

The LVPC report entitled *Comprehensive Plan The Lehigh Valley ... 2030* (Comprehensive Plan) is the foundation document that establishes a framework for this greenway plan. The report contains a thorough inventory of the natural, recreational, cultural, historical and scenic attributes of the Lehigh Valley and it maps natural resources within the Valley that should be protected and preserved in the future. Moreover, the Comprehensive Plan shows how natural resources and recreational resources in the region relate to patterns of urban and rural development. This plan was officially adopted by Lehigh and Northampton counties in June 2005.

The *Lehigh Valley Greenways Plan* stems from the inventory and analysis of the Comprehensive Plan identifying the resources that serve as the framework for the regional greenways network and provides recommendations on how to take full advantage of the opportunities they present. The location of the linear greenways and the associated destinations were, in many instances, determined by the location of existing natural, recreational, cultural and historical elements of value.



Jordan Creek Parkway — Whitehall Township

A brief analysis of the demographic and socioeconomic characteristics of the region provides an overview of the people being served by the greenway network and their land development preferences and needs. Growth trends and forecasts are useful in developing recommendations for resolving issues and capitalizing on opportunities created by existing greenway resources. Over the years, the LVPC has supported economic and community development initiatives that aim to diversify and strengthen the economy, protect resources and the environment, develop and improve infrastructure, and enhance the quality of life.

### Demography



The Lehigh Valley is a 725 square mile area which includes Lehigh and Northampton counties. It is located in eastern Pennsylvania, 80 miles west of New York City and 50 miles north of Philadelphia. The two counties form the core of a metropolitan area defined by the United States Bureau of the Census as the Allentown-Bethlehem-Easton Metropolitan Statistical Area.

In the 30 year period between 1970 and 2000, the region's population grew by 23%. During the period between 2000 and 2005, this growth rate began to accelerate. According to the Census, the region added 39,000 people in five years, a growth rate of nearly 7% for the first half of the decade, compared with a 7.6% rate of growth from 1990 to 2000. Much of this growth is due to migration from New Jersey where land is more expensive, taxes are higher, and the land regulatory system is tougher. In the Lehigh Valley, accelerated growth has produced a robust housing market, increased subdivision of land, escalation of housing and land prices, and increasing pressures on natural resources in the region. In decades prior to the 1990s, land was converted at a rate of 3.0 square miles per year. This increased to 3.5 square miles per year during the 1990s and 4.0 square miles per year after 2000. Clearly, this is a time when the two counties, the state and local municipalities need to craft and implement programs for the preservation of farmland and natural resources.

It is not likely that population pressure from New Jersey and the Philadelphia region will stop in future decades.

The LVPC periodically creates projections of future populations for the Lehigh Valley for use in the Comprehensive Plan. Population projections are calculated to identify growth issues associated with land use, resource protection and infrastructure planning. These projections provide the necessary data to forecast future transportation, sewer, water and park/open space needs for the region. The LVPC has created population forecasts using a demographic model to project growth trends through 2030. The model accounts for future migration, births and deaths at the county level, local development data, land resources information, and existing infrastructure. The LVPC's most recent population forecast update shows that the Lehigh Valley could grow to over 750,000 persons by 2030. If current trends continue, much of this growth will be in the suburbs surrounding the cities of Allentown, Bethlehem and Easton. Development pressures will be particularly high in eastern Northampton County because of its proximity to New Jersey. The preservation of a quality of life worth experiencing is dependant on community planning and concerted conservation efforts in response to increasing population growth pressures.

POPULATION FORECASTS								
Area	2000 Census	2010 Forecast	2020 Forecast	2030 Forecast	Change 2000-2010		Change 2000-2030	
					No.	%	No.	%
Lehigh Valley	579,156	644,348	704,026	767,856	65,192	11.3	188,694	32.6
Lehigh County	312,090	342,932	370,644	399,721	30,842	10.0	87,631	28.1
Northampton County	267,066	301,416	333,382	368,135	34,350	12.9	101,069	37.8

*Source: U.S. Census Bureau, Lehigh Valley Planning Commission*

Careful consideration of the region's population characteristics provides a snapshot of expected and potential users of the regional greenway network. User groups and associated preferred activities are defined by the age distribution and economic health of a region. The median age of the Lehigh Valley population, as it is with Pennsylvania and the nation, has been increasing for decades. Between 1970 and 2000, the median age for residents of the Lehigh Valley went from 33.0 years to 38.4 years and by 2000, a little over one-half of the population were adults age 25 through 64. Between 2000 and 2030 there will be important changes in the population of age groups. The age distribution will be changing dramatically over the projection period as the baby boomers move from the midyears of the population to the older years. Dramatic growth in the populace over age 65 is projected and modest growth in those under 30. As businesses and institutions in the Valley begin to prepare for this change in demographics, so should development related to recreation and the community experience.

### Economy, Transportation and Housing

The Lehigh Valley was settled in the early 1700s by German and Scotch-Irish farmers who established farmsteads and small villages in the southern part of Lehigh and Northampton counties. Over time, the region benefited from an increasingly prosperous agricultural economy. Road and bridge improvements around the turn of the century facilitated trade and travel over stagecoach routes, and farmers prospered while villages increased in number.



In the early 1800s, the industrial revolution in the Lehigh Valley was characterized by the mining of anthracite coal, slate, iron and zinc ore, and the building of canals and railroads. The transportation potential of the canals created a greatly expanded trade area for the products of the agricultural economy of the Lehigh Valley. The Lehigh Canal was a major force in land use changes and the creation of new commercial settlements. The growth of mining, particularly anthracite, led to the growth of railroads in the region. The railroads were an improvement in transportation over the canals in that they were less affected by weather and terrain and less restricted in routing. With the growth of the railroads, the industries of the region increased the value of their products and employment increased significantly.



No company has affected physical growth in the region as profoundly as Bethlehem Steel Corporation. By the late 1800s, success in the iron and steel industry required tremendous capital, worldwide markets, research, sophisticated marketing, and control of production from mining to consumer. Bethlehem Steel was the only company in the region to meet these requirements and survive. By 1930, Bethlehem Steel was the second largest producer of steel in the United States. Bethlehem Steel's primary impact on physical growth has been in the Bethlehem area. The presence of Bethlehem Steel, however, has also encouraged companies fabricating iron and steel products to locate in the region. By 1920, metal and metal products were well established as the principal industry of the Lehigh Valley.

During the twentieth century, the growth of industry and changes in lifestyle greatly increased the demand for retail and wholesale trade and services. New products and marketing techniques enhanced the appeal of electrical appliances, automobiles, gasoline and home heating furnaces. Around the turn of the century, department stores began to appear in downtown areas. In the 1920s, chain stores began replacing the neighborhood variety and grocery stores. Consequently the Valley experienced the rise of the shopping center and suburban discount store following residential growth in suburban areas.



The building of U.S. Route 22 created great opportunity for development of the suburban perimeter north of the Valley's urban core. The highway improved travel between the cities and brought a wider labor pool accessible to local employers. U.S. Route 22 was a direct link to New Jersey and New York City. With the completion of PA Routes 309 and 33 (both connecting to U.S. Route 22), interregional transportation was improved to the markets of suburban Philadelphia. The continuing dispersal of the regional population to suburban and rural areas and the reliance upon automobiles have resulted in the decline in use of mass transit and the discontinuation of passenger rail service connecting the region to New York and Philadelphia. Beginning in the late 1960s, there has been a long period of rapid suburban industrial construction. The establishment of suburban industrial parks drew companies away from their urban locations, and these areas continued to decline.

The national recession of 1980 lingered in its effects on the Lehigh Valley through mid-decade. People began to realize that a new, diverse regional economy must be built to shelter citizens from the high unemployment caused by cycles in demand for durable products such as steel and transportation equipment. In the early 1980s, numerous economic development organizations were created, including the Northampton County Development Corporation, the three cities' economic development corporations, the Ben Franklin Partnership, the Lehigh Valley Partnership, and the Lehigh Valley Convention and Visitor's Bureau. Their roles differ, but they share the goal of a healthy future Lehigh Valley economy. In the late 1990s, the Lehigh Valley Economic Development Corporation (LVEDC) was created to promote economic growth activities regionally. LVEDC has a vigorous marketing program that promotes Lehigh Valley interests nationally and internationally. LVEDC has also become the prime point of contact for the retention and attraction of business in the Lehigh Valley.

A strong economy has created redevelopment interest in the Lehigh Valley's three third class cities, Allentown, Bethlehem and Easton. All three have faced the challenges of disinvestment in cities seen throughout the nation. In recent years, however, all three have also seen renewed interest and substantial redevelopment projects proposed or underway. The City of Allentown is presently recognizing nearly \$375 million in new residential and commercial development, including three major hospital expansions and a new AAA Minor League Baseball franchise. The City of Bethlehem has the largest brownfield in the nation, the 1,600 acre former Bethlehem Steel site. The redevelopment of the site into a casino complex with a 200,000-square-foot mall of shops and restaurants is the lynchpin of the City's economic rebirth. The City of Easton plans to eliminate blight through the remediation of environmental problems along the Bushkill Creek corridor, including the adaptive reuse of abandoned buildings and brownfields, the preservation of open space, and the linkage of recreation areas along existing and proposed trail corridors along the Bushkill Creek.

## Natural Resources

The natural world that surrounds us is made up of rivers and streams, wetlands, floodplains, mountains and woodlands. The Natural Resources Plan of the *Comprehensive Plan The Lehigh Valley ... 2030* identifies and evaluates the important natural resources in the Lehigh Valley and what should be done to preserve them. This information is based on careful studies conducted by the Lehigh Valley Planning Commission (LVPC), Pennsylvania Science Office of The Nature Conservancy (TNC), Pennsylvania Department of Environmental Protection (DEP) and others. The important resources identified include DEP designated special protection waters, over 40,000 acres of interior woodlands and 79 sites designated by TNC as important natural areas of statewide significance. Interconnected natural resources provide numerous benefits. They provide habitat and maintain biodiversity; protect and enhance water quality; provide aesthetically pleasing areas to experience; filter pollutants from water, soil and air; recharge groundwater aquifers; provide recreation opportunities; and buffer developed areas from flooding ultimately saving lives, money and property.

### Topography

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The predominant geographic features of the Lehigh Valley include the Kittatinny Ridge, referred to locally as the Blue Mountain, at an elevation of 1,700 feet separating Lehigh and Northampton counties from Monroe and Carbon counties to the north and the South Mountain at an elevation of 1,000 feet which forms a scenic mountainous backdrop for the cities of Allentown, Bethlehem and Easton and separates the cities from the suburban areas to the south. Providing a boundary to the east, the Delaware River flows between New Jersey and Pennsylvania, and to the west low, rolling hills rise to form a divide between lands drained by the Lehigh and Schuylkill rivers. The Lehigh River runs south from the Blue Mountain to Allentown and then east to

the Delaware River at the City of Easton. Between the ridges and rivers is a seven mile wide limestone valley where most people in the Lehigh Valley live and work. The topography ranges from 1,700 feet above sea level along the northern ridge to 200 feet above sea level in the river valleys and creates a landscape with many natural landmarks and scenic beauty (Map 3).

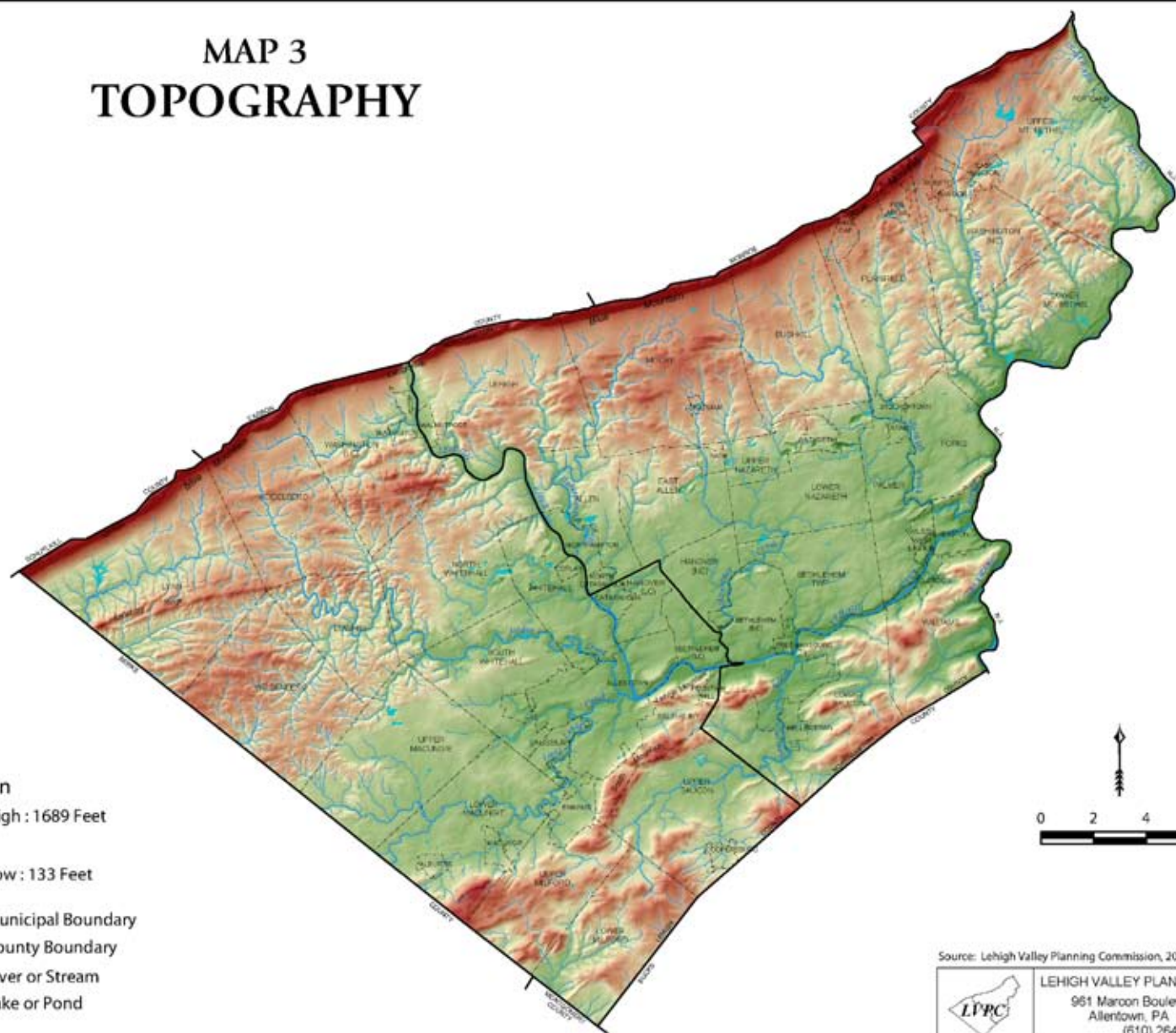








Blue Mountain — Heidelberg Township

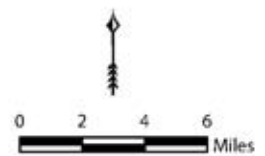
### **Geology**

Pennsylvania is a state rich with exceptional geologic features and heritage. The DCNR's Pennsylvania Geological Survey is striving to promote the awareness, appreciation and conservation of such outstanding geologic features by documenting their presence. The geologic mapping service has mapped six physiographic provinces throughout Pennsylvania. Each province is made up of sections characterized by terrain, subsurface rock type, soil and history. The Lehigh Valley contains three physiographic provinces: the Ridge and Valley, New England and Piedmont.

# MAP 3 TOPOGRAPHY



- Elevation**
-  High : 1689 Feet
  -  Low : 133 Feet
  -  Municipal Boundary
  -  County Boundary
  -  River or Stream
  -  Lake or Pond



Source: Lehigh Valley Planning Commission, 2000

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Characterized by forested, flat topped ridges and fertile valleys, the Ridge and Valley Province contains seven sections, two of which, the Blue Mountain and Great Valley sections, can be found in Lehigh and Northampton counties. The Kittatinny Ridge, otherwise known locally as the Blue Mountain, forms the easternmost edge of the Appalachian Mountain chain and the Ridge and Valley physiographic province. Extending southwest from New York to the Maryland border, the Kittatinny spans 11 counties in Pennsylvania and forms the northern boundary of Lehigh and Northampton counties. To the south of the Blue Mountain is the Great Valley, a very broad lowland area characterized by carbonate geology and well-drained fertile soils. The flat, undulating terrain of the central portion of the Lehigh Valley is used intensively for agriculture, and most of the areas where urban development has taken place are underlain by limestone.

The New England Province has one section, the Reading Prong, and consists of isolated hills and ridges divided by stream valleys. The Lehigh Mountain and South Mountain, two landmark ridges on the southern border of the City of Allentown, are part of the Reading Prong that runs the width of both counties south of the Lehigh River. They are parts of a larger region of mountains called the Highlands which extend from eastern Pennsylvania through New Jersey and New York to northwestern Connecticut, forming a vital linkage between the Berkshires and the Blue Ridge Mountains.

Also located in the Pennsylvania section of the Highlands is the Piedmont Province/Gettysburg-Newark Lowland Section. Beginning along the southernmost boundary of Lehigh County and continuing through most of Montgomery and Bucks counties to the south, the Gettysburg-Newark Lowland Section is characterized by rolling low hills and valleys and isolated ridge tops. The fascinating geology of Pennsylvania and the unique features it affords the Lehigh Valley contribute to greenway development. The conservation and scenic resource value of exceptional geologic features provide destinations for recreational and sight seeing opportunities as well as the necessary protection for sensitive natural resources.

### **Steep Slopes**

Slopes with grades of 15% to 25% are considered steep; slopes with grades greater than 25% are very steep. Steep slopes are vulnerable to damage resulting from site disruption, particularly related to soil erosion. Erosion of steep slopes can be a serious problem as all soils are subject to movement as the slope of the landscape increases. If disturbed, these areas can yield heavy sediment loads on streams and wetlands degrading water quality and disturbing aquatic habitat. Increased sedimentation also increases flood hazards by reducing the floodwater storage capacity of drainage ways.

The steepest slopes in the Lehigh Valley are found along the Blue Mountain and South Mountain (Map 4). There are sizable areas of steep slope along the hillsides of Weisenberg and Lowhill townships in Lehigh County and in townships beside the Lehigh and Delaware rivers. A notable characteristic of steep slope areas is that they are nearly all wooded; very few steep slopes are used for cropland or pastures due to their lack of suitability for agriculture. The LVPC does not recommend development of slopes greater than 25% and encourages the use of special erosion control measures on slopes of 15 to 25%. Controlling the erosion potential occurs in the education and regulation phases of implementation at the municipal level. The identification and protection of these areas protect communities from hazards related to steep slope disturbance, provides open space, and maintains biodiversity.

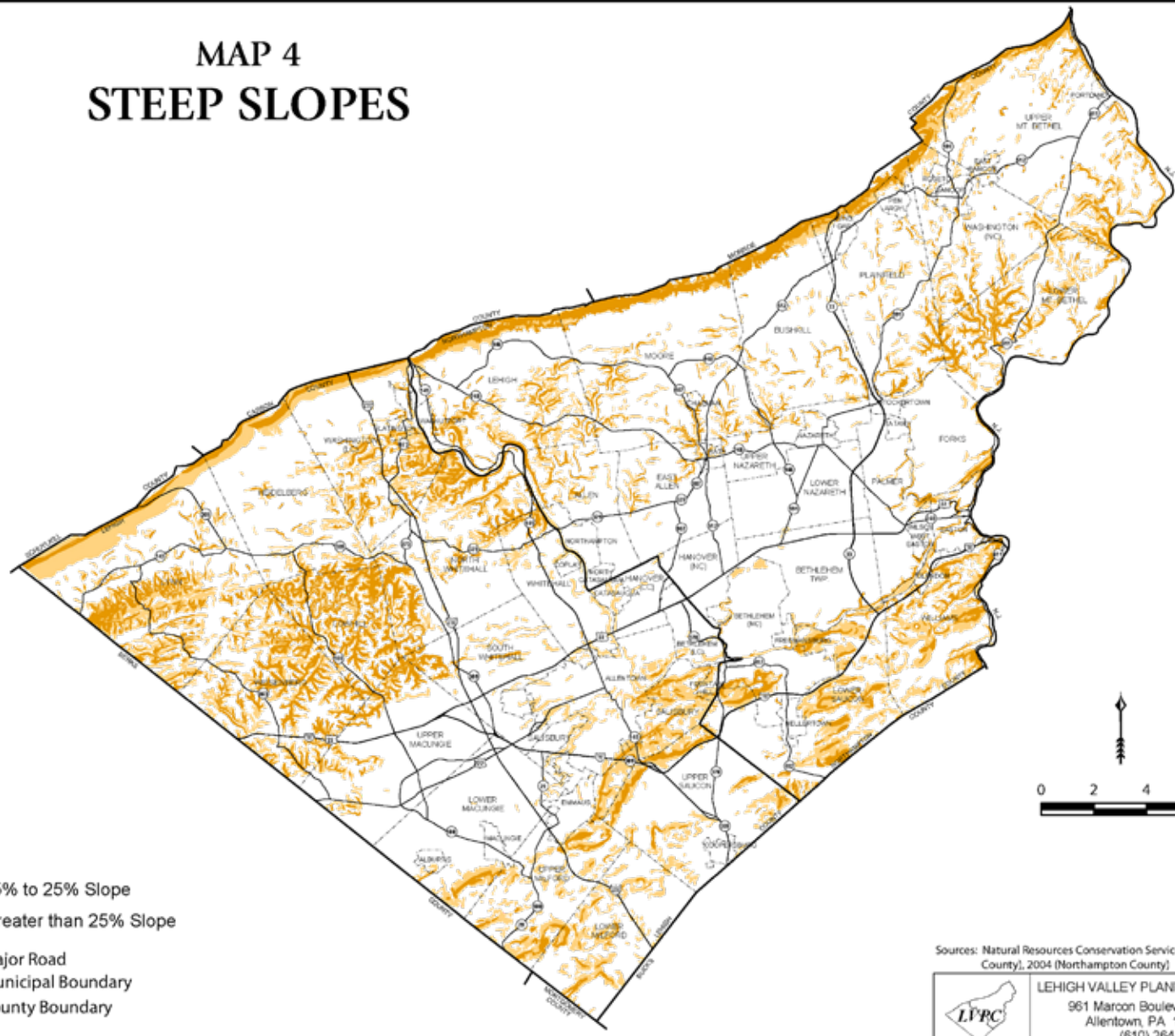
### **Woodlands**

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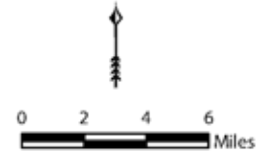
Woodlands are valued for many reasons. They provide recreational opportunities for nature study, hunting, hiking and horseback riding to name a few. Woodlands can be used for firewood harvesting, commercial timbering, and as land use buffers and boundaries between noncompatible land uses.



# MAP 4 STEEP SLOPES



- 15% to 25% Slope
- Greater than 25% Slope
- Major Road
- Municipal Boundary
- County Boundary



Sources: Natural Resources Conservation Service, 1998 (Lehigh County), 2004 (Northampton County)



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