 2000 | 2010 | 1990 - 2000 | 2000 - 2010 |
| Banks Township | 1,485 | 1,359 | 1,262 | -8.5 | -7.1 |
| Beaver Meadows Borough | 985 | 968 | 869 | -1.7 | -10.2 |
| Bowmanstown Borough | 888 | 895 | 937 | 0.8 | 4.7 |
| East Penn Township | 2,091 | 2,461 | 2,881 | 17.7 | 17.1 |
| East Side Borough | 330 | 290 | 317 | -12.1 | 9.3 |
| Franklin Township | 3,706 | 4,243 | 4,262 | 14.5 | 0.4 |
| Jim Thorpe Borough | 5,048 | 4,804 | 4,781 | -4.8 | -0.5 |
| Kidder Township | 1,319 | 1,185 | 1,935 | -10.2 | 63.3 |
| Lansford Borough | 4,583 | 4,230 | 3,941 | -7.7 | -6.8 |
| Lausanne Township | 237 | 218 | 237 | -8 | 8.7 |
| Lehigh Township | 500 | 527 | 479 | 5.4 | -9.1 |
| Lehighton Borough | 5,914 | 5,537 | 5,500 | -6.4 | -0.7 |
| Lower Towamensing Town. | 2,948 | 3173 | 3,228 | 7.6 | 1.7 |
| Mahoning Township | 4,198 | 3,978 | 4,305 | -5.2 | 8.2 |
| Nesquehoning Township | 3,364 | 3,288 | 3,349 | -2.3 | 1.9 |
| Packer Township | 918 | 986 | 998 | 7.4 | 1.2 |
| Palmerton Borough | 5,394 | 5,248 | 5,414 | -2.7 | 3.2 |
| Parryville Borough | 488 | 478 | 525 | -2.1 | 9.8 |
| Penn Forest Township | 2,895 | 5,439 | 9,581 | 87.9 | 76.2 |
| Summit Hill Borough | 3,332 | 2,947 | 3,034 | -11.6 | 3 |
| Towamensing Township | 3,111 | 3,475 | 4,477 | 11.7 | 28.8 |
| Weatherly Borough | 2,640 | 2,612 | 2,525 | -1.1 | -3.3 |
| Weissport Borough | 472 | 434 | 412 | -8.1 | -5.1 |
| Carbon County | 56,846 | 58,802 | 65,249 | 3.4 | 11 |

Source: U.S. Census

The Pennsylvania State Data Center projects that Carbon will see moderate increases in population through 2030, while higher increases are projected in Monroe County to the east and Lehigh and Northampton Counties to the south (Table A.3) New projections have not yet been completed based upon the 2010 Census.

Four of the five counties with a population growth greater than 50 percent were in the northeastern part of the state bordering New Jersey and New York.¹ Both the Counties of Luzerne and Schuylkill are projected to lose total population, in relation to the 2000 census. Access to I-80 and PA 476, the possibility of rail transit connecting from Monroe County to the New York metropolitan area, and migration of residents and businesses from New York and New Jersey will have direct effects on increases in the projected populations for these counties.

**Table A.3
Population Projections 2000-2020**

| <i>County</i> | <i>2010 Population</i> | | | <i>Percent Change 2000-2030</i> |
|--------------------|------------------------|-------------|-------------|-------------------------------------|
| | | <i>2020</i> | <i>2030</i> | |
| Carbon County | 65,249 | 64,599 | 69,098 | 17.5 |
| Lehigh County | 349,497 | 327,295 | 381,738 | 22.3 |
| Luzerne County | 320,918 | 317,870 | 287,943 | -9.8 |
| Monroe County | 169,842 | 212,009 | 239,824 | 72.9 |
| Northampton County | 297,735 | 303,586 | 342,081 | 28.1 |
| Schuylkill County | 148,289 | 145,994 | 146,078 | -2.8 |

Source: U.S. Census, Pennsylvania State Data Center

The number of residents in various age groups affects housing demand and many community services, including parks, recreation programs, senior center programs, and emergency medical services. The following points illustrate recent changes in the age composition of the Carbon County population (Table A.4).

- The boroughs, on average, had the highest concentrations of children under 5 and adults over the age of 65. Many seniors have lived in the boroughs for decades. Many families with young children reside in the boroughs because they typically have the most affordable housing..
- School-age children (ages 5–19) are spread throughout Carbon County. Lehigh Township had the highest percentage (23.1), while Parryville Borough (15.9) and Bowmanstown Borough (15.5) had the lowest percentages, compared to the Carbon County average of 19.1.
- Regarding the percentage of residents age 20–24, the Boroughs of Weissport (7.6 percent), Palmerton (6.3 percent), and Parryville (6.1 percent) had higher concentrations than the Carbon County average of 4.7 percent.

¹ Pennsylvania State Data Center. Penn State Harrisburg. Research Brief - Pennsylvania County Population Projections, November 3, 2008.

**Table A.4
Age Cohorts, 2010**

| Municipality | Under 5 | | 5 - 19 | | 20 - 24 | | 25 - 44 | | 45 - 54 | | 55 - 64 | | 65+ | | Total | Median Age |
|-----------------------|---------|-----|--------|------|---------|-------|---------|------|---------|------|---------|------|-------|------|-------|------------|
| | # | % | # | % | # | % | # | % | # | % | # | % | # | % | | |
| Banks Township | 70 | 5.5 | 195 | 15.7 | 75 | 5.9 | 275 | 21.8 | 216 | 17.1 | 162 | 12.8 | 266 | 21.1 | 1262 | 45.7 |
| Beaver Meadows Bor | 52 | 6 | 157 | 18.1 | 58 | 6.7 | 190 | 21.9 | 137 | 15.8 | 97 | 11.1 | 178 | 20.6 | 869 | 43.2 |
| Bowmanstown Borough | 56 | 6 | 141 | 15.1 | 46 | 4.9 | 248 | 26.5 | 149 | 15.9 | 133 | 14.2 | 164 | 17.6 | 937 | 43.5 |
| East Penn Township | 121 | 4.2 | 432 | 15 | 133 | 4.6 | 630 | 21.9 | 554 | 19.3 | 487 | 16.9 | 524 | 18.2 | 2881 | 47.5 |
| East Side Borough | 14 | 4.4 | 57 | 17.9 | 21 | 6.6 | 72 | 22.7 | 59 | 18.6 | 31 | 9.8 | 63 | 19.8 | 317 | 44.4 |
| Franklin Township | 205 | 4.8 | 724 | 17.0 | 184 | 4.3 | 1,074 | 25.2 | 682 | 16.0 | 680 | 16.0 | 713 | 16.9 | 4,262 | 4.8 |
| Jim Thorpe Borough | 244 | 5.1 | 848 | 17.7 | 208 | 4.4 | 1,190 | 24.9 | 812 | 17.0 | 711 | 14.9 | 768 | 16.0 | 4,781 | 43.8 |
| Kidder Township | 83 | 4.3 | 283 | 14.6 | 78 | 4.0 | 342 | 17.6 | 326 | 16.8 | 343 | 17.8 | 480 | 24.8 | 1,935 | 50.4 |
| Lansford Borough | 288 | 7.3 | 701 | 17.8 | 266 | 6.7 | 939 | 23.9 | 573 | 14.5 | 451 | 11.4 | 723 | 18.3 | 3,941 | 40.7 |
| Lausanne Township | 16 | 6.8 | 37 | 15.6 | 13 | 5.5 | 45 | 19.0 | 63 | 26.6 | 10 | 24.0 | 16 | 39.0 | 237 | 45.9 |
| Lehigh Township | 17 | 3.5 | 61 | 12.8 | 22 | 4.6 | 87 | 18.2 | 83 | 17.3 | 92 | 19.2 | 117 | 24.4 | 479 | 51.9 |
| Lehighton Borough | 370 | 6.7 | 979 | 17.8 | 297 | 5.4 | 1,406 | 25.5 | 775 | 14.1 | 644 | 11.7 | 1,029 | 18.8 | 5,500 | 40.6 |
| Lower Towamensing Twp | 144 | 4.5 | 551 | 17.1 | 137 | 4.2 | 776 | 24.1 | 610 | 18.9 | 457 | 14.1 | 553 | 17.1 | 3,228 | 45.1 |
| Mahoning Township | 213 | 4.9 | 681 | 15.9 | 188 | 4.4 | 972 | 22.6 | 758 | 17.6 | 608 | 14.1 | 885 | 20.5 | 4,305 | 46.3 |
| Nesquehoning Borough | 166 | 5.0 | 506 | 15.1 | 186 | 5.6 | 811 | 24.2 | 496 | 14.8 | 445 | 13.3 | 739 | 22.0 | 3,349 | 45.1 |
| Packer Township | 40 | 4.0 | 178 | 17.8 | 47 | 4.7 | 209 | 20.9 | 211 | 21.1 | 138 | 13.8 | 175 | 17.5 | 998 | 46.3 |
| Palmerton Borough | 361 | 6.7 | 1,015 | 18.8 | 328 | 601.0 | 1,523 | 28.1 | 771 | 14.2 | 541 | 11.9 | 775 | 14.3 | 5,414 | 38 |
| Parryville Borough | 27 | 5.1 | 76 | 14.5 | 22 | 4.2 | 139 | 26.5 | 87 | 16.6 | 85 | 16.2 | 89 | 16.9 | 525 | 44.8 |
| Penn Forest Township | 492 | 5.1 | 1,886 | 19.6 | 355 | 3.7 | 2,233 | 23.2 | 1,613 | 16.8 | 1,539 | 16.0 | 1,463 | 15.3 | 9,581 | 43.7 |
| Summit Hill Borough | 169 | 5.6 | 521 | 17.1 | 166 | 5.5 | 733 | 24.2 | 468 | 15.4 | 434 | 14.3 | 543 | 17.9 | 3,034 | 43.2 |
| Towamensing Township | 213 | 4.8 | 832 | 18.6 | 203 | 4.5 | 1,040 | 23.2 | 840 | 18.8 | 665 | 14.9 | 684 | 15.3 | 4,477 | 44.4 |
| Weatherly Borough | 99 | 3.9 | 453 | 17.9 | 125 | 5.0 | 544 | 21.6 | 380 | 15.0 | 293 | 11.6 | 631 | 25.1 | 2,525 | 46.1 |
| Weissport Borough | 27 | 6.6 | 71 | 17.2 | 24 | 5.8 | 125 | 30.3 | 72 | 17.5 | 50 | 12.1 | 43 | 10.5 | 412 | 38.5 |
| Carbon County | 3487 | 5.3 | 11388 | 11.7 | 3182 | 4.9 | 15603 | 23.9 | 10735 | 16.5 | 9210 | 14.1 | 11644 | 17.9 | 65249 | 43.9 |

Source: U.S. Census

- Lehigh Township has the highest percentage of persons aged 45-54 and persons aged 5-19.
- As of 2000, 29 percent of Carbon County residents were age 55 and older, and 19 percent of county residents were age 65 or older. Carbon County had a higher percentage of senior citizens than the state and national averages.

Housing

Carbon County contains the fewest number of housing units compared to all surrounding counties. Much of Carbon County is rural in character, and a large amount of land in the county is in public ownership. However, Carbon County had a 12.5 percent increase in housing units during the 2000s, behind only Monroe and Northampton Counties (Table A.5).

During the 2000s, the townships of Penn Forest (37.9 percent), East Penn (28.5 percent), and Franklin Township (26.1 percent) all experienced a significantly larger percentage increase in housing units than the county as a whole (Table A.6). Increases in second home and resort-oriented units and the immigration from New Jersey and New York caused the increase in the northeastern part of Carbon County.

Table A.5
County Housing Units 1990-2010

| <i>County</i> | <i>Total Housing Units</i> | | | <i>Percent Change</i> | |
|--------------------|----------------------------|-------------|----------------|-----------------------|--------------------|
| | <i>1990</i> | <i>2000</i> | <i>2010</i> | <i>1990 - 2000</i> | <i>2000 - 2010</i> |
| Carbon County | 27,380 | 30,492 | 34,299 | 11.4 | 12.5 |
| Lehigh County | 118,335 | 128,910 | 142,613 | 8.9 | 10.6 |
| Luzerne County | 138,724 | 144,686 | 148,748 | 4.3 | 2.8 |
| Monroe County | 54,823 | 67,581 | 80,359 | 23.3 | 18.9 |
| Northampton County | 95,345 | 106,710 | 120,363 | 11.9 | 12.8 |
| Schuylkill County | 66,457 | 67,806 | 69,323 | 2.0 | 2.2 |

Source: U.S. Census

Table A.6
Municipal Housing Units 1990-2010

| <i>Municipality</i> | <i>Total Housing Units</i> | | | <i>Percent Change</i> | |
|-------------------------|----------------------------|-------------|---------------|-----------------------|--------------------|
| | <i>1990</i> | <i>2000</i> | <i>2010</i> | <i>1990 - 2000</i> | <i>2000 - 2010</i> |
| Banks Township | 619 | 620 | 611 | 0.2 | -1.5 |
| Beaver Meadows Borough | 427 | 458 | 446 | 7.3 | -2.6 |
| Bowmanstown Borough | 371 | 417 | 429 | 12.4 | 2.9 |
| East Penn Township | 775 | 996 | 1,253 | 28.5 | 25.8 |
| East Side Borough | 149 | 146 | 150 | -2.0 | 2.7 |
| Franklin Township | 1442 | 1819 | 1,873 | 26.1 | 3 |
| Jim Thorpe Borough | 2098 | 2,193 | 2,290 | 4.5 | 4.4 |
| Kidder Township | 2045 | 2197 | 2,845 | 7.4 | 29.5 |
| Lansford Borough | 2215 | 2,228 | 2,161 | 0.6 | -3 |
| Lausanne Township | 101 | 109 | 117 | 7.9 | 7.3 |
| Lehigh Township | 216 | 237 | 227 | 9.7 | -4.2 |
| Lehighon Borough | 2469 | 2546 | 2,499 | 3.1 | -2 |
| Lower Towamensing Town. | 1123 | 1296 | 1,407 | 15.4 | 8.6 |
| Mahoning Township | 1617 | 1693 | 1,860 | 4.7 | 9.9 |
| Nesquehoning Township | 1527 | 1599 | 1,701 | 4.7 | 6.4 |
| Packer Township | 356 | 407 | 440 | 14.3 | 8.1 |
| Palmerton Borough | 2254 | 2,365 | 2,436 | 4.9 | 3 |
| Parryville Borough | 202 | 222 | 270 | 9.9 | 21.6 |
| Penn Forest Township | 3484 | 4,806 | 6,676 | 37.9 | 38.9 |
| Summit Hill Borough | 1431 | 1451 | 1,458 | 1.4 | 0.5 |
| Towamensing Township | 1272 | 1458 | 1,840 | 14.6 | 26.2 |
| Weatherly Borough | 994 | 1,033 | 1,123 | 3.9 | 8.7 |
| Weissport Borough | 193 | 196 | 187 | 1.6 | -4.6 |
| Carbon County | 27380 | 30492 | 34,299 | 11.4 | 12.5 |

Source: U.S. Census

More than three out of five (68.5 percent) of the housing units within Carbon County are single-family detached units (Table A.7). Most of the single units are in the townships. The boroughs include a much higher percentage of attached housing and apartments.

Table A.7
Units in Structure, 2000

| <i>Units in Structure</i> | <i>Carbon County</i> | |
|---------------------------|----------------------|------|
| | # | % |
| 1-unit detached | 23,153 | 68.5 |
| 1-unit attached | 6,169 | 18.3 |
| 2 -4 units | 1,732 | 5.1 |
| 5 or more units | 1255 | 3.7 |
| Other | 1486 | 4.4 |

Source: 2010 U.S. Census

Carbon County’s rich history in coal mining, lumber, and farming generated the initial locations of housing in the county. More than 52 percent of the housing units were constructed before 1970, while only 7 percent have been built from within the 2000’s.

Table A.8
Year Structure Built, 2000

| <i>Year Structure Built</i> | <i>Carbon County</i> | |
|-----------------------------|----------------------|------|
| | # | % |
| 2005 or later | 1,023 | 3.0 |
| 2000 - 2004 | 1,419 | 4.2 |
| 1990 - 1999 | 3,580 | 10.6 |
| 1980 - 1989 | 5,975 | 17.7 |
| 1970 - 1979 | 4,183 | 12.4 |
| Before 1970 | 17,615 | 52.2 |

Source 2000 U.S. Census

The tenure (owner vs. renter) of the county’s housing units has changed slightly within the past decade (Table A.9). Owner-occupied housing units have increased, while renter-occupied units have decreased. New development is generally focused on owner-occupied housing units in the outlying areas of the townships. The rental units—normally found in boroughs due to the density required to provide central water and sewer service—have slowly declined within the 1990’s as more people purchase homes.

Table A.9
Ownership of Housing Units, 2000 - 2010

| <i>Ownership and Vacancy Characteristics</i> | <i>Carbon County</i> | | | | <i>Percent Change 2000 - 2010</i> |
|--|----------------------|------|-------------|------|-----------------------------------|
| | <i>2000</i> | | <i>2010</i> | | |
| | # | % | # | % | |
| Occupied Housing Units | 23,701 | 77.7 | 26,684 | 77.8 | 12.6 |
| Owner-Occupied Units | 18,529 | 78.2 | 20,643 | 77.4 | 11.4 |
| Renter-Occupied Units | 5,172 | 21.8 | 6,041 | 22.6 | 16.8 |
| Vacant Housing Units | 6,791 | 22.3 | 7,615 | 22.2 | 12.1 |

Source: U.S. Census

Although the percent of the county’s housing stock that is vacant remained steady during the 1990s, the actual number of vacant units increased from 6,791 to 7,615—a total of 824 additional vacant units (Table A.9). Vacant housing units allow for a healthy housing market if the vacancy rate is about 4–7 percent of the total housing stock. Not only is the vacancy increasing in absolute terms, but the vacant units represent a relatively large 22.2 percent of the housing stock. Part of the vacancy rate increase may be explained by an increase in second home units.

Table A.9
Ownership of Housing Units, 2000 - 2010

| Ownership and Vacancy Characteristics | <i>Carbon County</i> | | | | Percent Change 2000 - 2010 |
|--|----------------------|------|-------------|------|---------------------------------------|
| | <i>2000</i> | | <i>2010</i> | | |
| | # | % | # | % | |
| Occupied Housing Units | 23,701 | 77.7 | 26,684 | 77.8 | 12.6 |
| Owner-Occupied Units | 18,529 | 78.2 | 20,643 | 77.4 | 11.4 |
| Renter-Occupied Units | 5,172 | 21.8 | 6,041 | 22.6 | 16.8 |
| Vacant Housing Units | 6,791 | 22.3 | 7,615 | 22.2 | 12.1 |

Source: U.S. Census

The term “household” refers to all persons living in a single housing unit. Average household size is another indicator of population changes.

Household size in Carbon and surrounding counties remained relatively constant from 2000 to 2010 (Table A.10). The largest change was an increase of 0.06 persons per unit (2.48 to 2.54) in Lehigh County. Smaller households are a common trend across the country as people wait longer to have children, spend more time in educational institutions, and put more time into the work environment.

Table A.10
Average Household Size, 1990 - 2010

| <i>County</i> | <i>Average Household Size (persons per unit)</i> | | |
|--------------------|--|-------------|-------------|
| | <i>1990</i> | <i>2000</i> | <i>2010</i> |
| Carbon County | 2.55 | 2.44 | 2.42 |
| Lehigh County | 2.51 | 2.48 | 2.54 |
| Luzerne County | 2.47 | 2.34 | 2.34 |
| Monroe County | 2.69 | 2.73 | 2.72 |
| Northampton County | 2.62 | 2.53 | 2.53 |
| Schuylkill County | 2.47 | 2.36 | 2.35 |

Source: U.S. Census

Income

Income affects many facets of Carbon County’s economy and housing market. Income levels in Carbon County are more closely aligned to the rural counties of Schuylkill and Luzerne than the more urban counties of Lehigh, Monroe, and Northampton (Table A.11). The urban counties include cities with higher-paying jobs and/or have a population of resident commuters to the New York / Northern New Jersey metropolitan area.

**Table A.11
County Median Household Income**

| <i>County</i> | <i>Median Annual Household Income (\$)</i> | |
|--------------------|--|-------------|
| | <i>1989</i> | <i>1999</i> |
| Carbon County | 25,501 | 35,113 |
| Lehigh County | 32,455 | 43,449 |
| Luzerne County | 23,600 | 33,771 |
| Monroe County | 32,465 | 46,257 |
| Northampton County | 32,890 | 45,234 |
| Schuylkill County | 23,028 | 32,669 |

Source: U.S. Census

PRESERVING GREENWAYS THROUGH DEVELOPMENT REGULATIONS

OVERVIEW OF METHODS

A variety of methods can be used in zoning ordinances, subdivision and land development ordinances (SALDOs) and floodplain ordinances to assist in preserving greenways. This appendix describes a menu of choices, which can be combined as appropriate.

Zoning vs. SALDO Provisions - Some natural feature protection provisions can be placed in either the zoning ordinance or the SALDO. In most cases, placement in a zoning ordinance is preferable because it will address more types of development. Also, a developer may attempt to avoid a SALDO requirement by destroying natural features before they submit a SALDO plan to the municipality.

Floodplain—The 100-year floodplain is the area expected to be flooded during the worst flood in an average 100-year period. By limiting development in the floodplain, the municipality not only increases safety by reducing the potential for flood damage, but also gains the additional benefits of maintaining open land along waterways.

Most municipal floodplain regulations allow construction to occur within the portions of the floodplain that are not within the main flood channel. Typically, new buildings have to be elevated and floodproofed. However, elevated buildings can still displace floodwaters and raise flood levels on other properties.

Townships should consider prohibiting the construction and placement of any new building within the entire 100-year floodplain. Exceptions could be included for small accessory sheds or redevelopment sites.

In addition, most floodplain regulations allow the construction of parking lots in the 100-year floodplain. As a result, the entire floodplain can be paved, which destroys natural vegetation and prevents groundwater recharge. Vehicles can also be carried by floodwaters, which can create hazards. One alternative is to prohibit new parking lots for three or more motor vehicles on any lot within the floodplain, within a township.

Within a borough, less restrictive floodplain regulations in regards to parking and new buildings often are appropriate to avoid creating difficulties for redevelopment.

Creek and River Buffers — The natural vegetation along a creek or river is extremely important to filter out pollutants and eroded soil. Thicker vegetation is preferable than thinner to filter out more pollutants, ideally including a combination of mature trees and thick, understory shrubs. (Grass has only a limited benefit in protecting water quality.) A municipal zoning ordinance can require that existing vegetation along a creek that is removed as part of a development must be replaced with new vegetation that will have a similar or better ecological benefit. A variety of free publications are available on the internet from nonprofit and governmental organizations that recommend ways to design vegetation buffers along creeks, also known as “riparian buffers.”

Creek and River Setbacks — A minimum setback can be established for all new buildings, parking lots, and business outdoor storage areas from any perennial creek. A perennial creek is a creek that usually has year-round flows, except during droughts. USGS mapping is often used as the source to separate perennial from intermittent creeks. The setback can vary by importance of the creek—a creek with great ecological important should have a wider setback than a creek with less value for recreation and fishing.

Allowed Uses and Densities—Zoning typically involves varying land uses and densities in different zoning districts. Zoning uses incentives and disincentives to encourage development to be placed in certain areas, as opposed to areas where preservation is encouraged. For example, business uses and higher densities of housing are allowed in growth-oriented zoning districts, while only very low density residential, agricultural, and open space-oriented uses are allowed in more conservation-oriented zoning districts. Where greenways are being encouraged, municipalities should consider prohibiting intense commercial uses and reducing the densities of residential development.

A municipality may wish to create a “conservation” zoning district to encompass an area with a concentration of natural features, such as flood-prone land, wetlands, and/or steep slopes. That conservation district could allow a limited number of uses, at a low density, with a strict maximum on the percentage of the lot that can be covered by buildings, paving, and other surfaces that are impervious to water.

Varying Densities Based Upon Natural Features—In many locations where greenways are desirable, land is often not suitable for development. The total density on a tract of land can be based upon all of the natural features on the tract. In other words:

- The total lot area of the development would be calculated first.
- Areas within wetlands, flood-prone areas, and very steep slopes would be deleted.
- A certain percentage of other natural features would be deleted. For example, 50 percent of areas with moderate slopes could be deleted. Sometimes, areas with electric transmission lines are deleted.
- The resulting net tract area is divided by a minimum lot area to determine the number of homes allowed on the tract.

A tract with fewer natural constraints would be allowed a higher number of homes than the same sized tract with many natural constraints. A similar requirement could state that wetlands, flood-prone areas, and very steep slopes would not be allowed to count towards the minimum lot area. For example, a zoning district may require a minimum *buildable* lot area of one acre. Then, a lot would need to include at least one acre *after deleting* all wetlands, floodprone areas, and very steep slopes.

Forestry and Tree Removal—The Pennsylvania Municipalities Planning Code (MPC) requires that forestry be allowed by right in all zoning districts and that it cannot be “unreasonably regulated.” However, municipal regulations have been upheld that regulate forestry. For example, one township ordinance, upheld in a court decision, prohibited large clearcutting and prohibited forestry close to creeks and on very steep slopes. A municipality can also require that a forest management plan be prepared to show how erosion is being minimized and that the forestry is being carried out to allow long-term productivity on the forested land.

A municipality can also regulate unnecessary removal of mature woodlands as part of a development. Where trees are proposed to be preserved, temporary fencing should be placed around the root system to prevent damage to the tree trunks and compaction of the soil during construction.

Steep Slopes—A municipal zoning ordinance can:

- Limit the amount of steep slopes to be disturbed.
- Require that natural vegetation be maintained in place on most steep sloped areas to minimize erosion.
- Require larger lot sizes and lower impervious coverages if a new principal building is proposed on steep slopes, which encourages a builder to place the home on the less steep portions of a lot. However, the provision also requires that the outer extent of the proposed building location be shown on the subdivision plan.

Wetlands—Municipalities should require a professional wetland delineation and certification whenever a wetland is suspected on-site. Applicants can be required to certify that a site contains no wetlands. A municipality can require that new buildings and new parking areas be setback from wetlands. At a minimum, a 20-foot wide setback is valuable to avoid intrusion into the wetland by construction equipment.

Transfer of Development Rights (TDR)—The optional TDR process can be included in a zoning ordinance. Certain rural areas are designated as “sending areas” where the goal is to encourage permanent preservation. Other areas are designated as “receiving areas” that are suitable for a higher density. The ordinance would allow a developer in a receiving area to buy a conservation easement from an owner of land in a sending area. The developer would privately negotiate a price for the easement with a willing seller in the sending area. The developer then transfers the number of homes that would have been allowed on the sending parcel to achieve a higher density on the receiving parcel. For example, if 10 homes would otherwise be allowed on the receiving parcel, and 8 homes would have been allowed on the sending parcel, the receiving parcel could be developed with 18 homes.

TDR is valuable land preservation process because:

- The TDR process is voluntary.
- TDR helps preserve land in a way that fairly compensates property owners.
- The TDR process helps to concentrate development in more suitable locations.
- TDR directs development away from important natural areas and farmland.
- The TDR process, as currently structured in Pennsylvania, preserves land without any expenditure of tax dollars.
- TDR does not increase the total number of homes allowed in a municipality.
- TDR greatly minimizes the land consumed by each new home.

TDR can also occur across municipal borders if authorized by both municipalities.

Recreation Land and Fee Requirements — The MPC provides municipalities with the authority to require that new developments include public recreation land. If agreed by the municipality and the developer, fees can be required in place of land. The fees can only be used to acquire recreation land or to construct recreation facilities. A recreation plan must be adopted by resolution before land or fees can be required, although the plan is not required to be detailed or elaborate.

When feasible, recreation land should be required to be placed at the edge of a new development next to a potential future development site. External placement allows the first recreation land to be combined with future recreation land when the adjacent site is proposed for development.

Proper standards are vital to make sure that required recreation land is suitable for recreation. A municipality can require that more recreation land be provided if the developer proposes land that is not prime for active recreation. For example, if most of the land is flood-prone, then the municipality could require, say, three times the amount of recreation land as would apply if the land was not flood-prone.

Trail Requirements—Some municipalities include requirements in a SALDO for developers to install recreation trails as part of subdivisions. The trail requirement is often in place of a sidewalk requirement. Sometimes the trail is designed with a more rural setting behind houses. In other cases, the trail may involve an asphalt bicycle path that runs parallel to a road, but is separated from the road by a green strip. When trails are planned as part of a residential development, construction of the trail should be required before any adjacent homes are sold. Otherwise, new residents may try to interfere with trail construction.

MODEL ORDINANCE PROVISIONS

The following are examples of model zoning and SALDO provisions that should be considered by the municipalities to help carry out this Plan and to protect important natural areas. The rationale for these provisions is discussed at the beginning of this Appendix.

FLOODPLAINS (Flood-prone areas).

Note: Municipalities have a choice of placing their regulations upon flood-prone areas in the Zoning Ordinance or in a separate ordinance. The PA. Department of Community and Economic Development has a recently updated model ordinance for regulating floodplains, which is available on their website.

If a township wishes to go beyond the minimum provisions, it should consider adding the following provision to its zoning ordinance:

“In no case shall any new principal building be placed, constructed or otherwise located within the one hundred year floodplain.”

AGRICULTURAL PRESERVATION

“Additional Requirements in the AC Agricultural Conservation District:

1. Minimum lot area - 1 acre, except 20 acres for any lot that is beyond the number of lots allowed under Section 307.D.7.
2. Maximum lot area - For a single-family detached dwelling that is not on a principal agricultural lot - 2 acres maximum lot area. The maximum lot area shall not apply if the applicant can demonstrate by credible evidence that the area proposed for the lot: 1) does not include more than 2 acres of Class I, II and/or III soils, as identified in official Federal soils mapping or a more accurate professional study, 2) where additional lot area is needed to improve septic or water supply facilities for the lot, in the determination of the Sewage Enforcement Officer, or 3) where a larger lot size is required because of a State or Federal regulation.
 - a. The largest amount of Class I, II and III agricultural soils that is feasible shall be included on one principal agricultural lot.
3. Minimum lot width - 150 feet.
4. Minimum yards for principal and accessory buildings, except for Raising of Livestock and Poultry, see Section 402:
 - a. Front - 40 feet.
 - b. Each of 2 sides - 15 feet.
 - c. Rear - 30 feet.
 - d. However, an accessory storage building with a maximum floor area of 600 square feet and a maximum height of 15 feet may be located a minimum of 10 feet from the side or rear lot line.
 - e. The minimum lot width may be met at the proposed principal building setback line instead of the minimum building setback line if the applicant proves that such modification would result in a greater amount of preservation of agricultural land than would otherwise occur.
5. Maximum impervious coverage - 15 percent, except sales of farm equipment and places of worship shall be allowed to have a 60 percent maximum impervious coverage.
6. Maximum height - 3 stories or 40 feet, whichever is more restrictive. No maximum height shall apply to agricultural structures.
7. Limitations on Subdivision and Land Development in the AC District.
 - a. To preserve agricultural tracts, the AC District regulations limit the subdivision of lots from farms and establishes a maximum lot size to allow the retention of tracts of sufficient size

to be productive for agriculture. This Section is based upon Section 604(3) and other provisions of the Pennsylvania Municipalities Planning Code.

- b. Each tract existing on _____ (*date of enactment*) shall be permitted to subdivide new lots from the tract or establish new principal uses on the tract based upon the lot area of the tract as it existed on such date, as follows:

| Lot Area (Acres) | Maximum Number of Total Lots of Less | |
|------------------|--------------------------------------|--|
| At Least | Less Than | 20 Acres Each Which Shall be Allowed (including the pre-existing lot) |
| 2 | 10 | 2 |
| 10 | 30 | 3 |
| 30 | 40 | 4 |
| 40 | 50 | 5 |
| 50 or more | | 6, plus one lot for every 10 acres over 60 |

- c. The condition of the tract on _____ (*date of enactment*), or on the date on which the tract was first zoned AC District, shall be the basis from which the maximum development set forth in Section D.7. above shall be calculated.
- d. No subdivision shall be permitted which shall increase the lot size of a lot used for residential purposes in excess of the maximum lot size, except as provided in Section D.2.
- e. A subdivision, the sole purpose of which is to transfer land to increase the size of a tract being used for agricultural purposes, where both the tract from which the land is taken and the tract to which the land is added will be 20 acres or greater after such subdivision, shall not be included when computing the permissible number of lots to be subdivided from a tract as set forth in Section D.
- f. A subdivision to create a lot which will be transferred to the Township, or a municipal authority created by the Township, or that is deed restricted or restricted by a conservation easement so that the lot can never be used for a principal use shall not be included when computing the permissible number of lots to be subdivided from a tract as set forth in Section D. above. For example, if a lot is created solely for the purposes of stormwater management or a water supply well, it shall not be limited by Section D.
- g. Any subdivision or land development plan hereafter filed with the applicable approving body for subdivision or land development of a parent tract shall specify which lot or lots shall carry with it a right of further subdivision or establishment of principal uses, if any such right remains from the quota allocated to the parent tract on _____ (*enactment date*), or on the date when such land was first included within the AC District. The right of further subdivision or establishment of principal uses shall also be included in the deed for the newly-created lot. If the designation of the right of further subdivision or establishment of principal uses was not included on a subdivision or land development plan of a parent tract, it shall be conclusively presumed that the largest lot remaining after subdivision shall carry the right of further subdivision or establishment of principal uses.
- i. In the event that a tract which was not classified as part of the AC District on _____ (*enactment date*), or was thereafter classified as part of the AC District, the size and ownership of the tract and the development existing on the tract on the effective date of the change in zoning classification shall determine the number of lots which may be subdivided from, or the number of principal uses which may be established on such tract.

- j. The number of lots which may be created or principal uses which may be established shall be fixed according to the size of the parent tract. This number shall not be increased by the subdivision of such parent tract. Any subsequent owner of a parent tract, land remaining in the parent tract after subdivision or land which was formerly part of a parent tract shall be bound by the actions of his predecessor.
- k. In submitting an application for a subdivision/land development for a dwelling unit within the AC District, the applicant shall demonstrate that measures have been used to:
 - 1) Minimize the loss of valuable farmland;
 - 2) Cluster residential lots on the subject property and, if applicable, with those lots contained on adjoining farms;
 - 3) Minimize the length of property lines shared by all residential lots and adjoining farms;
 - 4) Assure adequate vehicular access to future residences not currently proposed;
 - 5) Assure that the proposed plan can comply with the Township's Subdivision and Land Development Ordinance.
- l. Agricultural Nuisance Disclaimer - All lands within the AC District are located within an area where land is used for commercial agricultural production. Owners, residents and other users of this property may be subjected to inconvenience, discomfort and the possibility of injury to property and health arising from normal and accepted agricultural practices and operations including but not limited to noise, odors, dust, the operation of machinery of any kind including aircraft, the storage and disposal of manure, the application of fertilizers, soil amendments, herbicides and pesticides. Owners, occupants and users of this property should be prepared to accept such inconveniences, discomfort and possibility of injury from normal agricultural operations, and are hereby put on official notice that Section 4 of the Pennsylvania Act 133 of 1982 "The Right to Farm Law" may bar them from obtaining a legal judgment against such normal agricultural operations."

WETLANDS, LAKES, STEEP SLOPES AND WATERWAY CONSERVATION.

- A. “Wetland Studies. It shall be the responsibility of each applicant to determine whether land areas proposed for alteration meet the Federal or State definition of a wetland prior to submittal of development plans to the Municipality. If the Zoning Officer has reason to believe that wetlands may be present on a site proposed for development or subdivision, the Zoning Officer may require that the applicant provide a suitable wetland delineation study prepared by a qualified professional.
- B. Wetland and Lake Setbacks. A minimum setback of 20 feet shall be required between any new principal building for which a building permit is issued after the effective date of this Ordinance and any "wetland" or natural lake or pond.
- C. Steep Slopes. No principal building shall be constructed or placed on an area with a natural slope of 25 percent or greater. If a new lot will involve a principal building being constructed on slopes of 15 to 25 percent, then the minimum lot size shall be one acre, unless a larger lot size is required by the zoning district. These steep slope provisions shall not apply to slopes that were clearly man-made prior to the adoption of this Section.
- D. Setback from River/Riparian Areas. No new principal building, no new off-street parking space and no new commercial or industrial outdoor storage shall be allowed within 75 feet from the top of the primary bank of the _____ River and 50 feet from the top of the primary bank of any other perennial creek. Where trees and other natural vegetation is removed within this setback, it shall be replaced with new trees and vegetation that serve the same environmental purposes.”

OPEN SPACE DEVELOPMENT.

- A. Purposes. To allow flexible development of areas with sensitive natural features in such a way as to: a) avoid severe soil erosion and sedimentation, b) avoid severely increased storm water flows and speeds, c) steer development to those areas that are more physically suited for it, d) avoid construction of steep roads that are difficult, time-consuming, and expensive to maintain and snow plow, e) avoid increased use of steep roads and driveways that are dangerous to drive upon in snow and ice, f) to conserve forested areas that are an important part of the ecological cycle, providing for groundwater recharge, air pollution reduction and wildlife habitats and g) reduce construction costs while h) allowing each property owner a reasonable use of their land, related directly to the natural features and location and accessibility of the land.
- B. Applicability. This article allows an applicant the option to reduce the minimum lot areas on tracts of land if the applicant proves to the satisfaction of the Township that there will be compliance with all of the requirements of this Section.
1. The term "Open Space Development" shall mean a residential development meeting the requirements of this Section and which is approved as provided in Section ____.
 - a. Uses. A Open Space Development shall only include single family detached dwellings, nature preserves, Township-owned recreation, a golf course and their customary permitted accessory uses. A mobile/ manufactured home park shall not qualify as a Open Space Development.
 2. A tract may be eligible for approval for a Open Space Development if it includes a minimum of 6 acres of land area in common ownership. Such land area shall be contiguous, except that portions of the tract may be separated only by existing or proposed streets or creeks.
 - a. These provisions are intended to allow flexibility in the placement of individual dwelling units, in order to locate homes away from important natural areas and other community assets.
 - b. The amount of common open space shall be based upon the total lot area of all lots within the development, prior to subdivision, and prior to deletion of rights-of-way of future streets and before deleting the area of any environmental features.
 - 1) Areas that were preserved by a conservation or agricultural preservation easement *prior* to the submittal of the subdivision shall not be counted towards the area of the tract in calculating common open space or allowed density.
 - c. Areas used for a principal non-residential use (other than uses approved by the Township to be part of the preserved open space, such as a barn) shall not be included within the land area used to calculate residential density.
 - d. Conservation easements shall be established on lots as necessary to make sure that the maximum density requirement is met over time. Such conservation easements shall prevent the re-subdivision of lots in a manner that would violate this Section.
 3. A Open Space Development shall be designed as a unified, coordinated residential development, and shall be approved within a development plan controlled by a single development entity. After final subdivision approval and within an approved development agreement(s), a developer may sell individual lots to different builders or home buyers, provided that the developer or his/her successor remains responsible for ensuring the compliance with the approved development plan.
- C. Density, Open Space and Lot Standards.

1. A Yield Plan shall be presented by the applicant. The Yield Plan shall accurately show the maximum number of dwelling units that would be possible under current Township ordinances if the Open Space Development provisions would not be used. This Yield Plan shall be completed to an accurate scale, including accurately showing tract boundaries, steep slopes, 100 year floodplains and wetlands. The Yield Plan shall show potential lots and streets. However, the Yield Plan is not required to meet the detailed engineering requirements of a preliminary subdivision plan. The Board of Supervisors or its designee shall require sufficient septic probes to prove that on-lot septic systems would be possible in marginal areas. If the probes are not intended to be used for actual construction of septic systems, such probes may be conducted by any State-certified sewage enforcement officer.
2. Such Yield Plan shall be reviewed by the Zoning Officer, with advice by the Township Engineer, to determine whether each represents a reasonably accurate estimate of the number of dwelling units possible on each site, both physically and legally. If such estimates are determined to not be accurate, the applicant shall be required by the Zoning Officer to revise such Yield Plan.
3. The maximum number of dwelling units allowed on the tract through Open Space Development shall be 25 percent greater than the number of dwelling units that is determined by the Township to be possible under the approved Yield Plan.
4. Within a Open Space Development, the only allowed dwelling units shall be single family detached dwellings. The following minimum lot areas shall apply, provided that the total maximum density for the tract is not exceeded:

Note - The minimum lot sizes and minimum amounts of open space will need to vary depending upon the lot sizes that are required under development without open space. The goal is to provide as much open space as is reasonable, while still making sure that open space development is an attractive option to a developer.

- a) Conservation District - The minimum lot area shall be reduced to 1 acre and the minimum lot width shall be reduced to 150 feet. A minimum of 40 percent of the total lot area of the tract (prior to subdivision) shall be preserved as Common Open Space. The majority of the required common open space shall be in one contiguous tract, except that it may be separated by one street. The only allowed dwellings shall be single family detached dwellings.
 - b) Rural District - The minimum lot area shall be reduced to 1 acre and the minimum lot width shall be reduced to 150 feet. A minimum of 25 percent of the total lot area of the tract (prior to subdivision) shall be preserved as Common Open Space. The majority of the required common open space shall be in one contiguous tract, except that it may be separated by one street. The only allowed dwellings shall be single family detached dwellings.
 - c) Low Density Residential District - The dwellings shall need both Township-approved central water and central sewage services. The minimum lot area may be reduced to 10,000 square feet and the minimum lot width to 80 feet. A minimum of 35 percent of the total lot area of the tract (prior to subdivision) shall be preserved as Common Open Space. The majority of the required common open space shall be in one contiguous tract, except that it may be separated by one street. The only allowed dwellings shall be single family detached dwellings.
6. Utilities. Any lot of less than one acre shall be served by Township-approved central sanitary sewerage service and central water service.
 7. Subdivision of Part of a Tract. This subsection "7" addresses a situation in which only part of a lot is proposed to be subdivided, and the applicant at the present time does not intend to subdivide for the maximum number of dwellings allowed by this Section. In such case, the applicant shall establish a permanent conservation easement covering common open space to

comply with this Section. Because only part of the tract is being subdivided, it may not be necessary to meet the common open space requirement based upon the area of the entire tract.

- a) The land under the conservation easement shall be a regular rectangle in shape and shall be located in such a manner as to allow it to adjoin land that could be added under a conservation easement in the future.
- b) The following hypothetical example assumes a lot includes 50 acres, and the Yield Plan determines that the applicant for a Conservation Development is allowed a total of 30 new dwellings. In this example, the applicant only wishes to subdivide lots for 10 new dwellings at the present time, which is one-third of the total number of allowed dwellings. If the entire lot would be subdivided to the maximum allowed, a conservation easement would need to be placed on 30 percent of 50 acres, or 15 acres. Because only one-third of the allowed dwelling units are being subdivided, then the conservation easement at this time would only need to apply to 5 acres. The 5 acres under the conservation easement would need to be placed on the tract at a location where it could be joined by the remaining 10 acres of land under a conservation easement if the applicant in the future decided to subdivide lots for the remaining 20 dwelling units that are allowed.

D. Conditions for Approval. In addition to the specific requirements of this Section, a Open Space Development shall only be approved if the applicant proves to the satisfaction of the Board of Supervisors, based upon review by the Planning Commission, that the following conditions will be met:

1. That the Open Space Development would clearly serve a valid public purpose that would result in a development that would be superior to what would result if the land would be development as a conventional development. Such valid public purposes include but are not limited to the following:
 - a. The permanent preservation of dense forests, steep slopes, wetlands, creek valleys, highly scenic areas or other sensitive natural features.
 - b. The permanent preservation of a substantial area of land in agricultural uses, in a tract of proper size and configuration that allows for efficient agricultural use and that properly considers the issue of compatibility between the agricultural uses and homes.
 - c. The dedication of public parkland at a site deemed appropriate by the Board of Supervisors and that involves land that is clearly suitable for active and/or passive recreation.
 - d. The Open Space of homes in a location that will be substantially buffered from highly-noxious nuisance-generating uses, such as an expressway or major arterial street.
2. The applicant shall prove that the proposed Open Space Development has been designed in full consideration of important natural features, including mature woodlands, creek valleys, steep slopes and wetlands.
 - a. At a minimum, the applicant shall prove that areas along perennial creeks shall be preserved in their natural state, except for landscaping, erosion control improvements, public recreation improvements and needed utility, street and driveway crossings.
 - b. The natural features of the site shall be a major factor in determining the siting of dwelling units.

E. Open Space.

1. Open Space. Land within a Open Space Development may be permanently preserved as public, semi-public or private "Common Open Space." See definition in Section ___ of "Open Space, Common or Preserved." The common open space requirements of this Section

shall be in place of the common open space land or fee requirements of the Township Subdivision and Land Development Ordinance.

2. Open Space Standards. Any preserved open spaces shall meet all of the following requirements:
 - a. Such open space shall be permanently deed-restricted or protected by an appropriate conservation easement to prevent the construction of buildings or the use for any non-agricultural commercial purposes or the use of the land for clearcut forestry. Land approved as required open space shall only be used for non-commercial active or passive recreation, a Christmas Tree Farm, a golf course, a nature preserve, a wholesale plant nursery and/or Township-approved agricultural uses.
 - b. A Open Space Development shall still meet any recreation land dedication or recreation fee requirements that may apply under the Subdivision and Land Development Ordinance. The same area of land may be used to meet the SALDO recreation land and the zoning open space requirements, if the land meets the requirements for each.
 - c. The Township may require the use of conservation easements within a Open Space development to limit the disturbance of natural slopes over 15 percent, wetlands, mature forests, creek valleys and other important natural features.
 - d. Improvements to Open Spaces. Where open space is proposed to be used for recreation and/or dedicated to the Township, the application shall include a detailed and legally binding (if approved) description of what improvements the applicant will make to any land intended to be publicly dedicated open space to make it suitable for its intended purpose.
 - 1) Examples of such improvements for areas intended for passive recreation include preservation and planting of trees, development of nature, bicycle or jogging trails, the stabilization of creek banks and the removal of undesirable vegetation.
 - 2) Examples of such improvements for areas intended for active recreation include rough grading of land to create land suitable for free-play fields for youth.
 - 3) Type of Maintenance. Where the open space would not be dedicated to a government entity, the subdivision plan shall state the intended type of maintenance of the open space.
 - e. All proposed Preserved Open Space shall be cleared of construction debris, materials from illegal dumping and any rocks that were not naturally on the land, unless those rocks are incorporated into landscaping improvements.
 - f. The applicant shall prove that all required Open Space would be suitable for its intended and Township-approved purposes. The Township may require the provision of a trail easement and/or the construction of a trail through common open space. If a developer is required to install a trail, it shall be completed prior to the final sale of any adjacent residential lots.
 - g. Lots and open spaces shall be located to promote pedestrian and visual access to preserved open spaces whenever possible. A non-motorized recreation trail shall be shown on the plans through common open space and shall be built by the developer prior to the sale or construction of any adjacent homes, unless the Board of Supervisors determine that a trail is not appropriate in the particular situation.
3. Open Space Ownership. The method(s) to be used to own, preserve and maintain any preserved open space shall be acceptable to the Township. The Township shall only approve a Open Space Development if the applicant proves there will be an acceptable method to

ensure permanent ownership, preservation and maintenance of land that will not be included in individual home lots.

- a. The method of ownership and use of any required preserved open space shall be determined prior to preliminary subdivision or land development approval. The Township should be given right of first refusal at the time of such review to accept proposed open space as public open space. Required open space shall be permanently preserved by one or a combination of the following methods:
 - 1) Dedication to the Township as public open space, if the Board of Supervisors agree in writing to such dedication.
 - 2) Dedication to the County as public open space, if the County Commissioners agree in writing to such dedication.
 - 3) Dedication to the School District if such Board of Education agrees in writing to accept such dedication and to use and maintain the land for public school buildings and/or related open space.
 - 4) Dedication to a homeowners association as preserved open space, with the homeowners legally bound to pay fees for the maintenance and other expenses of owning such land, and with such homeowners association being incorporated with covenants and bylaws providing for the filing of assessments and/or municipal liens for the non-payment of maintenance costs for preserved open space that is not publicly-owned.
 - (i) Such responsibilities shall be specified as part of each deed prior to sale of each lot or dwelling unit. The Township may delay a dedication of maintenance responsibilities by a developer to a homeowners association until such association is incorporated and able to maintain such land.
 - 5) Dedication of the land to an established nature conservation organization acceptable to the Board of Supervisors.
 - 6) Dedication of a permanent agricultural preservation easement to the County Agricultural Land Preservation Board, with the land utilized for allowed agricultural uses.
 - 7) Dedication to the State Game Commission, State Fish and Boat Commission or similar public agency, if such agency agrees in writing in advance to accept the dedication and to maintain the land for public recreation.
 - 8) Operation as a bonafide golf course, with a minimum lot area of 50 acres. Areas including buildings or vehicle parking shall not count towards the minimum average lot area.
 - 9) Retention as part of one or more private lots, with an appropriate Township-approved conservation easement. This option (9) shall only be available in locations where the applicant proves to the Board of Supervisors that none of the above options are feasible or appropriate. This option (9) is primarily intended for situations where less than 2 acres of common open space would result (which may include a situation where only part of a tract is being subdivided).
- b. Legal documents providing for ownership and/or maintenance of required preserved open space shall be reviewed by the Township Solicitor and be subject to approval by the Board of Supervisors prior to recording of the final plan.
- c. A legally binding system shall be established to oversee and maintain land that will not be publicly-owned. Any homeowner association should generally follow the provisions of Section 705.f. parts (1) and (2) of the Pennsylvania Municipalities Planning Code, as amended. Proper notations shall be required on the Recorded Plan. For example, if the preserved open space is intended to be owned by a homeowner association as recreation land, a statement should be included that the designated open space "shall

not be further subdivided and shall not be used for the construction of any non-recreation buildings.”

- F. Steep Slopes. Within a Open Space Development, no principal building shall be placed on slopes of over 25 percent.
- G. Phasing. The development shall include a phasing system that shall be approved by the Board of Supervisors. Such phases shall ensure that the requirements of this Article would be met after the completion of any one phase, and that the development could properly function without the construction of additional phases.
- H. Landscaping Plan. An application for a Open Space Development involving over 15 acres shall include a landscape planting and preservation plan prepared by a registered landscape architect.
 - 1. Such plan shall show the locations, general species and initial sizes of landscaping to be planted within the preserved open space and throughout the tract.
 - 2. Such plan shall also show that existing substantial healthy trees will be preserved to the maximum extent reasonable. The methods to ensure preservation during construction shall be described.
 - 3. Landscaping shall also be used as appropriate to filter views of denser housing from any adjacent housing that is less dense.”

RECREATION AREAS AND FEES.

- “ A Purposes. To provide adequate open spaces, recreational lands and recreational facilities to serve new inhabitants/occupants of new developments, for both active and passive recreation. To recognize and work to carry out the Recreation Plan for _____, which is hereby adopted by reference as the Recreation Plan for the Municipality, or by a successor document that may be adopted as the Recreation Plan for _____.
- B. Applicability. This section shall apply to any subdivision or land development for which a preliminary plan or a combined preliminary/ final plan is submitted after the enactment date of this amendment.
 - 1. This Section shall not apply to plans that the Municipality determines only involve adjustments or corrections to an approved preliminary plan or a preliminary plan that was actively before the Municipality for consideration as of the date of the adoption of this Section, provided the adjustments do not increase the number of proposed dwelling units.
- C. Limitations on Use of Fees.
 - 1. Any fees collected under this section shall be placed within the Municipality Recreation Escrow Fund, or its successor account.
 - 2. To make sure that the lands and facilities are accessible to the inhabitants of the developments that paid fees towards their cost, such fees should only be used within a 5-mile radius of the boundaries of the subdivision or land development that paid the fees, unless the fees are used within a recreation area open to the public that the Municipality intends to serve the entire Municipality.
 - 3. Such fees shall only be used for the following: acquisition of public open space/recreation land and related debt payments, development of public recreational facilities, landscaping of public open space and necessary engineering and design work.

D. Land to be Preserved. Any subdivision or land development regulated under this Section shall be required to preserve the specified amount of recreation land, unless the Municipality Council and the applicant mutually agree that recreation fees shall be required in-lieu of land.

1. As a general non-binding guideline, it is the intent of this Section that smaller developments (such as 10 or fewer dwelling units) that do not include land that is adjacent to existing publicly-owned land should be required to pay a recreation fee in lieu of dedicating land. However, if the applicant refuses to pay such fees, then recreation land shall be required to be preserved.
2. The land and fee requirements of this section shall be based upon the number of new dwelling units that would be allowed on the lots of a subdivision or land development after approval.
3. Prime Recreation Land. For the purposes of this section, the term “Prime Recreation Land” shall mean land proposed to be established as recreation land that would meet all of the following standards:
 - a. less than 6 percent slope,
 - b. not a “wetland” under Federal and/or State regulations,
 - c. be part of a contiguous tract of at least 2 acres (which may include existing adjacent recreation land), and
 - d. not be within the “100 Year Floodplain” as defined by official floodplain maps of the Municipality.
4. Amount of Recreation land. If a subdivision or land development is required to include recreation land, the following amounts for each permitted new dwelling unit shall apply:

| Percentage of the Total Required Recreation Land that Would Land that Would Meet the Definition of “Prime Recreation Land”: | Minimum Required Recreation Land Per Permitted Dwelling Unit |
|---|--|
| 0% to 25.0% | 5,000 square feet |
| 25.1% to 99.9% | 2,500 square feet |
| 100% | 1,250 square feet |

E. Fees. If the Governing Body determines that a proposed subdivision or land development is required to pay fees-in-lieu of dedicating recreation land, this fee shall be \$_____ for each new dwelling unit, unless such fee is updated by future action by the Governing Body.

F. Decision on Land vs. Fees. The Governing Body shall determine whether a land dedication would be in the public interest, or whether the payment of fees is required. This initial determination should, but is not required to, be made at the time of sketch plan review. The Municipality should, at a minimum, consider the following in this decision:

1. Whether the land in that location would serve a valid public purpose.
2. Whether there is potential to make a desirable addition to an existing public or School District recreation area or to create a greenway along a creek.
3. Whether the proposed land would meet the objectives and requirements of this section and any relevant policies of the Comprehensive Plan and any Recreation or Open Space Plan.
4. Whether the area surrounding the proposed development has sufficient existing recreation and open space land, and whether it is possible for pedestrians and bicyclists to reach those lands.
5. Any recommendations that may be received from the Planning Commission, the Municipal Engineer, the local School Board or School District staff and the Municipal Parks and Recreation Board.

G. Recreation Land to be Preserved.

1. Suitability. Recreation land shall be suitable for its intended purpose, in the determination of the Governing Body. The applicant shall state in writing what improvements, if any, he/she will commit to make to the land to make it suitable for its intended purpose, such as grading, landscaping, or development of trails. Such land shall be free of construction debris at the time of dedication. Proposed recreation land shall be suitable to meet the needs of the residents of the development.
2. Ownership. Required recreation land shall be dedicated to the Municipality, unless the Governing Body agree to accept a dedication to any of the following: the School District, the County, a State agency charged with maintaining recreation land, a similar governmental agency, an incorporated property-owner association (such as a homeowner or condominium association) or an established environmental organization acceptable to the Governing Body. In the case of a rental development, the Municipality may permit the recreation land to be retained by the owner of the adjacent principal buildings.
 - a. If recreation land is to be owned by a property-owner association, the developer shall be required to establish such association in a form that requires all property owners within the development to annually contribute to the maintenance of the recreation land.
 - 1) Any property-owner association agreements regarding required recreation land shall be subject to acceptance by the Governing Body, based upon review by the Municipal Solicitor.
 - 2) Prior to the sale of any dwelling unit or lot, all deeds shall require each property-owner to pay fees on a regular basis for the maintenance and other expenses of owning such land. The property-owners shall be incorporated with covenants and bylaws providing for the filing of assessments. After providing notice to affected owners, the Municipality shall have the authority to establish municipal liens upon all properties in the association to fund maintenance of the land and Municipal legal costs if the property-owners association does not fulfill its responsibilities.
 - 3) An orderly process shall be established for the transfer of the land to the association. The dedication of maintenance responsibilities by a developer to a property-owners association shall not occur until such association is incorporated and able to maintain such land.
 - 4) The property-owners association shall be established in full compliance with applicable State law, including the Uniform Planned Community Act.
 - b. Transfer to another Entity. If the approved plan states that ownership of and/or responsibilities to maintain the recreation land are given to a particular entity, then any transfer of ownership or responsibilities to another entity shall require pre-approval by the Governing Body. Where land is to be owned by a conservation organization, a process shall be established for the land to transfer to a different organization if the first organization is not able to fulfill its obligations.
 - c. The Governing Body shall have the authority to refuse to accept an offer of dedication of recreation land to the Municipality, and/or to determine that an offer does not meet Municipal requirements.
3. Easements. Any required recreation land dedication shall include a conservation easement to permanently prevent its development for buildings, except buildings for approved types of non-commercial recreation or to support maintenance of the land. Such conservation easements shall, at a minimum, be enforceable by the Governing Body. The Governing Body may require that the easements also authorize their enforcement by a suitable third party.

4. Priorities. Priority shall be given to dedication of land that would be suitable for a) additions to existing public schools and public parks, or b) preservation of woods, steep slopes or other important natural features or land along a creek, or c) for centralized active recreation.
 5. Suitability. Land that is not suitable for active or passive recreation shall not be permitted to meet the requirements of this section. Any land area used to meet the requirements of this Section shall meet the definition of “Recreation Land.” Portions intended for active recreation shall be well-drained, of less than 6 percent average slope and not require filling in of a wetland for use.
 6. Access and Contiguosness. Recreation land within a subdivision or land development shall be contiguous, except as may be specifically exempted by the Governing Body, if necessary considering the unique features of the site, and shall have a minimum of 20 feet of road frontage at a location that allows access for maintenance and by pedestrians.
 7. Other Ordinances. Any required land dedication or fees under this Section shall be in addition to any land dedication or improvement requirements of any other Municipal ordinance.
 - a. However, the Governing Body may allow common open space provided under a zoning ordinance provision to also count towards the recreation land requirement if the land will be improved for recreation, capable of meeting all of the requirements of this Section, and be available without charge on a daily basis to the public.
 8. Residual Lands. If only a portion of a larger tract of land is currently proposed to be subdivided, or the applicant owns one or more adjacent tracts that are not currently proposed to be subdivided, the applicant shall provide a sketch of a possible future land dedication on these adjacent lands. The intent is to coordinate current plans with any future development, even in the long-term.
 9. Coordination With Future Adjacent Dedication. The Governing Body may require that a required land dedication within a property currently being subdivided be placed along an edge of the property so that it may, in the future, be combined with a recreation land/ open space dedication on the edge of an adjoining property when that adjoining property is subdivided or developed.
- H. Combination of Land and Fees. Upon mutual agreement of the Governing Body and the applicant, the Municipality may accept a combination of recreation land and fees-in-lieu of land to meet the requirements of this section for a subdivision or land development. This combination shall be based upon the recreation land requirement applying for a certain number of dwelling units and the fee-in-lieu of land requirement applying for the remaining development.
1. For example, if a development included 25 dwelling units, recreation land could be required for 15 dwelling units and fees could be required for 10 dwelling units.
- I. Timing of Residential Fees. Fees required by this Section for all of the dwelling units shall be paid prior to the recording of the final plan, except as follows:
1. If the required fee would be greater than \$4,000, and the applicant and the Municipality mutually agree to provisions in a binding development agreement to require the payment of all applicable recreation fees prior to the issuance of any building permits within each clearly defined phase or sub-phase of the development, then fees are not required to be paid prior to recording of the final plan but may instead be paid within the requirements of that development agreement.
 2. If the applicant agrees to pay such fees in installments, then all such fees shall not be considered to be “paid” for the purposes of any applicable time limitations for utilization

under the Municipalities Planning Code until all such fees are paid in full, including all installments and phases.

- J. Facilities in Place of Land or Fees. An applicant may submit a written request for a modification of the requirements of this section by offering to construct substantial permanent recreation facilities within the proposed subdivision or land development or on public parkland. Such modification shall only be approved if the applicant clearly proves to the satisfaction of the Governing Body that the facilities will serve a valid public purpose, will be designed following modern standards in a durable manner and will have a higher market value than the land or fees that would otherwise be required.
1. A modification of these requirements may also be approved by the Governing Body if the applicant donates or sells appropriate public recreation land to the Municipality or the School District. In such case, the applicant shall provide a written appraisal from a qualified professional that the market value of the donation or price reduction is greater than the value of the fee or land requirement that is waived. In such case, the land shall be determined to be suitable for public recreation by the Governing Body.

SIDEWALKS, PATHWAYS AND DRIVEWAY APRONS.

- A. Sidewalks built to Municipality specifications shall be required where the average residential density exceeds 3 dwelling units per acre or where the Governing Body determine they are necessary for safe pedestrian movement, such as near a school.
1. As a modification under Section ----, an applicant may propose an alternate system of pathways, such as a crushed stone or bituminous pathway, that serve the same purposes as sidewalks and which guarantee public access, but which are not necessarily within a street right-of-way, if approved by the Municipal Engineer.
- B. Pathway or Bikeway.
1. If deemed necessary for the convenient and safe circulation of bicycles and pedestrians, the Governing Body, upon the recommendation of the Planning Commission, may require that a major subdivision or land development include the construction of a pathway or bikeway.
 2. A bikeway/pathway shall have a minimum width of 6 feet and a maximum width of 12 feet. It may be required to be placed within a street right-of-way in place of a sidewalk, or may be placed elsewhere on a lot within an easement or other right-of-way.
- C. Location and Width of Sidewalks.
1. Sidewalks, where required or provided, shall be located within the street right-of-way. Any area between the sidewalk and curb shall be planted in an attractive vegetative ground cover, such as grass. This strip shall only be paved at driveway entrances.
 2. Any required sidewalks shall have a minimum width of: a) 5 feet along arterial streets or along routes used to access primary or secondary schools and b) 4 feet along collector or local streets in other locations.
- D. Construction.
1. Sidewalks shall meet construction specifications in PennDOT Publication 408.
 2. Bikeways/pathways shall be constructed of a one inch bituminous surface course, a 1.5 inch bituminous binder course, and 6 inches of compacted gravel or crushed stone, unless an alternative standard is pre-approved by the Municipality. To the maximum extent feasible considering topography, pathways should be accessible to persons in wheelchairs. Stop signs should be posted along bikeways where they meet streets.
 3. ADA Ramps. Ramps shall meet the requirements of the Americans With Disabilities Act and accompanying Federal regulations. Note - Additional PennDOT regulations apply along a State road.

SUMMARY OF POTENTIAL FUNDING SOURCES

State, federal and county governments provide various opportunities for funding assistance. Grants and loans from various sources should be used to help fund revitalization activities and other plan implementation items. Since funding sources are always changing, with new programs being added and older programs being revised or deleted, it will be important to continually keep abreast of current funding opportunities.

| Name of Program | General Description of Program | Administering Agency |
|---|---|--|
| Business in Our Sites Grants and Loans | Empowers communities to attract growing and expanding businesses by helping them build an inventory of ready sites. | PA Dept. of Community and Economic Development (PA DCED) |
| Communities That Care (CTC) | Communities That Care (CTC) is a community empowerment strategy that emphasizes assessment and planning as the basis for program development and implementation. CTC is a violence and delinquency prevention program that provides communities with a process to mobilize the community, identify risk and preventive factors, and develop a comprehensive prevention plan. | PA Commission on Crime and Delinquency |
| Community and Business Development Program | The Community and Business Assistance Program provides grants for community and business assistance projects that, in the judgment of the Department of Community and Economic Development (DCED), are consistent with the authorizing legislation and these program guidelines, and meet all requirements of the DCED Single Application for Assistance. | PA DCED |
| Community and Municipal Facilities Assistance Program | The Community and Municipal Facilities Assistance Program provides grants for community and municipal facility projects that, in the judgment of the Department of Community and Economic Development (DCED), are consistent with the authorizing legislation and these program guidelines, and meet all requirements of the DCED Single Application for Assistance. | PA DCED |
| Community Conservation and Employment Program | The Community Conservation and Employment Program provides grants for community and economic development projects that, in the judgment of the Department of Community and Economic Development (DCED), are consistent with the authorizing legislation and these program guidelines, and meet all requirements of the DCED Single Application for Assistance. | PA DCED |
| Community Development Block Grant (CDBG) | Offers grants for a wide variety of activities, provided the applicant proves by survey or census that the project will benefit low and moderate income persons or handicapped persons or eliminate “blighted” conditions in officially designated areas. For example, funds can be used for housing rehabilitation, handicapped accessibility, street and sidewalk improvements, parks / recreation / trail linkages, planning, and historic rehabilitation. | Carbon County Community Development Office |
| Community Economic Development Loan Program | Low-interest loans for projects in distressed communities. | PA DCED |

| Name of Program | General Description of Program | Administering Agency |
|--|---|---|
| Community Services Block Grant (CSBG) | Federal grants to support programs that promote economic self-sufficiency of low-income individuals. Designated Community Action Agencies serving individuals whose income is at 125% of the federal poverty level are eligible for funding. Funds may be used for: case management, job training, food and nutrition, transportation, education, housing, drug and alcohol, and economic development. | Carbon County |
| C2P2 - Community Conservation Partnerships Program | Provides 50% matching grants to municipalities to: develop plans for parks / recreation / trails; prepare park / greenway master plans; acquire parkland / nature preserves / greenways; and rehabilitate and improve public recreation areas / greenways. | PA Dept. of Conservation and Natural Resources (PA DCNR) |
| Downtown Revitalization Assistance | The Pennsylvania Downtown Center (PDC) promotes and supports the vitality of Pennsylvania's downtowns and traditional neighborhood business districts by providing local groups with the techniques and strategies needed to recapture or sustain their downtowns as a vibrant civic, social and economic center of activity. | Pennsylvania Downtown Center (PDC) |
| Economic Development Administration | <p>The Economic Development Administration (EDA) offers grants and technical assistance for economic development. Some of the major EDA programs are listed below:</p> <ul style="list-style-type: none"> • <u>Public Works and Economic Adjustment Assistance Programs</u> – Public Works and Economic Development investments help support the construction or rehabilitation of essential public infrastructure and facilities necessary to generate or retain private sector jobs and investments, attract private sector capital, and promote regional competitiveness, including investments that expand and upgrade infrastructure to attract new industry, support technology-led development, redevelop brownfield sites and provide eco-industrial development. • <u>Community Trade Adjustment Assistance Program</u> – EDA's Community Trade Adjustment Assistance (Community TAA) Program, which was created by the American Recovery and Reinvestment Act of 2009, is aimed at helping to create and retain jobs by providing project grants to communities that have experienced, or are threatened by, job loss resulting from international trade impacts. • <u>Planning Program</u> – The Planning Program helps support planning organizations in the development, implementation, revision or replacement of comprehensive economic development strategies (CEDs), and for related short-term planning investments designed to create and retain higher-skill, higher-wage jobs, particularly for the unemployed and underemployed in the nation's most economically distressed regions. | Economic Development Administration (EDA) / U.S. Department of Commerce |
| Elm Street Program | Grant funds for planning, technical assistance and physical improvements to residential and mixed use areas in proximity to central business districts. Elm Street is a 5-year program. A Plan that meets the Elm Street Plan required must be prepared prior to designation. Planning Grants (\$25,000) are available from PA DCED. Operational grants (\$50,000 maximum per year), and Residential Reinvestment grants (\$250,000 maximum per year) should be pursued annually over the five years. Elm Street involves five specific program areas: 1) organization; 2) promotion; 3) design; 4) neighborhoods and economy; and 5) clean, safe and green activities. | PA DCED |

| Name of Program | General Description of Program | Administering Agency |
|---|--|---|
| Historic Preservation – Certified Local Government Grants | Provides modest-sized matching grants to provide technical assistance to municipalities that have official historic districts and meet other criteria to be “certified”. | Federal, administered by PA Historical and Museum Commission (PHMC) |
| Historic Preservation Survey and Planning Grants | Matching grants for historic surveys, historic preservation planning and National Register nominations. Available to municipalities and nonprofit organizations. Cannot be used for construction. | Federal, administered by PHMC |
| Historic Preservation Tax Credits | Offers federal income tax credits for a percentage of the qualified capital costs to rehabilitate a certified historic building, provided the exterior is restored. The program is generally limited to income-producing properties. | National Park Service |
| HOME | U. S. Department of Housing and Urban Development (HUD) program that provides municipalities with funding and technical assistance to expand the supply of decent and affordable housing for low and very low moderate income persons. Uses may include: rehabilitation; new construction; acquisition of rental or sales housing and rental assistance. | Carbon County Community Development Office |
| Home Ownership Choice Program (HCP) | An initiative of the Pennsylvania Housing Finance Agency (PHFA) to finance new, single-family home construction in blighted areas of the Commonwealth. | PA Housing Finance Agency (PHFA) |
| Home Town Streets and Safe Routes to School | The Home Town Streets Program provides funding for a variety of streetscape improvements that are aimed at reestablishing downtown and commercial centers. The Safe Routes to School Program provides grants and is designed to work with both school districts and pedestrian and bicycle safety advocates to make physical improvements that promote safe walking and biking passages to schools. Both programs require a 20% local match. | PennDOT |
| Housing and Redevelopment Assistance | Provides state-funded grants for community revitalization and economic development activities at the local level. The program assists the community in becoming competitive for business retention, expansion and attraction. | PA DCED |
| Industrial Sites Reuse Program, PA (“Brownfields”) | Provides grants of up to 75% and low-interest loans for assessment of environmental contamination and remediation work at former industrial sites. Available to private companies, nonprofit economic development agencies, or authorities that own the land. Mainly targeted towards cities. Financing is not available to the company that caused the contamination. | PA DCED in cooperation with PA DEP |
| Keystone Historic Preservation Funds | Provides 50% matching grants to fund analysis, acquisition, or rehabilitation of historic sites. The site must be on the National Register of Historic Places or officially determined to be eligible for listing. The site must be accessible to the public after funding. Grants can be made to public agencies or nonprofit organizations. | PHMC |
| Keystone Recreation, Park and Conservation Fund | State grants to improve the physical facilities of public libraries. | PA DCED |

| Name of Program | General Description of Program | Administering Agency |
|---|--|---|
| Land Use, Transportation, and Economic Development Initiative (LUTED) | This program includes the former Land Use Planning and Technical Assistance Program (LUPTAP). The revised program began with planning efforts in regions throughout the state. Carbon County is part of the Northeast Region. The report for the region is online at: http://www.newpa.com/sites/default/files/uploads/northeastreportwilkesbarre.pdf | PA DCED |
| Land and Water Conservation Fund | The Land and Water Conservation Fund (LWCF) provides matching grants to state and local governments for the acquisition and development of public outdoor recreation areas and facilities. | National Park Service in cooperation with PA DCNR |
| Local Banks | Local banks in the area can contribute funding and financing toward Plan implementation, including making donations for revitalization projects. | Local Banks |
| Local Government Capital Projects Loan Program | This Program provides low-interest loans for equipment and facility needs of small governments with populations under 12,000. | PA DCED |
| Main Street Initiatives Streetscape Amenities Grant | Provides 50% grants up to \$8,000 for banners, benches, trash receptacles, plants, bike racks, signage and street trees. | Lehigh County Dept. of Community & Economic Development |
| Main Street Program (PA) | The Pennsylvania Main Street Program offers grants to local governments to fund “Main Street Managers” to coordinate downtown revitalization strategies and commerce activities. Includes: Anchor Building Grants, which assist in the renovation of integral buildings that are vital to the downtown’s health; and Downtown Reinvestment Grants, which provide financial incentives to municipalities for development projects to help eliminate decline. | PA DCED |
| National Recreational Trails Funding (Symms NRTA) | Provides grants for the acquisition and development of recreation trails (which may include trails for motorized vehicles). A 50% local match is required. Applications may be made by federal, state or local government agencies or organizations. | Federal, administered by PA DCNR |
| Neighborhood Partnership Program (NAP / NPP) | <p>Corporate tax liability credit for businesses that sponsor a neighborhood organization to develop and implement a neighborhood revitalization plan by contributing a substantial amount of cash per year over an extended period of time.</p> <p>Programs must serve clients who are low-income and residents of economically distressed neighborhoods specified by the neighborhood organization. Projects must fall under one of the following categories: housing; education; health and social services; community development; job training; crime prevention; and community participation.</p> | PA DCED |
| PA Infrastructure Investment Authority (PennVest) | Offers low-interest loans for construction and improvement of drinking water and wastewater systems. 100% grants may be available for highly-distressed communities. Mainly intended for public systems, but some private systems may be approved. Water projects are funded through the Drinking Water Revolving Loan Fund. Sewage projects are funded through the Clean Water Revolving Fund. PennVest is also authorized to provide loans for projects to control existing stormwater problems, such as separating stormwater from sanitary sewage. The “Advance Funding Program” provides low-interest loans for feasibility studies and engineering of systems if the utility cannot fund such work itself. | PennVest, PA DEP (Bureau of Water Supply Management) – Involves both U.S. EPA and state funds |

APPENDIX C

| Name of Program | General Description of Program | Administering Agency |
|---|--|--|
| PA Weed and Seed Program | The Weed and Seed program, modeled after the federal program, is a two-pronged approach to addressing the negative, or criminal, elements of a targeted area while supporting and enhancing the positives, or available resources, through the introduction of programming and specialized initiatives. | PA Commission on Crime & Delinquency, and the Office of the Governor |
| Pennsylvania Community Transportation Initiative Program | Grants are available from PennDOT as part of the Pennsylvania Transportation Initiative Program. Funds can be used for a variety of transportation projects and initiatives. | PennDOT |
| PennDOT's Local Technical Assistance Program | The Pennsylvania Department of Transportation provides technical assistance for Walkable Communities Program studies and other studies. | PennDOT |
| Rails to Trails, PA | Provides grants for feasibility studies, master site plans, acquisition, and improvement of former railroad lines for recreation trails. A 50% local match is required. Open to municipalities, authorities, and non-profit. | PA DCNR |
| Save America's Treasures | Save America's Treasures Grants are available for preservation and/or construction work on National significant artifacts and historic structures and sites. A dollar for dollar, non-federal match is required. The maximum grant request for all projects is \$700,000. | National Park Service |
| TEA-21 Transportation Enhancements Program (part of federal Transportation Efficiency Act) | The Transportation Equity Act for the 21 st Century (TEA-21) authorizes Federal surface transportation programs for highways, highway safety, and transit. | U.S. DOT funds administered by PennDOT |
| Urban Development Program (UDP) | Provides grants for urban development and improvement projects. Funds may be used for: construction or rehabilitation of infrastructure, building rehabilitation; acquisition and demolition of structures / land; revitalization or construction of community facilities; purchase of upgrade of machinery and equipment; planning of community assets; public safety; crime prevention; recreation and training. | PA DCED |
| Urban Forestry Grants / Tree Improvement Program / Mini-Grant for Planting Trees / PA Community Forest Grants | Several DCNR grants provide funding for tree planting projects on public property or along streets. There is also a Federal "America the Beautiful" grant program for tree planting. | PA DCNR |

| Name of Program | General Description of Program | Administering Agency |
|---------------------------------|---|-------------------------|
| USDA Rural Development Programs | <p>Various USDA funding assistance programs are available, including:</p> <ul style="list-style-type: none"> • <u>Housing Repair and Rehabilitation Grants</u> – To dwelling owners / occupants age 62 or older who have very low incomes (50% of the area median income) in eligible locations. • <u>Community Facilities</u> – Provides grants and loans to assist in the development of essential community facilities. Municipalities with a population under 10,000 are eligible. • <u>Water and Sewer</u> – Provides funding for water and sewer projects. Municipalities with a population under 10,000 are eligible. • <u>Business Programs</u> – Helps funds projects that create or preserve quality jobs and/or promote a clean rural environment. | USDA, Rural Development |

Sources: Publications and internet sites of various agencies; *Pennsylvanian* magazine; PA DCED, PA DCNR, PennDOT, PA Growing Greener websites

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