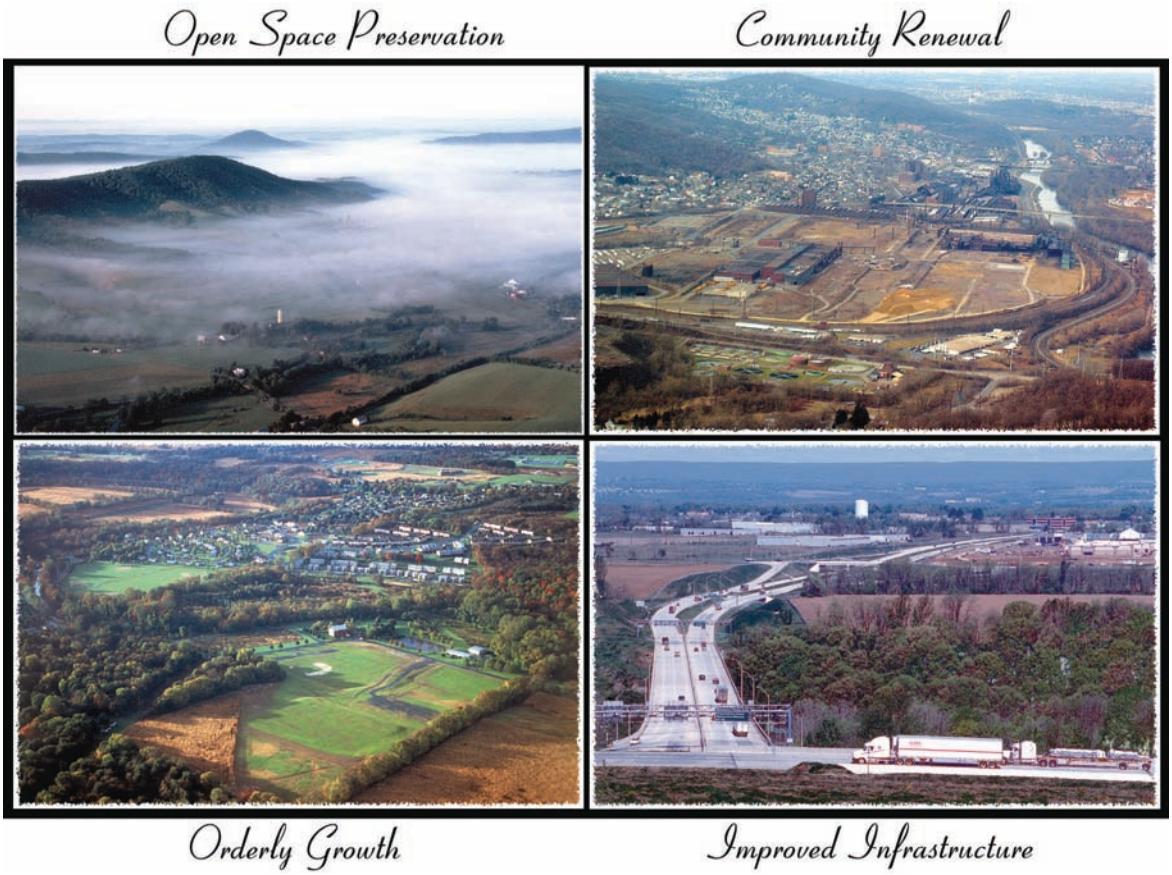
Comprehensive Plan

The Lehigh Valley ... 2030



Lehigh and Northampton Counties, PA

Lehigh Valley Planning Commission

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Comprehensive Plan

The Lehigh Valley ... 2030

Lehigh and Northampton Counties, PA

Prepared By: Lehigh Valley Planning Commission
Adopted: April 28, 2005
Data and Map Updates: June 2010

LEHIGH COUNTY

Adopted: June 22, 2005

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Adopted: June 16, 2005

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This report was financed by appropriations from Lehigh and Northampton counties and by a grant from the Commonwealth of Pennsylvania, Department of Community and Economic Development.

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EXECUTIVE SUMMARY

June, 2004

Based on public opinion surveys, workshops and information provided to the Lehigh Valley Planning Commission at numerous meetings the major planning issues in the Lehigh Valley are as follows:

- preservation of farmland
- preservation and protection of natural features
- redevelopment of old industrial sites including brownfields
- renewal and revitalization of the cities
- development of more parks and recreational facilities
- upgrade roads and intersections

This comprehensive plan advocates measures to achieve these and other goals relevant to conservation, development and redevelopment in the Lehigh Valley in the next 25 years. Following are major points made in the plan.

The Lehigh Valley population growth forecast is 700,000 by 2030. Much of this growth will be in suburban townships on the perimeter of Allentown, Bethlehem and Easton. However, there is considerable evidence that residential growth is pushing faster and deeper into rural agricultural areas with each passing year. In the 1990s and early 2000s about 3.5 square miles per year were converted from farms and other open space to urban land uses. This rate will likely increase to between 4 and 4.5 square miles per year in the future. By 2030 about 55% of the Lehigh Valley will be urban, compared with about 40% in 2000. Sprawl is a growing problem.

This plan identifies major natural resources that should be conserved based on careful studies by the Lehigh Valley Planning Commission, The Nature Conservancy and others. These resources include over 200 miles of cold water streams and lands adjacent to them, wetlands, and major concentrations of wooded hills and mountains. In addition to natural resources the plan proposes agricultural preservation in areas with prime agricultural soils that are near places that have already been designated for agriculture by agricultural security agreements and conservation easements acquired by the counties. Not all agricultural land can be saved. This plan establishes the goal of preserving approximately 25% of the land in the Lehigh Valley for agriculture.

Most urban development is recommended in the cities, boroughs and townships along a corridor that extends from Easton to western Lehigh County. Smaller concentrations of urban development are located in peripheral areas north and south of the corridor. In general public sewer and public water is available in designated urban areas. Where these utilities are not existent, it may be necessary to make extensions in the future. Major highway and transit service is also located in major urban and urbanizing areas. Most future transportation improvements should be made in designated urban areas in the future. Except for areas in and around center city locations and some scattered sites in the suburbs most housing in urban areas is low density single family housing. This plan recommends higher residential densities and greater variety in housing types.

Many areas in the Lehigh Valley are designated for future rural uses. It will be a challenge to keep these places rural in the future. Today they are a mixture of agriculture, low density residential, cement and slate quarries, and scattered business uses. If current development practices continue many of these areas will gradually change into low density urban places where it will be difficult to manage traffic and extend other services. Areas adjacent to the recommended urban corridor may gradually be consumed by it. Others may retain some rural character if land consumption is kept low, public sewers are kept out, conservation design concepts are used and natural resources and agriculture are preserved.

Completion of Route 222, construction of the American Parkway bridge, and completion of Route 412 improvements on the Bethlehem southside are projects that should alleviate congestion in western Lehigh County and improve access to downtown Allentown and Bethlehem. After completion of these projects the major transportation problem will be to address safety and capacity problems in the Route 22 corridor. In 2004 preliminary design studies were begun to determine solutions to these issues. Some congestion and safety problems of roads leading into Route 22 will also require further study. Many municipalities will need to consider access management strategies to minimize the impact of land development on local roadways as it is unlikely there will be sufficient federal and state transportation funds to add capacity to all roads that may need to be widened. It is expected that bus service will continue to be the primary mode of transit service for the foreseeable future.

The comprehensive plan also contains sections on economic development, community utilities, parks and historic properties. The Lehigh Valley Planning Commission supports economic development efforts that will provide above average paying jobs and strengthen the tax base of municipalities with declining tax bases.

The Commission believes that economic development programs must be joined with community development efforts to achieve these tasks. Brownfield redevelopment, urban renewal, downtown revitalization and infill are all important strategies to rebuild old urban areas.

Public sewer, water, stormwater management and solid waste policies are recommended in the plan. The policies are based on past studies and plans prepared by the Lehigh Valley Planning Commission. Public sewer and water infrastructure should be provided in most areas designated for urban development in the plan. On-site systems are generally advocated in rural and agricultural areas. The plan advocates that local municipalities pay particular attention to development of consistent land use and sewage facilities policies in their comprehensive plans, zoning ordinances, and Act 537 sewer plans. Consistency between land use and public water systems is also emphasized in the water supply component of this plan. The plan advocates that municipalities implement groundwater source protection measures based on the LVPC model wellhead protection ordinance, interconnection of municipal water systems, water conservation programs, metering of water usage, and improvement of water systems based on Federal Safe Drinking Water Act requirements.

The LVPC has long been involved in stormwater management planning as mandated by the Pennsylvania Stormwater Management Act, Act 167. The Commission has prepared plans for all watersheds in Lehigh and Northampton counties and is now working on water quality updates to these plans in order to meet certain requirements of the National Pollutant Discharge Elimination System. The Commission intends to continue this work in the future.

Both Lehigh and Northampton counties have prepared solid waste plans to meet the requirements of Pennsylvania Act 101. Although the Commission is not substantially involved in solid waste planning, solid waste projects are submitted to LVPC by the Pennsylvania Department of Environmental Protection for review. The main object of LVPC review is to assure consistency between solid waste disposal proposals, land use, and stormwater management plans.

The county park and recreation plans have been prepared and monitored by the LVPC staff since the early 1970s. In recent years the voters in both Lehigh and Northampton counties have supported the provision of funds for expanding parks, acquiring natural areas and preserving farmland. The Lehigh Valley Planning Commission strongly supports these programs. The Commission recommends that the counties and municipalities undertake open space and park acquisitions. Municipalities should be responsible for providing mini-parks, neighborhood parks, playgrounds and community parks. The counties should acquire large county parks, regional parks, regional park reserves and conservancy areas. High priority should be given to acquiring parkland and open space along rivers and major streams. In addition counties and municipalities should preserve important historic buildings, structures and sites.

In summary key development concepts advocated in this plan are:

- conservation of important natural areas and conservation of farmland;
- new growth contiguous with major existing urban areas;
- new growth in designated urban areas where community utilities already exist or can be expanded;
- increased residential densities in designated urban areas;
- no urban growth in areas designated for natural resources or farmland;
- better use of tools already authorized in the Pennsylvania Municipalities Planning Code;
- extensive infill, redevelopment and reuse of properties in cities and boroughs;
- combined economic and community development efforts to provide well paying jobs and improve the tax base of municipalities in distress;
- continued development of transportation facilities, community utilities and public parks to meet the needs of the region as it grows in the future.

Creating orderly patterns of development, curbing sprawl, and revitalizing urban areas are all difficult goals to achieve. Effective zoning laws and a commitment of large sums of public and private funds to acquire open space and redevelop urban space will be required to achieve these goals. Planning agencies like the Lehigh Valley Planning Commission can make recommendations; but municipal and county elected officials make the laws and provide the funding for implementation. Hopefully, municipalities and the counties will undertake appropriate implementation actions to carry out the plan. There are signs that some Lehigh Valley municipalities are willing to take action. Both counties are involved in open space acquisition programs. Renewal and revitalization efforts are underway in the three cities and a number of boroughs. Multimunicipal planning programs are underway in five areas in the Lehigh Valley. These are promising indications of growing intermunicipal cooperation and municipal action to implement goals and policies in this plan.

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Executive Director

April 28, 2005

Dear Lehigh Valley Resident:

On behalf of the Lehigh Valley Planning Commission I am pleased to present this comprehensive plan for the Lehigh Valley.

Under Pennsylvania law counties are required to have a comprehensive plan which is updated every 10 years. This report is an update of the comprehensive plan adopted by Lehigh and Northampton counties in 1993. Municipal comprehensive plans are required to be generally consistent with the county comprehensive plan.

This plan documents and addresses the many comments we received in our public opinion survey and in public meetings over the past four years. The plan prioritizes important natural and agricultural areas for future preservation. It identifies rural areas and major areas where urban growth and appropriate infrastructure should be developed in the future. The plan also recommends measures that should be taken to renew and redevelop older urban places in the Lehigh Valley. Throughout, this plan relies on data and mapping resources which the Lehigh Valley Planning Commission has created since 2000.

We appreciate the advice that Lehigh Valley citizens, municipalities and organizations have provided. We have endeavored to heed that advice in the creation of this plan. It is our intent to work diligently on the implementation of the plan in the coming years.

Yours truly,

Steven L. Glickman, Chair

THE LEHIGH VALLEY PLANNING COMMISSION

The Lehigh Valley Planning Commission (LVPC) consists of 37 members in the following categories: County Executive of each county, one Councilman from Northampton County, one County Commissioner from Lehigh County, the Mayors of Allentown, Bethlehem and Easton, one member from each City Council (Easton and Bethlehem alternate annually), five members from each county to represent boroughs and townships, nine at large citizen members from each county. Except for members appointed because of their office, all members are appointed by the County Executive of each county.

In 1961 the County Commissioners of Lehigh and Northampton counties created a planning commission for each county. In 1967 the Joint Planning Commission was created through a merger of these county planning commissions operating with a single staff. The Joint Planning Commission changed its name to the Lehigh Valley Planning Commission (LVPC) in 1997. The change was made to give more explicit recognition to the growing regional identity of the Lehigh Valley and the long term focus of the LVPC on regional growth issues.

The LVPC is organized into four committees: Executive Committee, Environment Committee, Comprehensive Planning Committee, Transportation. Work by the 19 member staff is screened by the committees then presented to the Commission at its monthly meeting. The Executive Committee is the administrative arm of the planning commission. It deals with budget, finances and staff matters. The Environment Committee reviews water, sewer, stormwater management and other environmental projects. The Comprehensive Planning Committee reviews subdivision plans and studies of land use and housing issues. The Transportation Committee deals with highway and transit planning in the Lehigh Valley.

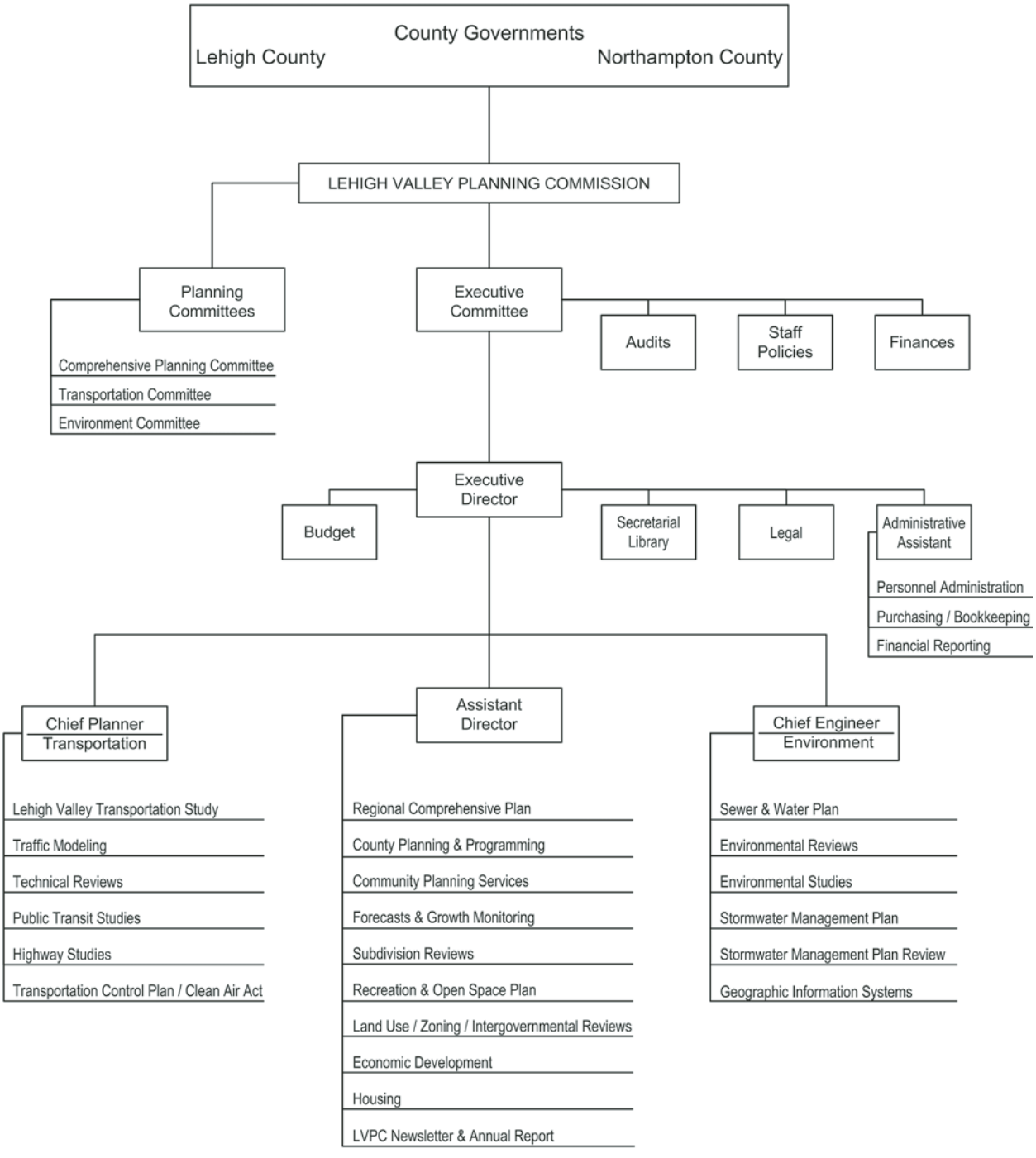
Since its creation the LVPC has managed an active planning program that covers a wide variety of topics including the following: environment and ecology, transportation, sewer, water, stormwater, energy conservation, parks and recreation, economic development, housing, municipal planning, zoning, subdivision regulations, codes enforcement, government management, geographic information system and many other topics. The presentation of these topics conforms with the requirements of Pennsylvania planning law and contemporary theories concerning content and construction of a county comprehensive plan.

Development of a county comprehensive plan is mandated by the Pennsylvania Municipalities Planning Code (MPC). However, county planning commissions are primarily advisory bodies that are not given much authority to implement a comprehensive plan under the MPC. Although counties are authorized to administer county zoning ordinances and subdivision regulations, such regulations at the county level are repealed when a municipality adopts a local ordinance. Municipalities create and administer comprehensive plans, local building permits, zoning ordinances and in most cases subdivision regulations. Under the MPC municipal plans are required to be generally consistent with the county comprehensive plan.

There is no county zoning ordinance in Lehigh or Northampton counties. Both counties have subdivision regulations. But these regulations cover only Slatington in Lehigh County and the boroughs of Freemansburg, West Easton, Glendon, East Bangor, and Chapman in Northampton County. The LVPC also does stormwater management plans for Lehigh and Northampton counties to meet requirements of Act 167, the Pennsylvania Stormwater Management Act and technical studies for PENNDOT to meet federal transportation planning regulations.

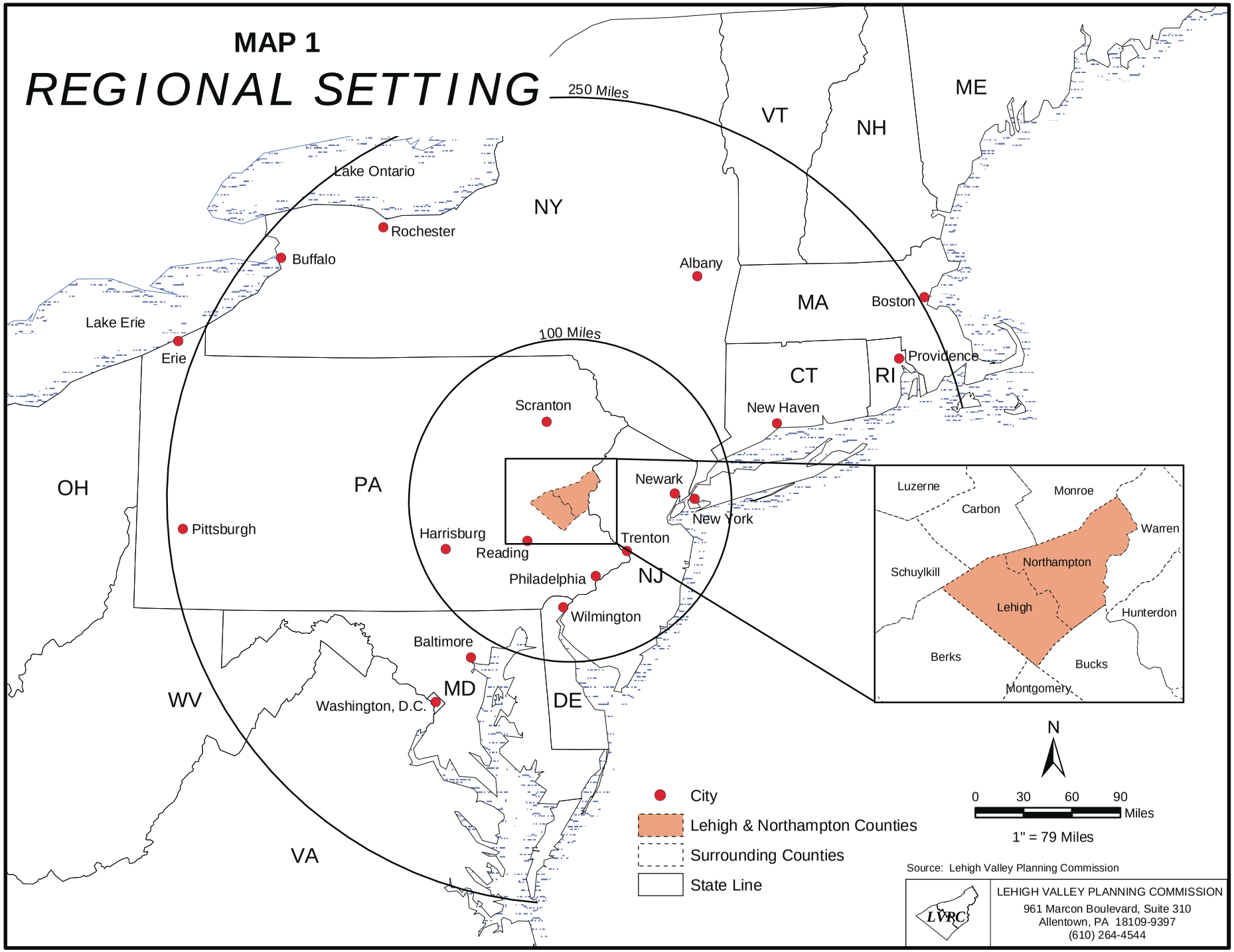
This is the fifth major update of the Lehigh Valley comprehensive plan. Upon completion, it will be submitted to Lehigh and Northampton counties for adoption. It will then be the responsibility of LVPC to advise local municipalities and other organizations of the recommendations of the plan.

LEHIGH VALLEY PLANNING COMMISSION
ORGANIZATION CHART



MAP 1

REGIONAL SETTING



Source: Lehigh Valley Planning Commission

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INTRODUCTION

The Lehigh Valley is a 730 square mile region in eastern Pennsylvania. The Valley is located about 80 miles west of New York City and 50 miles north of Philadelphia. These cities and their surrounding market areas exert strong economic, demographic, and social impacts on the region.

In the 1730s Scotch-Irish and German settlers began the agricultural development of the Lehigh Valley. During the 19th and 20th centuries canals, railroads, and highways coupled with the manufacturing of steel, cement, heavy trucks and chemicals continued to transform the economy and the landscape. Today the region is home to nearly 635,000 people. Growth, development and immigration continue patterns of change that began 300 years ago.

There are 62 municipalities in the Lehigh Valley which include 3 cities, 27 boroughs and 32 townships. In addition there are 17 school districts. Most of the major decisions with regard to planning, zoning, sewer, water, park development and local roads are made by the municipalities. In Pennsylvania county authority with respect to planning is primarily advisory. Most major roads in the Lehigh Valley are built and maintained by PENNDOT. Planning for major highways and transit is done through a cooperative organization called the Lehigh Valley Transportation Study, a partnership of state and local officials mandated by federal legislation.

The mission of the LVPC is to create a comprehensive plan to guide orderly growth in the Lehigh Valley. In undertaking this mission the LVPC carries out the following activities:

- Development of a comprehensive plan promoting orderly growth, development and redevelopment of the Lehigh Valley;
- Coordination of county and municipal plans for development and redevelopment;
- Define measures to improve the social and economic climate of the region;
- Encourage appropriate land use through implementation of the regional comprehensive plan;
- Encourage the maximum use of existing infrastructure and to plan new infrastructure as needed to fulfill the goals of the regional comprehensive plan;
- Promote the conservation of land, water and air and preserve unique historic and natural resources;
- Plan for the resolution of traffic congestion and traffic safety problems in the Lehigh Valley;
- Collect and distribute useful regional data;
- Offer technical planning assistance to Lehigh Valley governments and institutions.

Many recommendations of this comprehensive plan reflect ideas that have been presented in earlier editions. In the course of preparing this plan, the Lehigh Valley Planning Commission has interviewed and met with local municipal officials and citizens, conducted a public opinion poll, held public meetings and public hearings as prescribed by law, and transmitted the draft plan to local jurisdictions for review.

The comprehensive plan deals mainly with the future physical environment of the Lehigh Valley between 2000 and 2030. The plan presents a balanced program of environmental, economic and developmental proposals. This recognizes the fact that the Lehigh Valley is a mixture of agricultural, rural, suburban and urban features. The plan starts by reporting on public opinion researched in a public opinion survey. Next the plan describes basic forecasts about future growth. It then outlines proposals for natural resource and agricultural preservation. Sections on land use, economic development, housing, transportation and community facilities follow. These sections detail measures that need to be taken to assure compatibility between preservation, development and infrastructure. Finally, the plan presents a section on historic preservation.

Since the adoption of the 1993 plan by Lehigh and Northampton counties two factors have developed that will influence implementation of comprehensive plans in the future. The first factor is public attitudes concerning planning priorities and the second is a change in the Pennsylvania Municipalities Planning Code. Spurred by growing public concerns about traffic congestion and loss of open space many communities have given consideration to so-called “smart growth” development practices.

Largely, these practices are advocated to combat problems of "sprawl." Community planners have long recognized "sprawl" and advocated "smart growth". The major new element is the attention given to these matters by the media and the general public. Evidence of sprawl can be seen in the Lehigh Valley as: large expanses of outwardly expanding low density residential uses, leapfrog development, commercial strip development along roadways, development of small water and sewer systems to serve individual developments, and isolated individual residential developments dispersed across rural landscapes.

The "smart growth" response to "sprawl" focuses on a wide variety of measures that range in scale from subdivision design and site development measures to measures that require multimunicipal coopera-tion and some degree of influence over land development by county government. The LVPC believes sprawl is a regional development issue requiring action beyond the boundary of each municipality. Some regional smart growth measures include:

- implementation of regional growth boundaries or regional urban service areas;
- increased urban densities and urban infill;
- workable agricultural and natural resource protection measures in the rural areas;
- no public sewer, water or major roadways in agricultural areas;
- brownfield redevelopment;
- multimunicipal planning;
- improved levels of transit service in urban areas;
- enhanced cultural and environmental amenities in urban areas.

Many of these measures have been a part of the LVPC comprehensive county plans since the 1960's. They are all difficult to implement.

The second factor was development of a new Municipalities Planning Code. In the early 1990's the Pennsylvania legislature embarked on a major legislative initiative to revamp the Pennsylvania Municipalities Planning Code to deal more effectively with problems of urban sprawl. A number of the best measures for growth management were weakened or defeated. These measures included expanding the powers of counties to deal with growth management issues, strong requirements for consistency between municipal and county plans, county authority over developments of regional significance, and mandatory concurrency of development and infrastructure improvements. Vestiges of these provisions are in the planning code, but they are weak reflections of the original proposals.

On the other hand Pennsylvania's commitment to funding planning, particularly multimunicipal planning was expanded. Communities who adopt multimunicipal plans and modify local ordinances accordingly are given a measure of protection from developer initiated lawsuits alleging exclusionary zoning practices. Planning authority for natural resource protection and agricultural protection measures were expanded. As a result six multimunicipal plans are now existant in various parts of the Lehigh Valley. The plans cover northwestern and southwestern Lehigh County, the Bangor area, Wind Gap area, Nazareth area, and the Hellertown/Lower Saucon area in Northampton. The LVPC designed work programs for three of these efforts, managed consultants for two plans and is doing the technical planning work for ten municipalities in the Nazareth area. Whether or not these efforts will improve the quality of planning or help contain sprawl remains to be demonstrated. The Lehigh Valley Planning Commission will continue to work with those municipalities and groups interested in solving growth problems.

This report was adopted by Lehigh and Northampton counties in June, 2005. In May 2010 minor changes to the report were made to update new population forecasts published by the Lehigh Valley Planning Commission in 2007. In addition a number of maps were updated to present data that has changed since 2005. No changes were made to Goals, Policies or Implementation Strategies presented in the 2005 report.

PUBLIC INPUT FOR THE COMPREHENSIVE PLAN UPDATE

PUBLIC OPINION LAND USE SURVEY

The Lehigh Valley Planning Commission (LVPC) has learned that one of the best ways to obtain useful information about citizen opinions concerning planning issues is to conduct a survey of a sizable number — 3,500 to 4,000 — of Lehigh Valley residents. This method, involving a mail-out mail-back survey, was used successfully by the Commission in 1974, 1988, and 1999. The 1999 survey was used in the creation of this plan. A 2010 update of the survey was conducted. Its results were very similar to the 1999 survey.

The 1999 Public Opinion Land Use Survey was mailed to 4,000 registered voters. This represented 1.25% of all registered voters in the Lehigh Valley. A total of 1,078 surveys were returned for processing. This resulted in a 27% return rate which is good for a lengthy survey that included 41 questions.

The opinion survey contained two types of questions: socio-economic and demographic, and attitudinal. All responses were tabulated to determine how many and what percentage of the respondents answered each question. Selected cross-tabulations were prepared. A summary of the major findings follows:

- The three most important planning issues are the preservation of farmland, the preservation of environmentally sensitive areas, and the renewal of the cities.
- Nearly 59% of the persons who answered the survey want slower growth in the Lehigh Valley. Only 2.5% want faster growth.
- The three most significant consequences of growth are felt to be: increasing traffic congestion, loss of open space, and overcrowding in schools.
- The three factors people consider most important in choosing a place to live are: good schools, low taxes, and pleasant residential areas.
- Almost 47% of the survey respondents believe the quality of life in the Lehigh Valley has gotten worse during the past 10 years. Only 17% feel it has improved.
- There is a strong mandate by registered voters to preserve farmland. Over 90% favor preserving farmland. Only 2.6% do not want to preserve farmland.
- Nearly 85% of the survey respondents think the two counties should do more to preserve farmland.
- About one half (47.6%) feel the amount of new industry and business locating in the Lehigh Valley has been about right.
- People are interested in policies and programs that will lead to the creation of higher paying jobs.
- New industrial development should occur primarily in cities.
- Nearly 87% of the survey respondents want new industrial development to occur on brownfield and other redeveloped sites.
- Most people want to see more high technology research firms in the Lehigh Valley.
- Survey respondents feel the most important transportation improvement, by far, is the upgrading of existing roadways and intersections.
- The best long-term option for Route 22 is to add more travel lanes.
- Most voters do not believe the Lehigh Valley needs a wider variety of housing types.
- About 70% of the voters who answered the survey believe more parks, recreation facilities and open space are needed.
- The most needed park and recreation facilities are felt to be large regional parks, trails for hiking and biking, and nature reserves.
- To preserve the environment, priority should be given first to protecting rivers, creeks, streams and lakes.
- Survey respondents feel most new residential development should take place in the cities and suburban townships.
- People in the Lehigh Valley are interested in new concepts such as cluster development and traditional neighborhood development.
- The feature in new residential development most important to survey respondents is the preservation of open space and environmentally sensitive areas.
- About two thirds of persons who answered the survey want new retail development to occur in the cities.

- What people like most about the Lehigh Valley are its closeness to New York City, Philadelphia and shore points, its convenience to many things, and its farmland, open spaces and rural areas.
- What people like least about the Lehigh Valley are traffic congestion, crime, and too much development and sprawl.

WORKSHOPS ON THE PLAN UPDATE

In June 2001 the Lehigh Valley Planning Commission held two workshops for the purpose of obtaining input on the updates to the regional comprehensive plan and the transportation plan. One workshop was held at the Northampton Community College in Bethlehem Township on June 19. The other workshop was held at the Lehigh County Government Center in Allentown on June 21. Seventy-six persons attended the two workshops.

Both workshops started with an open house where displays covering different planning matters could be viewed. This was followed by presentations by the LVPC Chair and Executive Director. The audience then split into four breakout groups. Each group was to cover a specific topic. The four topics included: (1) natural resource protection and farmland preservation, (2) future development patterns, (3) economic development and city revitalization, and (4) transportation. This was followed by a wrap-up session where someone from each group reported on the group's discussion and conclusions. A summary of the major conclusions reached at the four sessions follows.

- Sprawl is a big problem in the Lehigh Valley.
- More should be done to preserve farmland.
- Important natural areas need preserving.
- Our rivers and streams are important assets and need protecting.
- The lowering of the water table is a problem.
- It is important to link land use decisions and transportation planning.
- Our cities and boroughs must be revitalized.
- More development should take place on brownfield sites.
- There is a need for a stronger county role in land use decisions.
- There is too little authority for effective regional planning.

CONSULTATION WITH SCHOOL DISTRICTS AND OTHER AGENCIES

The LVPC recognizes the important role of the school districts, municipal authorities, and public utilities in the future of the Lehigh Valley. Accordingly, the LVPC sought the input of these entities. In January 2001, the LVPC requested their input. Letters were sent to all 17 school districts serving Lehigh and Northampton counties, all 44 municipal authorities created by municipalities in the two counties, and 14 public utilities that serve customers within the two counties. Additionally, the LVPC coordinated with the State by notifying the Center for Local Government Services. This initiative was consistent with the provisions of Section 306 of the Pennsylvania Municipalities Planning Code.

The letters solicited input in three areas. The entities were asked to share forecasts and projections that they had prepared. The entities were asked to identify major planned capital improvements and changes in facilities. Lastly, the entities were given the opportunity to provide their thoughts regarding the comprehensive plan update. There were six responses to our survey.

Five provided information about planned capital improvements or changes in facilities. One provided population projections. None of the respondents offered any ideas or recommendations regarding the comprehensive plan update.

AD HOC COMMITTEE ON AGRICULTURAL PRESERVATION

In 1998 the Lehigh Valley Planning Commission created an ad hoc committee to study farmland preservation. The 10-member committee was made up of farmers, farmland preservation professionals, Agricultural Extension Service county agents and others involved in agriculture. The committee met during 1998 and 1999.

The committee decided open space preservation and scenic values topped the reasons for saving farmland. The preservation of the farm economy was second. Other reasons for preserving farmland included the preservation of soil as a natural resource, environmental benefits, being part of a growth management strategy to control sprawl, and support for the food production industry.

Strategies for the better implementation of farmland preservation were a main focus of the committee. The committee's thoughts are summarized as follows:

- Advocacy of farmland preservation is a priority. More effective means of advocacy need to be undertaken.
- Continuing the preferential assessment programs is favored.
- The purchase of development rights program is desirable. Funding should be increased. Factors to be used in deciding which properties should be purchased should include soil quality, creating clusters of preserved farms and consistency with the county comprehensive plan.
- Private land trusts should continue to assist in farmland preservation. Both counties should maintain a working relationship with the Wildlands Conservancy.
- The maintenance of and the expansion of agricultural security areas should be encouraged.
- Growth management strategies should be coordinated with farmland preservation efforts.
- The agricultural community is divided in its opinion on the use of effective agricultural zoning. Some favor it. Others oppose it.
- Little or no interest was expressed for the use of the transfer of development rights technique, right of first refusal agreements, purchase and resale programs or county condemnation of key farmland.

In addition to creating the Ad Hoc Committee on Agricultural Preservation, the LVPC staff sought municipal reaction to the proposed changes to the farmland preservation section of the comprehensive plan. Copies of background information, proposed text changes and proposed map changes were sent to nearly every township. We invited feedback and, as a result, received correspondence from the townships of Allen, Lynn, North Whitehall, Upper Macungie and Upper Milford. Additionally, LVPC staff met with elected officials and planning commissioners from North Whitehall and Washington (Lehigh County) to discuss farmland preservation issues. Input from these groups and the responses we received from the public opinion land use survey were used to update the agricultural preservation section of the comprehensive plan.

AD HOC COMMITTEE ON URBAN ISSUES

The Lehigh Valley has a number of mature communities that are largely developed. Planning issues in these communities differ in key aspects from those for communities that are still growing. The Lehigh Valley's mature communities include the three cities and 27 boroughs. Several townships share characteristics of these mature communities and will increasingly face the same issues. Many mature communities are characterized by a stable or declining tax base, the loss of population, an older building stock, a need for more services and higher poverty rates.

In 2001, the LVPC convened a special committee to focus on how the *Comprehensive Plan The Lehigh Valley … 2030 Lehigh and Northampton Counties* could address the particular needs of mature communities. The committee was composed of 11 individuals representing cities, boroughs, and the township of Whitehall.

In April 2002 the LVPC staff prepared a memo on mature communities that is based on information learned at the committee meetings. The memo recommends the plan update include three specific goals that deal with mature communities. These goals include:

- To achieve a high quality built environment.
- To obtain adequate revenue for providing appropriate governmental services by strengthening the employment and tax revenue bases of mature communities.
- To reinforce and enhance the roles of the mature communities as the centers of regional activities.

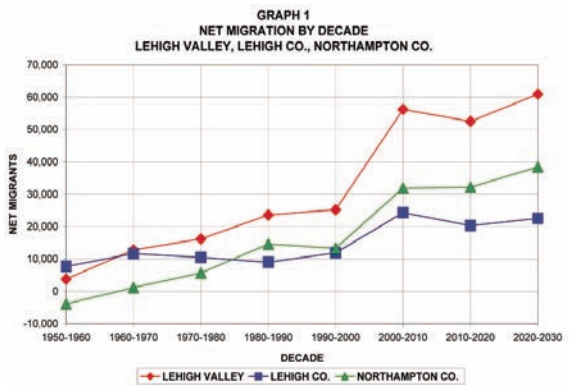
Each of the goals have been included, as appropriate, in other sections of the comprehensive plan. Each goal is followed by a list of policies and implementation strategies applicable to that goal.

GROWTH TRENDS AND FORECASTS

This section documents LVPC forecasts of future growth in the Lehigh Valley. Any forecast of future growth is somewhat speculative. There can be no guarantees that the Lehigh Valley and its parts will grow exactly as indicated here even though the LVPC has used a demographic model that accounts for future migration, births and deaths at the county level and data on local development, land resources, and available infrastructure for the municipal forecasts. The forecasts presented here are not recommendations for future growth by the LVPC. If these forecasts come about, they will present both problems and opportunities. Succeeding sections of the plan outline how to resolve some of the problems and capitalize on some of the opportunities. The forecasts found in our plan adopted in 2005 have been updated to show new forecasts released by the Lehigh Valley Planning Commission in 2007. The new forecast more accurately account for robust immigration to the Lehigh Valley during the 2000 to 2008 period.

REGIONAL POPULATION GROWTH

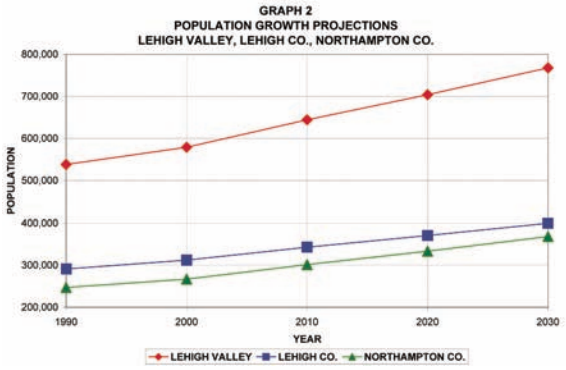
Future population growth in the Lehigh Valley will depend on migration. Based upon past experience, most of this growth will come from westward expansion of metropolitan areas in New Jersey and New York (see Map 1). The Philadelphia area is a secondary source of immigration. Graph 1 shows net migration (people moving in minus people moving out) to the Lehigh Valley since the 1950s and a forecast of the future trend.



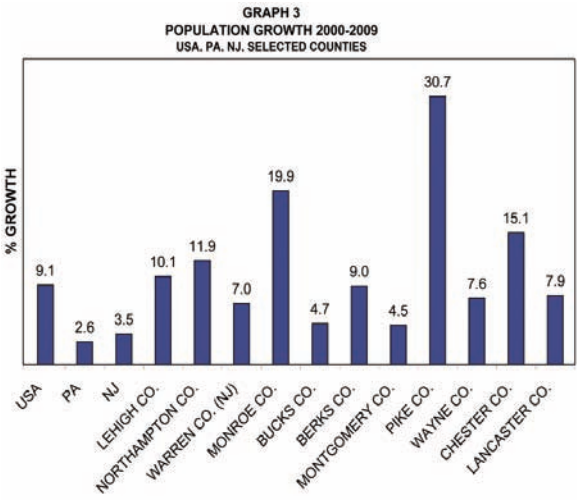
Between 2000 and 2030 migration is expected to account for an increase of 169,625 people in the Lehigh Valley. Forty percent (67,142) are forecast to locate in Lehigh County and 60% (102,483) in Northampton County.

Unless there are unexpected increases in family size, natural increase in population is not expected to account for much future population growth. Without migration, population would eventually decline.

Graph 2 shows the official LVPC forecast of future population growth for Lehigh County, Northampton County and the Lehigh Valley as a whole. If past trends in migration, births and deaths continue, the Lehigh Valley will grow by 33% between 2000 and 2030. The population of the Lehigh Valley will grow from 579,156 in 2000 to 767,856 in 2030. Northampton County is expected to grow 38% compared with 28% in Lehigh County.

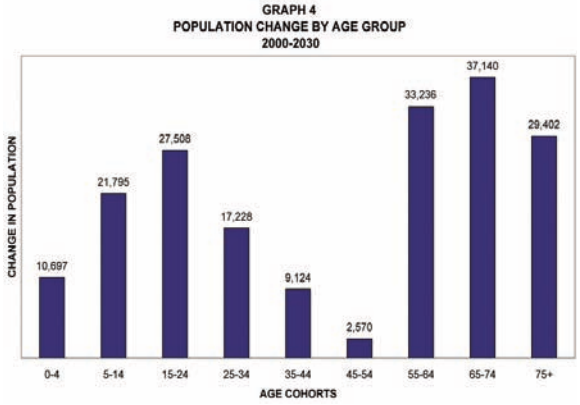


Graph 3 shows population growth in Lehigh and Northampton counties (Lehigh Valley) from 2000 to 2009 in relationship to the USA, Pennsylvania, and other nearby counties. Lehigh and Northampton grew faster than Pennsylvania, New Jersey, and the U.S.A. Many Pennsylvania counties have experienced negative growth or no growth. However, this is not the case in southeastern Pennsylvania and in counties bordering the Delaware River. In the cases of Monroe and Pike counties growth due to migration from New Jersey and New York has been extraordinary. Growth in the Lehigh Valley is a function of its location relative to New York, New Jersey and Philadelphia more than any other factors.



POPULATION CHARACTERISTICS

Between 2000 and 2030 there will be important changes in the population of age groups. Graph 4 shows those age groups that will grow, decline and remain static through the thirty year period. As illustrated there is dramatic growth in people over 65, relatively little change in the number of people 35 to 54 and modest growth in people under 35. The population over 65 will grow by about 73% during this time period.



Some businesses and institutions in the Lehigh Valley are already anticipating demographic change. There is robust growth in health industries in the Lehigh Valley and elsewhere. Various types of housing development aimed at older citizens and those with special living care needs are increasing. These are activities that directly relate to land use issues in both urban and rural places.

The most rapid growth in the transit market is specialized transit that takes passengers from door to door. Planners recommend locations close to urban areas when siting health services, housing and convenience facilities serving elderly citizens. Such locations reduce the need for long trips and increase the number of sites that can be reached by transit service. Many of the impacts of a growing elderly population cannot be easily anticipated because they have not been experienced. The only certainty is that there will be major changes in the coming years.

MUNICIPAL POPULATION GROWTH

Table 1 shows the top five municipalities in each county by their numeric population growth from 2000 to 2008.

TABLE 1
HIGHEST MUNICIPAL POPULATION GROWTH
Lehigh Valley Municipalities: 2000-2008

		2000	2008	Numeric Change
Lehigh County				
1	Lower Macungie Twp.	19,220	29,680	10,460
2	Upper Macungie Twp.	13,895	18,224	4,329
3	Upper Saucon Twp.	11,939	14,830	2,891
4	Whitehall Twp.	24,896	26,832	1,936
5	North Whitehall Twp.	14,731	16,275	1,544
Northampton County				
1	Forks Township	8,419	14,340	5,921
2	Palmer Twp.	16,809	20,315	3,506
3	Bethlehem Twp.	21,171	23,566	2,395
4	Allen Twp.	2,630	4,524	1,894
5	Upper Mt. Bethel Twp.	6,063	7,727	1,664

Table 2 shows the LVPC forecast of municipal population growth between 2000 and 2030. The top five population growth municipalities in Lehigh County are expected to be Lower Macungie, Upper Macungie, North Whitehall, Upper Saucon and South Whitehall. Population growth pressures are also expected to extend to several of the rural townships such as Washington, Weisenberg, Lynn and Lower Milford.

In Northampton County the top five growth municipalities are expected to be Bethlehem Township, Forks Township, Palmer Township, Lower Nazareth Township and Upper Nazareth Township. However, rural townships will experience growing development and growth pressure in the next thirty years. In general development patterns in Northampton County are much more dispersed than in Lehigh County. The potential for urban sprawl is substantial. With increasing migration from New Jersey many rural townships in Northampton will be faced with increasing growth problems. Early action to

TABLE 2
OFFICIAL LVPC POPULATION FORECASTS

Municipality	1900 Census	2000 Census	2010 Forecast	2020 Forecast	2030 Forecast	Change 2000-2030
Lower Macungie Twp.	2,920	19,220	28,020	33,424	42,193	22,973
Upper Macungie Twp.	2,081	13,895	19,859	26,479	33,508	19,613
North Whitehall Twp.	3,280	14,731	18,182	22,253	23,949	9,218
Upper Saucon Twp.	2,271	11,939	14,848	17,091	17,960	6,021
South Whitehall Twp.	2,472	18,028	19,817	21,619	23,573	5,545
Lynn Twp.	2,366	3,849	4,906	6,326	8,207	4,358
Weisenberg Twp.	1,366	4,144	5,246	6,363	7,631	3,487
Whitehall Twp.	7,935	24,896	26,305	27,201	28,218	3,322
Washington Twp.	3,096	6,588	7,520	8,682	9,498	2,910
Lower Milford Twp.	1,233	3,617	4,094	4,852	5,907	2,290
Lowhill Twp.	715	1,869	2,462	3,188	4,100	2,231
Allentown	35,416	106,632	107,110	107,469	108,230	1,598
Upper Milford Twp.	2,712	6,889	7,504	7,804	7,974	1,085
Heidelberg Twp.	1,411	3,279	3,612	3,995	4,356	1,077
Bethlehem (part)		19,029	19,430	19,596	19,939	910
Salisbury Twp.	4,582	13,498	13,895	14,094	14,119	621
Alburtis		2,117	2,243	2,329	2,479	362
Macungie	692	3,039	3,111	3,111	3,111	72
Emmaus	1,468	11,313	11,351	11,351	11,351	38
Hanover Twp.	3,324	1,913	1,915	1,915	1,915	2
Coopersburg	556	2,582	2,570	2,570	2,570	-12
Coplay	1,581	3,387	3,371	3,371	3,371	-16
Fountain Hill	1,214	4,614	4,595	4,595	4,595	-19
Slatington	3,773	4,434	4,413	4,413	4,413	-21
Catasauqua	3,963	6,588	6,553	6,553	6,553	-35
LEHIGH COUNTY	93,893	312,090	342,932	370,644	399,721	87,631
Bethlehem Twp.	3,090	21,171	25,193	28,979	33,566	12,395
Forks Twp.	1,147	8,419	13,973	16,522	19,962	11,543
Palmer Twp.	2,051	16,809	19,554	22,289	26,899	10,090
Lower Nazareth Twp.	1,034	5,259	7,085	10,222	12,380	7,121
Upper Nazareth Twp.	731	4,426	6,309	8,921	11,197	6,771
Lehigh Twp.	3,769	9,728	11,707	14,238	16,369	6,641
Allen Twp.	6,541	2,630	4,473	6,387	8,586	5,956
Plainfield Twp.	2,042	5,668	6,855	8,694	10,752	5,084
Moore Twp.	2,293	8,673	10,132	11,888	13,698	5,025
Upper Mt. Bethel Twp.	2,446	6,063	7,763	9,180	10,845	4,782
Bushkill Twp.	1,586	6,982	8,562	9,997	11,109	4,127
Washington Twp.	2,614	4,152	5,347	6,755	8,027	3,875
Lower Saucon Twp.	4,141	9,884	11,549	12,658	13,722	3,838
Williams Twp.	1,819	4,470	6,178	7,372	8,262	3,792
Hanover Twp.	401	9,563	10,560	11,472	12,954	3,391
East Allen Twp.	1,137	4,903	5,292	5,942	6,491	1,588
Bethlehem (part)		52,300	53,436	53,372	53,301	1,001
Lower Mt. Bethel Twp.	1,335	3,228	3,426	3,683	3,988	760
Bath	731	2,678	2,844	3,035	3,425	747
Nazareth	2,304	6,023	6,103	6,304	6,697	674
Bangor	4,106	5,319	5,350	5,458	5,655	336
Northampton		9,405	9,699	9,699	9,699	294
Pen Argyl	2,784	3,615	3,681	3,738	3,857	242
Portland	490	579	633	747	772	193
Easton	25,238	26,263	26,279	26,323	26,405	142
East Bangor	983	979	1,034	1,105	1,114	135
Tatamy	260	930	1,044	1,044	1,044	114
Walnutport		2,043	2,136	2,136	2,136	93
Freemansburg	596	1,897	1,973	1,973	1,973	76
Wilson		7,682	7,753	7,753	7,753	71
Stockertown		687	756	756	756	69
North Catasauqua		2,814	2,863	2,863	2,863	49
West Easton	1,000	1,152	1,170	1,170	1,170	18
Wind Gap	711	2,812	2,827	2,827	2,827	15
Hellertown	745	5,606	5,615	5,615	5,615	9
Roseto		1,653	1,662	1,662	1,662	9
Glendon	704	367	368	368	369	2
Chapman	319	234	234	234	234	0
Bethlehem (Total L & N)	23,625	71,329	72,867	75,625	73,240	1,911
NORTHAMPTON CO TOTAL	99,687	267,066	301,416	333,382	368,135	101,069
REGIONAL TOTAL	193,580	579,156	644,348	704,026	767,856	188,700

Source: *Lehigh Valley Planning Commission based on new forecasts published in 2007.*

mitigate threats to the natural environment and to manage traffic is needed. In order to cope with future growth pressures, municipalities will need to do better planning and implementation of plans than they have done in the past.

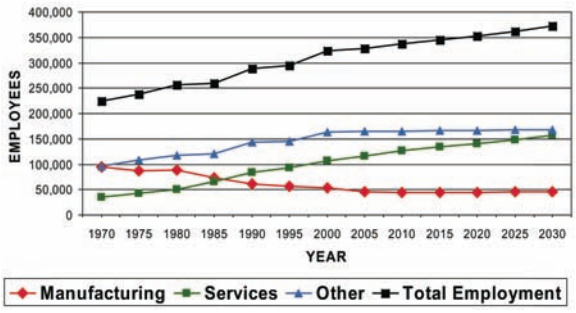
Economic, cultural and geographic forces that shape growth at the statewide and regional levels are difficult to stimulate if more growth is desired and equally difficult to manage if less growth is desired. Although states and regions have limited capacity to control growth, the authority of local municipalities is considerable. Communities can shape the location of growth and influence the timing and amount of growth. They do this through zoning regulations, sewer and water extensions, road improvements and resource protection policies. To the extent that counties opt to participate in any of these activities, they can also participate in growth management, though at a much lesser level than municipalities. In particular, counties can influence major sewer, water and highway projects that affect growth.

EMPLOYMENT GROWTH

Between 2000 and 2030, the LVPC forecasts a 15% increase in jobs in the Lehigh Valley. If trends over the last 20 years continue, most of these jobs will be in services. Manufacturing industries are likely to bottom out around current levels. Graph 6 illustrates these employment forecasts. The shift from manufacturing to services in the Lehigh Valley echoes national trends. The shift is occurring somewhat more rapidly in the Lehigh Valley because the area has historically had a more dominant manufacturing base than the nation. During the 1980s, 1990s and early 2000s major job losses occurred at Bethlehem Steel, Mack Truck, Agere and other manufacturing concerns. Job increases came from insurance back offices, warehousing, health care, education and personal services.

Changes in the regional economic base have affected all facets of life in the Lehigh Valley. Overall income levels have shown slow growth as high paying manufacturing jobs gave way to lower paying jobs in services and trade. Occupational requirements and training needs changed as the predominant blue-collar work force of previous decades changed to a white-collar labor force dominated by administrative and clerical personnel. Old industrial plants located in the cities shut

GRAPH 6
EMPLOYMENT TRENDS LEHIGH VALLEY
1970-2030



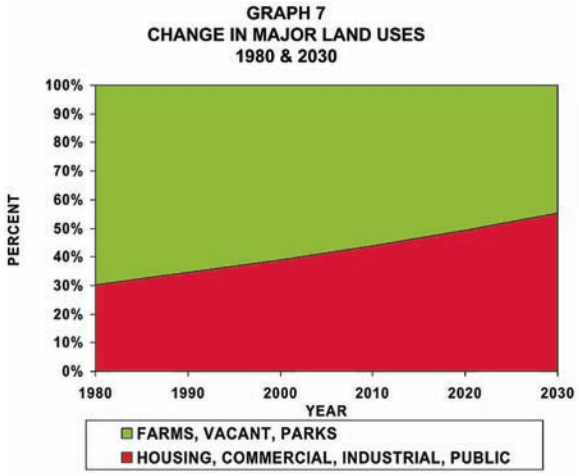
down all or part of their operations as new office structures were built in suburban locations. Land uses, travel patterns and infrastructure needs shifted accordingly. In the cities and some of the other older urban areas, problems of rehabilitating old sites for new development are major issues. In many of the new developed areas, problems of dealing with traffic congestion and provision of adequate sewer and water facilities have surfaced. Balancing the need for sound economic growth with environmental protection and provision of adequate facilities and services is a major challenge confronting all municipalities in the future.

LAND USE

As part of the update to this comprehensive plan the Lehigh Valley Planning Commission did extensive analysis of land use trends in the Lehigh Valley using the Geographic Information System (GIS), county aerial photographs flown in both counties in 2000, and county tax records. The purposes of the analysis were: (1) identify land use patterns and classifications by land use category; (2) compute land use changes during the 1990s and land consumption trends; (3) determine suitability of land for different uses; (4) analyze vacant land parcels and the potential for infill development. This information supplements tax assessment office records on land use change that LVPC has maintained since the 1970s. Following are major findings of this analysis:

a) Tax assessment data over the past 30 years indicates that agricultural and vacant land in the Lehigh Valley is being developed for housing, business and industry at an average rate of about 3.0 square miles per year. There is evidence that this rate has been increasing in each decade since the 1970s. GIS measurements from 1992 and

2000 aerial photographs show land consumption at 3.5 square miles per year in the Lehigh Valley. Graph 7 shows the changing percentages of land in housing, commercial and industrial uses versus the amount of land in agriculture, vacant and parks over the period extending from 1980 to 2030. It is projected that land consumption will exceed 4 square miles per year by 2030. By 2030 about 55% of the land will be in housing, commercial and industrial.



b) Suburban sprawl is a problem in the Lehigh Valley even though some national studies have shown that the Lehigh Valley has done better than most metropolitan areas in controlling sprawl. Measurements from 1992 and 2000 aerial photography show that 48% of the development in Lehigh County and 63% of development in Northampton County occurred outside of areas designated for urban growth in the Lehigh Valley comprehensive plan.

c) From 1975 to 2001 about 76% of the land developed in Lehigh County and 80% of land developed in Northampton County was developed for residential purposes. Persons looking for the main element in suburban sprawl need look no further. The key to controlling sprawl is more people living in higher density residential development in areas served with public sewer, public water, nearby transportation and other urban services. Consumer tastes for rural development create urban sprawl. Rural development carves large expanses of open space into small pieces.

d) Nearly all new industrial and business development in the Lehigh Valley is on “greenfield sites”. These are usually former farms converted to industrial sites. In 2002 12,922 acres of land was zoned for industry in Lehigh and Northampton counties. Of this total 4,466 (35%) are considered prime greenfield sites; i.e. sites with minimal environmental problems, available sewer and water and highway access. Lehigh County has 1,858 acres out of the 4,466 and Northampton County has 2,607.4. Much of the best industrial land is located in Upper Macungie, Lower Macungie and Upper Saucon townships in Lehigh County. In Northampton County the best greenfield sites are along the Route 33 corridor in Bethlehem Township, Lower Nazareth and Palmer. Each county will face a variety of problems concerning industrial site development in the future. In Lehigh County many of the best sites have already been developed. In Northampton County many of the zoned sites lack adequate sewer and water.

e) In addition to greenfield acreage listed above, the Lehigh Valley Economic Development Corporation reports there are 2,079 available acres of potential redevelopment property in the Lehigh Valley. Sixteen hundred of these acres are the Bethlehem Steel properties on the southside of Bethlehem. Redevelopment of these properties is an important land use and economic development issue. Plans are now underway to sell much of the Bethlehem Steel property to private developers. If successfully developed, sites of this type can become community assets. Industrial redevelopment adds to the supply of industrial space and reduces some of the development pressure on open space.

This plan begins with an evaluation of important natural resources in the Lehigh Valley and what should be done to protect them. Before a plan for development is proposed it is first necessary to determine what needs to be preserved. Voters have spoken very clearly on the subject in public opinion surveys conducted over the past 30 years. They want to preserve important natural resources.

Map 2 shows surface terrain features and streams in the 730 square mile Lehigh Valley area. The Lehigh River flows through Lehigh Gap at the northern boundary of Lehigh and Northampton counties southbound to Allentown where it makes an abrupt turn eastward. From Allentown the Lehigh flows eastward to its confluence with the Delaware River at Easton. Major tributary streams flowing into the Lehigh River are Jordan Creek, Little Lehigh Creek, Hokendauqua Creek, Monocacy Creek and Saucon Creek. Bushkill Creek and Martins Creek flow directly into the Delaware.

Blue Mountain, otherwise known as Kittatiny Ridge, extends southwest to the Maryland border. The mountain forms the northern boundary of Lehigh and Northampton counties. Lehigh Mountain and South Mountain are two landmark ridges on the southern border of Allentown. They are parts of a section of mountains called the Reading Prong which extend south of Emmaus, Macungie and Alburtis into Berks County. The eastward extension of these mountains extend through southern Northampton County and then northeast to Massachusetts.

Between Blue Mountain and South Mountain is a seven mile wide limestone valley where most people in the Lehigh Valley live and work. To the north of this valley is a low shale plateau with undulating hills, stream headwaters and a rural environment. The variety of topographic features in the Lehigh Valley creates a landscape with many natural landmarks and scenic beauty.

RIVERS AND STREAMS

The rivers and streams of the Lehigh Valley have played an important role in its history and development. The area's three cities and some of its major boroughs grew along the banks of the Lehigh or Delaware rivers. The Lehigh and Delaware Navigation Canals owed their existence to these rivers. Many streams served as the sites for early mills that were dependent on a supply of running water. Most major industries also were located along the banks of rivers or streams.

Visually, rivers and streams provide some of the most scenic settings in the region. The top example of this is the Delaware River Scenic Drive that follows Route 611. The multitude of recreation activities associated with waterways is high on the list of important regional assets. The Lehigh and Delaware are large enough to provide boating opportunities, including some fine canoeing and good fishing. The Forks of the Delaware Shad Fishing Tournament and Festival, held in late April each year in Easton, is a locally important event that depends on the yearly shad migration up the Delaware River. Some of the best trout fishing in eastern Pennsylvania can be found in the Little Lehigh Creek, Monocacy Creek and Bushkill Creek.

Many of the Lehigh Valley's best walking and biking trails are located near rivers and streams. The D & L Trail, a 150-mile path for hikers and bikers, extends from Bristol Borough in lower Bucks County to Wilkes-Barre. Through much of our region the D & L Trail follows the towpaths of the Delaware and Lehigh Navigation Canals. From the Village of Cementon north it will use the right-of-way of the abandoned railroad that parallels the western side of the Lehigh River.

Municipal parkways have been developed along rivers and streams. The most notable is the Little Lehigh Parkway in Allentown. This splendid, four-mile long greenway extends from the western edge of the city nearly to the Lehigh River. It contains a variety of trails, a fish hatchery and roadway. Other noteworthy parks include Trexler-Lehigh County Game Preserve, Jordan Creek Parkway, Cedar Creek Parkway East and West, Monocacy Nature Center, Saucon Park, Jacobsburg Environmental Education Center, Hugh Moore Historical Park, and Delaware Canal State Park. A number of munici-palities have developed parks adjacent to the Delaware and Lehigh Navigation Canals.

Rivers and streams either serve, or have the potential to serve, as linkages between recreation areas. The most notable linkage is the one at the Lehigh Water Gap where the Appalachian Trail crosses the D & L Trail. Other linkages have been created by rail-trail projects in places such as Whitehall Township, Bethlehem Township and Palmer Township.

Critical wildlife habitats are found along waterways in the Lehigh Valley. Many species of birds, aquatic animals and mammals depend on river and stream corridors for travel, cover and nesting places. The report *A Natural Areas Inventory of Lehigh and Northampton Counties, Pennsylvania* lists the Delaware River as one of two Exceptional Natural Features in the region. The other is the Blue Mountain. According to the natural areas inventory the Delaware River and its adjacent forested watersheds comprise one of the major corridors for the movement of biota in eastern Pennsylvania.

Finally, high quality rivers and streams are of critical importance for the preservation of water supplies in the Lehigh Valley. Much of the water we use comes directly or indirectly from local waterways.

STREAM QUALITY DESIGNATIONS

The streams of the state have been given water quality ratings by the Pennsylvania Department of Environmental Protection (DEP). These DEP stream quality designations are listed below.

- EV (Exceptional Value Waters) – waters that constitute an outstanding national, state, regional or local resource, such as waters of national, state or county parks or forests, or waters that are used as a source of unfiltered potable water supply, or waters that have been characterized by the Fish Commission as "Wilderness Trout Streams," and other waters of substantial recreational or ecological significance.
- HQ (High Quality Waters) – a stream or watershed with exceptional quality waters and environmental features that require special protection.
- CWF (Cold Water Fishes) – maintenance and/or propagation of fish species and flora and fauna that are native to cold water habitats.
- TSF (Trout Stocking) – maintenance of stocked trout from February 15 to July 31 and maintenance and propagation of fish species and flora and fauna which are native to warm water habitats.
- MF (Migratory Fishes) – passage, maintenance and propagation of fishes which ascend to flowing waters to complete their life cycle.
- WWF (Warm Water Fishes) – maintenance and propagation of fish species and flora and fauna that are native to warm water habitats.

Map 3 shows the stream quality designations and the number of miles in each category in the Lehigh Valley. Exceptional Value streams include parts of the Maiden Creek headwaters in Lynn Township, a small partion of the Bushkill Creek in Bushkill Township, a section of Slateford Creek in Upper Mt. Bethel Township and a tributary of Cooks Creek in Lower Saucon Towship. A number of streams qualify as High Quality Waters-Cold Water Fishes. These include important local streams such as the Little Lehigh, Cedar, Monocacy and Bushkill. Several tributaries to Jordan Creek are rated as High Quality Waters-Cold Water Fishes, Migratory Fishes.

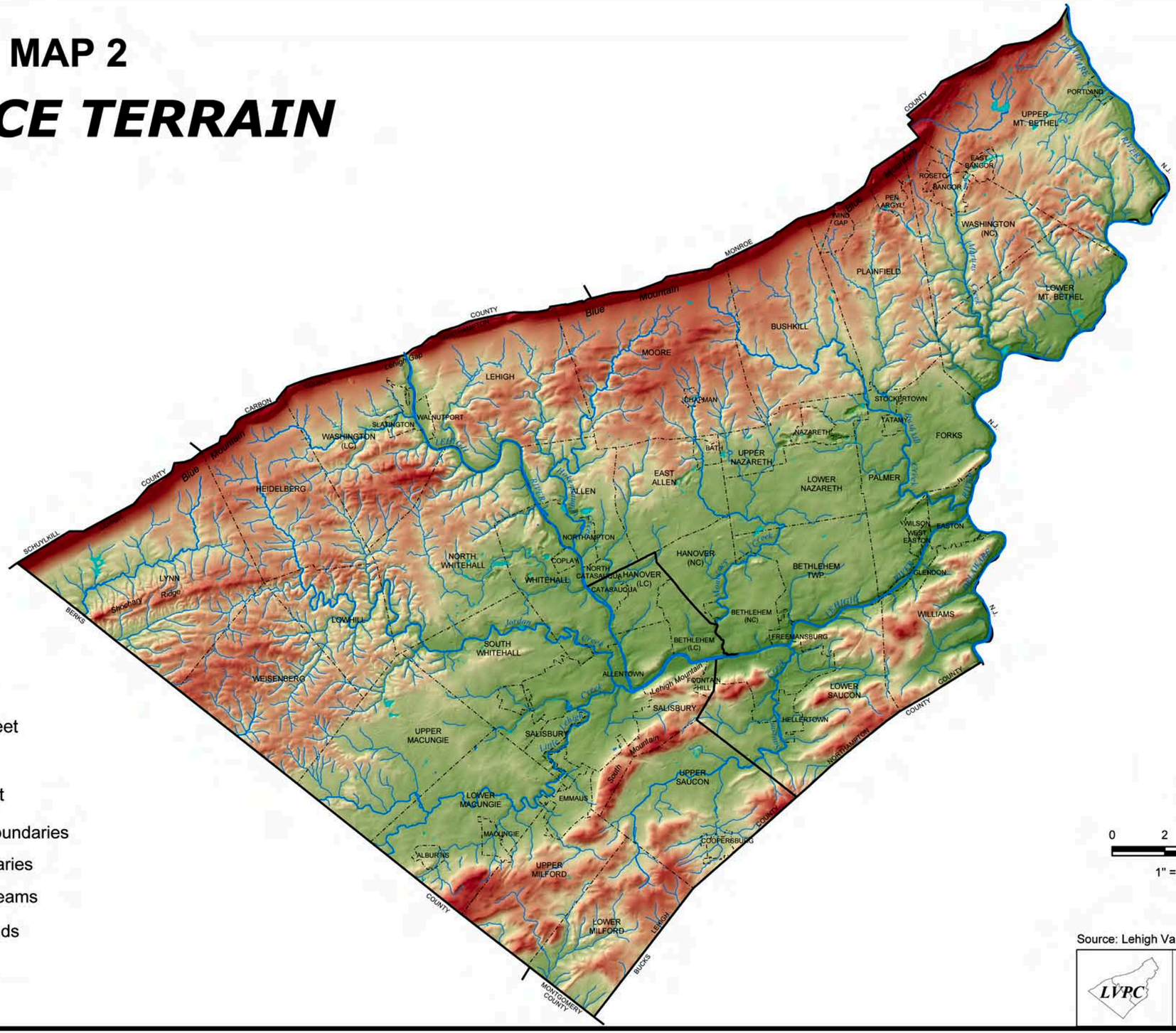
RIPARIAN BUFFERS

Riparian buffers are recognized as a vital feature for protecting and reclaiming waterways. A riparian buffer is an area of vegetation that is maintained along the shore of a water body to protect stream water quality and stabilize stream channels and banks. The riparian buffer reduces the amount of runoff pollutants entering the stream. It also controls erosion, provides leaf-litter to the stream and habitat for many desirable species of amphibians, reptiles, mammals and birds. If wide enough, riparian buffers function as corridors for migrating large and small mammals.

The riparian vegetation affects the stream channel shape and structure, as well as the stream's canopy cover, shading, nutrient inputs and amount of large woody debris entering the stream. Riparian canopy cover (branches and tree crowns overhanging a stream) is important not only for its role in moderating stream temperatures through shading, but also as an indicator of conditions that control bank stability, and as an energy source from leaves that will fall into the water. Aquatic macroinvertebrate organisms such as stoneflies eat, shred and break the leaves into coarse and fine particulate organic material that becomes food for other stream organisms.

MAP 2

SURFACE TERRAIN



Elevation

Value

- High : 1689 Feet
- Low : 133 Feet
- Municipality Boundaries
- County Boundaries
- Rivers and Streams
- Lakes and Ponds

N

0 2 4 6 Miles

1" = 4.10 miles

Source: Lehigh Valley Planning Commission

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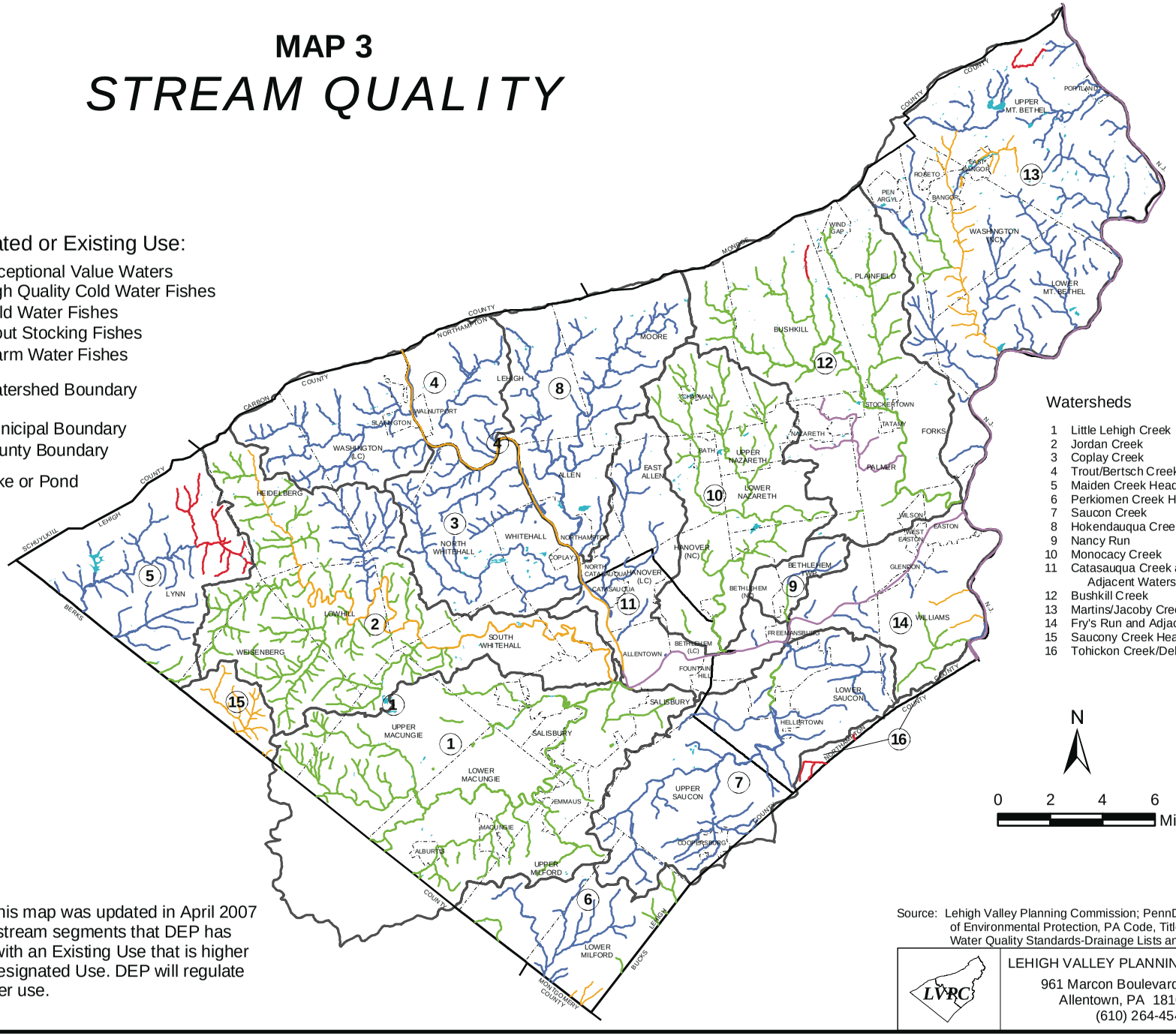
MAP 3
STREAM QUALITY



*NOTE: This map was updated in April 2007 to include stream segments that DEP has classified with an Existing Use that is higher than the Designated Use. DEP will regulate to the higher use.

Source: Lehigh Valley Planning Commission; PennDOT, 1997; PA Dept. of Environmental Protection, PA Code, Title 25, Chapter 93, Water Quality Standards-Drainage Lists and Existing Use Lists

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Riparian Buffer on the Bushkill Creek

Riparian buffers provide numerous benefits to landowners and the community by protecting groundwater recharge areas, providing flood control, providing stormwater management potential, and stimulating economic opportunities by creating valuable open space which may increase land values and the tax base. The Lehigh Valley Planning Commission recommended a 75 feet riparian buffer in its model *Riparian and Wetland Buffers* regulations.

Riparian buffers in the Lehigh Valley have been seriously disrupted over the years. Farming operations often have been practiced with little regard to protecting streams. More recently, residential and other forms of urban development have put serious stress on local streams. With proper planning this does not have to happen.

GOAL

To protect rivers and streams so they can provide numerous recreational and environmental benefits to Lehigh Valley residents.

POLICIES

- Encourage the restoration of riparian buffers on lands that border rivers and streams whether they are privately owned or owned by government.
- Recommend riparian buffers of 75 feet with a 25 foot residential setback along rivers and streams not covered by a 150 ft. buffer required under DEP erosion and sedimentation regulations that apply to Exceptional Value and High Quality Cold Water streams.
- Encourage riparian buffers that contain a variety of native trees and plants. Discourage the development of riparian buffers with monocultures of exotic vegetation.
- Educate officials and landowners as to why it is important to protect rivers and streams.
- Encourage the development of rivers conservation plans for major streams.
- Encourage landowners with streams on their property to have conservation plans prepared that include best management practices for riparian buffers.
- Encourage landowners to put conservation easements on the parts of their property that include riparian buffers.

- Promote the use of existing voluntary best management practices in the management of forestry activities in and along streamside buffer areas.
- Municipalities should include provisions for the preservation and restoration of riparian buffers in their comprehensive plans, zoning ordinances, and subdivision and land development ordinances.
- High priority should be given to recreation, greenway and open space projects that involve rivers and streams.

IMPLEMENTATION

- The LVPC will comment on the need for riparian buffers in reviews of municipal plans and subdivisions.
- The LVPC will create GIS maps and a database that provide information on streams. Information will include items such as water quality, recommended riparian buffer widths, identification of existing parks and other open space features.
- The LVPC will prepare examples of riparian buffer regulations that can be used by municipalities in their zoning ordinances and subdivision and land development regulations.
- The LVPC will explore ways it can promote educational programs on riparian buffer restoration and stream protection.
- The LVPC will cooperate with other organizations that are concerned about stream protection.
- As part of their open space initiatives, Lehigh and Northampton counties should give consideration to park and open space proposals that involve the protection of land along rivers and streams.
- The counties and municipalities and other organizations should take advantage of state and federal grant programs that can be used to protect riparian buffers.
- The LVPC will prepare a regional greenways plan for Lehigh and Northampton counties. The plan will emphasize the importance of rivers and streams in greenway planning.

FLOODPLAINS

Floodplains absorb and store large amounts of water which is a source of aquifer recharge. Natural vegetation supported by floodplains helps trap sediment from upland surface runoff, stabilize stream banks and reduce soil erosion. Floodplains also provide shelter for wildlife and proper stream conditions for aquatic life. Many of the most scenic areas in Lehigh and Northampton counties are found within the floodplain of the Delaware River, Lehigh River, and larger streams such as the Little Lehigh Creek, Jordan Creek and Bushkill Creek (see Map 4).

Regulation of floodplains helps to reduce the threat to human life and property caused by periodic flooding. For regulatory purposes, a floodplain is defined by the 100-year or base flood which has a one percent chance of being equalled or exceeded in a given year.

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 (NFIP). All flood-prone municipalities in Lehigh and Northampton counties participate in the program and have flood-mapping that was prepared by the Federal Insurance Administration of the U.S. Department of Housing and Urban Development.

GOAL

To minimize flood damage and protect floodplains.

POLICIES

- Prohibit new buildings, structures and fill in the 100-year floodplain except for highways and certain other structures owned or maintained by the Commonwealth of Pennsylvania, municipalities or public utilities as defined and regulated in Chapter 106 Floodplain Management of Title 25 Environmental Protection, Pennsylvania Code.
- The reuse or substantial improvement of existing buildings or the redevelopment of vacant but formerly developed land is appropriate within the floodway fringe if adequate floodproofing measures are taken. Redevelopment of vacant, formerly developed land is not recommended within the floodway.

IMPLEMENTATION

- The LVPC will provide model regulations covering floodplains.

- Municipalities should adopt special zoning and subdivision regulations to prohibit or otherwise control development in the 100-year floodplain.
- The LVPC will maintain a set of the most up-to-date floodplain maps that have been prepared for the National Flood Insurance Program. In the absence of other data, maps of alluvial soils should be used to identify areas subject to flooding.
- The LVPC will assist property owners, lending institutions, businesses and others in determining what properties are subject to the National Flood Insurance Program.
- The LVPC will promote and support park, greenway and other proposals that preserve floodplains for recreation and open space.
- Any conflicts with policies on floodplains will be noted during LVPC reviews of subdivisions and land developments.

WETLANDS AND HYDRIC SOILS

Wetlands perform a variety of important physical and biological functions. They moderate stormwater runoff and downstream flood crests because they are natural water storage areas. Also they provide habitat for many species of plant and animal life. Wetlands also help to maintain stream flow and groundwater discharge.

There are problems associated with developing near wetlands or on hydric soils. Wetlands located in floodplains are often flooded. Draining or filling in of upland wetlands removes natural water storage which can add to stormwater runoff problems downstream. Hydric soils are easily compacted. This results in uneven settling of structures. Hydric soils with low permeability and high groundwater tables are not suitable for the installation of on-lot septic systems.

Lehigh and Northampton counties contain over 1,000 individual sites that can be classified as wetlands. Wetlands and potential hydric soils are found in every municipality, but the largest concentrations occur in Upper Mt. Bethel Township and along the base of Blue Mountain in both counties (see Map 4).

GOAL

To protect the remaining wetlands in the Lehigh Valley.

POLICIES

- Preserve 100% permanent open space in all wetlands.
- Manage county-owned wetlands to maintain and enhance their environmental, scenic, scientific and educational values.
- Recommend a 50 foot natural buffer around all wetlands.
- Recommend that a wetland assessment be prepared by a qualified professional for development proposed on potential hydric soils.

IMPLEMENTATION

- The LVPC will maintain copies of the National Wetlands Inventory Maps and other wetlands information for public use and plan reviews by staff.
- LVPC staff will improve and expand the inventory of wetlands as new information becomes available.
- During subdivision, land development and sewage facilities reviews, LVPC staff will check to insure that the proposed development is consistent with the wetlands policies and that sewage disposal systems and wetlands are adequately separated.
- During review of local comprehensive plans, zoning ordinances, or subdivision and land development ordinances, the LVPC will recommend strategies for protection of wetlands and wetland buffers.
- Municipal comprehensive plans should include an identification of wetland areas. Municipalities should include provisions for the protection of significant wetlands in local zoning and subdivision ordinances.
- The LVPC recommends that municipalities, counties or conservancies acquire and manage wetlands that are identified as having special significance.

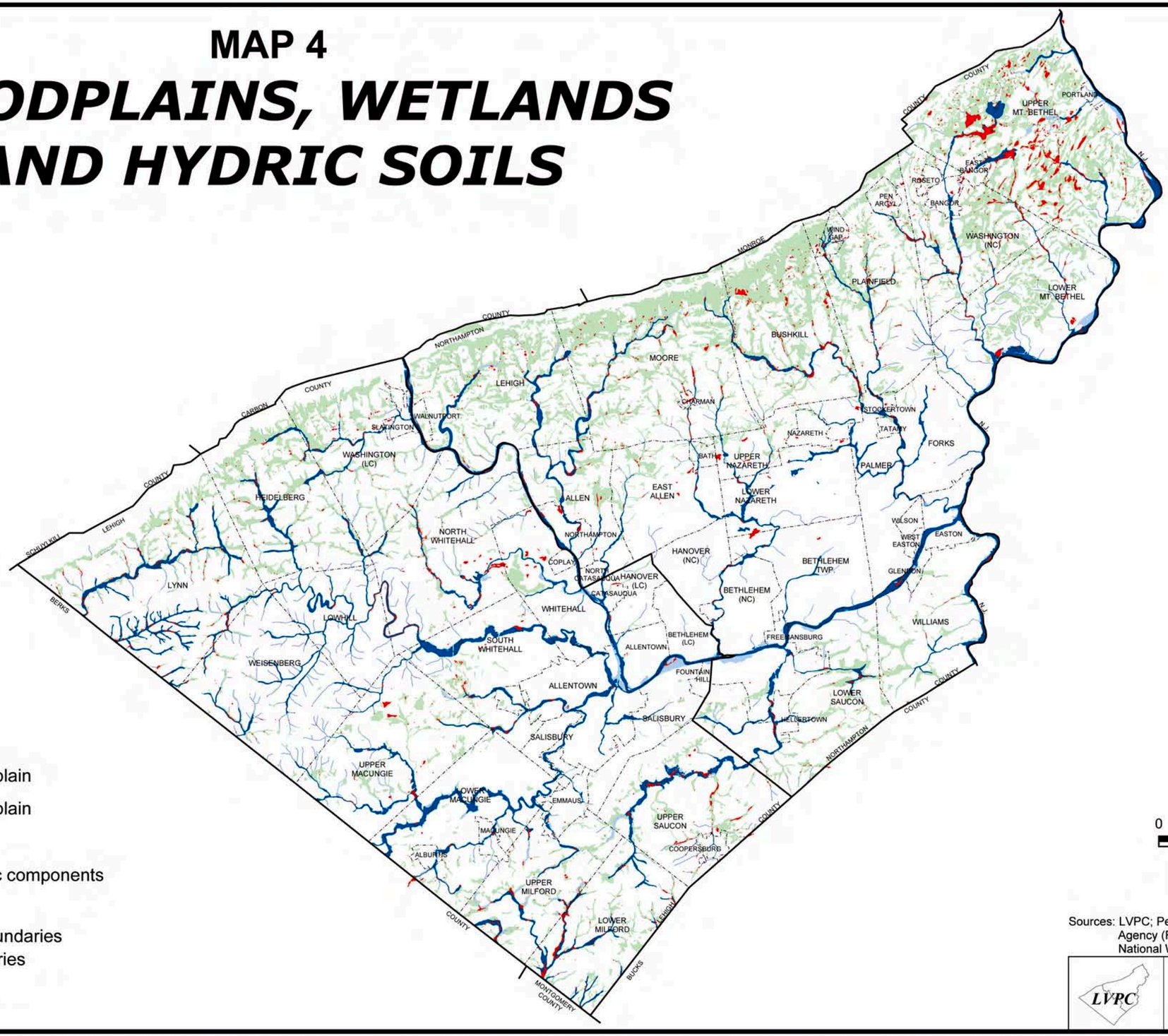
STEEP SLOPES

Slopes with grades of 15% or over are steep. If disturbed, these areas can yield heavy sediment loads on streams. Very steep slopes, over 25% grade, produce heavy soil erosion and sediment loading.

Septic systems for on-lot sewage disposal are impractical to construct and maintain on very steep

MAP 4

FLOODPLAINS, WETLANDS AND HYDRIC SOILS



100-year Floodplain

500-year Floodplain

Wetlands

Soils with hydric components

Streams

Municipality Boundaries

County Boundaries

N

0 2 4 6 Miles

1" = 4.10 miles

Sources: LVPC; PennDOT; Federal Emergency Management Agency (FEMA), 2001; U.S. Fish & Wildlife Service, National Wetlands Inventory

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slopes because the downhill flow of the effluent is too rapid. Improperly treated effluent is likely to surface at the base of the slope, causing wet, contaminated seepage spots. If there is a layer of impervious material such as dense clay or rock under shallow soils, the effluent may surface on the slope and run downhill unfiltered.

The steepest slopes and the greatest concentration of steep slopes are found on the Blue Mountain and South Mountain. There are sizable areas of steep slope in townships along the northern and southern borders of Lehigh and Northampton counties. A notable characteristic of steep slope areas is that they are nearly all wooded. Very few steep slopes are used for cropland or pastures (see Map 5).

GOAL

To minimize the adverse environmental impacts of steep slope development.

POLICIES

- Future development is not recommended on slopes greater than 25%.
- On slopes of 15% to 25%, large lots with low site coverage standards should be maintained and special erosion and storm drainage controls enforced. The LVPC recommends a maximum of one dwelling unit per acre if public water and sewers are available. A minimum lot size of three acres is recommended if an on-lot water supply or sewer system is used. In cities and other urban areas, infill development on steep slopes should be allowed in accord with the zoning ordinance if site design can eliminate or greatly reduce the negative environmental impacts of the project.

IMPLEMENTATION

- The LVPC will provide model regulations that limit steep slope development.
- Any conflicts with policies on steep slopes will be noted during LVPC reviews of subdivisions and land developments.
- Municipalities should adopt zoning and subdivision and land development regulations to manage development, grading, and forestry on steep slopes.

CARBONATE GEOLOGY

In Lehigh and Northampton counties, 46 of the 62 municipalities are underlain entirely or in part by carbonate rock (see Map 5). These carbonate formations are located in the Lehigh Valley's urban core. They provide the primary raw material for the local cement industry and they lie under the most fertile soils.

Carbonate rock has the potential for sinkhole formations which are fairly common in the Lehigh Valley. When sinkholes occur in developed areas, they can cause severe property damage, injury and the loss of life, disruption of utilities and public services, and damage to roadways.

GOAL

To minimize the hazards to development in areas where carbonate rock exists.

POLICIES

- Developments should be designed to avoid problems related to sinkholes.
- Municipalities with carbonate rock should develop sinkhole management programs.

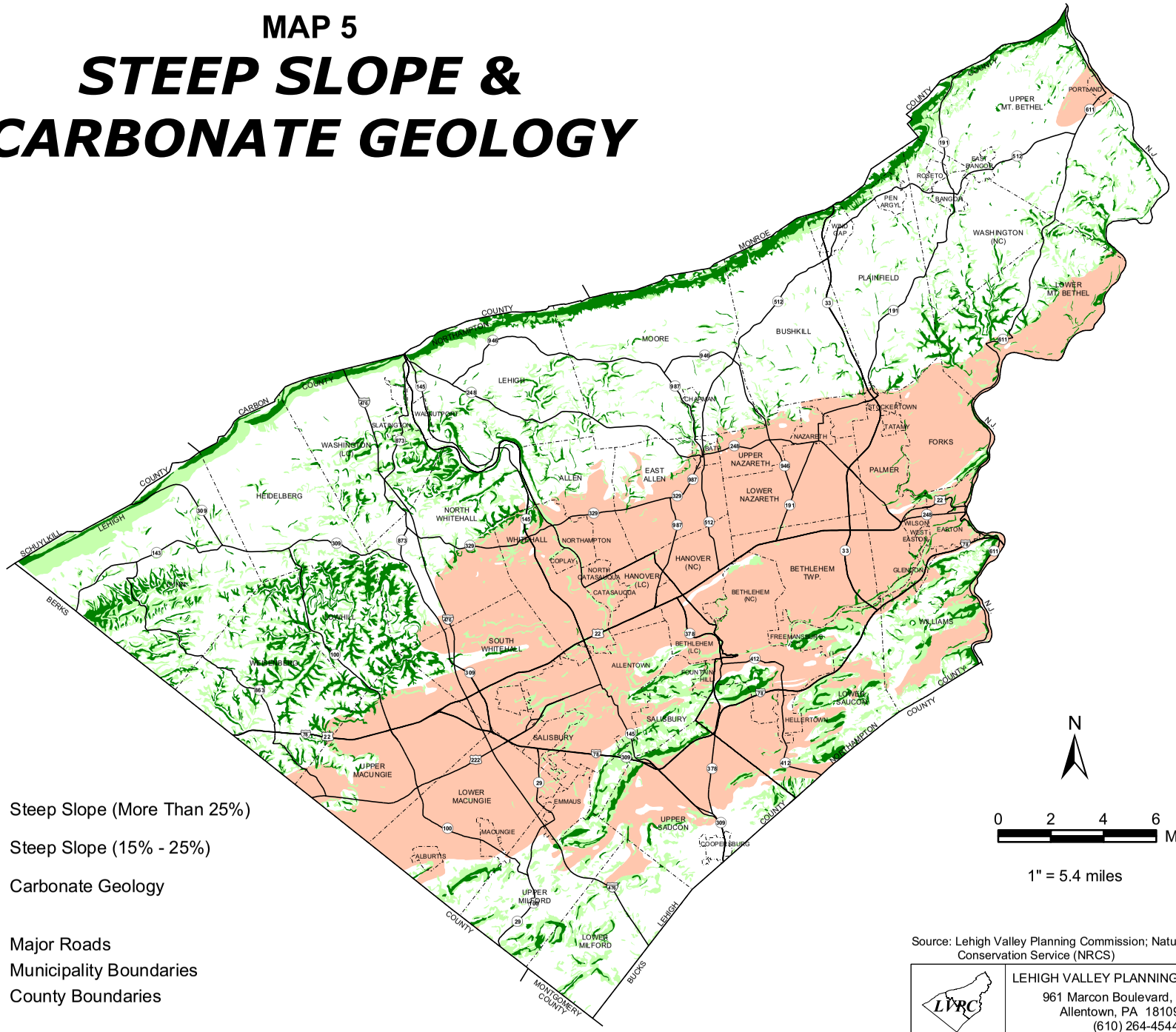
IMPLEMENTATION

- Municipalities should adopt subdivision and land development ordinance regulations to manage development in areas with carbonate rock.
- Municipalities with carbonate rock should adopt special subdivision regulations to identify and mitigate risks in these areas.
- The LVPC will maintain information on the location of sinkholes and other land forms associated with carbonate rock.

WOODLANDS

Woodlands are valued for many reasons. They provide recreational opportunities for nature study, hunting, hiking, horseback riding and scenic views. Woodlands can be used for firewood harvesting, commercial timbering, and as land use buffers and boundaries. Many species of birds depend on large, unbroken wooded tracts for survival. Woodlands also mitigate environmental stress by reducing stormwater runoff, filtering groundwater recharge,

MAP 5
STEEP SLOPE & CARBONATE GEOLOGY



Source: Lehigh Valley Planning Commission; Natural Resource Conservation Service (NRCS)

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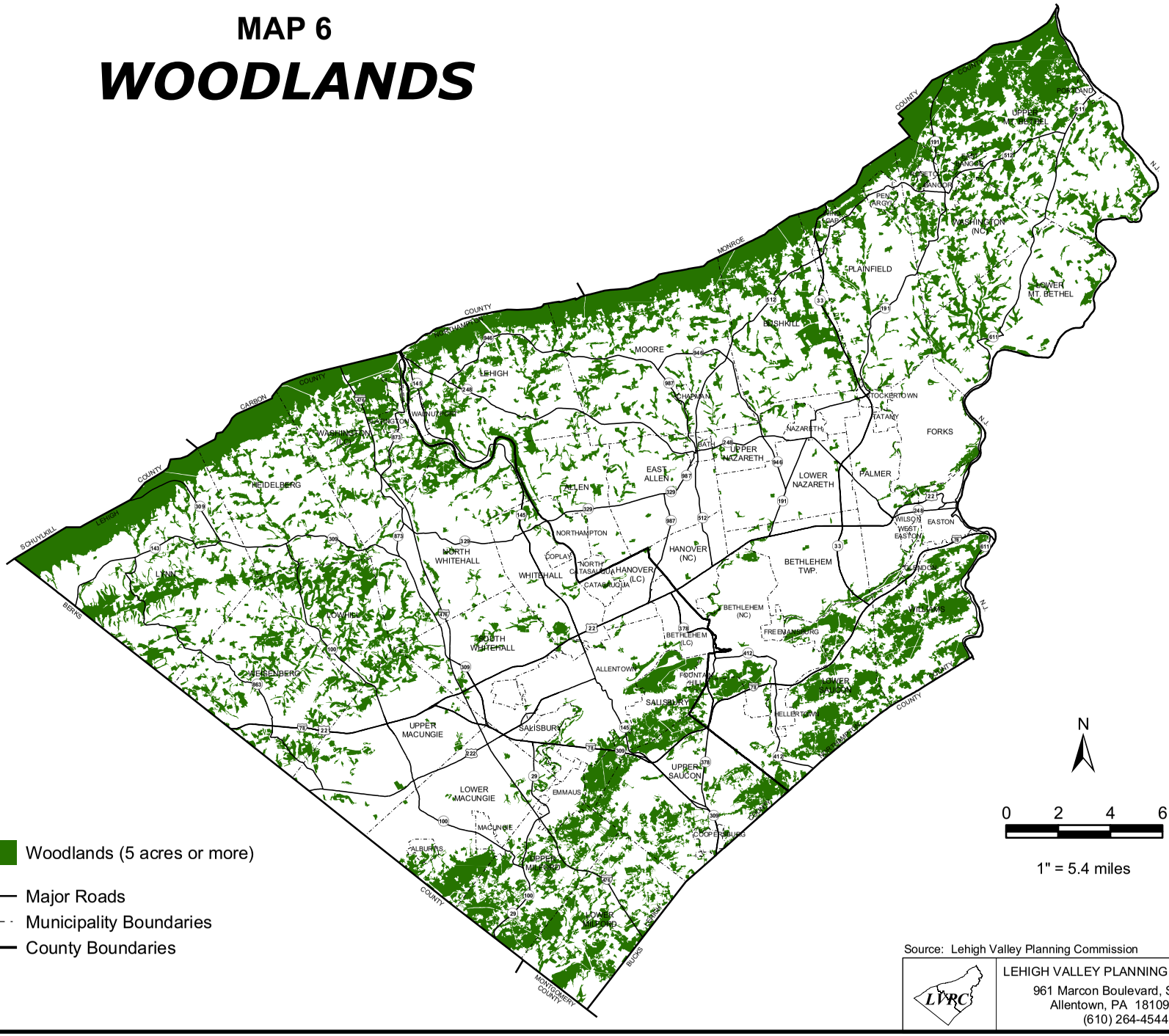
Collapse of creek bank and yard area along Bushkill Creek

Norfolk Southern Railroad Bridge wingwall sinking into a water-filled sinkhole along Bushkill Creek

MAP 6
WOODLANDS



Source: Lehigh Valley Planning Commission

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controlling erosion and sedimentation, moderating local microclimates and purifying air. Many woodlands are located on other environmentally sensitive areas such as steep slopes and floodplains. This adds another important reason for them to be protected. The largest tracts of unbroken woodland are on Blue Mountain and South Mountain. Other sizable wooded areas include Shochary Ridge in Lynn Township, some of the larger hills in the area from Upper Milford Township to Williams Township, and much of the northern part of Upper Mt. Bethel Township (see Map 6).

GOAL

To protect and manage the region's woodland resources.

POLICIES

- Woodlands that have important environmental significance should be protected or preserved.
- When development is planned for wooded tracts, site design and development should maximize preservation of trees.
- Landowners should improve their woodlands by taking advantage of the Cooperative Forest Management Program offered by the State Bureau of Forestry. This includes having a forest management plan prepared by a professional forester if logging is intended.

IMPLEMENTATION

- Municipalities should adopt zoning and subdivision regulations to control tree removal and the indiscriminate cutting of trees during subdivision and land development activities.
- Important woodlands such as those on South Mountain and Blue Mountain should be acquired by conservancies or local government.
- During review of local comprehensive plans, zoning ordinances, and subdivision and land development ordinances, LVPC staff will recommend woodland protection policies and standards, as needed.
- The LVPC will provide model regulations to control logging and the cutting of trees.

NATURAL RESOURCES PLAN

Lehigh and Northampton counties have many significant natural resources that are worthy of protection. These include high quality streams, rare plant communities, critical wildlife habitats and outstanding geologic features. Some areas such as Bake Oven Knob in Heidelberg Township and The Delaware River Water Gap in Upper Mt. Bethel Township are large, well-known features that are easily identified. At the opposite end of the recognition scale are small, obscure sites with rare plant communities.

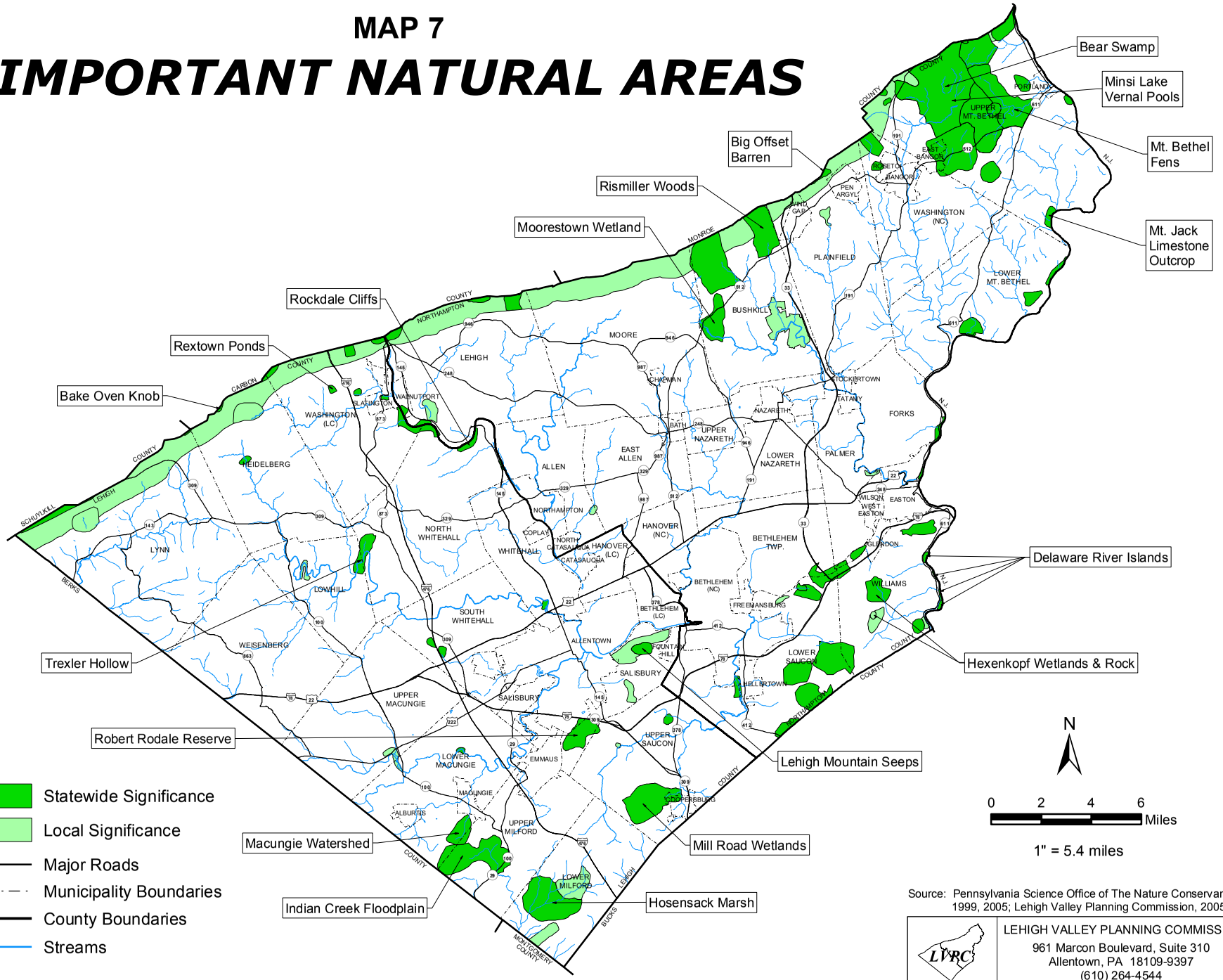
In 1997 the Lehigh Valley Planning Commission contracted with The Nature Conservancy to prepare a report titled *A Natural Areas Inventory of Lehigh and Northampton Counties, Pennsylvania*. This report was updated in 2005. The Natural Areas Inventory report presents the Lehigh Valley's known outstanding natural areas which are shown on Map 7. Major sites are labeled.

In addition to sites on Map 7, the Delaware River and its adjacent forested watershed and the Blue Mountain are recognized as exceptional natural resources. Both serve as major corridors for the movement of biota in eastern Pennsylvania. Many smaller stream valleys, such as the Bushkill and Little Lehigh, are important local natural resources. Nearly all significant natural areas have other resource characteristics or development limitations. Hexenkopf Rock and Bake Oven Knob, for example, are wooded and have very steep slopes. Bear Swamp in Upper Mt. Bethel Township is noted for its rare plants and as a home of the endangered bog turtle. It is also wooded and a wetland. Some critical wildlife habitats coincide with floodplains of the Delaware and Lehigh rivers or the large, unbroken woodlands on Blue Mountain and South Mountain.

Map 8 shows major conservation areas based on a composite of natural resources illustrated on Maps 2 through 7. Areas are weighted and prioritized to assure that the areas with the greatest combination of important natural resources are given highest priority in future conservation activities. Very high conservation priority areas should be given first consideration for public and private conservation acquisition programs. High priority areas should also be considered for acquisition, especially if they are part of a larger natural feature identified as very high conservation priority. In some cases, such as flood plains and steep slopes high priority areas might be adequately protected through municipal zoning. Medium priority areas should be protected through zoning regulations,

MAP 7

IMPORTANT NATURAL AREAS



Source: Pennsylvania Science Office of The Nature Conservancy, 1999, 2005; Lehigh Valley Planning Commission, 2005

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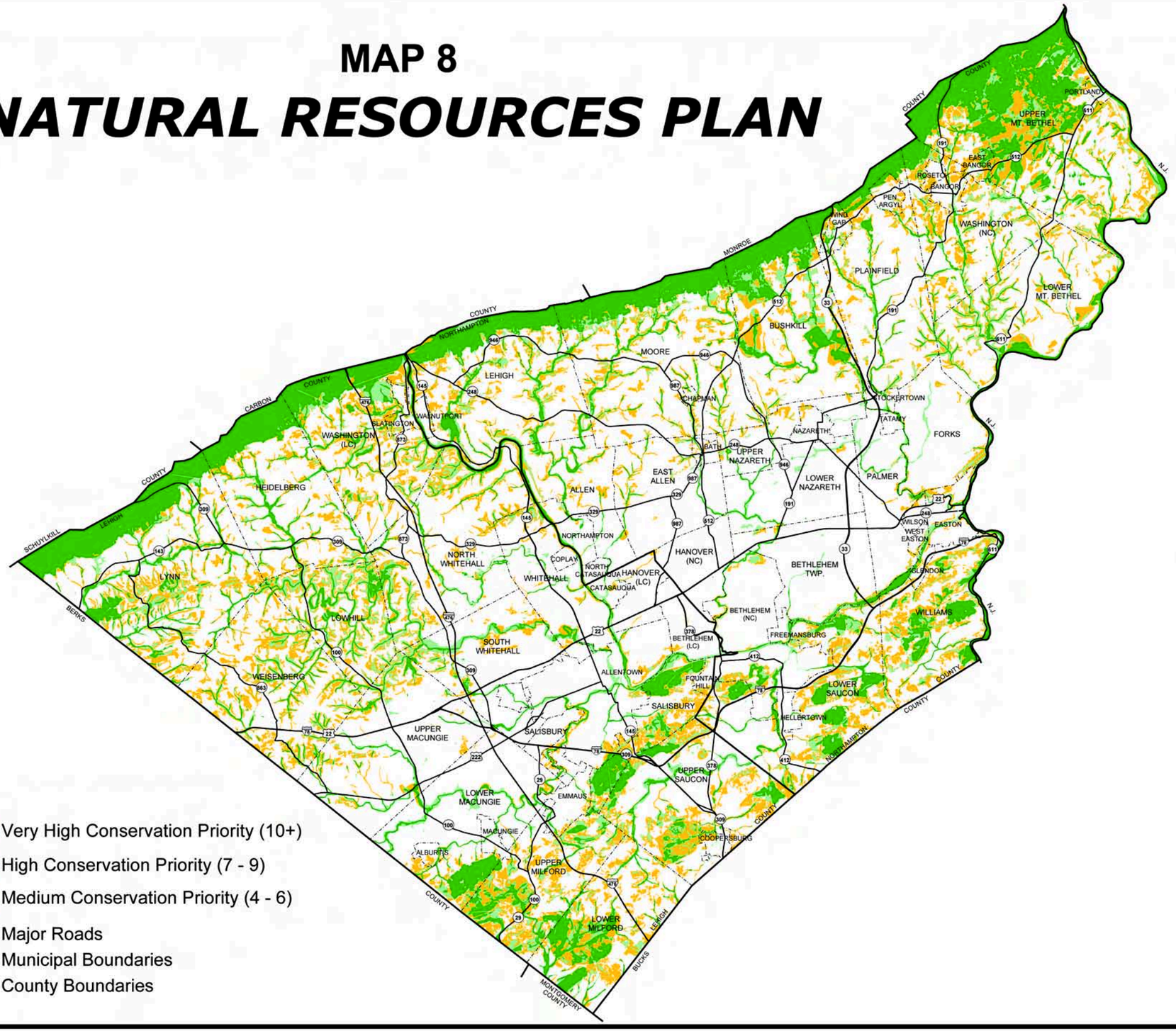
MAP 8

NATURAL RESOURCES PLAN



Very High Conservation Priority (10+)

High Conservation Priority (7 - 9)

Medium Conservation Priority (4 - 6)

Major Roads

Municipal Boundaries

County Boundaries

Natural Resource Weighting Factors

Weight		Feature
7	--	Floodplains - 100 year
7	--	Wetlands
		Hydric Soils
3	--	Major Components
2	--	Inclusions
		Steep Slopes
4	--	>25%
2	--	15-25%
		Water Quality
4	--	Exceptional Value
3	--	High Quality
2	--	Cold Water Fishes
1	--	Trout Stocking
		River Resource Areas - 300 ft. buffer
4	--	Delaware River
2	--	Lehigh River
		Natural Areas
6	--	Statewide Significance, County Rank 1 and 2
5	--	Statewide Significance, County Rank 3, 4, and 5
4	--	Local Significance
6	--	Blue Mountain Natural Area
		Woodlands
4	--	25 or more acres
2	--	5 to 25 acres
		Interior Woodlands
6	--	500 or more acres
4	--	100 - 499 acres
2	--	25 - 99 acres
5	--	Riparian Woodlands - 100 ft. buffer

N

0 2 4 6 Miles

1" = 4.10 miles

Source: Federal Emergency Management Agency, 2001; Northampton County, Dept. of Fiscal Affairs, GIS Division, 1999, 2003; U.S. Fish & Wildlife Service, 1971-1992; Pennsylvania Dept. of Transportation, 1997; Pennsylvania Dept. of Environmental Protection, various dates; Pennsylvania Science Office of The Nature Conservancy, 1999; U.S. Dept. of Agriculture, Natural Resources Conservation Service, 1998; Lehigh Valley Planning Commission, 2000

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conservation subdivision design and conservation farming practices. Many of these areas may include small stands of woodland, drainage swales or poorly drained soils that are either part of local farm operations or are part of larger residential lots.

GOAL

To protect and preserve top priority natural resources depicted in this plan.

POLICIES

- Protect significant, high, and very high priority projects through acquisition or conservation easements.
- Manage county-owned significant natural areas to maintain the health and quality of the site and to regulate public access.
- Where appropriate consider natural areas in park and recreation plans.
- Support county funding raised by bond issues or other sources for the conservation of natural resources.
- Advocate conservation design techniques and transferable development rights programs to conserve natural resources.

IMPLEMENTATION

- Conduct research on significant natural areas, based on state, federal and local agency listings of species and sites.
- The LVPC will work with the two counties, municipal governments and conservancies to facilitate the acquisition of significant, high, and very high priority natural areas that are not already protected.
- During subdivision, land development, and Act 537 reviews, LVPC staff will comment on potential impact of proposals on significant, high, and very high priority projects.
- During review of municipal comprehensive plans or park and open space plans, the LVPC will encourage officials to include information on significant, high, and very high priority natural areas and will recommend policies for protecting these sites. See Appendix G (Resolution # 2-10) for LVPC policy concerning placement of wind energy facilities in these areas.
- Collaborate with conservation organizations in the preservation of important natural resources in the Lehigh Valley.

OTHER NATURAL RESOURCE PROTECTION PROJECTS

A number of natural resource protection projects advocated by conservation organizations are particularly important in the Lehigh Valley. In December, 2003 the Wildlands Conservancy completed its Lehigh River Watershed Conservation Plan. The plan presents goals, objectives and recommendations for improvement of the Lehigh River, its biological resources, watersheds, cultural and historic resources. For many years the Conservancy has taken the lead in increasing the public awareness and interest in the Lehigh River environment. If implemented the plan will do much to conserve the Lehigh River environment for future generations. The plan is supported by the LVPC.

The Audubon PA Blue Mountain — Kittatinny Ridge Project aims to conserve the 200 mile long mountain ridge that extends from northern New Jersey through central Pennsylvania to the Maryland border. Approximately 46 miles of this ridge forms the northern border of Lehigh and Northampton counties. Prominent features in and near the Lehigh Valley include Bake Oven Knob, Hawk Mountain, the Appalachian Trail and the Delaware Water Gap National Recreation Center. The LVPC supports conservation efforts of Audubon PA.

The Highlands Coalition is an organization dedicated to protection of a two million acre area that extends through northern New Jersey, the southern part of Northampton, Lehigh, and Berks counties westward to the Maryland border. In the Lehigh Valley this area includes South Mountain and Lehigh Mountain that form the southern boundary of Allentown and Bethlehem and numerous other ridges and stream valleys extending from the Delaware River west to Berks County. Numerous high priority conservation sites in this area are designated in the Natural Resource Plan shown in this report. The LVPC supports the work of the Highlands Coalition.

The Two Rivers Council of Governments has sponsored the *Two Rivers Area Greenway Plan* that recommends a variety of conservation measures in the Bushkill Creek Watershed and parts of Williams Township. This plan is consistent with the recommendations of this comprehensive plan and is supported by LVPC.

FARMLAND PRESERVATION

Lehigh and Northampton counties have some of the best farmland in Pennsylvania. This land is being converted to housing, commercial and industrial uses at a rate of 3.5 square miles per year. Housing accounts for about 80% of this land conversion. Map 9 illustrates the location of prime agricultural soils and the urban uses located on them in the year 2000. It is evident that most agricultural parts of the Lehigh Valley are under intense development pressure.

Lehigh Valley residents think preserving farmland is important. The 1999 LVPC voter attitude survey shows 91.4% of the voters favored preserving farmland. In April 1999, the Pennsylvania General Assembly included $43 million in the budget for farmland preservation. This amount supplements the 1987 $100 million bond issue and other funding. Voters in Lehigh and Northampton counties have strongly supported open space and farmland preservation bond issues.

Farmland preservation efforts in this region have been picking up momentum. These efforts have mostly focused on agricultural easement acquisition by the counties. Map 10 shows agricultural easements acquired and agricultural security areas as of March 2010. At that time Lehigh County reported 30.2 square miles of land in agricultural easements. Northampton County reported 17.2 square miles. Agricultural security areas have been designated in both counties on 110 square miles of land. In order to qualify for the agricultural easement program land must be in an agricultural security area which is created under voluntary agreements between the property owner and the municipality. Under the agricultural easement program the property owner sells rights to develop land for non-agricultural purposes to the county. The property owner continues to own the land and farm it.

Thirty-three square miles of land are protected by agricultural easements. This accounts for only 6.6% of the land in the Lehigh Valley. Approximately 15% of the land is covered by agricultural security agreements. Clearly, the counties and municipalities in the Lehigh Valley have a long way to go if they intend to preserve a significant amount of land for agriculture in the future.

Municipalities can preserve farmland through local zoning controls. To be effective these controls must exclude uses other than agriculture, farm residences and accessory uses in agricultural areas and they must curtail subdivision development. Effective zoning practices have not been popular in the Lehigh Valley. Only four municipalities in Lehigh County (Lynn Township, Heidelberg Township, Lower Macungie Township and Upper Saucon Township) have effective agricultural zoning.

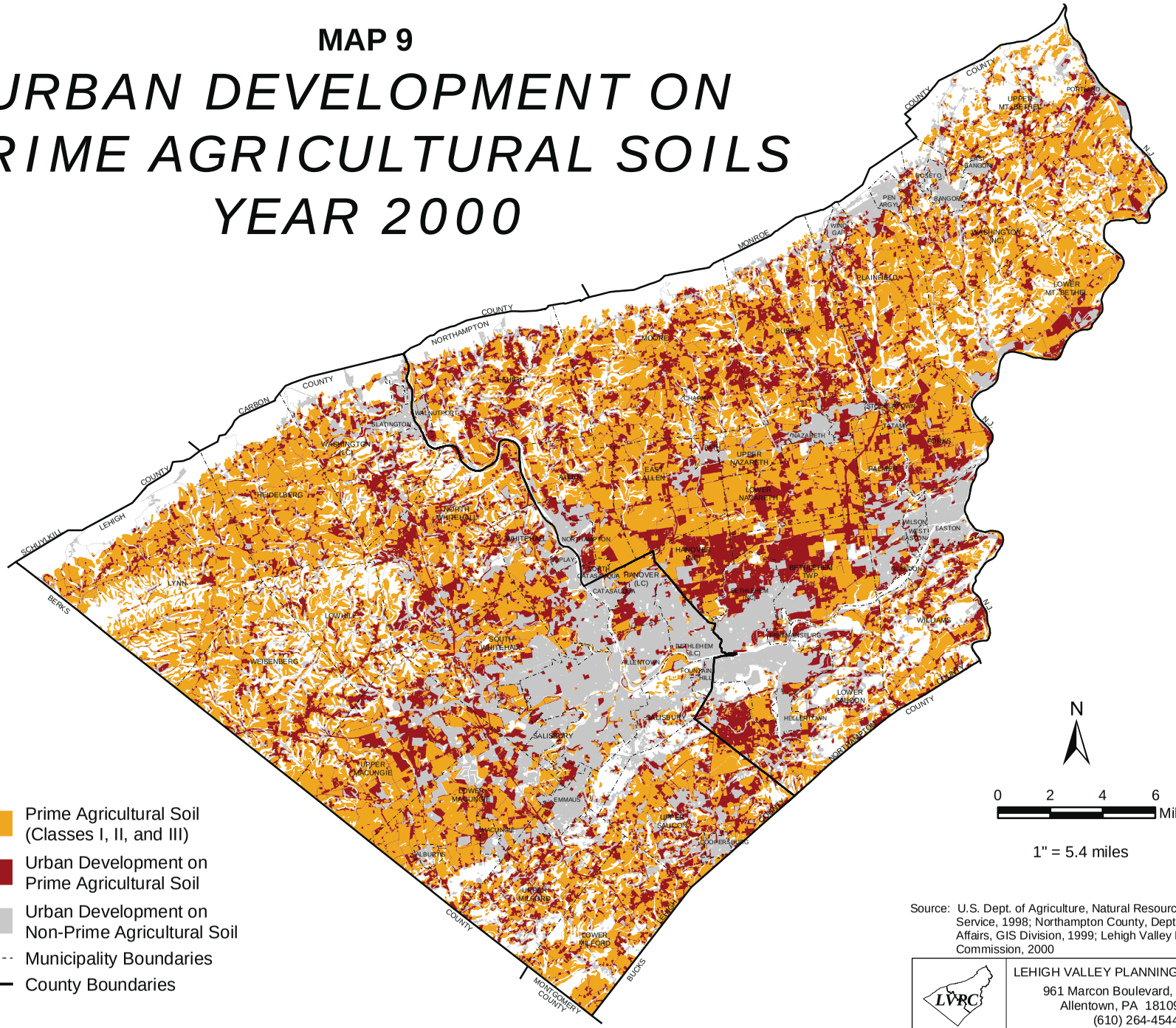
Map 11 illustrates the farmland preservation plan for the Lehigh Valley. Areas shown on this plan have the following characteristics: (1) a concentration of prime farmland as defined by the Pennsylvania Municipalities Planning Code and soil survey data, (2) concentration of properties designated as Agricultural Security Areas in 2004, (3) clusters of farms that have been preserved for farming under the county agricultural easement program. Not all properties in areas depicted on the map are covered by agricultural security agreements or agricultural easements. It is assumed that the areas depicted are the most likely locations for such designation in the future.

In Lehigh County, most of Lynn and Heidelberg should be preserved for farming. Much of Lower Milford and Weisenberg, and parts of Upper and Lower Macungie, Upper Milford, Upper Saucon, Lowhill and Washington also should be saved for farming.

Northampton County also has areas where farmland preservation should be encouraged. Some of the best soils in the region occur in the area from Allen Township to the Delaware River at Riverton in Lower Mt. Bethel Township. There are sizable areas in Moore, East Allen, Plainfield, Washington, and Upper and Lower Mt. Bethel where farming should remain as the primary land use. South of the Lehigh River, the Stouts Valley in Williams Township should remain in farming. Other townships which include areas recommended for farmland preservation include Lehigh, Allen, Upper and Lower Nazareth, and relatively small areas in Bethlehem and Bushkill townships. It will be difficult to save much farmland in Northampton County unless municipalities adopt strong agricultural zoning and

MAP 9

URBAN DEVELOPMENT ON PRIME AGRICULTURAL SOILS YEAR 2000



Prime Agricultural Soil (Classes I, II, and III)

Urban Development on Prime Agricultural Soil

Urban Development on Non-Prime Agricultural Soil

Municipality Boundaries

County Boundaries

Source: U.S. Dept. of Agriculture, Natural Resources Conservation Service, 1998; Northampton County, Dept. of Fiscal Affairs, GIS Division, 1999; Lehigh Valley Planning Commission, 2000

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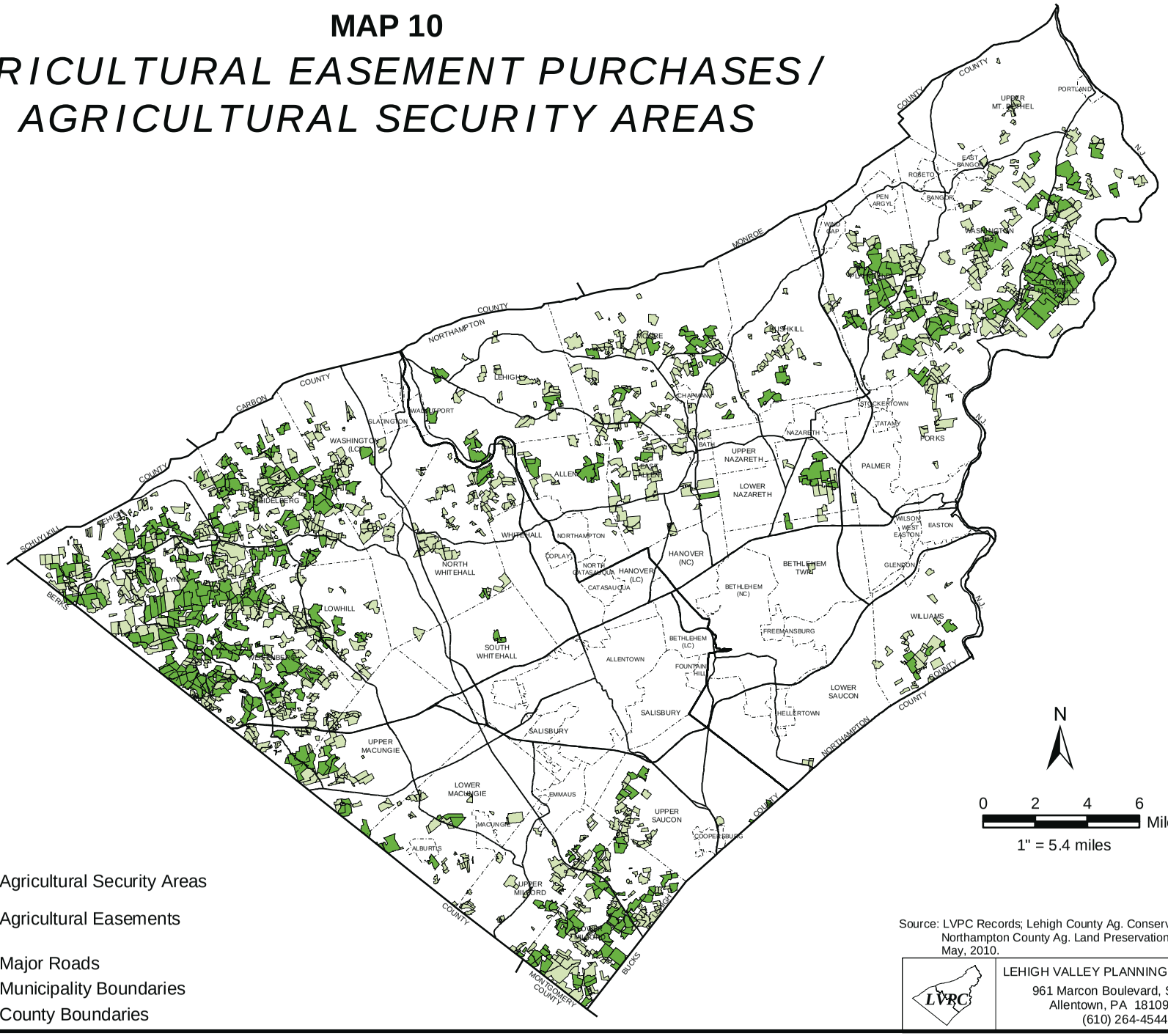
MAP 10

AGRICULTURAL EASEMENT PURCHASES / AGRICULTURAL SECURITY AREAS



Source: LVPC Records; Lehigh County Ag. Conservation District & Northampton County Ag. Land Preservation Board through May, 2010.

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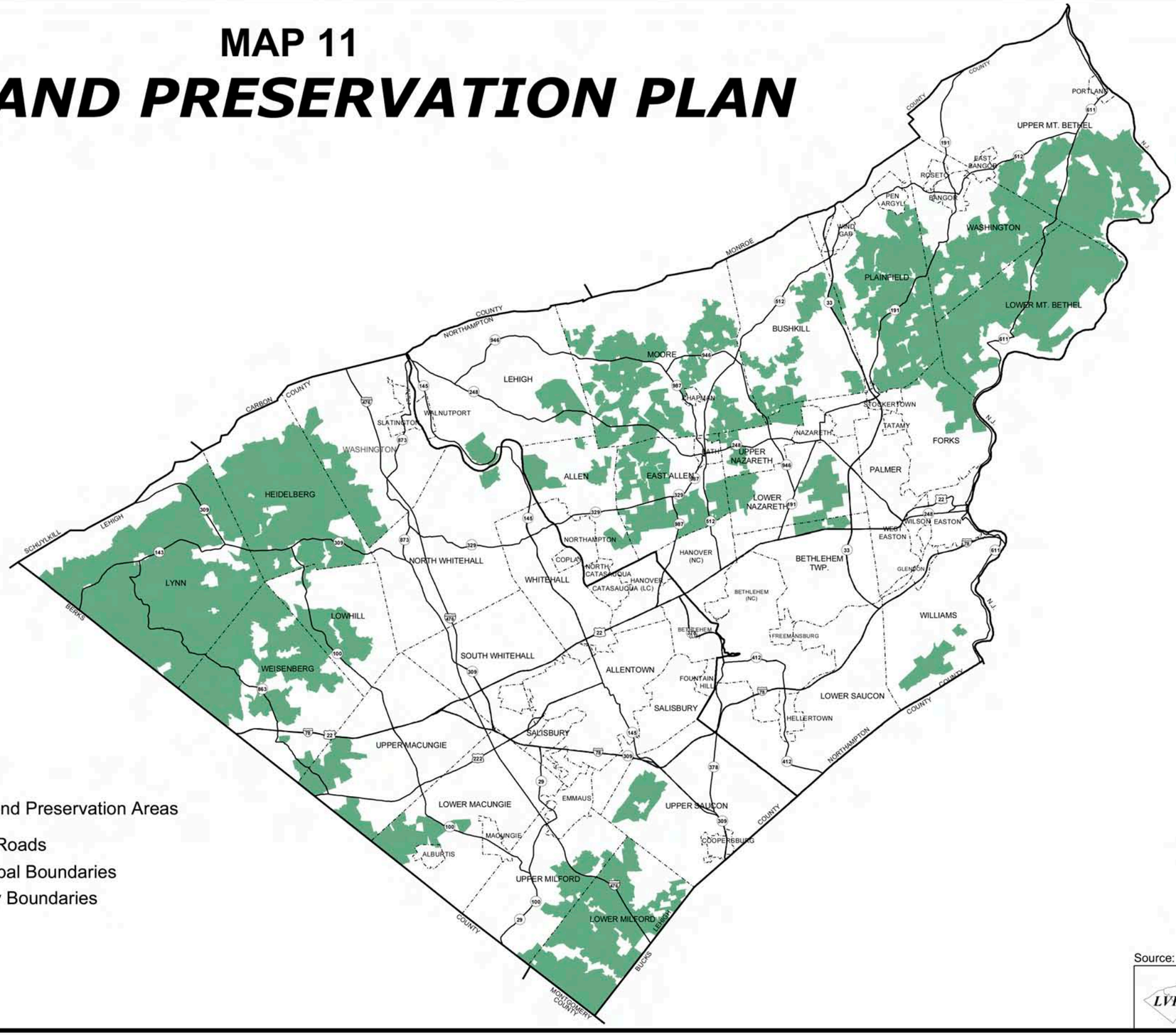
MAP 11

FARMLAND PRESERVATION PLAN



Source: Lehigh Valley Planning Commission

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Residential development encroaches on actively farmed areas.

the county puts adequate money into the agricultural easement program.

GOAL

To preserve approximately 25% of the land in Lehigh and Northampton counties for agriculture.

POLICIES

- Support effective agricultural zoning, agricultural security areas, and purchase of agricultural easements in areas where farming is the recommended land use.
- Preserve large contiguous clusters of farmland in areas that have not been substantially urbanized.
- Discourage the extension of water and sewer services and new roads into areas where farming is the recommended use.
- Discourage preservation techniques such as agricultural zoning, agricultural security areas and the purchase of agricultural easements in areas where urban development is recommended.
- Encourage farm-related business in areas where farming is recommended.
- In areas recommended for farming, agricultural uses should be protected from residential development and non-farm activities that interfere with normal farming practices.
- Target strategic areas for preservation as illustrated on Map 11.

IMPLEMENTATION

- LVPC staff will make recommendations to each county government and agencies involved in agricultural preservation on matters pertaining to this plan.
- LVPC will support effective agricultural zoning such as the type used in Heidelberg and Lynn townships. LVPC staff assistance will be offered to townships that want to enact similar zoning to protect areas that the regional plan recommends for farmland preservation.

- During subdivision and land development reviews, LVPC staff will identify any inconsistencies with areas recommended for farming on the General Land Use Plan.
- During utility and transportation reviews LVPC staff will identify conflicts with existing agricultural security areas and areas recommended for farming in the plan.
- During updating or review of local comprehensive plans, staff will recommend mapping of important farmland, agricultural security areas, and farmland where agricultural easements have been purchased so that these areas can be considered for preservation in the comprehensive plan.
- Consideration will be given to amending the General Land Use Plan to add "farmland preservation" areas where actions at the local level make farming the recommended use if farming is consistent with other policies of this plan.
- Agricultural Land Preservation Boards in each county should preserve farmland primarily in the areas designated for farmland preservation in this plan. The Agricultural Land Preservation Boards in each county should give greater importance in their scoring systems to conformity with the recommendations of the county comprehensive plan.
- The counties and municipalities should provide an adequate level of financial support for acquisition of development rights on agricultural properties.

GOAL

To support agriculture as an essential component of a self-sustaining, regional economy, promoting profitable farms that produce healthy food locally for the people of our region while respecting our natural environment.

POLICIES

- Support retention of local family farms.
- Support expansion of sustainable family farming as a profitable activity.
- Support retention and expansion of farmer-only farmers' markets where the farmers come from within a short distance of the market.
- Support retention and expansion of regional value-added efforts such as local farms and businesses that culture vegetables, that produce cheeses and wine, the micro-breweries, the local weavers, soap-makers, etc.
- Support the efforts of regional institutions, extension services, and other agencies engaged in agricultural development efforts.

IMPLEMENTATION

- LVPC will use review powers to support agricultural, value-added, and commercial sites that are providing locally-produced food to Lehigh Valley residents.
- LVPC will promote coordination of site development for farms, farmers markets, and other local food distribution/usage locations and of their related distribution networks.

LAND USE

The Natural Resources Plan and the Farmland Preservation Plan present the land preservation components of this comprehensive plan. This chapter presents the recommended general land use plan for the Lehigh Valley which includes recommendations for urban, suburban and rural areas. Also included are LVPC goals and policies for developments of regional significance.

GENERAL TRENDS AND PATTERNS FOR DEVELOPMENT IN THE LEHIGH VALLEY

As previously noted the Lehigh Valley population is growing modestly. With a few exceptions cities and boroughs in the Lehigh Valley are not growing. Residential growth is greatest in suburban townships with public sewer and water on the perimeter of Allentown, Bethlehem and Easton. Between 75% and 80% of the subdivided lots in the Lehigh Valley are in urban or suburban areas where urban development is recommended. Unfortunately the remaining 25% of lots that are subdivided in rural areas constitute 75% of the acreage of subdivided land. This is because rural densities are much lower than urban and suburban densities. People who move to rural areas want larger lots and need them to handle septic tanks, sand mounds, and wells. Zoning policies enacted by municipalities promote this type of development. The inevitable consequences are:

a) increasing consumption of farmland and natural resources;
b) increasing dispersion of development;
c) increasing traffic on rural roads.

These trends are not unique to the Lehigh Valley. They exist throughout Pennsylvania and the nation. Also these trends are not new; they have existed for most of the post WWII period in the United States. In comparison with other parts of the country Pennsylvania seems to be less successful in dealing with them.

The Lehigh Valley is changing from a predominantly agricultural area to a predominantly urban area. In 1975 67% of the area was agriculture and vacant land. By 2030 this percentage will drop to about 45%.

Map 12 shows land use patterns in the Lehigh Valley. Most urban development in the region is between Route 22 and I-78 from Route 100 east to the Delaware River. Interchange locations in this corridor have been popular sites for business and industrial locations since the late 1950s. The corridor is also bounded by rapidly developing suburbs such as Hanover and Bethlehem townships in Northampton County and Upper and Lower Macungie townships in western Lehigh County. Development in western Lehigh County was strongly influenced by the development of a long sewer interceptor from western Allentown to the industrial area around the I-78/Route 100 interchange in the late 1960s.

Expanses of farmland and other open space still exist in northwestern Lehigh County, southwestern Lehigh County, northeastern Northampton County and southeastern Northampton County. There is also an area of prime farmland south of Bath and Nazareth. However, farmland is disappearing rapidly. Rural single family subdivisions on large lots served by on-lot sewer and water are scattered throughout the region. In the less developed areas individual lots or small groups of lots are found along existing roads and at rural road intersections.

Map 13 shows municipal zoning in the Lehigh Valley in 2010. In preparing the map the LVPC staff paid primary attention to the existing regulations in various zones and not zoning district labels which are frequently misleading. The fact is many municipal zoning ordinances that designate areas for agricultural protection are ineffective in accomplishing the goal. In the Lehigh Valley only six municipalities have strong zoning regulations that will protect agriculture. These are Lynn, Heidelberg, Lower Macungie, Upper Saucon, Lower Milford, Allen, East Allen and Upper Nazareth townships. Only small areas are protected in Lower Macungie, Upper Saucon, Allen and East Allen. In Heidelberg and Lynn townships property owners are limited to subdivision of 10% of their property for non-agricultural purposes. This has helped to reduce development pressure in these townships.

Environmental protection zoning has been successfully initiated in many Lehigh Valley municipalities. Thirteen municipalities have enacted strong

environmental protection zoning. A number have added environmental overlays to existing zones. Effective environmental protection generally includes very low density zoning. On Blue Mountain Lehigh and Moore townships limit single family residential zoning to 10 acres per dwelling unit. Most of the other municipalities have passed zoning ordinances that require minimum residential lot sizes in the range of 3 to 5 acres per lot.

Unless municipalities are willing to curb development with large minimum lot sizes, land acquisitions, or measures that will limit subdivision development, they will not conserve much natural and agricultural land. A minimum lot size of one acre will only assure more large lot subdivision development, which is a primary characteristic of urban sprawl. The emphasis in this plan is on natural resources and agricultural preservation because they comprise a large part of the Lehigh Valley landscape. Restrictive zoning to protect these resources is in accord with Pennsylvania land use law. Growth management in the region depends largely on how municipalities deal with these zoning categories.

Some suburban and rural townships are reaping substantial tax benefits from new development, especially development of large expensive homes. It is tempting to create zoning regulations that will promote this type of development. Pennsylvania courts have long taken a dim view of large lot zoning practices. Large lot zoning must have some relationship to natural resource protection or agricultural preservation. Large lot zoning just to support expensive housing is probably not sustainable if challenged.

Managing commercial development is another problem in many suburban and rural municipalities. Long ribbons of commercial zones are evident in many municipalities. Although this type of zoning may be attractive to business it adds to traffic congestion and traffic accidents because it creates too many points of access that conflict with moving traffic. Municipalities need to concentrate business activities and control access along major roadways.

REGIONAL LAND USE PLAN

Map 14 shows the recommended General Land Use Plan for the Lehigh Valley. The map deals with broad categories of land use — natural resources, farmland preservation, urban and rural development. Table 3 shows the types of land use activities envisioned in each category. The natural resources and agricultural areas illustrated are based on policies recommended in earlier chapters of this report. Urban areas include cities, boroughs and the existing urbanizing portions of suburban townships. It is recommended that most future urban growth , including most residential, industrial and business expansion, be located in the urban areas. In designating the urban areas on Map 14 LVPC considered recommendations of multimunicipal plans underway in early 2004, local zoning, and potential expansion of public sewer systems. Rural areas are low density areas with no existing public sewers and a mixture of low density housing, scattered businesses and farms. Major residential, employment and institutional development is not recommended in rural areas.

GOAL

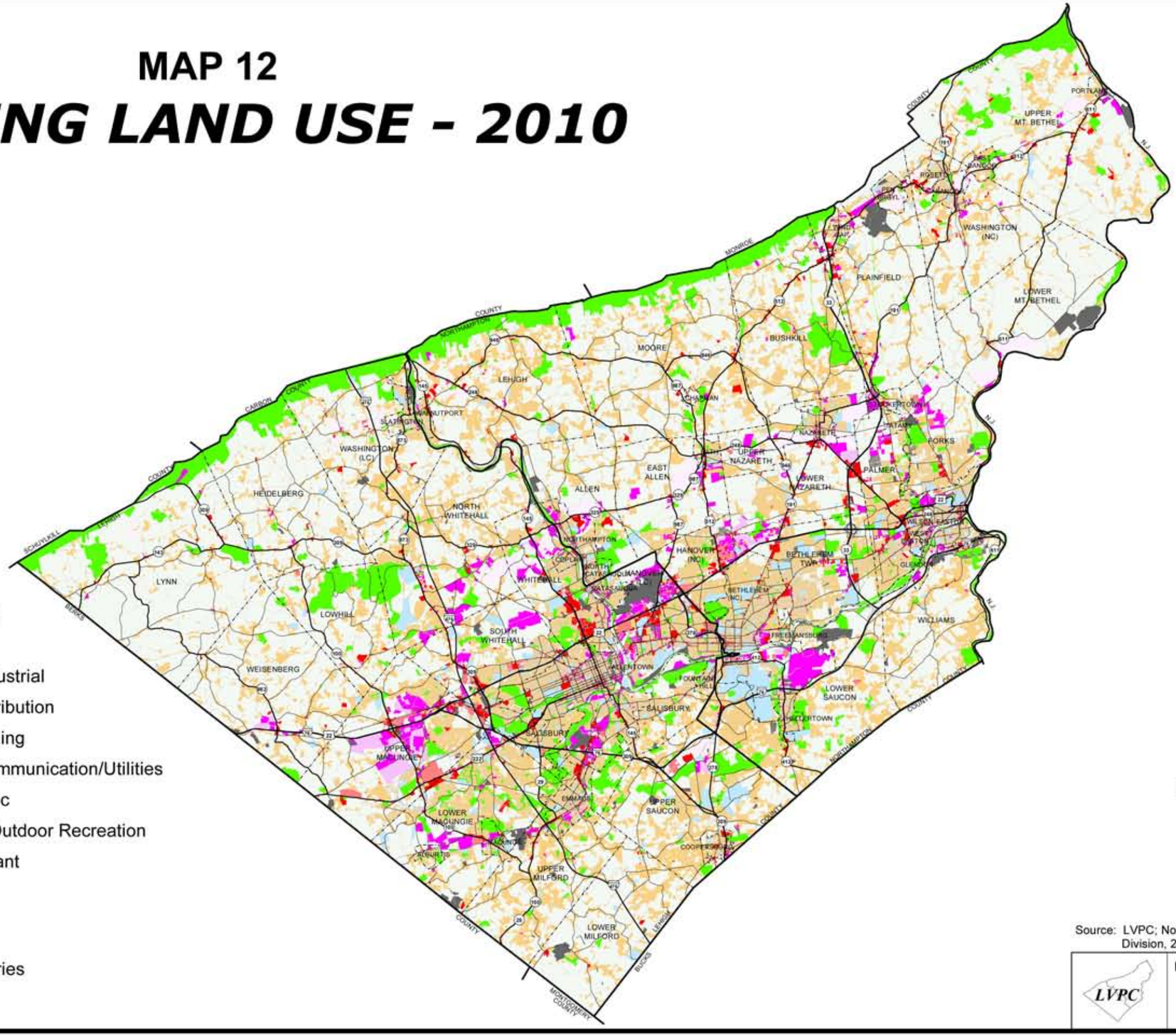
To provide a regional framework for protecting natural and agricultural resources, guiding the location and intensity of development, and matching land development with appropriate infrastructure.

POLICIES

- New growth should locate in areas designated for urban development on Map 14.
- New growth should not go into areas recommended for natural resource protection or agricultural protection.
- Generally, housing density and housing variety should be increased in urban development areas.
- Rural areas not designated for natural resource protection, agricultural protection or future urban growth are planned for low density, low intensity rural uses.
- Land uses and land use intensities should be compatible at adjoining municipal borders.
- Municipalities should require access management measures to minimize and control land use impacts on major roads.
- Public buildings and facilities should be located in areas recommended for urban development in this plan unless the facility clearly requires a rural location.
- Oppose use of federal and state funds for projects that will create or encourage sprawl.
- The urban development areas designated in this plan may be expanded into rural areas

MAP 12

EXISTING LAND USE - 2010



- Residential
- Retail/Commercial
- Offices
- Manufacturing/Industrial
- Warehousing/Distribution
- Quarrying and Mining
- Transportation/Communication/Utilities
- Public/Quasi-Public
- Parks and Other Outdoor Recreation
- Agricultural & Vacant
- Right Of Way

- Major Roads
- Other Roads
- Municipal Boundaries
- County Boundary

N

0 2 4 6 Miles

1" = 4.10 miles

Source: LVPC; Northampton County Dept. of Fiscal Affairs, GIS Division, 2010; Lehigh County Assessment Dept., 2010

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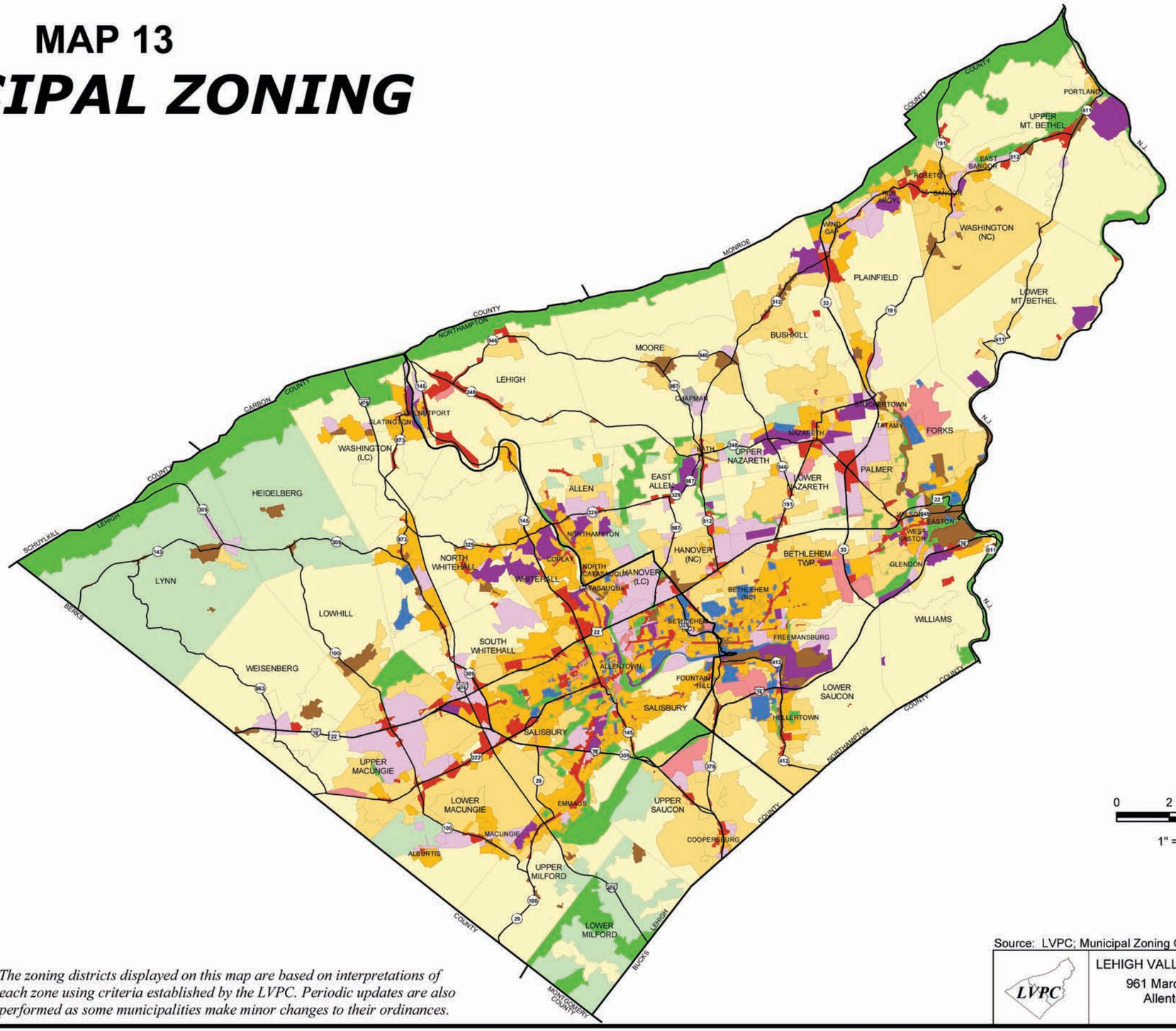
MAP 13

MUNICIPAL ZONING



- Agricultural Preservation
- Environmental Protection
- Rural
- Suburban Residential
- Urban Residential
- Institutional
- Office/Business
- Retail Commercial
- Mixed Use
- Light Industrial
- Heavy Industry
- No Zoning

- Major Roads
- Municipal Boundaries
- County Boundary

Note: The zoning districts displayed on this map are based on interpretations of each zone using criteria established by the LVPC. Periodic updates are also performed as some municipalities make minor changes to their ordinances.

Source: LVPC; Municipal Zoning Ordinances, through March 2010.

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only after a determination by the LVPC that (1) the expansion is otherwise consistent with the overall goals and policies of this plan and (2) the following criteria are met:
- —the expansion is contiguous with the urban development area designated in this plan and does not include areas designated for natural resource preservation or farmland preservation,
- —the expanded area is designated for urban development in the municipal comprehensive plan, zoning ordinance, and municipal planning for sewer and water expansions,
- —the area will be served by publicly-owned sewer and water and its expansion will not create traffic safety or congestion problems.

IMPLEMENTATION

- The Pennsylvania Municipalities Planning Code should be amended to convey greater authority to counties in protecting natural and agricultural resources, managing regional growth and assuring consistent planning policies.
- The LVPC will continue to support multimunicipal planning as the preferred way to undertake local planning consistent with county planning.
- The LVPC will use its review authority under the Pennsylvania Municipalities Planning Code to assure consistency between local and county plans.
- If staff is available, the LVPC will provide technical planning services to municipalities.
- The LVPC will continue to prepare data, technical studies and model regulations that may be useful in the development and implementation of plans.
- Municipalities should incorporate access management in local subdivision regulations.

GOAL

To improve the quality of municipal plans and plan implementation in the Lehigh Valley.

POLICIES

- Support planning implementation measures authorized by the Pennsylvania Municipalities Planning Code.
- Support complete and high quality technical approaches to solving planning problems in the Lehigh Valley.

IMPLEMENTATION

- Continue planning education programs through the LVPC Local Government Academy.
- Continue to use GIS mapping and various types of computer modeling software to help analyze planning projects and inform citizens and officials of the probable consequences of their planning efforts.
- Support innovative techniques such as transferrable development rights, traditional neighborhood development, and conservation development practices.
- The LVPC will review plans and zoning ordinances with respect to substantive planning and zoning requirements in the Pennsylvania Municipalities Planning Code.

CITIES AND BOROUGHS

Cities and boroughs in the Lehigh Valley face very different land use and development problems than suburban and rural townships. There are three cities and 27 boroughs in the Lehigh Valley. About 89% of the total area of all cities and boroughs is already developed. Some of the remaining 11% may not be suitable or available for development. The lack of good developable land limits new development opportunities. In cities and boroughs key issues are redevelopment of old properties, some of which are brownfield sites, urban infill, creating markets for urban sites that may not have the same market appeal of those in the suburbs, conversion of low intensity sites into sites with high intensity land use potential, and updating of old urban infrastructure.

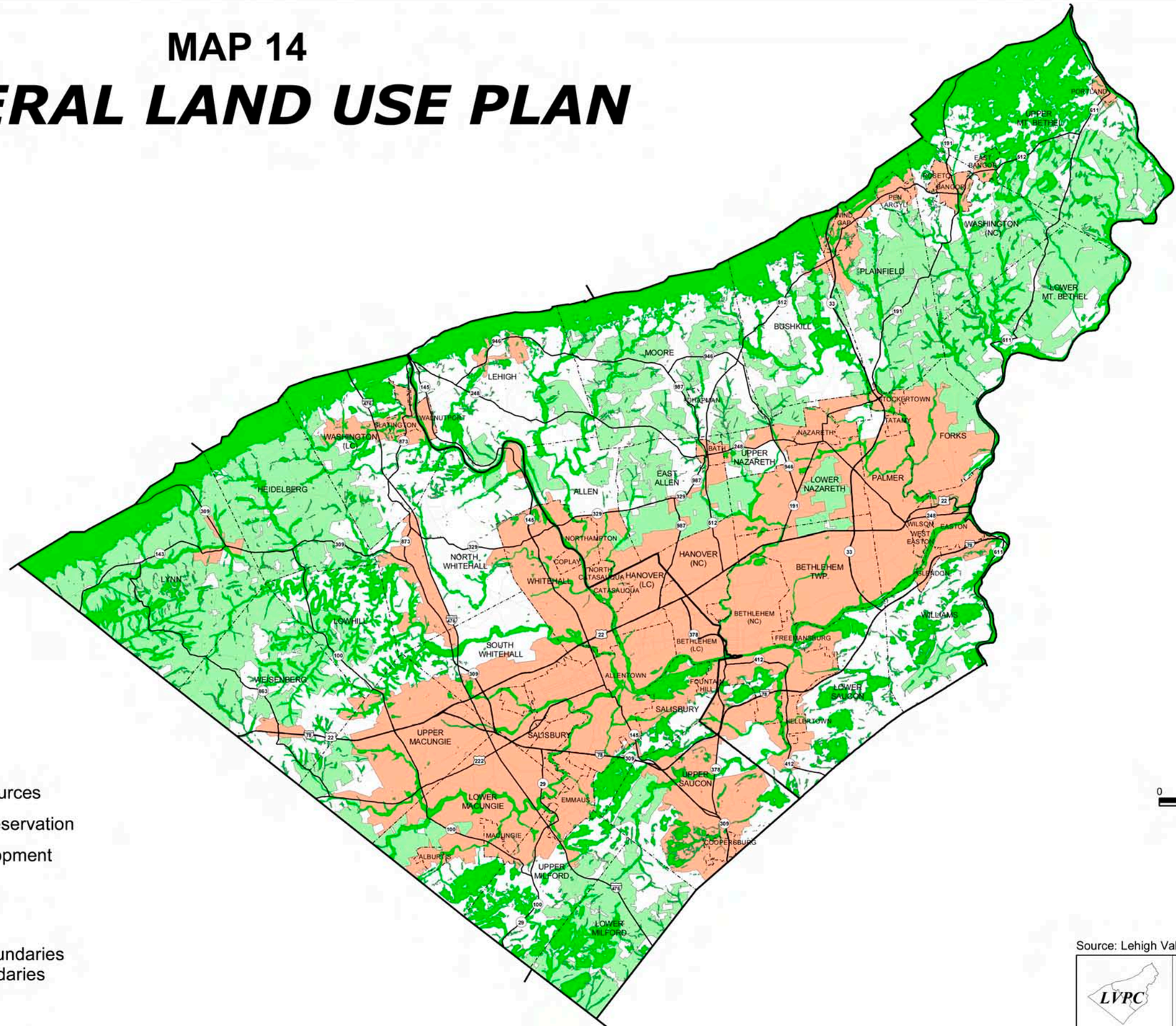
Cities and boroughs face unmistakable trends in their growth characteristics and in their role within the region. In most cases population growth is low in comparison with townships. Between 1990 and 2000, the regional population grew by 40,921. Of that total, only 3,594 (9%) was located in the cities and boroughs. Between 1950 and 2000, the share of regional population in the cities and boroughs dropped from 76% to 52%. LVPC population forecasts show no growth in the three cities in the next thirty years and low growth in boroughs.

TABLE 3
General Land Use Categories

	Objective	Recommended Land Uses	Recommended Densities	Recommended Sewer and Water Systems
Farmland	To protect farmland and to promote farming as an economic activity. (See Farmland Preservation section for detail.)	Agriculture Businesses related to agriculture Parks/open space uses Housing related to agriculture Housing not related to agriculture on a very limited scale	Maximum density of 1 unit per acre for all uses except housing not related to agriculture For housing not related to agriculture, a minimum lot size of 30,000 sq. ft. with no more than 10% of the tract in non-agricultural uses.	On-lot systems Central systems in connection with cluster development for housing not related to agriculture
Natural Resources	To protect sensitive natural resources, particularly flood plains and steep slopes from inappropriate development. (See Natural Resource Protection section for detail.)	Parks/open space uses Woodlands Single family detached housing in steep slope areas Pastureland	Maximum density of 1 dwelling unit per 3 acres in steep slope areas with on-lot utilities. Maximum density of 1 dwelling unit per acre in steep slope areas with public utilities. No development in very steep slope, flood plain areas and other high priority natural areas.	On-lot systems
Rural Development	To provide development opportunities consistent in the context of rural land use patterns and capabilities.	Housing - (single family detached dwellings) Agriculture Businesses related to agriculture Parks/open space uses Mining or public uses needing buffers (like quarries, sanitary landfills and power plants) Industry, businesses, stores, offices and community facilities which by their nature require a rural location or are designed to mainly serve the surrounding rural area	Maximum density of 1 dwelling unit per acre preferably using conservation design practices.	On-lot systems Central systems for public uses requiring a rural setting
Urban Development	To provide areas where development can occur, coordinated with the provision of infrastructure. To meet the needs for development sites.	Housing - (single family detached dwellings, twins, townhouses, condominiums, apartments and mobile home parks) Industries Warehousing, wholesaling Stores, businesses Offices Community facilities Transportation facilities Recreation facilities Parks/open space Crop farming	Density ranges (per acre) with public utilities of: Single family detached 4-7 Twins 6-12 Townhouses, condominiums 8-15 Apartments 8-50 Planned residential developments 4-12 No separate density standard for non-residential uses Maximum density of 1 unit per acre with on-lot utilities	Public sewer and community water systems

MAP 14

GENERAL LAND USE PLAN



Natural Resources
Farmland Preservation
Urban Development
Rural
Major Roads
Other Roads
Municipal Boundaries
County Boundaries

N

0 2 4 6 Miles

1" = 4.10 miles

Source: Lehigh Valley Planning Commission

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Most growth in property valuation is in townships. Between 1991 and 2004, the assessed valuation of the townships in the Lehigh Valley increased by more than $2.8 billion, an increase of 41%. At the same time, the assessed valuation of the cities and boroughs grew by $43 million, a gain of less than 1%. The absence of growth in development and the high demand for services contribute to the tax burden in the cities and boroughs. In 2004 the average real estate tax in Lehigh County cities and boroughs was over four times that in the townships. In Northampton County the average city and borough millage rates were approximately three times township rates.

The cities and boroughs have greater needs for services but diminishing financial resources when compared with townships. According to the 2000 Census data, the cities have lower housing values and higher poverty rates than other areas of the counties. Disparities in these measures are growing. Housing values are lagging in the cities and poverty is becoming more concentrated.

GOAL

To achieve growth, property development, redevelopment and an improved tax base in the cities and boroughs in the Lehigh Valley.

POLICIES

- Support infill development, redevelopment and reuse of abandoned properties and brownfield sites.
- Encourage the coupling of community development and economic development activities so that economic development programs give highest priority to renewal of cities and boroughs.
- Promote reuse of properties that are considered under utilized or under valued.
- Give high priority to infrastructure projects and programs that will redevelop and renew cities and boroughs.
- Encourage high quality and innovative urban design practices in private and public open spaces. Development in cities and boroughs should stress urban design motifs not suburban design.
- Give highest priority to cities and boroughs in the siting of schools, government centers, cultural, entertainment and athletic facilities.
- Encourage development of high quality residential land uses in and near to downtown areas.
- Support state legislation that will assure equitable distribution of growth benefits to all municipalities in each county.

IMPLEMENTATION

- Support local, state, and federal programs that target funds for renewal, revitalization and redevelopment activities in cities and boroughs.
- Advocate that economic development agencies give priority to reuse and redevelopment of properties in cities and boroughs.
- Give high priority to transportation projects that will improve access, safety, and urban environments in cities and boroughs.
- Support development of innovative incentives, financing and other tools for redevelopment of brownfields and previously used sites that are not brownfields but are under used.
- Support tax-base sharing.
- Support statewide reforms that make it easier for municipalities to merge or consolidate and allow municipalities to dissolve themselves.

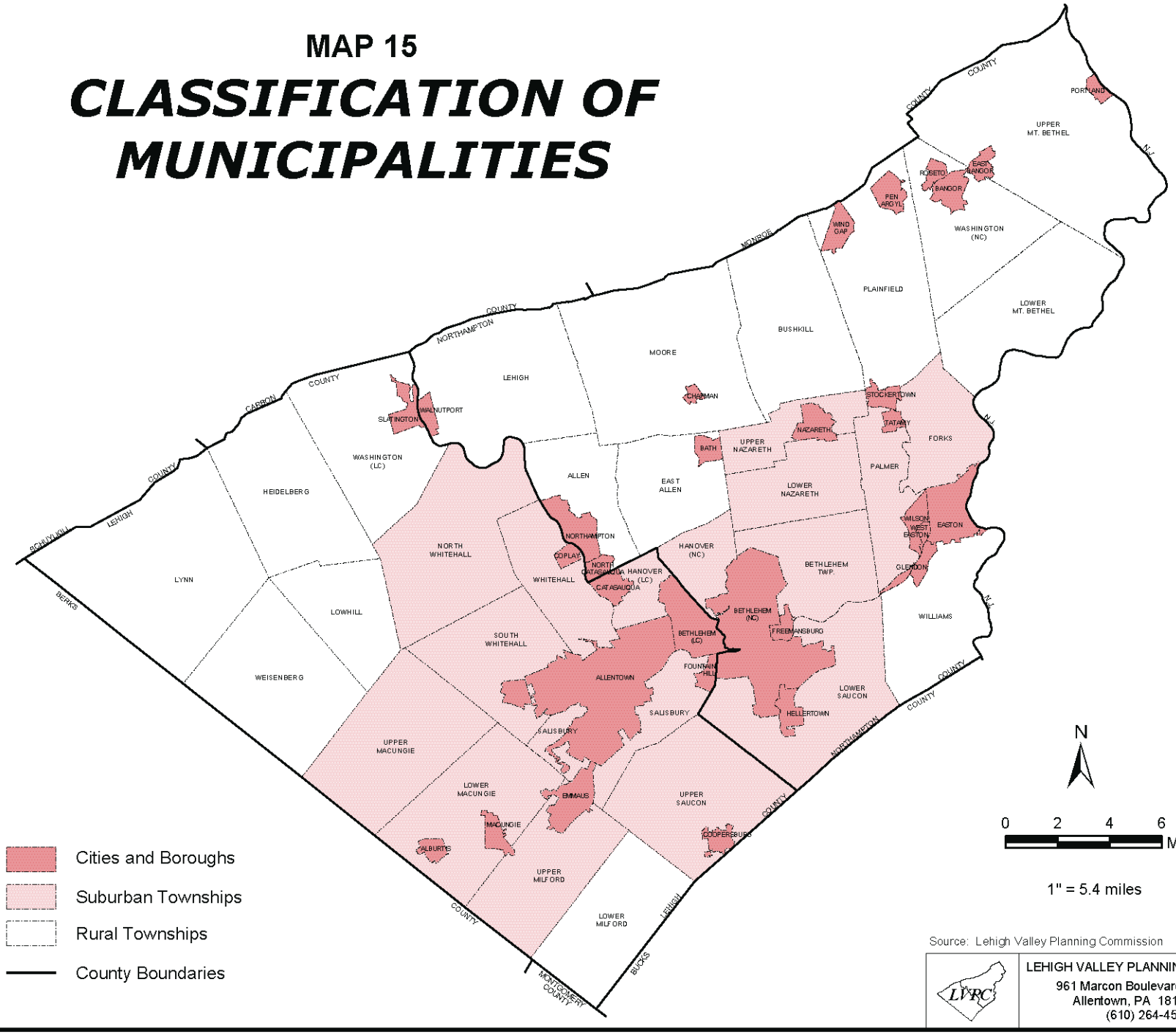
SUBURBAN TOWNSHIPS

As shown on Map 15 suburban townships in the Lehigh Valley lie on the perimeter of the three cities on an east-west axis from Easton westward to the Berks County line. Since 1970 71% (80,714) of the rural and suburban population growth in the Lehigh Valley has been in this area. In the next 30 years it is projected that 69% (82,146) of the growth will be in this area. All suburban townships have public sewers and public water in at least a part of their jurisdiction. Much of the regional highway system extends through suburban townships. Since the 1970s the Lehigh Valley Planning Commission has considered parts of these townships contiguous to previously developed areas to be the logical path for most future growth in the Lehigh Valley provided adequate infrastructure is expanded concurrently and natural resources are protected. Some outer areas of these municipalities have also opted to preserve significant sections of farmland.

Development in suburban townships is characterized mainly by low density, single family residential

MAP 15

CLASSIFICATION OF MUNICIPALITIES



Source: Lehigh Valley Planning Commission

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subdivisions, various types of shopping centers, and greenfield industrial parks. In comparison with cities and boroughs in the region many suburban townships must deal with too much growth happening too fast. This trend is a constant challenge to local planning and zoning policies where frequent changes and shifts are made in response to development proposals. Common development problems include: increasing traffic congestion, sewer and water system expansions, developer sponsored exclusionary challenges to zoning ordinances, need for more school facilities and other services such as police, fire protection, and parks.

Suburban townships generally have staffs to manage planning problems. However, many need better, more coordinated planning tools — comprehensive plans, zoning ordinances, Act 537 sewer plans, access management controls, subdivision regulations and official maps. Following are LVPC goals, policies and implementation strategies relating to suburban townships.

GOAL

Improved planning and management of growth in suburban townships in the Lehigh Valley.

POLICIES

- Support sewer and water system expansion to serve new development in areas designated for urban development on Map 14.
- Public infrastructure improvement should be made concurrently with all new development.
- Advocate greater variety of housing types in suburban townships and higher densities than currently prevail.
- Oppose strip commercial planning and zoning because they require added public investment in traffic control measures and increase the probability of accidents.
- Protect important natural resources and farmland either through effective zoning controls or acquisition.
- Consider traditional neighborhood development concepts instead of conventional subdivision design practices.

IMPLEMENTATION

- Suburban townships should adopt comprehensive plans that are in accord with the requirements of the Pennsylvania Municipalities Planning Code. Such plans should be updated at least every ten years.
- Zoning ordinances, subdivision regulations and sewer plans should be consistent with the municipal comprehensive plan and the county comprehensive plan.
- Subdivision regulations should be amended to include access management measures, assure street connectivity and provide for sidewalks and bikeways.
- All suburban townships should adopt impact fee ordinances to help defray some of the costs associated with traffic impacts of new development.
- All suburban townships should adopt an official map to help reserve sites for future road improvements, parks and other public facilities.
- Suburban townships should invest in local road improvements and local open space acquisitions.

RURAL TOWNSHIPS

For purposes of this plan, townships with a year 2000 density of under 350 persons per square mile are considered rural. In some areas a population density of 100 persons per square mile is considered rural. By this measure only Lynn Township in Lehigh County would be rural. At 93 persons per square mile in 2000 it is the most rural municipality in the Lehigh Valley. The sixteen townships under 350 persons per square mile are shown on Map 15. Most are experiencing increased development pressure. Unless rural municipalities act to preserve farmland, most will be a lot less rural in 2030.

From the perspective of the LVPC regional plan most sprawl in the Lehigh Valley is in rural townships. Its pattern (or lack thereof) follows the textbook definition of sprawl: scattered subdivisions with intervening patches of open space; ribbons of strip commercial development; large residential developments on large lots served by septic tanks and well water. In the Lehigh Valley this hodgepodge of development is further complicated by the occasional presence of slate and cement quarries and isolated commercial and industrial sites.

Most rural municipalities and school districts are

Rural Lynn Township — Mid 1990s

Rural North Whitehall Township — 2004

struggling with strong development pressure. They are challenged to expand schools, resolve increasing traffic problems, and fix or take over small sewage treatment plants or water systems that fail due to poor design or lack of maintenance. In addition there is growing demand for police, fire services, park and recreation facilities. Rural communities need to reevaluate their comprehensive plans and zoning ordinances to determine more effective measures to retain their rural character.

GOAL

Reduce urban sprawl in rural townships and retain the rural character of rural areas.

POLICIES

- Preserve farmland and natural resources through strong zoning regulations and public acquisition of property.
- Rural villages should be the preferred location for local convenience retail establishments.
- Refrain from development of public sewer and water systems except where necessary to resolve existing health problems.
- Practice conservation design measures in subdivision development.
- Plan and zone for land uses that are appropriate in rural areas. Avoid planning and zoning for regional commercial, industrial and institutional uses.
- Oppose strip commercial planning and zoning practices.

IMPLEMENTATION

- Rural townships should adopt comprehensive plans that are in accord with the requirements of the Pennsylvania Municipalities Planning Code. Such plans should be updated at least every ten years.
- Zoning ordinances, subdivision regulations and sewer plans should be consistent with the municipal comprehensive plan and the county comprehensive plan.
- Subdivision regulations should be amended to include access management measures, assure street connectivity and provide for sidewalks and bikeways.
- Rural townships should adopt impact fee ordinances to help defray some of the costs associated with traffic impacts of new developments.
- All rural townships should adopt an official map to help reserve sites for future road improvements, parks and other public facilities.
- Rural zoning and subdivision regulations should encourage conservation design practices in the subdivision of land that involves natural resources recommended for conservation.
- Rural townships should invest in local road improvements and local open space acquisition programs.

LAND USES OF REGIONAL SIGNIFICANCE

The Pennsylvania Municipalities Planning Code calls upon county comprehensive plans to identify current and proposed land uses that may have regional impact or significance. Such uses are of special significance because they may have a substantial effect upon the citizens and property owners in more than one municipality. The planning code does not convey extraterritorial power on any municipality to act upon a development in a neighboring municipality. In cases where a property boundary extends into more than one municipality each municipality acts on the basis of its own regulations. In cases where municipalities have agreed to create and implement a multimunicipal plan the municipalities are authorized to create a regional zoning ordinance. Counties are given broad review authority under the planning code. Municipal plans are required to be generally consistent with the adopted county plan. It has been LVPC practice to forward review comments to neighboring municipalities where a development has significant impact on that municipality. County comments cannot override local zoning.

Table 4 identifies land uses and criteria that the LVPC will use in review comments on regional significance. Retail uses are of particular importance because of their wide regional impact and the frequency of retail development. In this section the LVPC has established general policies and implementation strategies for review of developments of regional significance and some special policies for retail uses.

GOAL

To facilitate communication and coordination be-

TABLE 4
LAND USES OF REGIONAL SIGNIFICANCE

Land Use Category	Minimum Criteria
Major Shopping Centers	Greater than 200,000 square feet of leasable area
Major Industrial Parks	Greater than 100 acres
Mines and Related Activities	Greater than 200 acres under permit
Office Buildings & Office Parks	100,000 square feet of office space in buildings
Storage Facilities	Greater than 500,000 square feet of building
Large Residential Developments	500 dwelling units
Regional Entertainment Complexes	All
Regional Recreational Complexes	Identification as a regional recreational facility in park and recreation inventory
Hospitals	Inclusion in list of hospitals in Annual Trends report
Airports	All
Landfills and Other Solid Waste Facilities	All solid waste facilities
Power Plants	All power plants
Educational Facilities	Colleges; high schools; school campus arrangements
Railway and Rail Facilities	All

tween municipalities in the planning and review of developments of regional significance.

IMPLEMENTATION

- The LVPC will review and comment on the intergovernmental impacts of developments of regional significance based on planning goals and policies in this comprehensive plan.
- The LVPC will send its review to all potentially impacted municipalities and agencies.
- The LVPC will call on entities proposing developments of regional significance to conduct studies that clearly indicate environmental, land use, traffic and other impacts on all municipalities that may be affected by a development.
- The LVPC will provide mediation services to municipalities desirous of such services consistent with the provisions of Section 502.1 of the Pennsylvania Municipalities Planning Code.

GOAL

To minimize negative impacts associated with subdivisions and land developments of regional significance and impact.

POLICIES

- Municipalities should establish design guidelines for nonresidential developments of regional significance to protect nearby residential areas from undesirable environmental impacts. Sign regulations, architectural controls, buffering of nearby uses and parking lot landscaping should be considered.
- The off-site traffic impacts of developments of regional significance should be minimized. The developer should pay for the portion of the needed improvements attributable to the development. Municipalities should enact an appropriate impact fee ordinance to assure this happens.
- Driveway entrances should be arranged to minimize the disruption to the traffic flow of arterial and collector roads.
- Sub-regional, regional and super-regional shopping centers should be sited in areas near interchanges with expressways or along major arterials.
- Developments of regional significance and development regulations should be coordinated so that the land use decisions in one municipality are sensitive to the impacts in neighboring municipalities.

IMPLEMENTATION

- The LVPC will research and prepare model provisions for design guidelines.
- LVPC reviews of zoning ordinances and land use plans will promote siting criteria consistent with these policies. LVPC proposed zoning ordinances and land use plans will promote consistency with the policies.

GOAL

To facilitate renewal and redevelopment of developments of regional significance.

POLICIES

- The LVPC supports the renewal, redevelopment and retrofitting of existing shopping centers, industrial sites and office complexes in preference to the development of new facilities on greenfield sites.

IMPLEMENTATION

- The LVPC supports the use of public financial incentives for renewal and redevelopment sites in preference to greenfield sites.

POLICIES

- Commercial development should be sited in areas designated for urban development on Map 14 which meet the following criteria:
  - — Public sewage disposal and community water supply should be available.
  - — The affected nearby roads should have adequate capacity to handle the traffic.
  - — Safe access should be available.
  - — The location should be convenient for the intended customers.
  - — The development should meet the environmental policies of this plan.

  Also, the availability of transit service by LANTA is desirable.
- Private developers should pay for infrastructure needs generated by their development.

IMPLEMENTATION

- LVPC reviews of zoning ordinances and land use plans will promote consistency with criteria stated in these policies. Municipalities should not zone for retail uses in areas that cannot meet the criteria stated in this plan.

ECONOMIC DEVELOPMENT

The thirty year period from 1970 to 2000 has been a time of economic transition in the Lehigh Valley. Although total employment in the Lehigh Valley has grown 45% this is a much lower growth rate than the 84% growth at the national level. A major factor has been the loss of 44% of the manufacturing jobs that were in the region in 1970. Although manufacturing employment has also lost ground at the national level (-3%), the loss has been nowhere as severe as the Lehigh Valley. Even with robust growth in services and retailing economic growth has not kept pace with the nation.

The loss of jobs in steelmaking, truck manufacturing, apparel and other industries, along with a continuing pattern of urban growth at suburban and rural locations, has caused the loss of tax base in the cities and some boroughs and a steady increase in the amount of vacant business and industrial sites. Economic development must be combined with community development if the vision of a sound economy and healthy, desirable communities is to be achieved in the future.

Since the last update of this plan in 1993, economic development programs in the Lehigh Valley have been regionalized at the Lehigh Valley Economic Development Corporation (LVEDC). This organization is the primary marketer of the Lehigh Valley to the outside world. It is also involved in administering economic development grant programs, brownfield redevelopment, the Keystone Opportunity Zone program and local coordination of the Team Pennsylvania program.

The principal economic development role for the Lehigh Valley Planning Commission is in long range land use and infrastructure planning. Goals, policies and implementation strategies in this section will deal primarily with these issues. Map 13 shows sites that are zoned for office and industrial uses. Although municipalities zone properties for economic development, this does not guarantee that such development will occur or that the sites are good sites. Inadequate infrastructure, particularly highway access and availability of public services, are common problems with industrial sites. Sites also require good location and experienced developers. Map 16 shows major areas that are planned and zoned for industry or offices, have public sewers or are close to them, and do not otherwise conflict with this plan. Some areas are not shown because they are too small. Approximately 69 square miles of land are zoned for a variety of economic development activities. In 2002 there were 19 square miles of vacant greenfield sites and three square miles of redevelopment sites. Most vacant land is in western Lehigh County, the Route 33 corridor in Northampton County and the I-78 corridor in both counties. Most redevelopment property is on Bethlehem's south side. Of the 19 square miles seven square miles are served with adequate sewer, water and highway infrastructure. There is great demand for this land in both counties.

In addition to greenfield sites the Lehigh Valley has many old industrial sites that have been used in the past but are no longer viable because of location, obsolescence, pollution or depletion of natural resources. Redevelopment of old industrial sites, especially those that are in urban areas, is a major land use and development issue in the Lehigh Valley. There are many good reasons to redevelop old industrial sites — job creation, tax generation, brownfield cleanup. In addition some brownfield sites, such as the former Bethlehem Steel sites in the southside of Bethlehem, are very well located with respect to major highway and rail transportation corridors. Allentown has important redevelopment sites in its downtown and in the Lehigh Street corridor and Easton in its Bushkill corridor. Urban sites in these areas add to the supply of land for development and reduce some of the pressure for development on farmland in rural areas.

During the past thirty years many infrastructure improvements have benefited economic development efforts in the Lehigh Valley. Since its completion in the mid-1950s Route 22 has become the main business and industrial corridor in the Lehigh Valley. More recently development of I-78, extension of Route 33 from Route 22 to I-78 and regionalization of the sewer system in western Lehigh County are particularly notable. Unfortunately the demand for new highways, interchanges, and other transportation improvements usually exceeds the ability to pay for such infrastructure. Transportation funding comes primarily from the federal and state governments. It is fiscally constrained by federal and state allocation formulas and it is generally insufficient to account for all of the improvements people think are needed. In addition, use of

Greenfield development in the Route 33 corridor looking north.

LVIP VII (Saucon Tract), southside of Bethlehem looking west.

federal and state funds requires compliance with environmental and other laws. The design review process can span a period of 10-12 years for a major project. These are important factors in the assessment of future economic development. In the coming years safety, congestion management and maintenance projects will be given highest priority in the transportation program along with completion of high priority projects such as Route 412 and the American Parkway in Allentown. The major long term project will be upgrading Route 22.

The LVPC supports economic development efforts and efforts to preserve valuable natural resources. It is sometimes very difficult to steer a developmental course that champions both improvement of the regional economy and preserves the natural resources that many citizens wish to preserve. Clearly a livable, desirable community must attend to both economic and natural resource preservation goals. The hard part will be finding the balance between the two. This plan attempts to depict those parts of the Valley that are appropriate for each set of goals.

MINERAL EXTRACTION

Mineral resources played an important part in the development of the Lehigh Valley. Deposits of iron ore were being mined in Williams Township in the late 1700's. Local deposits of limonite and hematite were mined extensively in the 1800's. In the 1880's Lehigh County was one of the largest iron ore producing counties in the country. The richest deposit of zinc in the commonwealth was discovered in Upper Saucon Township in the 1840's. Zinc mining in Upper Saucon continued until 1982. Some of the best slate in the country is found in a narrow belt along the southern base of the Blue Mountain from the Delaware Water Gap to the western boundary of Lehigh County. The slate industry started in the 1840's and gained prominence in the latter part of that century. Although only a shadow of its former importance, several active slate operations continue to this day.

The most important mineral resource in the region is limestone. Large quantities of limestone capable of forming excellent cement exist in a strip several miles wide extending from Riverton in Lower Mt. Bethel Township to Fogelsville in Upper Macungie Township. The large-scale production of cement started in the late 1800s and by the early 1900s the Lehigh Valley was producing about 70% of all portland cement in the country. Although the local cement industry has been in decline for decades, there is one plant in Lehigh County and four plants in Northampton County that still produce cement from local limestone deposits.

The terms *Cement Belt* and *Slate Belt* are still used to describe the areas of the Lehigh Valley where limestone and slate were mined. Remainders of the iron, cement and slate industries are with us today as mine pits, large quarries and rubble piles. Some sites have been turned into recreational resources for fishing and scuba diving. Others have been used for the discard of various types of waste. In most instances abandoned sites are an eyesore and in some cases they are a nuisance. Some sites have been placed on the Keystone Opportunity Zone registry. The reuse potential and cost of site remediation is yet to be determined.

Mineral operations still have a presence in the Lehigh Valley. As of early 2001 there were 52 permitted mining operations in the region. The major existing sites are shown on Map 16. The Pennsylvania Municipalities Planning Code, as amended in 2000, requires that important mineral resources be identified and that municipalities provide for the reasonable development of minerals.

GOAL

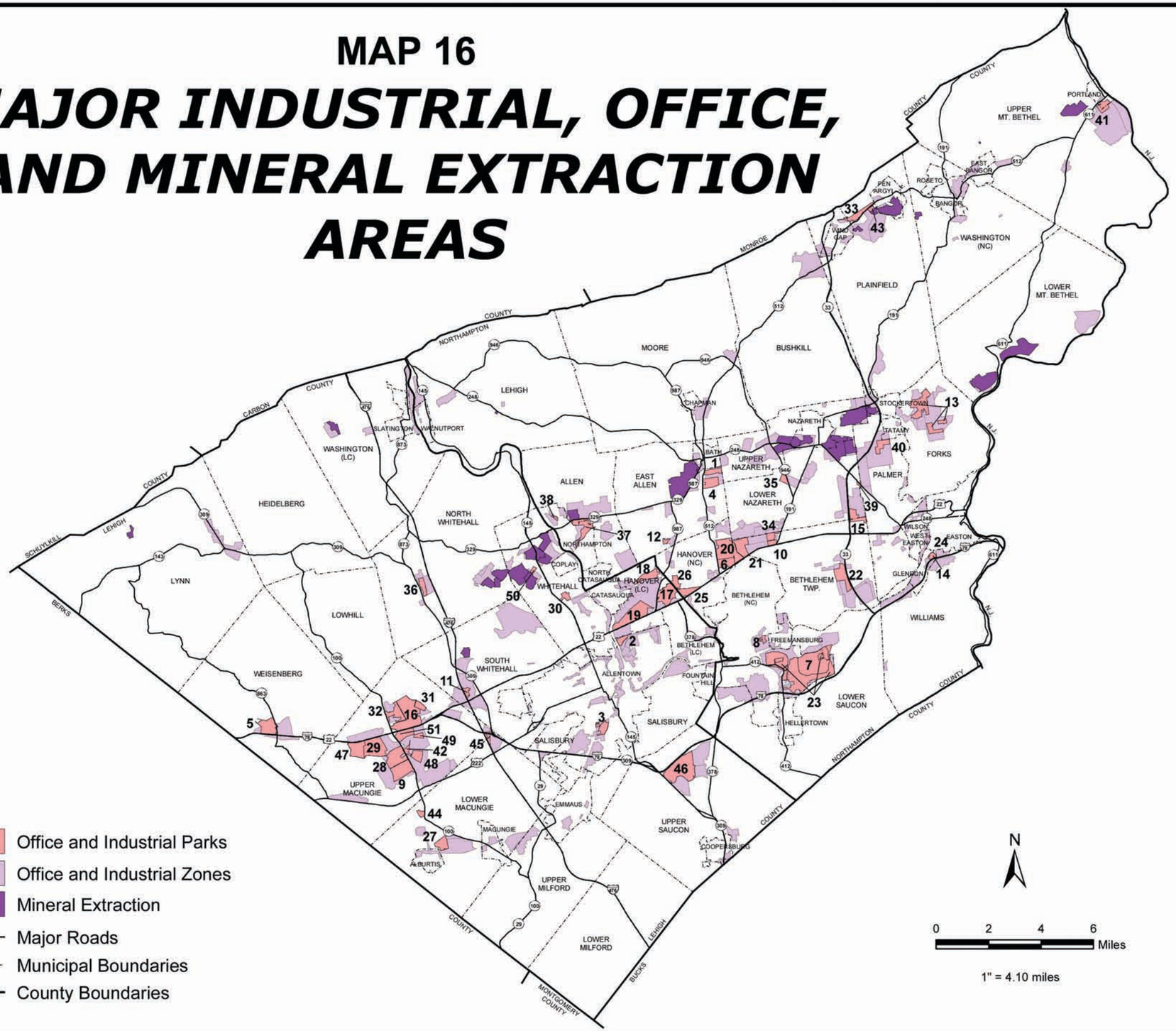
To support economic development opportunities that provide jobs at above average wages and improve the regional tax base.

POLICIES

- Promote retention and expansion of businesses with above-average wages.
- Reject land intensive, cheap labor industries that are viable only with public grants, tax relief and other incentives.
- Provide employment opportunities to all social and economic groups.
- Recruit high technology businesses that are targeted to take advantage of the programs and expertise of educational institutions and businesses in the region.
- Use federal and state programs that promote economic development consistent with the goals and policies of this plan.
- Promote tourism activities that relate to the unique physical, historic and cultural features of the Lehigh Valley.

MAP 16

MAJOR INDUSTRIAL, OFFICE, AND MINERAL EXTRACTION AREAS



Office and Industrial Parks
Office and Industrial Zones
Mineral Extraction
Major Roads
Municipal Boundaries
County Boundaries

N

0 2 4 6 Miles

1" = 4.10 miles

ID	Office and Industrial Parks	Area (Acres)
1	512 Industrial Park	77
2	Allentown Business Park	54
3	Allentown Commerce Park	96
4	Arcadia East Industrial Park	129
5	Arcadia West Industrial Park	210
6	Bethlehem Business Park	125
7	Bethlehem Commerce Center	1573
8	Bethlehem Industrial Park	28
9	Boulder Business Center	256
10	Brodhead Industrial Campus	37
11	D & C Spinosa Company Site	39
12	East Allen Industrial Park	23
13	Forks Industrial Park	397
14	Glendon Business Center	34
15	Hecktown Road Industrial Park	121
16	Iron Run Corporate Center	533
17	LVIP I	259
18	LVIP II	138
19	LVIP III	378
20	LVIP IV	378
21	LVIP V	177
22	LVIP VI	195
23	LVIP VII	958
24	Lehigh Drive Industrial Park	5
25	Lehigh Valley Corporate Center	105
26	Lehigh Valley Corporate Center II	72
27	Lehigh Valley South Industrial Park	116
28	Lehigh Valley West 2 Industrial Park	254
29	Lehigh Valley West Industrial Park	337
30	MacArthur Industrial Park	53
31	Meadows Business Center	59
32	Mill Run Industrial Park	157
33	NAPA Industrial Park	120
34	Nancy Run Industrial Center	61
35	Newburg Industrial Park	47
36	North Whitehall Industrial Park	77
37	Northampton Development Center	199
38	Northampton Industrial Park	15
39	Northwood Business Park	10
40	Palmer Industrial Park	103
41	Portland Industrial Park LP	96
42	Route 100 The Corporate Center	38
43	Slate Belt Industrial Complex	20
44	Spring Creek Industrial Park	34
45	Springside Industrial Acres	28
46	Stabler Executive Center	545
47	The Crossings (Haaf Terdha Industrial Park)	201
48	West Park Business Center	92
49	West Park II	35
50	Whitehall Business Park	22
51	William Penn Business Center	135

Source: Lehigh Valley Planning Commission, 2009

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Implementation

- LVPC will use review powers to support major employment sites accessible to all social and economic groups.
- LVPC will promote coordination of employment site development and transit services.

Goal

To strengthen the tax base of municipalities with declining tax bases.

Policies

- Existing vacant buildings and sites should be redeveloped and reused to the maximum extent possible.
- Combine economic development and community development efforts to revitalize the economy of urban places and make urban redevelopment sites more competitive with greenfield sites in suburban and rural areas.
- Public sector efforts to influence the amount of business or industrial growth should give high priority to assisting economically and financially depressed communities and population groups.

Implementation

- Economic development agencies should give priority to the reuse and redevelopment of existing vacant sites over greenfield sites.
- LVPC will support infrastructure proposals needed to make existing buildings and sites usable in areas otherwise supported in this comprehensive plan.
- Promote private innovation and investment in the reuse of old industrial sites.

Goal

To locate future employment in areas where the comprehensive plan policies indicate that urban growth is appropriate.

Policies

- Employment growth is recommended in areas that meet the following criteria:
  - — public sewer and water should be available;
  - — adequate highway capacity should be available;
  - — site should be close to major concentrations of development;
  - — site should be environmentally suitable;
  - — site should be served or potentially served by LANTA;
  - — site should be consistent with this plan.

Implementation

- LVPC reviews will support zoning ordinances and development proposals consistent with the above criteria. Areas that cannot meet the above criteria should not be planned or zoned for industry.

Goal

To accomplish economic development efforts in an effective, efficient manner.

Policies

- Emphasize coordination and cooperation among the governmental bodies, agencies and organizations involved in economic development and community development.

Implementation

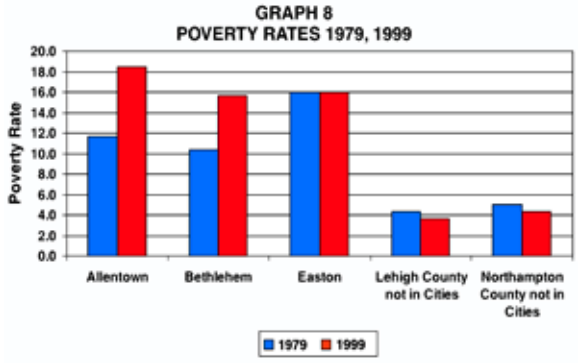
- The LVPC will continue to cooperate with economic development entities in accord with LVPC policies and the availability of staff.
- The LVPC will collaborate with the counties and LVEDC in the development and maintenance of the Comprehensive Economic Development Strategy report that is required to maintain eligibility for Economic Development Administration funds.
- The LVPC will provide available data needed for economic development.
- The Lehigh Valley Transportation Study (LVTS) planning process should support transportation improvements needed for economic growth provided such proposals are consistent with this plan, the LVTS Transportation Plan and Transportation Improvement Program.
- The LVPC will work with economic development agencies to identify appropriate areas for new developments, sites for industries that need special buffering and sites suitable for reuse.
- LVPC reviews will support grant proposals that promote economic development consistent with the policies of this plan.

HOUSING

Providing adequate housing has been national policy since 1949 when the United States Housing Act was enacted. Although progress has been made through six decades of programs and funding, the fundamental goal of providing decent and affordable housing to each family remains unmet. In the Lehigh Valley, progress has been made in the area of providing decent housing. Slums have been razed. Unsafe housing has been upgraded. Overcrowding is less common. Regulations assure that new housing meets minimum livability standards. However, the housing needs of the disadvantaged segments of society remain only partially met. In 2007, *An Affordable Housing Assessment of the Lehigh Valley* stated that "The primary issue confronting the Lehigh Valley is how to create affordable housing opportunities for households with lower incomes." The demand for subsidized housing exceeds the supply. The five public housing authorities had a total of 6,024 applicants on their waiting lists for Section 8 vouchers and public housing units in 2006. The overall public housing rate of 98% reflects a critical undersupply of affordable rental housing units.

Blacks and Hispanics comprised 76% of the area's population increase between 2000 and 2006-8. These groups have significantly higher poverty rates than non-Hispanic whites according to the 2000 Census. The poverty rate for Hispanics is four times higher than for non-Hispanic whites. The poverty rate for blacks is about three times the poverty rate for non-Hispanic whites. Also, the housing needs of other disadvantaged population segments remain unmet. Demand for housing exceeds available supply for the elderly, the handicapped, and those requiring the assistance of the counties' human service agencies. Three-quarters of the Lehigh Valley population which is eligible for subsidized rental housing does not live in such housing.

The further concentration of poverty within the cities continues. As shown in Graph 8, the poverty rates of the three cities between 1979 and 1999 increased while poverty rates outside of the cities went down. Between 1999 and 2006-8, the poverty rate in Allentown increased from 18.5% to 21.1%. The poverty rate in Bethlehem rose from 15.7% to 15.9%, while the poverty rate in Easton rose from 16.0% to 19.2%. In the parts of Lehigh County and Northampton County that were not in the cities, the poverty rates rose from 3.7% to 4.2% and from 4.3% to 4.5% respectively, reversing the drops found between 1979 and 1999. The growth in poverty rates in the parts of the counties outside of the cities grew by less than in Allentown and Bethlehem between 1999 and 2006-8. The disparity in poverty rates does not reflect that the provision of housing in a wide choice of locations that maximize social and economic opportunities for everyone. Also, the trends further imbalances the costs of governance, to the disadvantage of the cities.



Housing affordability has reemerged as an important housing issue. Housing prices escalated in the Lehigh Valley until 2008 and have since retreated to 2005 levels according to Kamran Afshar Associates. The median price of a Lehigh Valley home was $202,500 in 2008. The median household income ($54,496) would be insufficient to buy the median priced house in 28 Lehigh Valley municipalities with ten or more sales during 2008. Unfortunately, these 28 municipalities represented 89% of the new home sales, putting the fast-growing new construction areas out of reach for most of the region's families.

According to the *Affordable Housing Assessment*, "many low income households, both renters and homeowners, are cost burdened. In 2000, 25.9% of the 14,404 low income households that rented were cost burdened. In 2000, 35.3% of the 25,355 low income households who were homeowners were cost burdened." Cost burdened households are those that need to spend more than 30% of their income on housing.

Map 17 depicts the distribution of residential land uses within the urban and urbanizing core of the Lehigh Valley. Outside of this area, low density single family detached housing predominates. Within the core area, most twins and townhouses are found in the cities and the boroughs. Apartments are scattered throughout the area. Mobile homes and mobile home parks are found mostly in the outlying townships.

The private sector housing market has responded to the increased number of elderly persons, by providing housing choices specific to their needs and lifestyles. These housing arrangements span the spectrum from assisted housing to age-restricted communities. The housing market will continue to respond to development opportunities in the coming years. The forecast of a 72.6% increase in the number of persons age 65 and over taking place between 2000 and 2030 will drive this development.

GOAL

To provide an adequate supply of affordable housing which meets the needs of all income and social groups.

POLICIES

- Municipalities should regulate only to the extent necessary to assure legitimate health, safety and welfare objectives. Greater standards will unnecessarily raise housing costs.
- The particular needs of disadvantaged segments of the population should be addressed. These segments include the handicapped, the elderly, the mentally ill, minority groups, households with a female head and one-person households.
- The housing market should be open and free from discrimination based on sex, race, age, national origin, familial status or handicap. The strict enforcement of fair housing laws should be used in achieving this policy.
- Financial institutions doing business in the Lehigh Valley should assist with regional housing finance needs through the continued financial support of housing development corporations and the loan pool for financing the construction of rental housing for the low and moderate income people. A cooperative effort by local financial institutions in providing mortgage financing for moderate income families for new and older housing units should be undertaken. The existing housing development corporations should work throughout the two-county area.
- Mobile homes, sectional homes and modular homes installed on permanent foundations should be allowed in the same districts and with the same requirements as other single family detached dwellings.

IMPLEMENTATION

- Municipalities should revise land development ordinances to eliminate provisions that unnecessarily increase costs of constructing new housing. Specifically, this can be addressed in the following ways:
  - Municipalities should use LVPC suggested ordinances dealing with subdivisions, mobile home parks and planned residential developments.
  - Municipalities should follow suggested zoning standards for residential uses as contained in the LVPC Zoning Guide.
  - Municipalities should adopt zoning ordinances in accord with lot sizes and densities shown in Table 5.
  - The location of new residential areas should be consistent with the overall goals and policies of this comprehensive plan. Residential zones should be located in areas recommended for urban development in the comprehensive plan.
- The LVPC will support the efforts of area housing authorities, social service agencies, nonprofit organizations and housing development corporations when such efforts are consistent with the policies of this plan.
- LVPC reviews will recommend against excessive standards that will unnecessarily raise housing costs.
- LVPC reviews of land use regulations and comprehensive plans will advocate densities consistent with Table 2 and the mobile home/modular home policies of this element.
- The counties should continue to use the Affordable Housing Trust Funds to finance programs and projects that meet needs for affordable housing.

TABLE 5
SUGGESTED RESIDENTIAL DENSITIES*
Units Per Net Acre
(with public water and sewer)

Housing Type	Range of Densities
High or Mid-Rise Apartments	15-50
Garden Apartments	8-20
Townhouses, Row Homes, Condominiums	8-15
Duplexes, Twins	6-12
Single Family Detached	4-7
Planned Residential Development	4-12

*Density ranges are presented in this table to reflect the diversity of existing urban areas in the Lehigh Valley. In any specific community, there will probably be a need for more than one residential zone since certain areas will be more appropriate for high density development than others. Not all dwelling unit types are appropriate in all areas.

GOAL

To provide housing in a wide choice of locations which maximize the social and economic opportunities for everyone.

POLICIES

- To promote economic and social integration, residential communities should include a variety and mix of housing types and values.
- Housing type and location choices should be expanded in accord with the following principles:
  – Low and moderate income housing should be located with convenient access to job opportunities and transit service.
  – Over-concentrations of low and moderate income housing in any one area of a jurisdiction should be avoided. New low and moderate income housing should be located in stable neighborhoods where social and economic integration is possible.
- Affordable housing should be located convenient to major employment areas.

IMPLEMENTATION

- Municipalities should provide for the basic forms of housing defined by the Pennsylvania Municipalities Planning Code (MPC). These are: single-family and two-family dwellings, a reasonable range of multi-family dwellings in various arrangements, mobile homes and mobile home parks.
- LVPC reviews will support plans, ordinances and projects consistent with these policies. The 1994 LVPC report entitled *Housing-Zoning* will be updated and used as a resource for issues relating to the cost and variety of housing opportunities in Lehigh Valley communities and the consistency of local housing policies with the recommendations of this plan. Changes will be recommended for plans, ordinances and projects that are not consistent.

GOAL

To promote and maintain suitable living environments and housing.

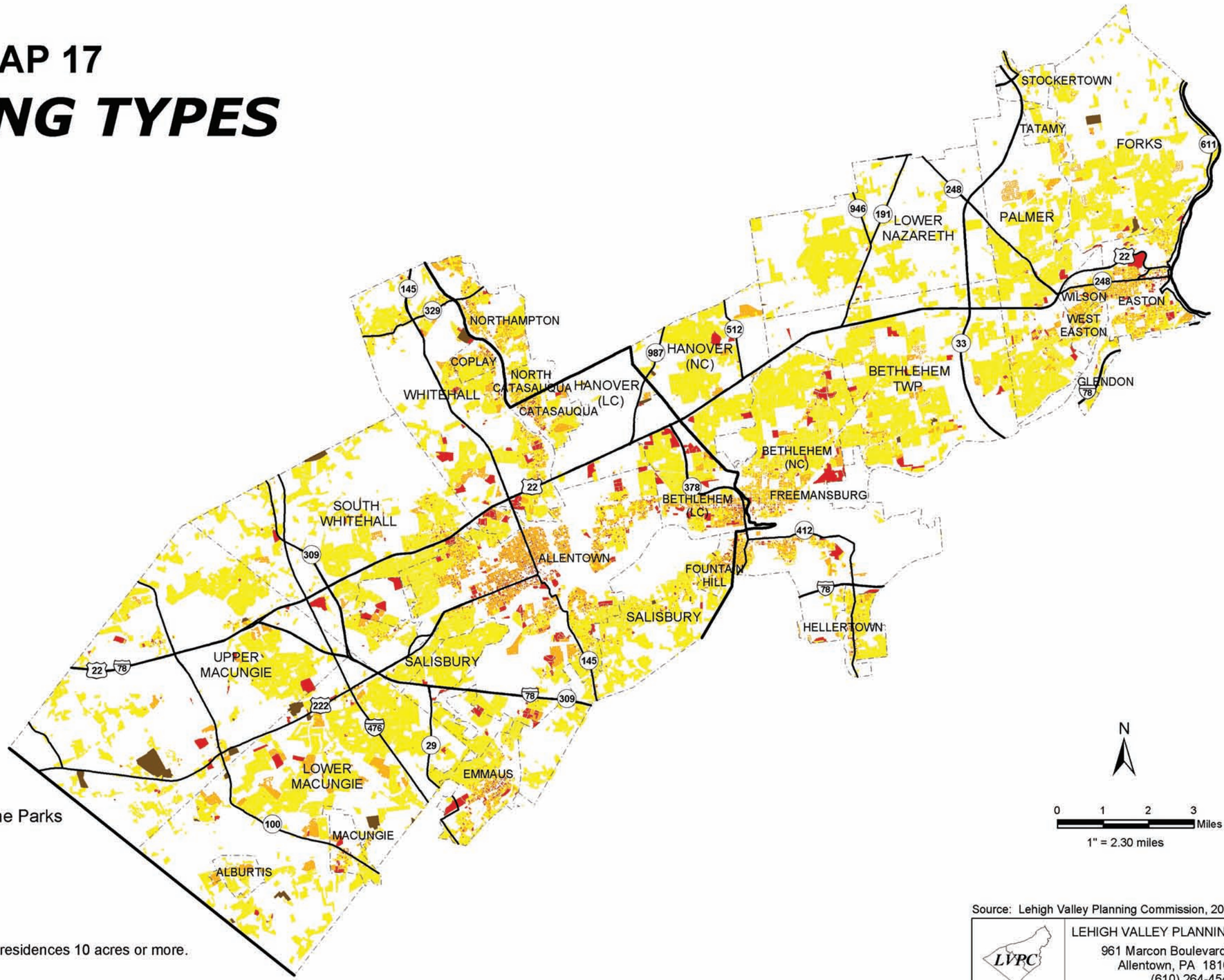
POLICIES

- Neighborhoods with substantial amounts of older housing and structures that require upgrading should be revitalized by cooperative efforts of public and private institutions.
- Adequate government services should support neighborhood rehabilitation programs. The scattered demolition of unusable units should be undertaken where appropriate to provide a decent living environment.
- Neighborhoods should be protected from adverse impacts including environment impacts. Such impacts include but are not limited to noise, air pollution, visual blight, offensive odors, glare and vibrations.

IMPLEMENTATION

- Financial institutions should be responsive to strategies of reinvestment in older residential neighborhoods. Financial institutions and existing housing development corporations should cooperate in increasing the availability of mortgage financing funds within these older areas.
- Municipalities should make use of federal and state grant programs to accomplish housing rehabilitation. Specifically, communities should use the Community Development Block Grant programs, federal housing programs for rehabilitation of existing housing and neighborhood improvement programs administered by the Pennsylvania Department of Community and Economic Development.

MAP 17
HOUSING TYPES



Single Family Detached *

Twins and Rows

Apartments

Mobile Homes & Mobile Home Parks

Major Roads

Municipal Boundaries

County Boundary

* Does not include farmsteads or large lot residences 10 acres or more.

N

0 1 2 3 Miles

1" = 2.30 miles

Source: Lehigh Valley Planning Commission, 2007

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- Municipalities should establish thorough and workable housing code enforcement programs to improve areas with substantial amounts of older housing. Financial support for the improvements should include both private and public sector sources.
- Municipalities should promote increased home ownership as part of neighborhood revitalization program strategies.

GOAL

To promote the orderly development of new well-planned residential environments.

POLICIES

- Encourage new residential neighborhoods in the areas recommended for urban development in this comprehensive plan.
- Developments should be located and timed to make maximum use of existing and future investments in services such as public sewer and community water facilities, adequate public roads and public transportation systems, shopping facilities, police and fire protection, recreational opportunities, schools and social services.
- Encourage the utilization of innovative residential development techniques such as planned residential development, traditional neighborhood development, conservation design and cluster development to provide high quality residential living environments and minimize the impact of development upon the natural environment of the site.
- New residential development should not locate in areas where identified noises exceed accepted standards such as those promulgated by federal agencies, unless the impacts can be remedied by construction, site planning or other techniques.

IMPLEMENTATION

- Municipalities should plan and budget for the orderly development of services, facilities and utilities as part of an overall capital improvements program in order to provide suitable areas for new residential growth.
- LVPC reviews will support housing proposals in areas recommended for residential development.
- LVPC reviews will consider noise in assessing the suitability of a site for residential development.
- The LVPC will support legislation which requires the coordination of development with the availability of adequate infrastructure.
- The LVPC will encourage the adoption of cluster, CD, TND and PRD provisions and their use where it would be consistent with the policies of this plan.
- The LVPC will advocate workable legislation that enables the fair share of off-site infrastructure impact costs to be financed by the residential developer. Once workable legislation is in place, municipalities will be encouraged to use it to help finance needed off-site improvements.

HIGHWAYS

Travel across the Lehigh Valley continues to grow at a rate comparable to factors that influence growth, including population, employment, licensed drivers, and vehicle registrations (see Table 6). Federal Highway Administration statistics show that growth in vehicle miles of travel nationally correlates closely to the growth in gross domestic product. This correlation implies that people make more discretionary trips as their disposable income increases.

TABLE 6
LEHIGH VALLEY RATES OF GROWTH

	% Change
Population (Est.) (2000-2009)	10.9%
Employment (2000-2007)	9.3%
Licensed Drivers (2000-2008)	12.3%
Passenger Car Registrations (2000-2009)	18.4%
Daily Vehicle Miles of Travel (2000-2007)	6.5%

Source: *U.S. Census; PENNDOT; LVPC, REMI Model.*

Other factors that contribute to growth in travel include an increasing number of two and three (or more) vehicle households, higher female participation rates in the work force, and a rapidly increasing elderly population that is becoming more mobile. Also, more Lehigh Valley residents are driving alone (up 22% over 1980 levels) while a smaller percentage are carpooling and using transit (Table 7). In fact, driving alone to work was the only mode choice that increased its share over the twenty-year period. Walking to work remains the most significant of the modes not using a personal vehicle, though its share has dropped by 47% over the last twenty years. The large majority of walking continues to take place in the three Lehigh Valley cities. In 2000, 64% of all Lehigh Valley walk to work trips took place in the three cities.

TABLE 7
LEHIGH VALLEY MODE TO WORK COMPARISON

MODE	1980	1990	2000
Drive Alone	69.1%	80.3%	84.1%
Carpool	20.3%	12.2%	10.0%
Public Transportation	2.5%	1.5%	1.4%
Bicycle	0.2%	0.0%	0.2%
Walked	7.3%	5.1%	3.9%
Other	0.6%	0.7%	0.4%

Source: *U.S. Census.*

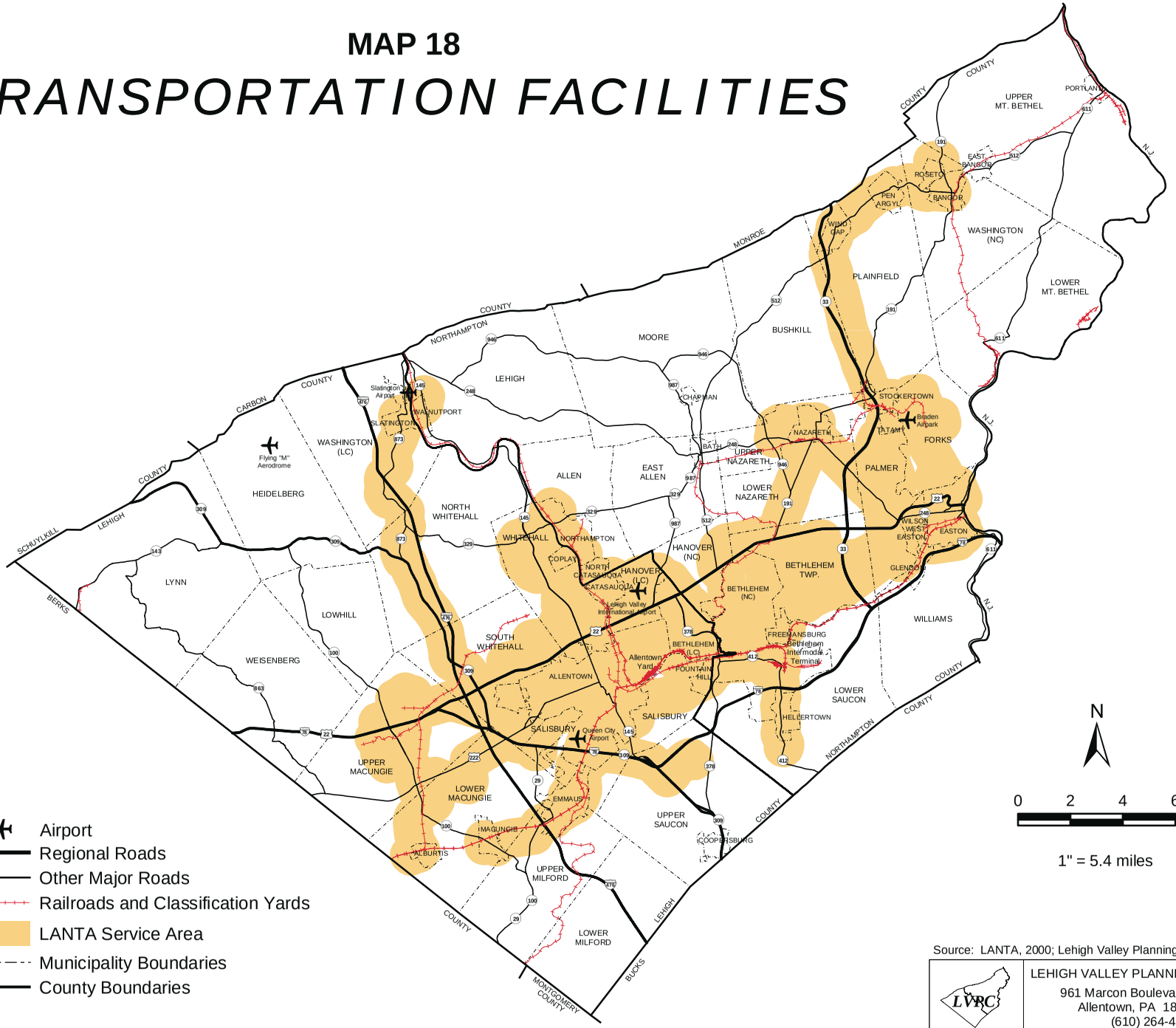
While vehicle miles of travel have grown rapidly, increases in the transportation network have not kept pace. Over the past thirty years, the Lehigh Valley has seen notable highway improvements, including the completion of I-78, the extension of Route 33, the relocation of Route 222 (which is under construction), and widening of Route 512, Airport Road and Schoenersville Road. In fact, the regional road network is complete (see Map 18) with the exception of the American Parkway Bridge across the Lehigh River in Allentown City. These improvements, however, were not enough to keep morning and afternoon peak hour congestion from growing in the Lehigh Valley. Map 19 shows the areas of congestion in 2000 and 2030. The ability to respond to this congestion by providing capacity improvements has been constrained by the lack of adequate federal and state funding.

Along with congestion, safety is a major transportation issue. Nationally, approximately 37,000 Americans die annually in traffic crashes; in Pennsylvania, about 1,300 deaths per year occur on highways; and in the Lehigh Valley, an average of 70 deaths occur annually. While the rate of fatalities per million vehicle miles traveled is steadily falling, projects that increase safety are an important priority in the Lehigh Valley. Using PENNDOT crash data, 23 corridors were identified as having significant crash problems in the Lehigh Valley (see Map 20).

The transportation planning program conducted by the Lehigh Valley Planning Commission in conjunction with the Lehigh Valley Transportation Study (LVTS) prioritizes and programs highway, bridge, and transit improvements. The *Lehigh Valley Surface Transportation Plan: 2010–2030* is the long range transportation plan for the region. Its purpose is to guide transportation decisions over the life of the plan and to outline the transportation

MAP 18

TRANSPORTATION FACILITIES



Source: LANTA, 2000; Lehigh Valley Planning Commission, 2004

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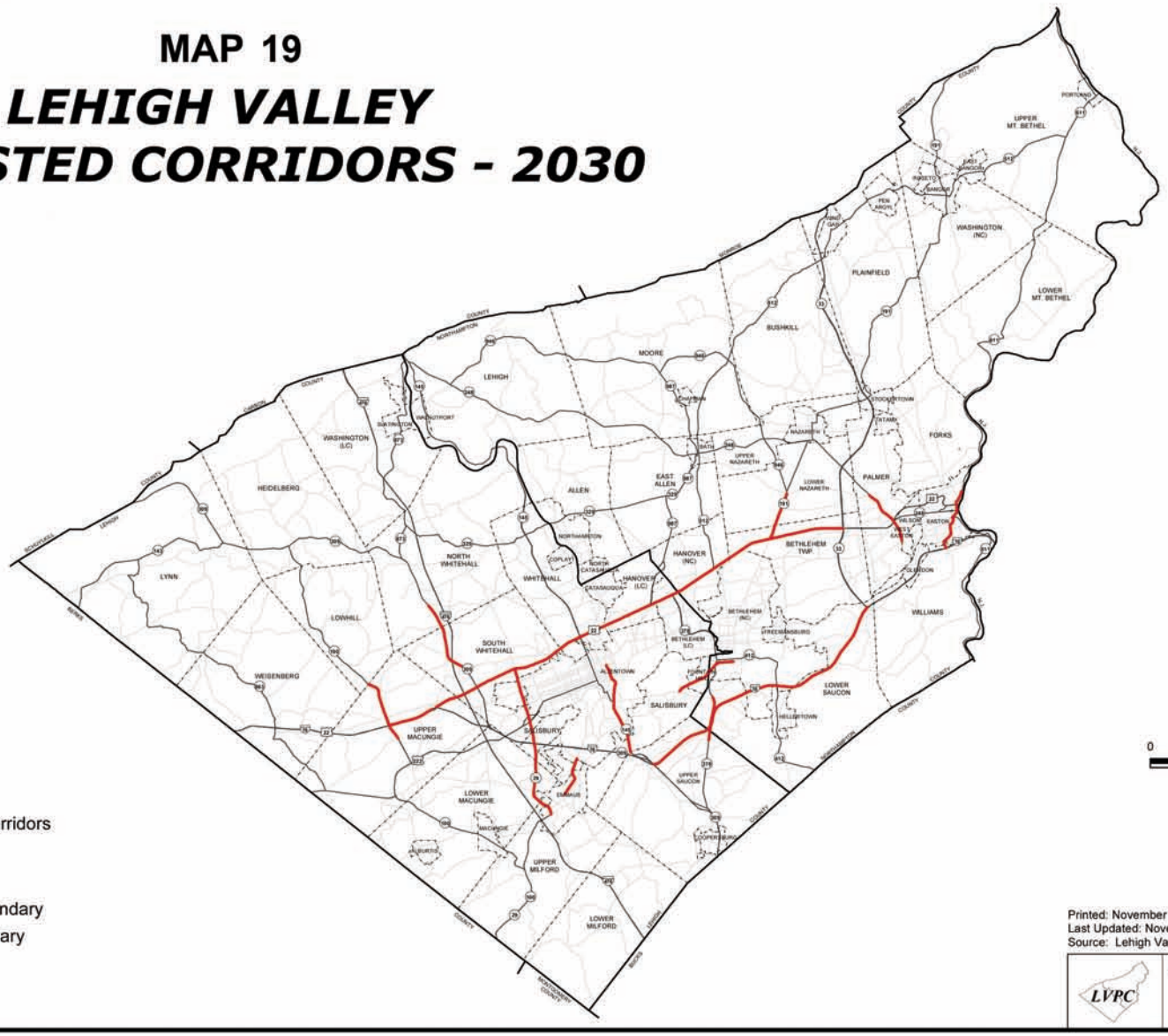
MAP 19

LEHIGH VALLEY CONGESTED CORRIDORS - 2030



Printed: November 18, 2008
Last Updated: November 18, 2008
Source: Lehigh Valley Planning Commission, 2003

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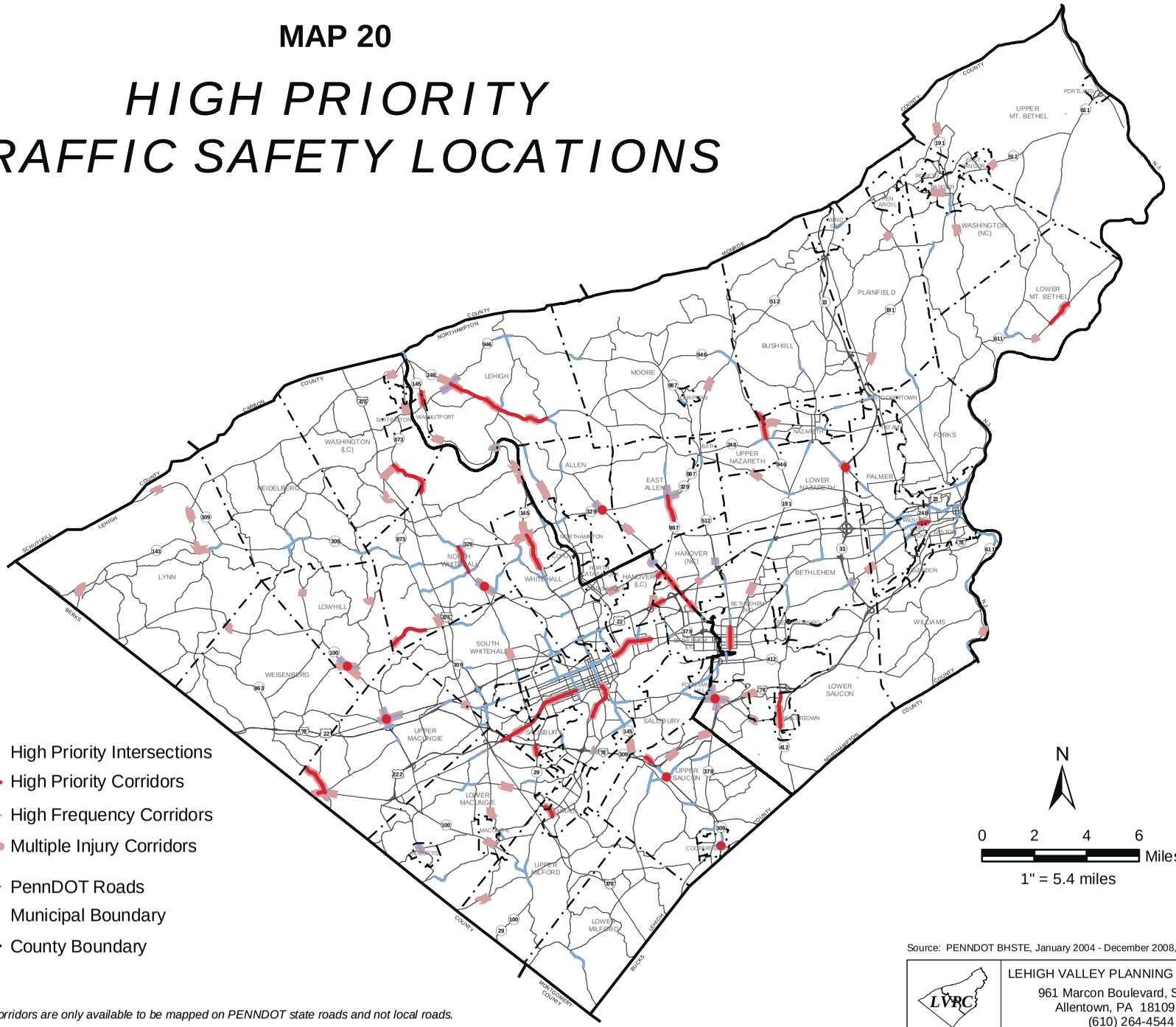
MAP 20

HIGH PRIORITY TRAFFIC SAFETY LOCATIONS



Source: PENNDOT BHSTE, January 2004 - December 2008, LVPC

Note: Crash corridors are only available to be mapped on PENNDOT state roads and not local roads.

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planning process. The plan is fiscally constrained and divided into a short, medium, and long range element. The highway element of the plan directs funding in the short term to the construction of three high-priority projects: the extension of the American Parkway in Allentown, and the Route 412 improvements in Bethlehem City and improvements to Route 22. The medium range element focuses on network maintenance and addressing safety issues. The long range element continues the focus on network maintenance and safety but begins the widening of Route 22. The Transportation Plan Map (Map 21) includes long range highway, bridge, and transit projects into short range projects, i.e. projects expected to be completed by 2030 or sooner. Appendix B lists and briefly describes major projects on Map 21. In general, preliminary phases of work such as environmental evaluation and design have started on short range projects. The long range projects are still in the study phase or have yet to be undertaken.

Financial resources for transportation improvements are limited. Federal planning regulations require that both transportation improvement programs (four year programs) and long range transportation plans (twenty year plans) be fiscally constrained. This means that the cost of the projects included must not exceed a reasonable estimate of available funds over that time frame. In Pennsylvania, allocations are made to each of the planning areas in the state based on an allocation formula that includes factors such as population, lane miles, vehicle miles of travel, bridge ratings, and rail crossing crash history. The *Lehigh Valley Surface Transportation Plan: 2010–2030* forecasts approximately $2 billion in transportation funding being available over that twenty-year period, with $1 billion going to highways, $590 million to bridges, and $395 million to transit. Even at that level, revenues received from the federal and state governments will not resolve all of the region's transportation needs.

Traffic congestion on Route 22 — a major Lehigh Valley traffic problem.

The shortage in transportation funding makes it important for transportation decision-makers to scale improvements appropriately. In some instances transportation management strategies may reduce peak hour traffic and make more efficient use of existing highway capacity. Numerous strategies are available, including mass transit, carpooling and staggered work hours. The LVPC implemented a carpool program and park-and-ride program during the early 1980s. However, response to the program was poor. In 1988, the LVPC tried to implement a staggered work hour program in the Lehigh Valley International Airport (LVIA) area, but received little interest from major employers. Based on experience here and in other metropolitan areas, transportation management strategies appear to be best suited as a supplement to projects that add capacity by extending the life of the improvements. Intelligent Transportation System (ITS) strategies can enhance the efficiency of the existing network by providing real-time information to motorists through means such as variable message signs and highway advisory radio. ITS strategies were used during the *22/Renew* reconstruction project and were a major factor in minimizing congestion during construction. Access management strategies such as provision of service roads, shared driveways, reverse frontage lots, and left turn lanes can increase safety and road capacity. LVTS must investigate the use of these strategies in the future to extend the capacity life of the existing roadway network.

In addition to developing a balanced capital program, transportation planners are required to balance the need to build roads and the need to protect other public interests. A number of federal and state laws regulate highway construction relative to environmental features, historic structures, agricultural operations, and displacement of homes and businesses. These laws require that highways minimize and mitigate environmental damage and disruption to communities. They also require lengthy and expensive planning and design studies that slow the highway construction process. Major capacity improvements take an average of 12 to 15 years to proceed from the planning stage to construction.

GOAL

To provide a safe, well-maintained road network that facilitates the movement of traffic.

POLICIES

- Give high priority to projects that upgrade unsafe roads and intersections, rehabilitate or replace defunct bridges, and upgrade existing highways that are deficient.

IMPLEMENTATION

- The LVPC will review PENNDOT safety data and assist in identifying intersections and corridors with a high crash rate.
- The LVPC will conduct planning studies on high priority safety and congested corridors and program appropriate improvements.
- The LVPC will recommend to LVTS that regional highway plans and programs contain funding targeted solely toward implementing safety improvements.
- Municipalities should include a transportation element in their comprehensive plans. At a minimum, the transportation element should include a plan to deal with locally defined safety problems.

GOAL

To alleviate and mitigate traffic congestion and to provide access to major traffic generators that are consistent with this plan and the transportation plans and programs adopted by the Lehigh Valley Transportation Study (LVTS).

POLICIES

- Plan, program and build highway capacity improvements in areas recommended for urban development in this comprehensive plan.
- In planning access projects give highest priority to those that improve access to Allentown, Bethlehem and Easton and support urban revitalization in these cities.
- Address intermodal connections where appropriate.
- Address interregional and interstate travel needs as necessary.

IMPLEMENTATION

- The LVPC will promote land use planning and land use ordinances that coordinate development with the availability of road capacity and public transit service.

- Municipalities should assure that the land use and transportation elements of local plans are coordinated.
- The LVPC will recommend that development which causes or aggravates congestion not be built unless the impact can by mitigated by the developers or the local municipality.
- The LVPC will review and comment on developments creating at least 1,500 average daily trips or that impact congested roadways.
- Developers should prepare traffic studies for all proposals expected to impact congested roadways or generate 1,500 or more average daily trips.
- The LVPC will recommend that intermodal connections be considered during the highway or land development project development process.

GOAL

To construct highway and bridge improvements that are compatible with the conservation, development and redevelopment goals of this plan.

POLICIES

- Design and location of major highway and bridge projects should be consistent with the natural resource and agricultural preservation provisions in this plan.
- Planning and design of road improvements should give careful consideration to potential negative impacts on established neighborhoods and local communities.

IMPLEMENTATION

- The LVPC will review and comment on major road improvements and alignments to insure consistency with environmental goals and policies in this plan.
- The LVPC will support proposed road improvements that are least intrusive on existing residential settlements.
- The LVPC will support traffic calming and context sensitive design strategies in appropriate areas.
- The LVPC will participate in environmental and design studies associated with major projects.

GOAL

To promote economy and efficiency in highway planning, design, and function.

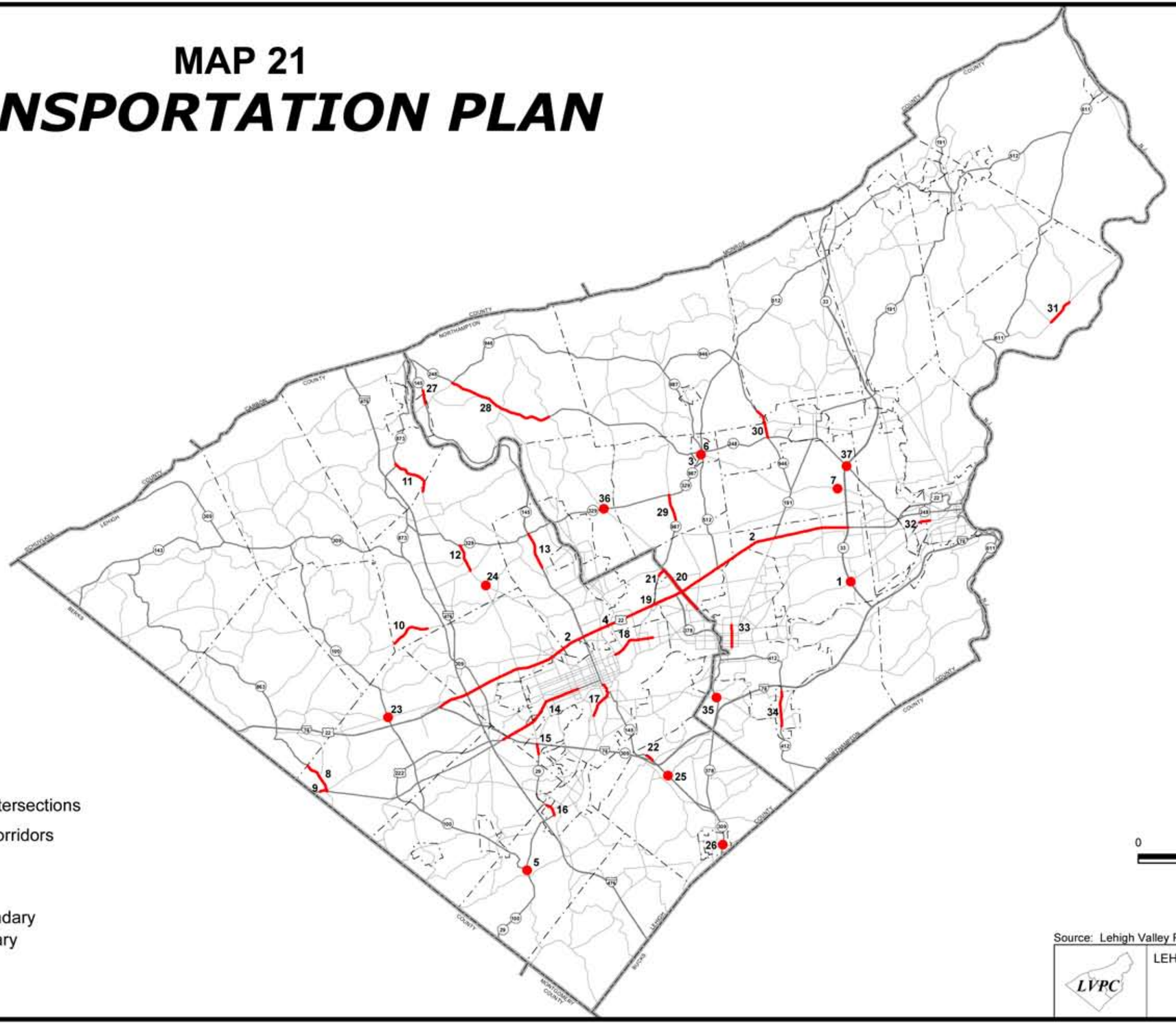
POLICIES

- Preserve arterial roads for their through traffic carrying function by reducing on-street parking and curb cuts for driveways through access management techniques.
- Highway improvements should be scaled to needs that result from reliable travel forecasts. Improvements to existing highways at current locations are generally preferred over relocations and bypasses.
- Improvement of existing interchanges on Route 22, I-78, the Pennsylvania Turnpike and Route 33 to resolve major safety and capacity problems will be supported if sufficient funds are available. Interchanges at new locations are not recommended by LVPC.
- The LVPC will support strategies for transportation management, intelligent transportation systems, access management practices, and context sensitive design in situations consistent with this plan.
- Improve sidewalk, trail, and local street connectivity to reduce the number of vehicle trips taken on the major highway network.
- Municipalities should adopt impact fee ordinances to help finance highway improvements.

IMPLEMENTATION

- Where feasible, municipalities and PENNDOT should eliminate on-street parking on congested arterial roads and minimize direct access to arterial roads.
- The LVPC will encourage consideration for public transit, bicycles and pedestrians in reviewing highway plans and projects.
- The LVPC and LVTS will support the implementation of ITS strategies in corridors where the capacity of the existing roadway receives a significant benefit as a result of the improvement.
- Where appropriate, the LVPC will promote carpooling, staggered work hours, public transit and other transportation management techniques to reduce peak hour travel demand and reduce energy consumption. Local businesses should support such activities.

MAP 21
TRANSPORTATION PLAN



High Priority Intersections

High Priority Corridors

Major Roads

Major Roads

Municipal Boundary

County Boundary

N

0 2 4 6 Miles

Source: Lehigh Valley Planning Commission, 2010

LEHIGH VALLEY PLANNING COMMISSION
961 Marcon Boulevard, Suite 310
Allentown, PA 18109-9397
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- The LVPC will work with municipalities to develop implementable access management ordinances.
- Develop and expand park and ride lots where there is demand for such facilities.
- The federal, state and local governments should provide adequate funds to pay for needed construction and maintenance.
- Developers should finance roadway improvements proportionate to the traffic impact of the development.
- PENNDOT and other agencies of the state and federal government should develop and adopt procedures to reduce the time and cost involved in preparing and reviewing environmental impact studies.

PUBLIC TRANSPORTATION

The Lehigh and Northampton Transportation Authority (LANTA), was formed by Lehigh and Northampton counties in 1972 to provide public transportation services for the inhabitants of the Lehigh Valley. LANTA's operations are comprised of two operating divisions — Metro and Metro Plus. The Metro division provides fixed-route services along 26 routes and carries about 5.2 million trips annually. It serves the Lehigh Valley metropolitan area including the cities of Allentown, Bethlehem, and Easton and their surrounding environs (see Map 18). The Metro Plus division provides door-to-door service for the region's elderly and those with disabilities. This coordinated transportation system is operated through a contract with a private transportation provider and provides nearly 500,000 trips annually.

Transit service is essential for providing mobility for the disabled, elderly, low-income individuals, and those not owning automobiles. Other potential benefits of mass transit include improved air quality, reduced congestion, and more efficient use of existing road capacity.

Current land use development patterns have not favored the use of public transportation. Development densities in the Lehigh Valley are low and development is spread out rather than concentrated in high density core areas. Populations and jobs are moving out from the cities to suburban locations. This has resulted in an increase of suburb-to-suburb commutes, increasing travel times and generating significant obstacles for public transportation to overcome. While transit usage in the urban core remains high, most new system demand comes from these less financially productive outlying areas. The LVPC and LANTA have jointly entered into a Memorandum of Understanding (MOU) to collaborate in promoting land use and development techniques that will make Lehigh Valley municipalities more favorable to public transit.

LANTA's *Moving LANTA Forward Plan* and its *Land Use Toolkit* will guide the authority's operating and land use advocacy for the next decade. The documents focus on addressing unmet public transit needs in the region, expanding mobility and access to employment opportunities, increasing the visibility and convenience of services, and establishing development guidelines and standards that municipalities can follow in creating development opportunities favorable to transit operations.

In the 1980's an intermodal center was developed in the City of Bethlehem to serve as a transportation hub. In the summer of 2007 a transportation hub was developed in Center City Allentown. The center provides a protected terminal and transfer center for transit passengers and includes items of convenience such as ticket vending, electronic bus information, beverages, and newspapers. A similar facility is being planned in Easton. Map 21 shows the locations of the facilities.

A sufficient supply of convenient, affordable, and reliable inter-city bus service exists to popular destinations such as New York City and Philadelphia. This service is provided by private, unsubsidized bus operators Carl R. Beiber and TransBridge Lines, Inc.

GOAL

To promote economy and efficiency in public transportation planning, design, and function.

POLICIES

- Fixed route transit service should be provided only in those areas where service is financially feasible through operating revenues and necessary subsidies.
- Privatization of mass transit service should be considered when such service is provided at equivalent service levels with lesser public subsidies.

- Public transportation equipment and facilities should be replaced and upgraded as needed to provide safe, reliable and cost-effective service.
- Fixed route service scheduling and routing should be evaluated and adjusted as needed to produce efficient and market-responsive service.
- When feasible, mass transportation should be used to mitigate short term, high volume traffic destinations such as special events rather then building permanent highway capacity improvements.
- Site plans should include features that make the use of mass transit easy, safe and convenient.

IMPLEMENTATION

- The LVPC will promote higher density residential, employment, shopping and activity centers where transit service exists or is feasible, provided the area meets the other policies of this plan.
- The LVPC review of site plans and subdivisions should advocate easy, safe and convenient facilities for potential transit users.
- Replace buses on a regular basis based upon life-cycle costing and LANTA's financial capacity.
- LANTA should continue to install bicycle racks on buses where demand warrants.

GOAL

To provide adequate mobility for the elderly, the handicapped, the poor, and those who do not own an automobile.

POLICIES

- Provide convenient and reliable fixed-route service between higher density residential areas, major employment concentrations, important shopping areas, key government facilities, medical facilities, and other activity areas.
- Provide coordinated specialized public transportation for people who cannot use conventional bus services.
- Shopping, workplace, government, and housing facilities with transit dependent clients or workers should be sited at locations where transit service exists or is feasible.

IMPLEMENTATION

- LANTA should continue to provide mass transit service in the Lehigh Valley. It should be supplemented with private service as feasible. The LVPC should assist LANTA in implementing these policies.

GOAL

To support expansion of the public transit system and to advocate transit use as an alternative to single occupant driving.

POLICIES

- LANTA should continue to offer and improve a wide range of service options to meet a variety of mobility needs in the Lehigh Valley.
- Plan, program, and build intermodal transportation improvements to accommodate current and future travel demand.

IMPLEMENTATION

- LANTA and LVPC should continue to explore ways to improve and expand transit service.

GOAL

To have a sufficient supply of convenient intercity public ground transportation available to popular destinations such as New York City and Philadelphia.

POLICIES

- This service should be met through unsubsidized privately owned bus operators.
- New publicly subsidized service should not be established unless established unsubsidized bus operators are unwilling or unable to supply a sufficient convenient service.
- Adequate and convenient terminals should be available for intercity buses.
- Service needs and opportunities to improve transportation to destinations outside of the Lehigh Valley should be reviewed on a regular basis or as significant changes dictate.

IMPLEMENTATION

- The LVPC will monitor intercity transportation. Further study will occur if the monitoring reveals any problems.
- The LVPC will advocate and support the upgrading of intercity bus terminals.
- The LVPC will review and comment on site plans and subdivisions advocating the conversion of rail rights-of-way to non-transportation/ recreation uses.
- The LVPC will support proposals for subsidized passenger rail service only if a need for the service is established and if rail service is as cost effective as other modes.

RAILROADS

Railroads remain a significant part of the transportation system. Good rail service is essential for the siting of numerous types of businesses. For instance, distribution centers utilize rail service. In an era when rail service is declining or threatened in some communities, the Lehigh Valley remains in a relatively strong position. The dominant class 1 rail freight carrier in the Lehigh Valley is the Norfolk Southern Railroad, which operates lines that were formerly operated by Conrail. The railroad's Newark, New Jersey to Harrisburg main line passes through the two counties. The *2009 Pennsylvania Intercity Passenger and Freight Rail Plan* identifies this line as part of the Central Corridor, the largest of the six priority freight corridors in the state. A secondary main line extends north from Allentown to the Scranton area. Numerous branch lines provide Norfolk Southern service to area shippers. The Cement Secondary which serves the Forks Industrial area and the C&F Secondary which serves the Fogelsville area are the most prominent of the branch lines. A second class 1 carrier also serves the Lehigh Valley via trackage rights. CP Rail has assumed the operations once provided by the Delaware and Hudson Railway. The area is also served by six short line railroads: RJ Corman-Allentown, the East Penn Railroad, the Northampton Development Corp. Railroad, the Belvidere & Delaware River Railroad, the Delaware Lackawana Railroad and the Lehigh Valley Rail Management (LVRM) railroad.

These railroads operate several significant rail facilities within the Lehigh Valley. The Allentown Classification Yard is one of the major yards in the Norfolk Southern System. The LVRM operates an intermodal terminal and container terminal, both located in Bethlehem.

Numerous rail carriers and shippers have been able to use funding available from the Commonwealth of Pennsylvania to upgrade existing track and to construct new track. This funding, available either under the Rail Freight Assistance Program or through the PA Capital Budget process, has allowed new customers to use rail service and has upgraded service for existing shippers. The use of these programs has supported economic development efforts in the Lehigh Valley. The LVPC has assisted economic development efforts by compiling an inventory of available rail-served sites.

Rail abandonments create unique opportunities for the reuse of the right-of-way when the land does not revert to the adjoining landowners. Lehigh County, Northampton County and several municipalities have acquired abandoned rights-of-way for recreation and other uses. Rights-of-way are well suited for hiking trails and bicycle paths.

No commuter or intercity passenger service is available in the two counties. The most recent passenger train to actually enter the two counties was the Southeastern Pennsylvania Transportation Authority service to Philadelphia which ended in 1981. Passenger service from nearby Phillipsburg, New Jersey to Newark was ended in 1983 by New Jersey Transit.

Two rail passenger initiatives could involve the Lehigh Valley at some future time. The first is an attempt to restore service between Upper Bucks County and Philadelphia. The service would terminate in Shelly (between Coopersburg and Quakertown). A feasibility study was completed in 2000 for the Bucks County Planning Commission. The study identified one main alternate and two subalternative proposals. These alternatives had total capital costs ranging from $180 million to $215 million. Because of high capital costs, a revised service was developed in a study commissioned by the Bucks County Transportation Management Association entitled *Quakertown Stony Creek Passenger Rail Restoration Business Plan* (January 2006) Ridership for the service was estimated to be between 1,200 and 2,000 weekday passenger trips. A park and ride lot would be built in Shelly and would in part serve Lehigh Valley riders. Capital costs, including rolling stock and development of

seven (7) stations, were estimated to be $95 million, with annual operating cost estimates of $4.3 million. Bethlehem and Hellertown are developing parts of the rail property north of Shelly as a a linear park with a walking trail. The rail proposals have failed to attract much support by planners and other officials in the Lehigh Valley because they are expensive, ridership estimates are low.

In April, 2010 the Pennsylvania Component of the Central New Jersey/Raritan Valley Transit Study was released by the Lehigh Valley Economic Development Corporation, Lehigh and Northampton counties. The consultant for this project was SYSTRA Consulting Inc., an international consulting firm.

The study evaluated two bus alternatives and one rail alternative for providing transit service to central New Jersey and New York City. The commuter rail service would connect with the current terminus of rail at High Bridge, New Jersey and then proceed to New York City. In Pennsylvania the service would follow the Norfolk Southern alignment south of the Lehigh River with station stops in Allentown, Bethlehem, and Easton.

Rail ridership from Allentown, Bethlehem, and Easton in 2030 is projected to be 800 riders plus 395 riders from Phillipsburg, Bloomsbury and Hampton, New Jersey. The 2010 operating and maintenance costs for the service are estimated to be $14.90 million dollars. Of this total $3.3 million is estimated to come from the fare box: $11.6 million in public subsidies will be required to operate the service. Capital costs for the Pennsylvania portion of the railroad are estimated at $658.9 milliion.

The SYSTRA study provides valuable data for planners, public officials, and the public at large to consider. The data reveals a number of problems with the rail alternative that will need to be resolved if rail is to be expanded in the future.

- To date New Jersey has made no commitment to expand rail west of High Bridge, New Jersey.
- There are no public funds committed to pay capital or operating costs.
- No work has been done to identify who would operate a rail service or who would subsidize operating costs.
- There is no commitment or agreement with Norfolk Southern for use of their facilities.
- Ridership forecasts for 2030 are low and rail travel times are longer than present bus service.

Clearly much needs to be resolved if the rail alternative is to be implemented in the future.

GOAL

To have available and dependable rail freight service to support existing businesses and to attract new businesses.

POLICIES

- The private sector should meet this goal to the greatest extent possible.
- Public financial assistance for upgrading railroad facilities should be undertaken in support of economic development opportunities when those opportunities are consistent with the criteria of this plan.
- Public financial assistance for upgrading railroad facilities should be undertaken when such improvements represent a cost-effective means of reducing highway travel.
- Public acquisition, upgrading and operation of rail lines proposed for abandonment should be limited to instances where the investment is cost-effective relative to employment opportunities and tax revenues.
- Land near rail lines which meets the comprehensive plan's criteria for industrial siting should be designated for industrial uses.
- Support access to facilities and freight terminals that are otherwise compatible with this plan.
- Provide safe at-grade crossings by upgrading to current safety standards.

IMPLEMENTATION

- The LVPC will support public assistance for rail system improvements according to the policies in this section.
- The LVPC will update the inventory of rail-served industrial sites in coordination with area economic development efforts.
- LVPC reviews of municipal comprehensive plans and zoning ordinances will advocate industrial uses for rail-served sites, when those sites meet the criteria of this plan for industrial uses.

GOAL

To meet recreation, transportation and utility needs by acquiring or retaining abandoned rail rights-of-way.

POLICIES

- Rail rights-of-way proposed for abandonment should be acquired if analysis shows that they are desirable for recreation, road right-or-way, utility right-of-way or other uses.
- Rail rights-of-way should be preserved for future rail reuse if analysis shows that the re-establishment of future service is necessary, feasible, and cost effective.

IMPLEMENTATION

- The LVPC will review and make recommendations about rail abandonments based on the above policies.
- Municipalities and/or the counties should acquire rail rights-of-way needed for recreation or transportation purposes.

AIR TRANSPORTATION

Lehigh and Northampton counties are well served by air passenger carrier, air cargo, and general aviation service. The Lehigh Valley International Airport (LVIA) provides a full range of passenger, general aviation, and air cargo services. In addition, large international airports in Philadelphia and the New York City area are within a two-hour drive of the region. Queen City Airport in Allentown, Braden Airpark in Forks Township, the Slatington Airport, and the Flying "M" Aerodrome in Heidelberg Township also serve general aviation aircraft needs. Map 18 shows the general location of the facilities mentioned.

LVIA is operated by the Lehigh-Northampton Airport Authority. It occupies a 1,000 acre site. The main runway is 7,601 feet long and 150 feet wide. The crosswind runway is 5,790 feet long and 150 feet wide. The airport's tri-level passenger terminal building was opened in 1975. A new departure building, the Wiley M. Post Concourse, opened in 1997. A new flight control tower became operational in 1995. The major issues facing the airport in the next decade include planning for future runways/runway extensions to meet projected demand and working with local, state, and federal governments to achieve compatible off-airport land use in the noise impact areas.

Between 1972 and 2002, total passenger movements at LVIA increased from 368,689 to 798,154. During the same period, operations (take-offs and landings) increased from 111,674 to 142,341. This rate of growth has been moderated by the events of September 11, 2001. To deal with growth, the LVIA Master Plan assumes that the current level of airline service will remain during the 20-year planning period from 1989–2009. Most of the increased passenger activity occurring in the 1990s was accommodated by larger narrow-body aircraft and an increased number of flights by regional jet and turboprop aircraft.

The LVIA Master Plan presented four alternatives for meeting airfield capacity needs through 2009. The recommended alternative was the most conservative and could be implemented on the existing airport property — a 2,400 foot extension to the main runway and the construction of a runway parallel to the main runway with a 700-foot separation distance to the north.

LVIA continues to implement elements of the Noise Compatibility Study which includes land acquisition, soundproofing structures, relocation, acquisition of aviation easements, zoning overlay districts, comprehensive plan revisions, real estate disclosure, revision of building codes and environmental impact review procedures.

Queen City Airport is owned and operated by LVIA. The airport is located on a 198 acre tract of land in southwest Allentown, adjacent to I-78 and Lehigh Street. The airport's primary east-northeast/west-southwest oriented runway is 3,940 feet long and 80 feet wide. The crosswind runway is 3,380 feet long and 80 feet wide. The airport serves as a general aviation airport for private aircraft.

Braden Airpark is located on a 71.3 acre Forks Township tract just east of Tatamy. The general aviation airport has a paved runway that is 1,950 feet long and 50 feet wide. The airport was acquired by LNAA from private ownership in 1999.

Slatington Airport is a general aviation airport located on a 56.5 acre tract along the Lehigh River in Slatington. The privately-owned airport has a

2,500 foot north-south runway (2,000 feet are paved) that is 30 feet wide.

The Flying "M"Aerodrome is located at the base of Blue Mountain in northern Heidelberg Township. The privately-owned airport has a 2,375 foot long by 100 foot wide east-west oriented grass landing strip.

GOAL

To have air passenger carrier, air cargo and general aviation services that meet the needs of present and future Lehigh Valley residents and businesses.

POLICIES

- The LVIA should serve as the region's air passenger carrier, corporate aviation, and air cargo airport. All other airports should serve general aviation and specific corporate aviation needs.
- The LVIA should continue to be developed to service existing and forecast demand for scheduled and non-scheduled air carrier services, corporate aviation and air cargo in an adequate, safe and efficient manner.
- The LVPC prefers that all future runway expansions at LVIA be limited to the main airport property bounded by Airport Road on the east, Race Street on the north, and LVIP #3 on the south unless it is demonstrated that expansion beyond these limits is necessary due to safety and/or site limitations of the main airport property described above and the expansion is in accord with the FAA approved Airport Layout Plan.
- Local highway access to the LVIA should be improved as necessary on the basis of periodic evaluation of access needs in connection with the LVIA Master Plan and in conjunction with the airport's relationship to the surrounding industrial parks and future development of airport property located contiguous to industrial park uses.

IMPLEMENTATION

- Lehigh and Northampton counties should continue to support the improvement and expansion of LVIA to meet existing and future demand. Any expansion should be environmentally sound and acceptable to the surrounding municipalities.
- Planned improvements at LVIA should be based on the airport's role in the National Plan of Integrated Airport Systems (NPIAS), the airport's role in the Pennsylvania Airport System Plan, and FAA requirements.
- Lehigh and Northampton counties and the Lehigh-Northampton Airport Authority should support local highway projects that improve access to LVIA Airport.
- The Lehigh-Northampton Airport Authority should update the Regional Aviation System Plan to identify methods to preserve system capacity, particularly privately-owned general aviation airports, and further coordinate the relationship between LVIA and outlying general aviation airports.

GOAL

To maximize the compatibility of LVIA operations and nearby land uses.

POLICIES

- Future development in the LVIA area should be compatible with existing and projected air traffic operations.
- Remedial and preventive measures such as land acquisition, relocation, zoning overlay districts, environmental review, soundproofing, revised building codes, real estate disclosure and easement acquisition should be used as needed to promote compatibility with existing and future LVIA operations.
- Encroachment of airport operations on existing residential areas should be minimized. New residential development should not encroach on LVIA or its glide paths.
- Airport operations should seek to minimize the noise impacts on existing developed areas as much as possible without compromising safety.

IMPLEMENTATION

- LVIA personnel and the five municipalities impacted by airport operations should work to revise local zoning ordinances where needed.
- The airport authority and surrounding municipalities should work together to ensure compatibility of airport and local plans.
- During reviews of local comprehensive plans,

zoning ordinances, or subdivision and land development ordinances, LVPC staff will note if there are any conflicts between the local land use regulation and the Airport Master Plan Noise Exposure Map and other appropriate airport plans and studies. The airport authority will be notified whenever conflicts are identified.
- LVPC will comment on subdivision and land development plans that encroach upon LVIA, are within flight glide paths, or are of an incompatible nature.

GOAL

To optimize to operational efficiency, effectiveness, and safety of the facility.

POLICIES

- The Lehigh-Northampton Airport Authority (LNAA) should continue to conduct and revise, as necessary, the LVIA Master Plan, FAR 150 Airport Noise Compatibility Study, Regional Aviation System Plan, and any other pertinent studies to ensure efficiency, effectiveness, and safety.

IMPLEMENTATION

- The LNAA should update its airport facilities and operations plans to incorporate the latest safety technologies.
- Future capacity needs should be updated on a regular basis and as changes in long-term market conditions and planning assumptions dictate.

BICYCLES AND PEDESTRIANS

The 2000 census estimated 10,300 commuters walked to work and another 550 biked to work, representing 3.8% and 0.2%, respectively, of all Lehigh Valley commuters. Pedestrian safety is an issue in the Lehigh Valley. From 1996 to 2000, 42 pedestrian deaths have occurred in the region. Pedestrian fatalities account for 13% of transportation-related deaths over that five year period. There were 221 pedestrians injured in the Lehigh Valley in 2000, down 11% from 1999.

The issue of developing and enhancing the Bicycle/Pedestrian (B/P) network in the Lehigh Valley is one of increasing options available to the public. While most municipalities can and should do a better job of providing pedestrian facilities like sidewalks and bikeways, it is unlikely that such facilities will relieve the Lehigh Valley of its current air quality problems or future congestion problems. Potential users of the B/P network still must contend with low-density land development patterns (resulting in longer trips for all purposes) and a climate that is not always conducive to B/P activity. However, to the degree feasible facilities should be developed to improve the safety and convenience of walking and biking. Properly designed and available facilities will produce more users and increase the frequency of use.

The B/P network is made up of two distinct components. The first encompasses the highway and sidewalk network. Bicycles and pedestrians are allowed on the current highway network with the exception of expressways. Sidewalks are part of the pedestrian network as well. Most sidewalks in the Lehigh Valley are in the cities and boroughs. Highways can be made more B/P friendly by widening and stabilizing shoulders on roadways and keeping them clean to allow for safe bicycling. Existing and potential B/P usage should be taken into account when designing a new road or widening an existing road. In urban and suburban areas without sidewalks municipalities can mandate installation in new subdivisions in the future. Sidewalks must be present, continuous, well-designed, and maintained to provide for a safe and usable network. Consideration should be given to pedestrian crossing phases for traffic signals located in urban areas. In some residential neighborhoods it may be appropriate to consider traffic calming measures to lessen the dominance of the automobile and increase safety.

The second component of the B/P network consists of multiuse paths, distinguished from the previous network by protected rights-of-way. This network is developing but not truly regional at this point (see Map 21). The parts in place have come about primarily through efforts of local municipalities such as Whitehall Township, Palmer Township, and Plainfield Township, and through the development of the Delaware and Lehigh Canal and State National Heritage Corridor (D&L Trail). Emphasis should be placed in developing a series of multiuse paths that address regional transportation needs. Of particular interest should be “missing links” in the network, with the goal of developing a network of

paths that allow users to move around the region. Also, communities should consider linking adjacent residential developments through B/P paths to reduce the dependence on the automobile and to increase alternatives to the user.

The LVPC has been involved in identifying and addressing B/P issues. The first effort was a regional Bicycle/Pedestrian Advisory Committee, formed as a subcommittee to the LVTS Technical Committee. The idea in the formation of this group was to look at this topic from a regional perspective. In practice, however, the process did not produce tangible results for a number of reasons, one being that these issues are more able to be identified and addressed from a local perspective. In response, the LVPC asked to be included in citizen traffic advisory committees established in the cities of Bethlehem and Allentown. These committees have identified high priority activities to address B/P issues, primarily safety-related issues. A joint thermoplastic crosswalk project was developed and programmed for the two cities. The LVPC will continue to work with these committees to develop viable B/P projects and encourage other communities that have B/P issues to set up similar committees.

Most Lehigh Valley communities and PENNDOT need to be more active in addressing B/P issues. In addition to the measures mentioned above site design can be accomplished in a way to be more conducive to pedestrian travel. Allowing higher densities and mixed use developments under the zoning ordinance often will shorten trip lengths, thus making them more attractive to be taken on the B/P network. Limiting access points along arterials can also make B/P travel safer along those routes.

GOAL

To support bicycle and pedestrian activity and to provide safe access to the transportation system for cyclists and pedestrians in the Lehigh Valley.

POLICIES

- Promote transportation infrastructure improvements such as shoulder improvements, sidewalks, and crosswalks to resolve bicycle and pedestrian safety issues. The appropriateness of bicycle facilities should be considered as part of all road projects.
- Support the development of regulations in local municipalities that mandate construction of sidewalks and pathways to serve pedestrian and other non-motorized traffic.
- Support the construction of rails-to-trails projects for use in both recreation and transportation.
- Promote the construction of missing links in the bicycle and pedestrian networks.
- Support future development patterns conducive to non-motorized travel.
- Provide safe, convenient bicycle parking and storage facilities in urban areas.
- PENNDOT should adopt B/P design and performance standards; consideration of pedestrians and bicyclists should be given when designing and locating traffic control devices, signs, and crosswalks.

IMPLEMENTATION

- The LVPC, through its involvement with LVTS, will support consideration of infrastructure improvements for bicycles and pedestrians as part of highway improvement projects.
- LVPC will encourage the construction of sidewalks in appropriate growth areas during reviews of site plans and subdivisions.
- PENNDOT should add bicycle lanes/shoulders to appropriate roads during construction if demand warrants.
- The LVPC will continue to support path and trail development through the Transportation Enhancement Program.
- The LVPC will support streetscape projects that are proposed in urban areas under the Hometown Streets/Safe Routes to School Program.
- The LVPC will continue its involvement in municipal B/P committees to develop viable B/P projects.
- The LVPC will encourage communities with high levels of B/P activity to organize a committee to address outstanding issues.

CLEAN AIR ACT/ AIR QUALITY COMPLIANCE

Congress passed the Clean Air Act in 1970. This Act was amended in 1977 and, most recently, in 1990. The act contained National Ambient Air Quality Standards (NAAQS) for three measures of air quality: ozone, carbon monoxide and particulate matter. The 1977 Clean Air Act Amendments (CAAA) set 1982 as the deadline for urban

areas to meet NAAQS. Areas which could not meet the standards by 1982 were designated as non-attainment areas and given an extension to 1987 to meet the standard. The Lehigh Valley was able to meet all pollution standards except ozone. Therefore, the Lehigh Valley was designated as an ozone non-attainment area.

Ozone is formed by a chemical reaction between volatile organic compounds, oxides of nitrogen and sunlight. Because a high percentage of volatile organic compounds comes from tailpipe emissions, a plan to reduce mobile source emissions was required. The responsibility for developing that plan was placed on the Lehigh Valley Planning Commission in conjunction with the Lehigh Valley Transportation Study (LVTS). The resulting plan had two main strategies to reduce tailpipe emissions. The first, under the auspices of PENNDOT, was an automobile inspection and maintenance (I/M) program designed to have vehicles burn fuel more efficiently thereby reducing emissions. The second strategy dealt with the development and implementation of transportation control measures such as carpooling and ridesharing, elimination of four-way stop controlled intersections, coordination of traffic signal timing and increased transit usage. The *1982 Air Quality/Transportation Plan* became part of the State Implementation Plan (SIP). It was submitted to EPA in 1982 and subsequently approved.

The implementation of the I/M program and most of the transportation control measures did not result in meeting the standard. Therefore, in the 1990 CAAA, the Lehigh Valley was categorized as a "marginal" non-attainment area, the least severe of non-attainment categories. The Lehigh Valley met the NAAQS for ozone in subsequent years and was designated as an "attainment-maintenance area" on March 4, 2008. A maintenance plan for the region that provides for continued attainment of the NAAQS was submitted and approved.

On December 14, 2009, EPA issued a more stringent NAAQS for small particulate matter ($PM_{2.5}$) and designated Lehigh and Northampton counties as a non-attainment area for the 24-hour (daily) standard. Fine particulates are emitted from tailpipes and also from tire wear and brake wear. Therefore, transportation plans and programs must be analyzed to determine their impact on the region's ability to meet the NAAQS.

GOAL

To ensure that air quality in the Lehigh Valley meets the National Ambient Air Quality Standards for ozone and small particulate matter ($PM_{2.5}$).

POLICIES

- Highway improvement projects that have a negative impact on air quality should not be programmed (as mandated by the Clean Air Act Amendments of 1990).
- Transportation control measures such as carpooling and encouraging increased transit usage should be implemented, where feasible, to reduce vehicle miles traveled and emissions.

IMPLEMENTATION

- Local businesses should implement the policies of the transportation plan to reduce reliance upon the single occupant vehicle and reduce congestion and emissions.
- The LVPC will support highway construction projects and transportation management strategies that reduce emissions.
- The LVPC will utilize the computerized travel model and air quality software to assess air quality impacts of major highway and transit improvements.
- The LVPC will perform an analysis of the LVTS *Transportation Improvement Program* and Long Range Plan to ensure conformity of highway improvements with the Clean Air Act Amendments of 1990.

SEWAGE DISPOSAL

The primary state legislation for the protection of water quality is the Pennsylvania Clean Streams Law. To execute this law, the Pennsylvania Department of Environmental Protection (DEP) has been granted the power to write, adopt and enforce regulations. The Pennsylvania Sewage Facilities Act of 1966 (as amended), more commonly called "Act 537," is the primary law controlling individual and community sewage disposal systems. Act 537 requires municipalities to submit official sewage facilities plans to the DEP for approval. These plans show the current and future needs of the municipality and assess wastewater facility choices to meet these needs. They are reviewed by appropriate planning agencies, including a county planning agency, to determine consistency with land use goals and policies.

The Lehigh Valley Planning Commission has maintained a long range plan for sewage disposal in Lehigh and Northampton counties since 1967. The latest version of this plan was prepared in 1995. It contains the detailed sewage disposal policies that are the basis of LVPC project reviews. The plan identifies existing sewage disposal systems as well as sewage disposal concerns for the region. The systems are divided into two categories based on the type of service area involved as follows:

— *Public sewer systems* — publicly-owned systems which serve a generalized service area and designed independently of specific land developments or subdivisions.
— *Central sewer systems* — publicly or privately-owned systems designed primarily to serve a single subdivision, land development or rural public use involving two or more lots or domestic sewage disposal in excess of one equivalent dwelling unit (EDU) per lot.

There are currently 17 public and 25 central sewage treatment facilities in the two-county region (see Map 22). The location of major public sewer facilities is a key factor in the management of growth in the Lehigh Valley. Approximately 84% of all approved building lots during the 1994 to 2003 period were served by public sewers. Many municipalities within the two counties need to examine their sewage treatment needs, particularly the need for future allocation of public sewage treatment plant capacity. Addressing these needs requires a revised Act 537 Sewage Facilities Plan. Based on 2000 information, 40 of the 62 municipal Act 537 plans in the region are at least 10 years old. Act 537 requires municipalities to review and revise their official plans whenever the municipality or DEP determines that the plan is inadequate to meet existing or future sewage disposal needs of the municipality.

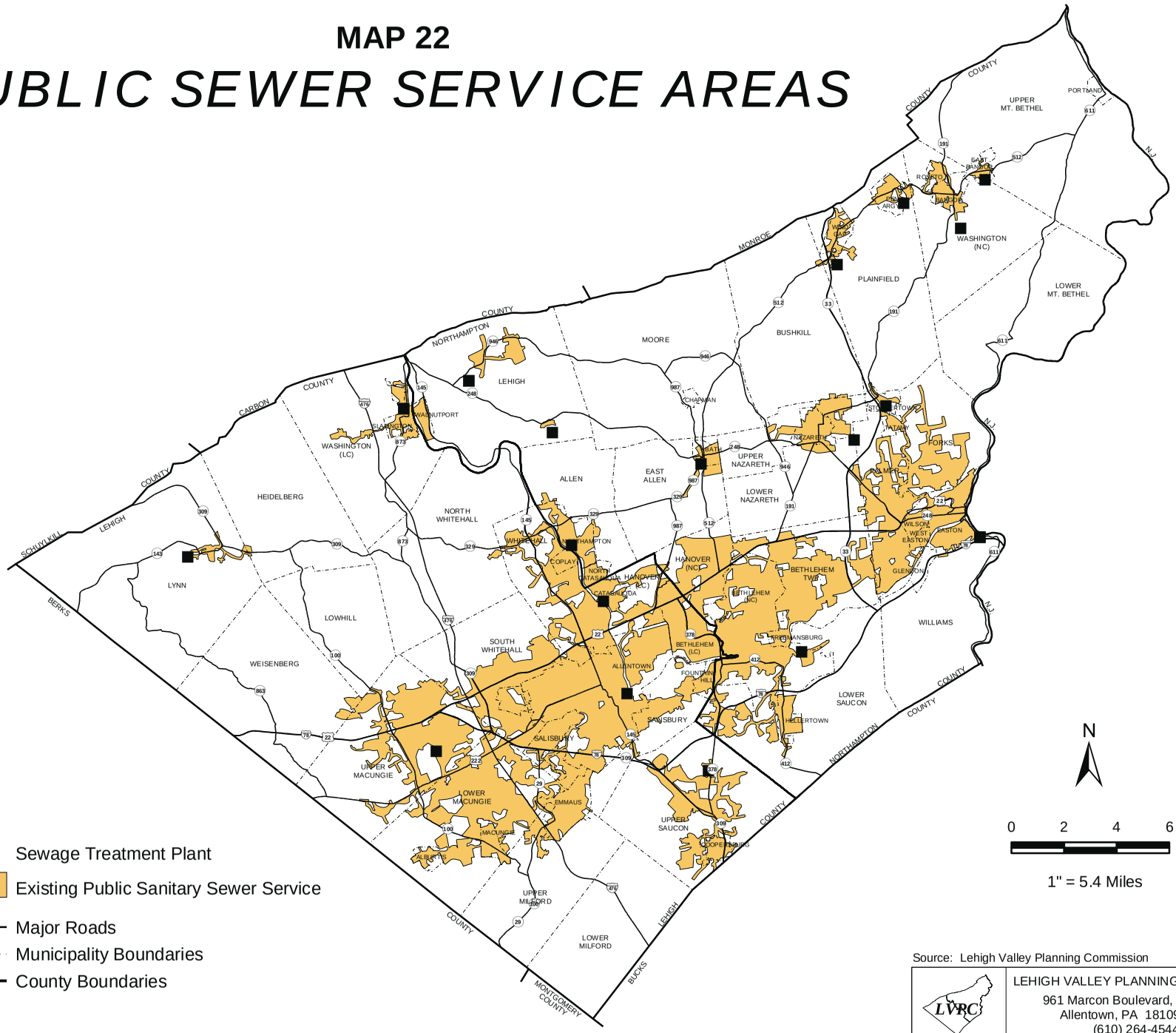
Under Act 537, municipalities are responsible for assuring that safe and reliable sewage disposal is provided within municipal boundaries. Lack of adequate planning by municipalities for sewer needs is a major concern especially in rural townships. Solutions to sewage disposal problems in rural areas can be very expensive and can promote additional urban development. Municipalities often develop sewage plans independently from comprehensive plans and zoning ordinances. The lack of coordination among these plans can result in costly public improvements to solve problems. Building new sewage collection and treatment facilities involves substantial planning, engineering and construction costs. Most federal funding was eliminated by the Water Quality Act of 1987. The primary funding mechanism available is PennVEST which provides low interest loans for financing needed sewer and water projects. Even with PennVEST, sewage projects are currently funded predominantly with local funds.

Urban development in rural areas served by central sewage systems is a concern. Many of these systems have been created simply to accommodate higher density development in areas not served by public sewage systems. Once the system is in place, some system owners do not invest sufficient funds to maintain and operate the system properly. Municipalities are responsible if the systems fail to operate properly or become overloaded.

Another concern is the lack of preventive measures to ensure that development using on-lot sewage disposal will not become a future prob-

MAP 22

PUBLIC SEWER SERVICE AREAS



Source: Lehigh Valley Planning Commission

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lem. Municipalities can require a fully tested on-lot replacement area for new development proposed for on-lot sewage disposal. This will provide a low-cost, on-lot alternative should the primary system fail. According to 2000 information, 14 municipalities within the two counties require a fully tested, undisturbed replacement area.

GOAL

To provide environmentally sound sewage disposal for all persons.

POLICIES

- Tested primary and replacement absorption areas should be provided for each lot proposed for on-site sewage disposal.
- Adequate up-to-date Municipal Official Sewage Plans should be maintained consistent with Act 537 — the Pennsylvania Sewage Facilities Act of 1966.
- Areas with malfunctioning on-lot sewage disposal systems or malfunctioning central systems should be provided with the most cost-effective solution to the problems based upon an evaluation of appropriate alternatives.

IMPLEMENTATION

- Municipalities should adopt ordinance provisions allowing for municipal inspection and enforcement of on-site system maintenance requirements.
- DEP and municipalities should require a primary and replacement tested absorption area for lots proposed for on-lot sewage disposal.
- Municipalities should monitor the performance of all sewage disposal facilities within their borders and take corrective measures, as appropriate.
- Municipalities should maintain an up-to-date Official Sewage Plan, as prescribed by law.
- The LVPC will support the sewage facilities policies through MPC, Act 537 and other project reviews.

GOAL

To coordinate economical, efficient sewage disposal with existing and future development.

POLICIES

- Urban development should locate in areas where the public sewer system can accept additional growth, either at present or through limited expansion and upgrading, consistent with the comprehensive plan recommendations for urban development.
- Urban development should be discouraged in areas where it can only be served by on-site sewage disposal systems or new central sewage facilities. However, urban development in areas recommended for rural development in this comprehensive plan may be served by existing or expanded publicly-owned sewage facilities under the following conditions:
  - — the expansion is contiguous with the urban development area designated in this plan and does not include areas designated for natural resource preservation or farmland preservation,
  - — the expanded area is designated for urban development in the municipal comprehensive plan, zoning ordinance, and municipal planning for sewer expansions,
  - — the area will be served by publicly-owned water and its expansion will not create traffic safety or congestion problems.
- Public system treatment plant expansions and relief interceptors should be constructed to accommodate new development that occurs consistent with this comprehensive plan. The timing and sizing of these facilities should be consistent with the sewage flow forecasts included in the LVPC Sewer and Water Plan or suitable alternate forecast prepared by the municipality.
- In areas where the comprehensive plan recommends urban development, but where public sewers are not yet available, lot sizes smaller than one acre served by on-site sewage disposal should be allowed if the project is consistent with the municipal Act 537 plan and if a viable financing commitment exists for extension of sewer lines. A tested primary absorption area should be provided for each lot and a capped sewer system should be installed. The capped sewer system should be connected to the public system when available.
- Rural development should be served by on-lot sewage disposal facilities except where local

zoning allows conservation design techniques to preserve natural resources or farmland using publicly-owned central sewage disposal facilities. Publicly-owned sewage treatment and disposal may also be acceptable for recreational, institutional or other public uses that by necessity require a rural location.

- In areas recommended for urban development, interim central sewage facilities should be allowed if properly installed and maintained, and if the development can be connected to public sewers within five years.
- If, after an evaluation of alternatives, it is determined that a public sewage system is the best solution to an existing sewage disposal problem, then the capacity of the new system should be determined as follows:
  - — If the provision of sewers means the area would be recommended for urban development in this comprehensive plan, the system should be designed to serve additional urban development areas supported by an updated planning analysis.
  - — If the area would not be recommended for urban development in this comprehensive plan, even with sewers, the system should be designed to serve only the existing development.

IMPLEMENTATION

- The LVPC will prepare a supplement to the 1995 Sewage Facilities Plan to reflect revised population forecasts and future sewage flows.
- Municipal official sewage plans should be compatible with the municipal comprehensive plan and zoning and this comprehensive plan. Municipal plans should be coordinated with the sewage disposal plans/needs of adjacent municipalities.
- The Pennsylvania Department of Environmental Protection and municipalities should disapprove applications for new central sewage facilities to serve urban land uses in areas not recommended for urban development in the comprehensive plan.
- To ensure that central sewage systems are operated in accord with DEP standards, municipalities should assume ownership of any system within their borders. In the event that these systems remain private, municipalities should require assurances for proper long-term operation and maintenance.
- The LVPC will support the sewage facilities policies through MPC, Act 537 and other project reviews.

WATER SUPPLY PLAN

Preservation of water resources is a major priority of the regional water supply plan. Pollution and/or loss of potable water are potential problems facing many municipalities. Overall, water of adequate quality and quantity is available to meet current demands in the Lehigh Valley. However, the ability to provide a safe, reliable water supply could be adversely impacted without careful county and local planning. Water suppliers need to have emergency plans, establish emergency interconnections with other systems and implement water source protection programs to assure a safe, reliable supply. The LVPC has created several ordinances that are available for consideration by municipalities to help ensure water supplies of adequate quantity and quality for existing and future users. These ordinances include a wellhead protection ordinance, small water system ordinance and draft water withdrawal ordinance.

The LVPC previously prepared a long range water supply plan in 1995. That plan contains the detailed water policies that are the basis of LVPC project reviews. Its primary purpose is to guide water supply decisions for the region. The 1995 plan evaluates existing and future water use for community and central water systems. Water usage and facility data is available annually from the DEP for each system. Community and central water systems are defined as follows:

— *Community water systems* — publicly or privately-owned systems which serve a generalized service area and are designed independently of specific land developments or subdivisions.

— *Central water systems* — publicly or privately-owned systems designed primarily to serve a single subdivision, land development or rural public use involving two or more lots or domestic water use in excess of one EDU on a single lot.

The availability of community water systems has been a factor influencing the location of urban development within the two counties. Approximately 85% of all approved building lots during

the 1994-2003 period were served by community water systems. The *LVPC Water Supply and Sewage Facilities Plan 2000 Supplement* documents 25 community water systems in the two counties with their own source(s) of supply. Since 2000, the Citizens Utilities water system and service area were acquired by the Penn American water system. Many community systems serve multiple municipalities (see Map 23 for Existing Water Service).

Coordination of community water system development with comprehensive land use planning is essential for assuring long-term, reliable water supplies. Water demand projections for community water systems help identify needed improvements to source yield, filtration capacity and treated storage volume. Based on 1995 system data, 12 of the 25 community water suppliers required at least one of these improvements. Water supply sources and land use also need to be matched to prevent pollution of supplies. Thus far, Upper Mount Bethel Township, Catasauqua Borough and Washington (L) Township have adopted wellhead protection ordinances to help prevent pollution.

The LVPC compiled data on central water systems in the *Water Supply and Sewage Facilities Plan 2000 Supplement*. There are 32 central water systems serving subdivisions and institutions, and 37 central water systems serving mobile home parks. These systems are widely dispersed. Adding them to a regional system is often difficult, expensive and at public cost. Recently, several central systems have been proposed for acquisition by community systems because there are either operational problems with the central systems or the owners simply no longer want them. In 1997, the LVPC prepared a small water system ordinance designed to regulate both the creation of new small water systems and the expansion of existing small water systems.

The cost for providing water will increase as amendments to federal and state regulations are enacted requiring water systems to meet more stringent standards. Large community water systems, through economies of scale and diverse customer bases, should have less trouble meeting new standards. However, new pollutant regulations could have a serious impact on central water systems. Many central water system owners do not have the knowledge or money to meet new requirements. The result could be many existing central water systems being abandoned if not obtained by capable suppliers. A means for assuring that adequate water supply is provided by existing central systems and that any new systems are viable needs to be established regionally and statewide.

Water industry representatives have also expressed concern that water system replacement costs will become a serious problem in older urban areas. It is expected that water suppliers will need to establish appropriate facilities monitoring and capital replacement programs to meet these challenges in the future.

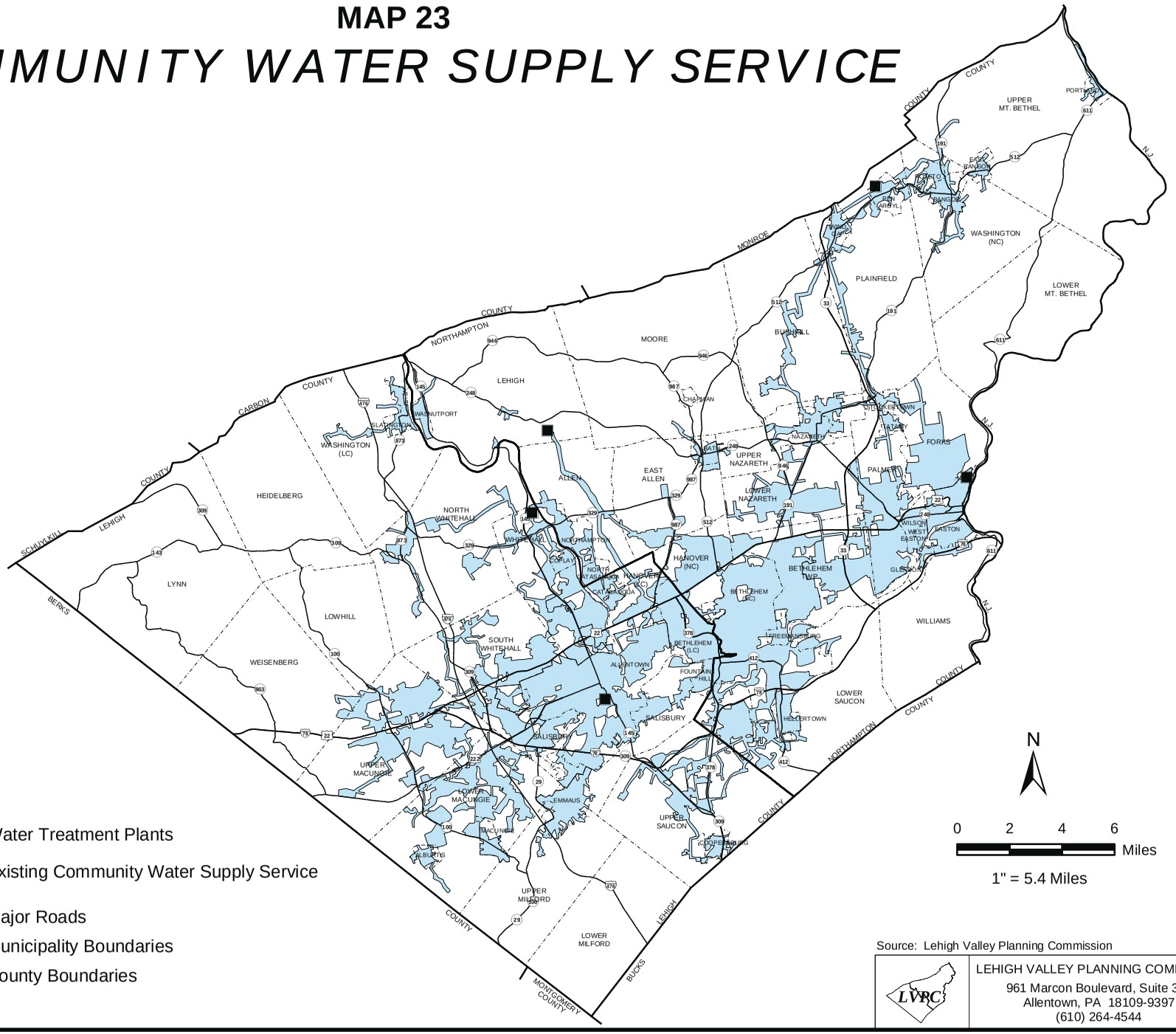
Providing service to existing and future customers in an adequate and cost-effective way often requires agreements between municipalities. The agreements may be for routine water service or may include provisions to deal with emergencies. Most adjacent water systems/municipalities have water supply agreements to govern service areas, allocations and emergencies. However, several situations still exist where there are no agreements or inadequate existing agreements. These communities need better agreements to assure that a safe, reliable water supply is available at all times.

In response to concerns over large commercial water withdrawal proposals in the Lehigh Valley, the LVPC researched a draft water withdrawal ordinance in 1997 for consideration by municipalities to manage water resources. The intent of the ordinance was to ensure continuous water availability and prevent adverse impacts on existing users for proposed withdrawals of 10,000 to 100,000 gallons per day that are less than that regulated by Delaware River Basin Commission (DRBC). DRBC has broad regulatory authority over water withdrawals. Municipalities should be aware of this authority and the potential legal limitations of the draft ordinance.

In 2002, the LVPC completed a preliminary assessment report of the Valley's water resources to identify current and future well water users of all types through 2030 and water availability during normal and drought conditions. Types of users include community and central water systems and users with their own individual well such as commercial agriculture production operations, golf courses, residential, commercial/industrial and water bottling operations, among others. These uses are included in the assessment because they have

MAP 23

COMMUNITY WATER SUPPLY SERVICE



Source: Lehigh Valley Planning Commission

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an impact on water resources. From the available data, it was found that well water demand will not exceed groundwater supply during normal and drought conditions through 2030. However, one of the main findings of the assessment was the lack of up-to-date, reliable data on water usage, groundwater recharge and water quality. DEP and DRBC need to create both consistent, current databases for the data and comprehensive water management policies addressing various hydrologic settings. These issues may be resolved as part of an updated State Water Plan. In December 2002, the state passed the Water Resources Planning Act. The act mandates that the State Water Plan be updated within five years.

Changes to the Pennsylvania Municipalities Planning Code (MPC) in 2000 require municipal and county comprehensive plans to contain a plan for the reliable supply of water. This section of the comprehensive plan contains policies and implementation strategies to address the MPC amendment. The water supply goals and policies of this plan are generally consistent with those of the current State Water Plan and Delaware River Basin Commission Comprehensive Plan. The county comprehensive plan, through its policies, promotes the provision of adequate supplies of water of good quality to meet the existing and future needs of the Lehigh Valley.

GOAL

To provide water supplies of adequate quantity and quality to meet both the existing and future needs of all persons.

POLICIES

- The quality and quantity of existing ground and surface water should be protected. Proposed water withdrawals should be accomplished without adversely impacting the present or future uses of the Basin's water resources during both drought and non-drought conditions. Lawful activities, such as extraction of minerals, impact water supply sources and such activities are governed by statutes regulating mineral extraction that specify replacement and restoration of water supplies affected by such activities.
- Areas experiencing problems with existing on-site or central water supply should be provided with adequate water service. The most cost-effective solution to the problems should be implemented after an evaluation of appropriate alternatives is completed.
- Water conservation measures should be implemented by all existing and future systems during both emergency and non-emergency operations.
- Community and central water facilities should be designed, constructed, and managed to provide long-term adequate water supply.
- Existing central water systems should be operated and managed in accord with DEP public water system standards.

IMPLEMENTATION

- The LVPC will prepare a supplement to the 1995 Water Supply Plan to reflect revised population forecasts and future water demand.
- DEP and DRBC should coordinate development of both the State Water Plan and Delaware River Basin Commission Comprehensive Plan to provide updated forecasting techniques, water user database and recharge data, and water supply policy that reflects the integrated nature of surface and groundwater resources.
- DEP and DRBC should, through documented environmental assessments, ensure that new or expanded water withdrawals do not adversely impact existing water uses or the availability of water to support future water needs during both drought and non-drought conditions.
- DEP should ensure that regulations for mineral extraction activities are enforced providing protection for water supply sources.
- DEP should develop performance standards for the design, construction, location and maintenance of individual water supply wells and a mechanism to implement them at the local level.
- Municipalities and water suppliers should implement surface and groundwater source protection programs based upon the LVPC model wellhead protection ordinance.
- Water suppliers should ensure adequate water supply during drought or pollution emergencies.
- Municipalities and water suppliers should implement water conservation programs for both the system and individual users during

both emergency and non-emergency operations.
- Metering of sources and individual customer use should be provided for all central and community water systems.
- Water suppliers should make improvements to their water systems to meet the requirements of the current federal and state Safe Drinking Water Act (SDWA).
- Water suppliers should develop capital replacement programs to identify strategies and programs for replacement of aging water system infrastructure.
- LVPC staff will promote water conservation and groundwater/wellhead protection through the use of existing brochures. LVPC staff will provide the model small water system ordinance and the draft water withdrawal ordinance to interested parties.
- The LVPC will support the water supply facilities policies through MPC, Act 537, DRBC, PUC and other project reviews.

GOAL

To coordinate economical, efficient water service with existing and future development.

POLICIES

- Urban development should locate where the existing community water system can accept additional growth, either at present or through limited expansion and upgrading, in areas where the comprehensive plan recommends urban development.
- Urban development should be discouraged in areas where it can only be served by on-site water systems or new central water facilities. However, urban development in areas recommended for rural development in the comprehensive plan may be served by existing or expanded publicly-owned water facilities under the following conditions:
  - — the expansion is contiguous with the urban development area designated in this plan and does not include areas designated for natural resource preservation or farmland preservation,
  - — the expanded area is designated for urban development in the municipal comprehensive plan, zoning ordinance, and municipal planning for water expansions,
  - — the area will be served by publicly-owned sewers and its expansion will not create traffic safety or congestion problems.
- In areas where on-site sewage disposal systems will be used for more than five years, the availability of a central water system should not be used as a basis for permitting urban development.
- A safe and reliable community water supply should be available in areas designated by this plan for urban development.
- Community water supply sources, treated storage and filtration plant capacities should be expanded to accommodate new development that occurs consistent with this comprehensive plan. The timing and sizing of these facilities should be consistent with the water demand forecasts included in the LVPC Sewer and Water Plan.
- Rural development should be served by on-site water supply except where local zoning allows conservation design techniques using publicly-owned central water supply facilities to preserve natural resources or farmland. Publicly-owned community or central water supply may also be acceptable for recreational, institutional or other public uses that by necessity require a rural location.
- Provision of water supply should be accomplished as efficiently and economically as possible. Maximum use should be made of the existing community water systems to more efficiently use present investments and minimize future investments in water supply facilities.
- In areas recommended for urban development, interim central water facilities should be allowed only if designed, at minimum, to meet DEP public water system standards, if properly installed and maintained, if the development is connected to the existing community water system when available and if the expected need for centralized facilities is no longer than five years.
- Municipal and multimunicipal plans should coordinate land use planning with water resource planning.

IMPLEMENTATION

- The LVPC will prepare a supplement to the 1995 Water Supply Plan to reflect revised population forecasts and future water demand.
- Municipalities should include a water supply plan component as part of the municipal comprehensive plan.

- Municipalities and water suppliers should prepare or update water supply agreements with adjacent municipalities to provide service consistent with the urban development recommendations of this plan.
- Municipalities should adopt ordinance provisions consistent with DEP regulations to assure adequate design, construction, and management of new or expanded central water facilities.
- The DEP and municipalities should not approve applications for new centralized water facilities to serve urban land uses in areas not recommended by LVPC.
- To ensure that central water systems are operated in accord with DEP standards, the host municipality, authority or community water supplier should assume ownership of any system. In the event that these systems remain private, municipalities should require assurances for proper long-term operation and maintenance.
- The LVPC will support the water supply policies through MPC, Act 537, DRBC, PUC and other project reviews.

STORMWATER MANAGEMENT

Historically within Pennsylvania, stormwater management design criteria were crafted by individual municipalities without consideration of watershed-wide impacts. Adequate planning cannot be done on a parcel-by-parcel, municipality-by-municipality basis. Additionally, stormwater law was a patchwork of court decisions based partially on the civil law doctrine protecting downstream landowners and partially on the common enemy doctrine protecting the rights of upstream landowners. Lack of clear legal guidance and sufficient hydrologic information historically hampered the ability of municipalities to make sound stormwater management decisions.

In 1978, the Pennsylvania General Assembly passed the Stormwater Management Act, Act 167 of 1978, which clarified both the technical and legal elements of stormwater management decisions. Act 167 requires counties to prepare stormwater management plans on a watershed-by-watershed basis. The plans must be developed in consultation with the affected municipalities. Standards for control of runoff from new development are a required component of each plan and are based on a detailed hydrologic assessment. A key objective of each plan is to coordinate the stormwater management decisions of the watershed municipalities. Implementation of each plan is through mandatory municipal adoption of ordinance provisions consistent with the plan.

Within Lehigh and Northampton counties, the Lehigh Valley Planning Commission prepares plans on behalf of both counties. The state has designated 16 Act 167 study areas within the region. Map 24 displays the status of Act 167 planning in the Lehigh Valley in December 2010.

Until 2004 stormwater planning dealt solely with runoff quantity and not with runoff quality. In order to comply with requirements of the National Pollutant Discharge Elimination System (NPDES) regulations from the Environmental Protection Agency, 59 of the 62 municipalities in Lehigh and Northampton counties must adopt and implement an ordinance that requires the use of stormwater Best Management Practices (BMPs) to reduce or prevent the discharge of pollutants into receiving waters. The LVPC prepared an update to the Little Lehigh Creek Watershed Act 167 Plan to address water quality issues. The municipalities in the watershed adopted the model ordinance in 2004. The Little Lehigh Water Quality model ordinance is used as a starting point for water quality updates in other watersheds in the Lehigh Valley.

Plans prepared under the Stormwater Management Act will not resolve all drainage issues. A key goal of the planning process is to maintain existing peak runoff rates throughout a watershed as land development continues to take place. This process does not solve existing flooding problems although it should prevent these problems from getting worse. Correction of existing flooding problems is the responsibility of the municipalities.

Goal

To manage the rate, volume and quality of storm runoff for protection of public safety and welfare, property and the environment.

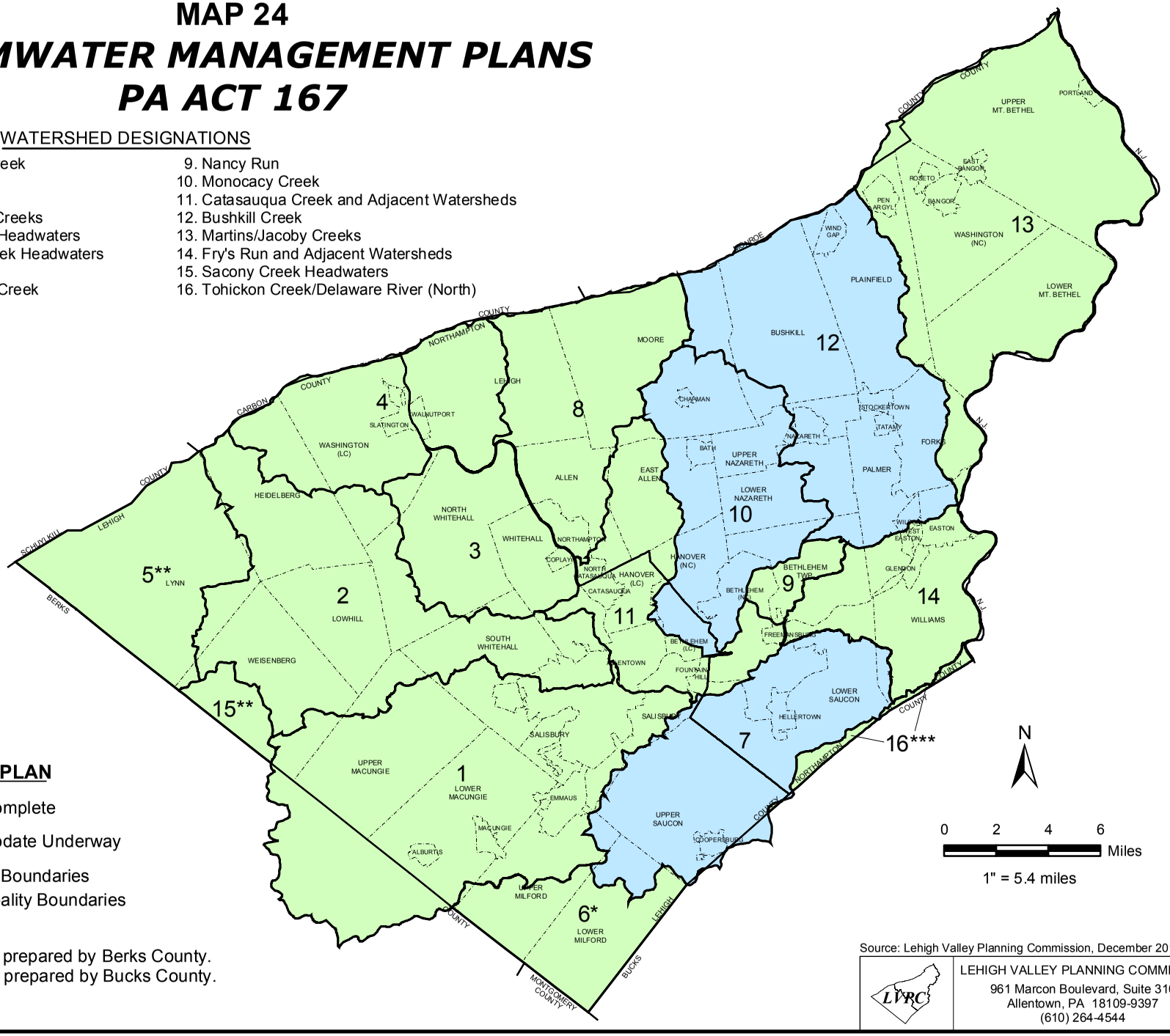
Policies

- New development should be designed with respect for natural drainage patterns to avoid future storm drainage problems.

MAP 24
STORMWATER MANAGEMENT PLANS
PA ACT 167

WATERSHED DESIGNATIONS

1. Little Lehigh Creek
2. Jordan Creek
3. Coplay Creek
4. Trout/Bertsch Creeks
5. Maiden Creek Headwaters
6. Perkiomen Creek Headwaters
7. Saucon Creek
8. Hokendauqua Creek
9. Nancy Run
10. Monocacy Creek
11. Catasauqua Creek and Adjacent Watersheds
12. Bushkill Creek
13. Martins/Jacoby Creeks
14. Fry's Run and Adjacent Watersheds
15. Sacony Creek Headwaters
16. Tohickon Creek/Delaware River (North)



STATUS OF PLAN

- Plan Complete
- Plan Update Underway
- County Boundaries
- Municipality Boundaries

*Original Plan prepared by Berks County.
**Original Plan prepared by Bucks County.

Source: Lehigh Valley Planning Commission, December 2010

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- To assure preservation of adequate areas for carrying storm runoff, structures should not be developed in natural swales identified in the LVPC report entitled *Regional Storm Drainage Plan* (1975).
- Open channels may be constructed where a natural swale, as identified in the Regional Storm Drainage Plan, inhibits reasonable use of a property. Open channels should follow the course and grade of the existing swale and should be designed to minimize erosion.
- In watersheds governed by an approved stormwater management plan under Act 167 of 1978, stormwater controls should be provided to meet the performance standards specified in the plan.
- In watersheds not governed by an approved stormwater management plan, the municipality, in consultation with the municipal engineer, should determine the appropriateness of stormwater detention for new development.
- Stormwater management during construction should be accomplished in a manner that is consistent with the Department of Environmental Protection regulations as administered by the county conservation districts. Standing water on construction sites should be managed in a manner that protects public health, safety and welfare.

IMPLEMENTATION

- Lehigh and Northampton counties should continue their commitment to preparing and updating stormwater management plans under Act 167 of 1978.
- Stormwater management plans created under Act 167 should promote protection of existing and future water supply sources.
- Municipalities should implement the provisions of approved stormwater management plans through timely adoption of ordinances and diligent enforcement of runoff control criteria.
- Municipalities should prepare engineering studies and develop capital improvement programs to solve their existing drainage problems as identified in the stormwater management plans and the regional storm drainage plan.
- The LVPC staff will continue to evaluate the need to update Act 167 plans for both quantity and quality and will make recommendations to the counties for plan updates, as appropriate.
- LVPC staff will conduct detailed reviews of the storm drainage component of subdivisions and land developments for consistency with adopted stormwater management plans. LVPC staff will monitor the design compliance of subdivision and land development plans with stormwater management plan requirements and report periodically to the LVPC.
- Municipalities should ensure the proper construction of storm drainage facilities in accord with approved subdivision and land development plans.
- Municipalities should ensure continued operation and maintenance of storm drainage facilities through regular inspections and enforcement of maintenance plans.
- LVPC staff will annually evaluate the need to continue the training seminars for engineers (municipal and private) regarding proper application of the performance standards contained in adopted stormwater management plans.
- The LVPC will evaluate the feasibility of creating a regional stormwater infrastructure plan that will provide solutions to existing flooding problems.
- Municipalities should adopt ordinance provisions to regulate standing water on construction sites and should routinely inspect construction sites for standing water to insure the protection of public health, safety and welfare.
- The county conservation districts should routinely inspect construction sites and enforce the stormwater management measures in the approved erosion and sedimentation control plan.

SOLID WASTE

In Pennsylvania solid waste management follows the provisions of the Municipal Waste Planning, Recycling and Waste Reduction Act of 1988 (Act 101). The act grants powers and duties to counties and municipalities relating to solid waste management. Counties are responsible for the preparation and implementation of a municipal waste management plan. The plan must contractually assure the existence of waste disposal capacity for a ten-year period. Municipalities may opt out of a county plan if they have their own plan. Municipalities with a population greater than 5,000 and a population density of 300 or more persons per square mile are required to have a

curbside collection recycling program. The act remains in effect although the courts have ruled that flow control, the primary means of implementing the municipal waste management plans, is unlawful.

Lehigh and Northampton counties have each prepared a solid waste plan to meet the Act 101 requirements. The most recent adopted plans are dated 1990 (Northampton County) and October 1996 (Lehigh County). These plans have been approved by DEP. Northampton County has also completed a revised plan dated March 2003. Plan adoption is pending at this writing. The draft Northampton County Municipal Waste Management Plan allows municipal waste to be taken to a number of facilities, each of which has a contract with the county to accept the waste. In a similar fashion, the Lehigh County Solid Waste Management Plan allows solid waste to be taken to any permitted facility. The county has entered into contracts with disposal facilities located within 100 miles of the county such that the facilities will accept waste generated in the county. However, the waste may also be taken to permitted facilities that are more than one hundred miles from the county. Both of the solid waste plans seek to reduce the amount of solid waste needing disposal by promoting recycling. Recycling programs are part of each of these plans. The county plans assure disposal capacity for a ten-year period.

The Act 101 plans do not cover hazardous, infectious, construction and demolition and residual (industrial) wastes. Specific DEP regulations control the disposal of each of these types of waste. The Act 101 plans do not consider issues relevant to permit applications or modifications to existing solid waste facilities, including expansions. They include no policies on such matters and take no positions on any such permit application, except that the draft Northampton County plan supports the capacity expansion of the East Penn Transfer Station.

Improperly managed solid waste facilities can create numerous problems such as groundwater pollution, surface water pollution, air pollution, odors, noise, off-site litter, disease and vectors. DEP is charged with enforcing rules and regulations to prevent these problems. The rules and regulations cover the design and operation of solid waste facilities through a permit process. The permit process allows the host municipality and the host county to review and comment on the permit applications. Lehigh and Northampton counties have designated the LVPC to handle host county reviews. However, the LVPC is neither staffed nor funded to do technical reviews of solid waste issues. Local governments retain a degree of control over facility siting, design and operations insofar as relevant state laws enable and do not preempt such regulations.

GOAL

To assure environmentally responsible and economical waste disposal.

POLICIES

- Disposal of waste generated in Lehigh and Northampton counties should be in accord with the Northampton County Municipal Waste Plan or the Lehigh County Solid Waste Management Plan as relevant.
- Material should be recycled and reused to the degree economically feasible. (Economic feasibility considers avoided disposal costs as well as direct revenues.)
- Solid waste facilities should be sited in areas with adequate access and in accord with the policies of this plan, including those relating to land use, natural resource protection, farmland preservation, recreation and open space and highways.
- Solid waste facilities should be sited, designed and operated to minimize the impact on existing residential areas in accord with the policies of the housing section of this plan.
- Solid waste facilities should be designed in accord with the relevant stormwater management plan and should mitigate the offsite traffic impacts.

IMPLEMENTATION

- The counties should assure adequate waste disposal through timely updates to the solid waste plans.
- The counties should implement the recycling components of their Act 101 Solid Waste Management Plans. Municipalities should fulfill their obligations set forth by Act 101.
- The LVPC will review solid waste facility permit applications to determine consistency with the plans and policies of this comprehensive plan, not against technical criteria or other considerations.

PARKS AND RECREATION

Residents of the Lehigh Valley have grown accustomed to high quality local and regional parks. Allentown, Bethlehem and a number of smaller municipalities have long been committed to parks. In 2000 the Lehigh Valley Green Future Fund was created to explore the possibility of park and open space bond issues in each county. The group, composed of local civic leaders and government officials, came up with the recommendation that each county should have a $30 million bond issue. The monies from the bond issue would be used to acquire important natural areas, land for future parks, and agricultural conservation easements to preserve farmland. Nonbinding referendums were held in both counties in 2002. The initiatives were strongly supported in each county (70% in Lehigh and 64% in Northampton).

Lehigh and Northampton counties started major county-wide park programs in the late 1960s in response to recommendations made by the LVPC. The counties and the LVPC have been actively involved in park planning, acquisition and development ever since. The park and open space goals presented here are based on a LVPC document entitled *Regional Recreation and Open Space Plan* and detailed plans prepared for each county. The major parks and other outdoor recreation areas are shown on Map 25.

The amount of land in parks and other outdoor recreation in the Lehigh Valley has increased substantially since the LVPC completed the first recreation and open space plan for the Lehigh Valley. Between 1970 and 2003, outdoor recreation acreage in the two counties increased by 15,556 acres, or about 76%. The greatest increase was in Northampton County — 99%. The increase in Lehigh County was 60%. The amount of parkland owned by the two counties increased 2,795 acres, or 190% during the 33-year period. Municipal parkland grew 3,683 acres, or 120%, between 1970 and 2003. The remaining increase in acreage was largely due to acquisitions by the Wildlands Conservancy, the state and federal government. The development of five new 18-hole golf courses since 1990 added 896 acres to the regional recreation inventory. Most of the recommendations of the 1971 Recreation and Open Space Plan have been fulfilled.

One measure of a region's park and open space system is the acres per 1,000 population standard. The National Recreation and Park Association (NRPA) suggests that a core park system should have 6.25 to 10.5 acres of developed open space per 1,000 population. This is local, close-to-home space that includes mini-parks, neighborhood parks and playgrounds, and community parks. In addition, the NRPA recommends there be another 15 to 20 acres per 1,000 population in regional space which includes regional/metropolitan parks and regional park reserves.

Table 8 gives projected 2020 acreage needs for local, close-to-home space and regional space. If the 6.25 acres standard is used, Lehigh County already has enough acres of local, close-to-home space needs for the year 2020 and Northampton County needs only another 42 acres. The Lehigh Valley had 7.4 acres of local, close-to-home recreation space per 1,000 persons in 2003. If the 10.5 acres per 1,000 persons NRPA guideline is used, another 2,637 acres of local, close-to-home recreation space will be needed in the Lehigh Valley by the year 2020.

TABLE 8
PROJECTED PARK AND OPEN SPACE ACREAGE NEEDS - 2020[1]

REGION	Existing Acreage 2003	Projected Need 2020	Additional Acres Needed by 2020
LEHIGH VALLEY			
Local, Close-to-Home Space	4,328	4,146	none[2]
Regional Space	4,747	9,950	5,203
LEHIGH COUNTY			
Local, Close-to-Home Space	2,395	2,171	none[2]
Regional Space	1,678	5,209	3,531
NORTHAMPTON COUNTY			
Local, Close-to-Home Space	1,933	1,975	42
Regional Space	3,069	4,741	1,672

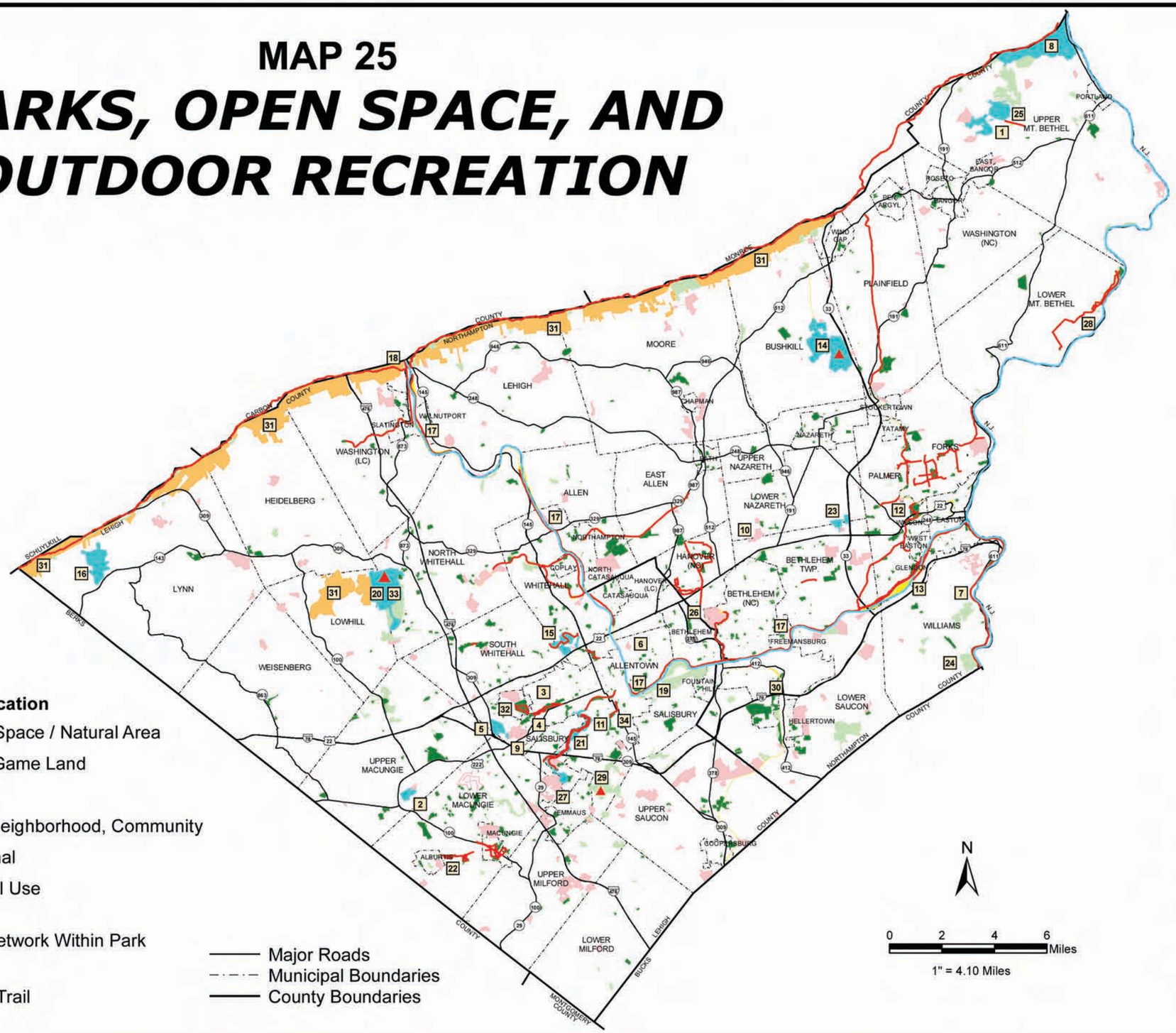
[1]Acreage needs are measured by the National Recreation and Park Association suggested minimum guideline of 6.25 acres/1,000 persons for local, close-to-home space and 15.0 acres/1,000 persons for regional space.

[2]There is enough acreage to meet the NRPA suggested minimum guideline in the aggregate. However, not every municipality meets the minimum guideline of 6.25 acres/1,000 residents. There are some municipalities that have no local, close-to-home space.

In 2003 the Lehigh Valley had 4,747 acres in regional parks. Table 8 shows that both counties were below the NRPA minimum suggested guideline of 15 acres of regional space per 1,000 persons. The two counties will need another 5,203

MAP 25

PARKS, OPEN SPACE, AND OUTDOOR RECREATION



Major Park and Recreation Sites

ID	Name
1	Bear Swamp Archery Complex
2	Bob Rodale Cycling and Fitness Park
3	Cedar Creek Parkway
4	Cedar Creek Parkway East
5	Cedar Creek Parkway West
6	Coca-Cola Park
7	Delaware Canal State Park
8	Delaware Water Gap National Recreation Area
9	Dorney Park and Wildwater Kingdom
10	Dutch Springs
11	Earl F. Hunsicker Bicentennial Park
12	Hackett's Park
13	Hugh Moore Park
14	Jacobsburg Environmental Education Center
15	Jordan Creek Parkway
16	Leaser Lake
17	Lehigh Canal Park (various parks)
18	Lehigh Gap Wildlife Refuge
19	Lehigh Uplands Preserve
20	Lehigh Valley Zoo
21	Little Lehigh Parkway
22	Lock Ridge Park and Furnace Museum
23	Louise W. Moore Park
24	Mariton Wildlife Sanctuary
25	Minsi Lake
26	Monocacy Complex
27	Pool Wildlife Sanctuary
28	PPL Martins Creek Environmental Preserve and Public Boat Access Area
29	Robert Rodale Reserve
30	Saucon Park
31	State Game Lands
32	Trexler Memorial Park
33	Trexler Nature Preserve
34	Trout Creek Parkway

Park Classification

- Open Space / Natural Area
- State Game Land
- Linear
- Mini, Neighborhood, Community
- Regional
- Special Use

- Trail Network Within Park
- Trail
- Water Trail

- Major Roads
- Municipal Boundaries
- County Boundaries

0 2 4 6 Miles

1" = 4.10 Miles

Source: Lehigh Valley Planning Commission, 2008

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acres of regional parks by the year 2020 to meet the minimum NRPA suggested guideline.

Map 26 shows the location of a number of recommended recreational trails and land acquisitions. Many of these trails and acquisitions should be part of a regional greenways network. The LVPC staff will be preparing a regional greenways plan for the two counties starting in late 2004.

Jordan Creek Parkway — A 296 acre Lehigh County park and natural area in Whitehall Township.

SCENIC RESOURCES

The Lehigh Valley has an abundance of scenic resources. These resources include scenic waterways, scenic roads, scenic views, and scenic features or areas. The Valley's identity is formed and reinforced through these features. Scenic features are viewed as a regional asset that contribute to our quality of life.

Examples of scenic waterways include the Delaware River, the Lehigh River and many of our streams. Scenic roads can still be found throughout the two counties. The best known is the Delaware River Scenic Drive (scenic Route 611) in Northampton County. This road was designated a scenic drive by the State of Pennsylvania on December 5, 1988. Examples of some other scenic roads include: Kistler Valley Road in Lynn Township, Limeport Pike in Lower Milford Township, and Wassergass/Raubsville roads in Williams Township. There are many others.

Scenic views exist at many locations throughout the Lehigh Valley. Some of the best views include:

- the view from the lookout above Lehigh University
- the view from Bake Oven Knob
- the view from the intersection of Routes 29 and 100 in Upper Milford Township
- the view of the Stouts Valley from the intersection of Wassergass Road and Steely Hill Road in Williams Township
- the view of the Lehigh Valley from I-78 west of the Route 33 interchange.

The two most prominent scenic features of the Lehigh Valley are the Blue Mountain and South Mountain. These two features form the backdrop for much of the region. Our farmlands are an important resource that Valley residents appreciate for their open space value and their scenic beauty.

Some other scenic features of importance include covered bridges, the Bethlehem star, downtown Bethlehem, the square in Nazareth and the Little Lehigh Parkway in Allentown.

GOAL

To provide and maintain adequate space and facilities to meet the recreation needs of Lehigh Valley residents.

POLICIES

- The counties and municipalities should meet minimum National Recreation and Park Association suggested guidelines for park space and recreation facilities.
- Current recreation activity trends and local demographics should be used when planning for new recreation facilities and programs.
- The counties should acquire the following types of parks: large community parks, regional parks, regional park reserves, linear parks and conservancy areas.
- Parkland acquisitions that are inaccessible, limited in use potential, or are tied up with legal restrictions or informal understandings with former or neighboring property owners on use of the land should be avoided.
- Land acquired by the counties or municipalities for parks or open space should not be converted to other uses.
- Municipalities should be responsible for providing mini-parks, neighborhood parks and playgrounds, and community parks.
- High priority should be given to acquiring parkland and open space along rivers and major streams.
- The needs of the handicapped should be considered in any recreation and open space planning.
- Recreation facilities at schools should be available to the public.
- Quasi-public organizations and the private sector should provide special use recreation facilities such as golf courses, campgrounds and ski areas.

IMPLEMENTATION

- Municipalities should prepare and implement park and recreation plans.
- Municipalities should require the dedication of land or money for parks as a condition for subdivision or land development approval as provided in the Pennsylvania Municipalities Planning Code.
- The counties and municipalities should cooperate in acquiring, developing and maintaining parks and other outdoor recreation facilities.
- The counties and municipalities should encourage private sector participation in the acquisition and development of park and recreation areas.
- The counties and municipalities should commit the financial resources and efforts needed to maintain existing recreation facilities.
- The counties and municipalities should take advantage of any grant programs for park acquisition, development or maintenance.
- LVPC staff should maintain and update the inventory of parks and other outdoor recreation facilities that was done in 1989.
- Lehigh and Northampton counties should follow the recommendations of the park plans the LVPC prepared for each county. These plans should be updated on a regular basis.
- The LVPC should cooperate with government agencies and other organizations to improve recreation opportunities in the two-county area.
- Lehigh County should hire a professional parks director to manage the county's park system.
- The Trexler-Lehigh County Game Preserve should be developed as a county park that includes a variety of recreational uses that can be used by Lehigh Valley residents.
- The Weaversville property in Allen Township that is owned by Northampton County should be developed as a county park.

GOAL

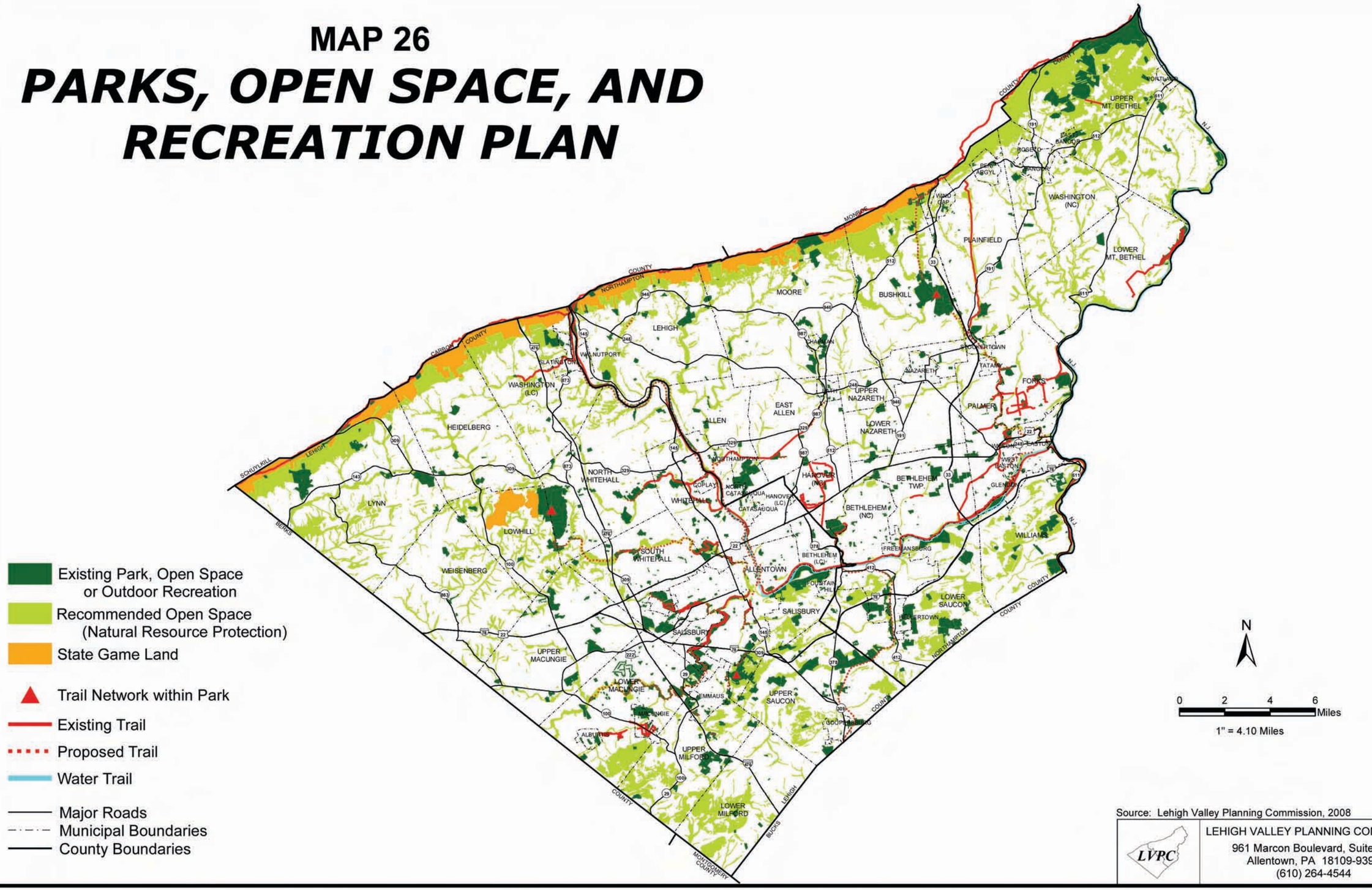
To preserve open space and important natural areas.

POLICIES

- Important natural areas should be preserved as part of parks and open space areas whenever possible.
- Public and private partnerships should be used whenever possible to preserve open space and important natural areas.
- Promote the preservation and creation of open space and cultural features in the Dela-

MAP 26

PARKS, OPEN SPACE, AND RECREATION PLAN



Source: Lehigh Valley Planning Commission, 2008

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ware and Lehigh Navigation Canal National Heritage Corridor and the Delaware River Greenway.

IMPLEMENTATION

- Lands shown as potential open space acquisition areas in the LVPC report *South Mountain* and the county park plans should be acquired by the counties, municipalities or Wildlands Conservancy.
- The Pennsylvania Game Commission should continue to add land to the State Game Lands along the Blue Mountain.
- The counties and the LVPC should support conservation groups such as the Wildlands Conservancy and The Nature Conservancy in their efforts to acquire open space and important natural areas if the efforts are consistent with other policies of this plan.
- The findings and recommendations of the report *A Natural Areas Inventory of Lehigh and Northampton Counties* should be used by the LVPC, counties, municipalities and conservation groups.
- The LVPC should work with the various government agencies and other organizations that are interested in preserving open space and important natural areas.
- The LVPC will prepare a regional greenways plan for Lehigh and Northampton counties.
- The Valley's scenic resources should be preserved whenever possible.

HISTORIC PRESERVATION

Lehigh and Northampton counties have a wealth of historic buildings, structures, sites and districts that are found throughout the region. These resources add to the beauty and attractiveness of the region, increase understanding and appreciation of our heritage, and improve the quality of life. Many significant historical features are of value to the local economy because they are tourist attractions.

Many projects now require an analysis of historic resources before they can proceed. Under state and federal law, it is the responsibility of state and federal agencies to consider the effects of their actions on all historic and prehistoric sites, districts, buildings and structures eligible for inclusion in the National Register of Historic Places. The federal legal mandates include Section 106 of the National Historic Preservation Act of 1966, Executive Order 11593, and the regulations of the Advisory Council on Historic Preservation. State legal mandates include the Environmental Rights Amendment, Article 1, Section 27 of the Pennsylvania Constitution, and the Pennsylvania Historic Preservation Act of 1978. Agencies must meet their responsibilities to identify all eligible resources that may be affected by their actions. Often this requires a survey to identify significant historic resources.

The presence of historic sites sets a greater restriction on government actions than on private ones. If a site is on the National Register of Historic Places or is eligible for National Register listing, federal and state agencies must show there is no feasible and prudent alternative to avoiding the feature before it can be eliminated. Private property owners do not have to comply with federal and state mandates regarding National Register properties.

Many important historic features are listed on the National Register of Historic Places (see Table 9 and Map 27). As of April 2003, the National Register list included 85 listings in the Lehigh Valley. These 85 listings include historic districts which, in turn, contain many important historic features. The list of properties on the National Register of Historic Places has more than doubled since 1970. Nevertheless, there are many other historic features in the Lehigh Valley that can qualify for National Register listing.

There are at least 171 buildings, structures or districts in the Lehigh Valley that have been recognized by the Pennsylvania Historical and Museum Commission as being eligible for listing on the National Register of Historic Places. Eighty-four of these eligible properties are in Lehigh County and 87 are in Northampton County. Before any of these properties can be listed on the National Register of Historic Places someone must complete and submit the necessary application forms.

The Pennsylvania historical marker program was established in 1946. This popular Pennsylvania Historical and Museum Commission program is responsible for the blue and gold roadside markers that highlight people, places and events significant in the state and national history. There are about 1,800 markers across the entire state. Seventy-nine markers can be found in the Lehigh Valley (55 in Northampton County and 24 in Lehigh County). The LVPC has a list of historical markers.

There have been a number of major efforts since 1970 to identify and survey the remaining historic resources in Lehigh and Northampton counties. Some communities prepared very good history studies for the 1976 bicentennial celebration. Another important effort in the 1970s involved a major study of the Lehigh Canal by the U.S. Department of the Interior, Heritage Conservation and Recreation Service titled *Lehigh Canal - an HCRS Project Report*.

A few municipalities have conducted comprehensive historic resources surveys funded with state grants. Communities that took advantage of this grant program include Catasauqua, Coopersburg and Forks Township. The Pennsylvania Historical and Museum Commission still has money for funding comprehensive historic resources surveys. No Lehigh Valley municipalities have applied for the grants for a number of years.

The Lehigh Valley Planning Commission published a report in 1963 titled *History of the Lehigh Valley Region*. The report dealt with impor-

The Lehigh Canal was built by Josiah White and Erskine Hazard in 1827-29 so canal boats could transport coal and timber from Mauch Chunk (Jim Thorpe) to markets in Lehigh and Northampton counties and Philadelphia. Today, the Lehigh Canal is an important historic feature that offers many recreation opportunities. These photos show the restored Lock #23 and the 1828 Locktender's House in Walnutport. The photos were taken the weekend of the Walnutport Canal Festival, an important local event sponsored by the Walnutport Canal Association, Inc. every October.

TABLE 9
PROPERTIES LISTED ON THE NATIONAL REGISTER OF HISTORIC PLACES

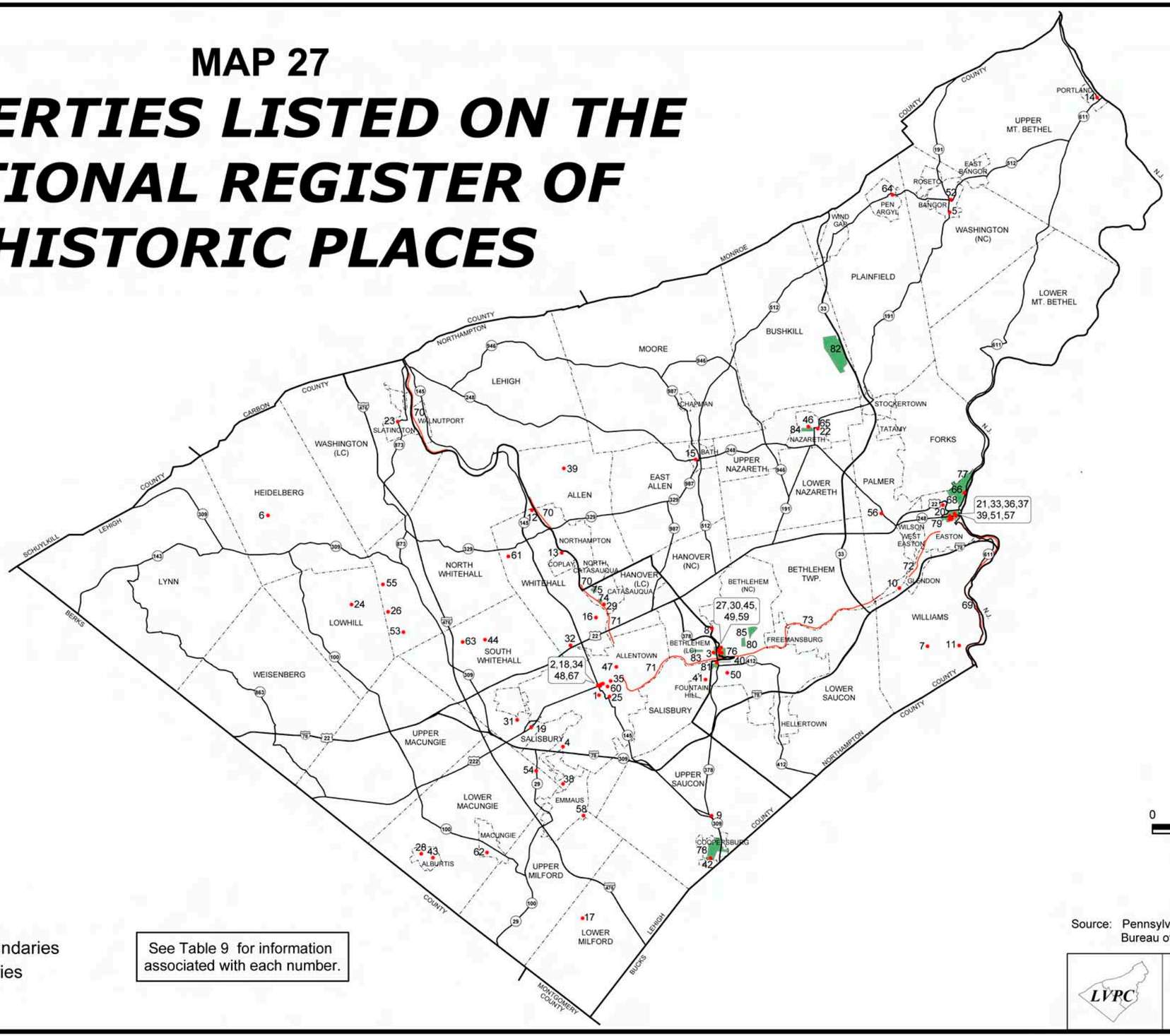
Id	Name	Municipality
Structures		
1	Alburtis L. Meyers Bridge	Allentown
2	Americus Hotel	Allentown
3	Bethlehem Armory	Bethlehem (LC)
4	Bogert Covered Bridge	Allentown
5	Bridge in Bangor Borough	Bangor
6	Bridge in Heidelberg Township	Heidelberg
7	Bridge in Williams Township	Williams
8	Burnside Plantation	Bethlehem (LC)
9	Centennial Bridge	Upper Saucon
10	Chain Bridge (ruins)	Easton
11	Coffeetown Grist Mill	Williams
12	Cold Spring Bridge	Whitehall
13	Coplay Cement Co. Kilns	Coplay
14	County Bridge #36	Portland
15	Daniel Steckel House	Bath
16	Dent Hardware Company	Whitehall
17	Dillingersville Union School & Church	Lower Milford
18	Dime Savings & Trust Company	Allentown
19	Dorneyville Crossroad Settlement	South Whitehall
20	Easton Cemetery	Easton
21	Easton House	Easton
22	Ephrata Tract	Nazareth
23	Fireman's Drinking Fountain	Slatington
24	Frantz's Bridge	Lowhill
25	Gauff-Roth House	Allentown
26	Geiger Covered Bridge	North Whitehall
27	Gemeinhaus-De Schweintz	Bethlehem (NC)
28	George F. Schlicher Hotel	Alburtis
29	George Taylor House	Catasauqua
30	Gristmiller's House	Bethlehem (NC)
31	Haines Grist Mill	South Whitehall
32	Helfrich's Springs Grist Mill	Whitehall
33	Herman Simon House	Easton
34	High German Evangelical Reformed Church	Allentown
35	Hotel Sterling	Allentown
36	Jacob Mixsell House	Easton
37	Jacob Nicholas House (Little Stone House)	Easton
38	Kemmerer House (Iron Gate)	Salisbury
39	Kreidersville Covered Bridge	Allen
40	Lehigh Valley Railroad Headquarters Bldg.	Bethlehem (NC)
41	Lehigh Valley Silk Mills	Fountain Hill
42	Linden Grove Pavilion	Coopersburg
43	Lock Ridge Furnace Complex	Alburtis
44	Manasses Guth Covered Bridge	South Whitehall
45	Moravian Sun Inn	Bethlehem (NC)
46	Nazareth Hall Tract	Nazareth

Id	Name	Municipality
Structures (continued)		
47	Neuweiler Brewery	Allentown
48	Old Lehigh County Courthouse	Allentown
49	Old Waterworks	Bethlehem (NC)
50	Packer Memorial Chapel	Bethlehem (NC)
51	Parsons-Taylor House	Easton
52	Real Estate Building	Bangor
53	Rex Covered Bridge	North Whitehall
54	Rodale Organic Gardening Experimental Farm	Lower Macungie
55	Schlicher's Covered Bridge	North Whitehall
56	Seipsville Hotel	Palmer
57	State Theatre	Easton
58	The Shelter House	Emmaus
59	The Tannery	Bethlehem (NC)
60	Trout Hall	Allentown
61	Troxell-Steckel House	Whitehall
62	Valentine Weaver House	Macungie
63	Wehr Covered Bridge	South Whitehall
64	Weona Park Carousel	Pen Argyl
65	Whitefield House & Gray Cottage	Nazareth
66	William Jacob Heller House	Easton
67	Zollinger-Harned Co. Building	Allentown
68	Zeta Psi Fraternity House	Easton
Canals		
69	Delaware Division of Pennsylvania Canal	Multiple
70	Lehigh Canal (1)	Multiple
71	Lehigh Canal (2)	Multiple
72	Lehigh Canal (4)	Multiple
73	Lehigh Canal (3)	Multiple
District		
74	Biery's Port Historic District	Catasauqua
75	Catasauqua Residential Historic District	Catasauqua
76	Central Bethlehem Historic District	Bethlehem (NC)
77	College Hill Residential Historic District	Easton
78	Coopersburg Historic District	Coopersburg
79	Easton Historic District	Easton
80	Elmwood Historic District	Bethlehem (NC)
81	Fountain Hill Historic District	Bethlehem (NC)
82	Jacobsburg Historic District	Bushkill
83	Mt. Airy Historic District	Bethlehem (LC)
84	Nazareth Historic District	Nazareth
85	Pembroke Village Historic District	Bethlehem (NC)

See Map 27 for the location of these properties.

MAP 27

PROPERTIES LISTED ON THE NATIONAL REGISTER OF HISTORIC PLACES



Sites
Canals
Districts
Major Roads
Other Roads
Municipality Boundaries
County Boundaries

See Table 9 for information associated with each number.

N

0 2 4 6 Miles

1" = 4.10 Miles

Source: Pennsylvania Historic and Museum Commission, Bureau of Historic Preservation, 2002

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tant events and persons and not the identification of historic sites and structures. In 1970 the Commission completed a report titled *Historic Structures and Sites*. That document is part of a seven-report series for the regional recreation and open space plan. It contains an inventory of the most important historic structures, buildings and sites that had been identified as of 1970. The report also includes general policy recommendations and recommendations for specific historic buildings and structures.[1] Most of the recommendations of the report have been accomplished, thanks to both public and private efforts.

The Lehigh Valley Planning Commission believes that the preservation of historical resources is important. Historical preservation fulfills a variety of needs that range from a heightened awareness of our past to economic opportunities made possible by tourism. Continued efforts are needed to insure that our most important historic resources are preserved so they can be enjoyed by future generations of Lehigh Valley residents and visitors.

Goal

To preserve the important historic buildings, structures and sites in Lehigh and Northampton counties.

Policies

- Historic buildings that have educational importance or value as tourist attractions should be given a high priority in restoration programs.
- Restoration programs should evaluate a full range of possibilities from minimal efforts that stabilize ruins to full restoration projects.
- Historic buildings that can be restored or used by the private sector should be given a high priority in restoration programs.
- Park acquisitions should include important historical features whenever possible.
- Historic sites should be marked and publicized so the maximum number of Lehigh Valley residents and tourists can enjoy them.
- Highway projects and other public infrastructure improvements should avoid significant features that are listed, or are eligible for listing, on the National Register of Historic Places, unless reasonable alternatives are not available.
- Historic districts should be preserved by the municipal adoption of historic district regulations pursuant to Act 167.
- Restoration of historic properties that will attract tourists to the Lehigh Valley should be supported.

Implementation

- Municipalities that have not already done so are encouraged to conduct comprehensive historic sites surveys.
- The LVPC will keep an updated list of properties that are on or eligible for the National Register of Historic Places.
- During its various reviews, the LVPC will document if any proposed action may impact any National Register property or any other feature that has been deemed eligible for the National Register by the Pennsylvania Historical and Museum Commission.
- As the opportunity arises, the LVPC will inform the counties and municipalities of historic features that may be worthy of preserving.
- Private property owners of historic sites are encouraged to preserve the features that make such sites historic.

[1]Joint Planning Commission, Lehigh-Northampton Counties, regional Recreation and Open Space Plan Report No. 3, *Historic Sites and Structures* (Lehigh Valley, PA, May 1970), pp. 87-92.

STATEMENT OF PLAN INTERRELATIONSHIPS

Section 301(4.1) of the Pennsylvania Municipalities Planning Code requires that comprehensive plans include a discussion of the interrelationships among the various plan components. This directive is intended to insure that the components of the plan are integrated and do not present conflicting goals, policies or recommended actions. What follows is a brief summary of the plan interrelationships. The more detailed aspects of interrelationships are covered in other sections of the plan.

The revised *Comprehensive Plan The Lehigh Valley … 2030 Lehigh and Northampton Counties* was prepared with this directive in mind. During the preparation of the plan, each draft element was reviewed by LVPC staff, the appropriate LVPC committee, and the full Commission. LVPC staff and committee members met on numerous occasions during the preparation of the revised regional *Comprehensive Plan The Lehigh Valley … 2030 Lehigh and Northampton Counties*. The internal consistency of the various drafts was examined during the review process.

Examples of the major interrelationships among various plan components are the following:

- Little or no development is recommended in natural resource protection areas such as floodplains, steep slopes and wetlands.
- The most important natural areas identified in the report *A Natural Areas Inventory of Lehigh and Northampton Counties, Pennsylvania* should be protected through acquisition by a unit of government or a nonprofit group such as The Nature Conservancy.
- The policies for preserving open space and important natural areas relate directly to the natural resource protection goals and policies of the plan.
- Areas recommended for farmland preservation do not overlap with areas recommended for urban growth.
- The retention of farmland as an economic activity strengthens the farmland preservation policies of the plan.
- Future water and sewer service expansions are recommended only for areas where urban development should occur.
- Commercial and industrial development is not recommended in rural areas unless it is to mainly serve the surrounding rural residents or unless it requires a rural location.
- A variety of housing types and densities is recommended to promote housing choice, but not at the expense of natural resource protection areas or areas recommended for farmland preservation.
- Higher density housing should occur only where adequate infrastructure is available or planned based on the recommendations of the plan.
- Water, sewerage and highway improvements should be made concurrent with major housing, commercial or industrial development.
- Highway improvements are not recommended where they will encourage large scale development in agricultural or rural areas.
- Major economic development should locate where it can be served by existing or proposed sewer and water systems and highways.
- Major employment facilities are encouraged to locate where LANTA bus service is available.
- The redevelopment of vacant industrial and commercial sites (brownfields) is recommended as one way to improve the economy of the region's cities and boroughs.

STATEMENT REGARDING PLAN RELATIONSHIP TO PLANS FOR ADJACENT COUNTIES AND LOCAL MUNICIPALITIES

The Pennsylvania Municipalities Planning Code (MPC) requires that comprehensive plans include a statement concerning compatibility with contiguous portions of neighboring counties. The MPC also requires that consideration be given to comments from municipalities and school districts within Lehigh and Northampton counties. This section summarizes procedures used to meet these requirements and conclusions made concerning neighboring counties and municipalities in the Lehigh Valley.

The draft comprehensive plan was sent to the chief executive in each municipality, public school superintendents, neighboring county planning commissions and major organizations interested in development of the Lehigh Valley. The draft was available in paper report form, executive summary, CD-ROM and on the LVPC website. We provided extra copies of the draft plan, summary and CD-ROM on request.

The LVPC received written comments from Bucks, Berks, Montgomery, Monroe counties and the Delaware Valley Regional Planning Commission (DVRPC). These comments indicated consistency between the LVPC draft plan and plans of neighboring counties and DVRPC. The LVPC staff internal review of plans for the counties mentioned above plus Carbon, Schuylkill, and Warren County, New Jersey confirmed the consistency of the land use components in each plan. In two instances transportation issues were mentioned. Montgomery County believes that the Pennsylvania Turnpike and Route 100 may eventually need to be widened from Montgomery County into Lehigh County. These projects are not programmed in the Lehigh Valley transportation plan because traffic data does not indicate a need for such work. Berks County identifies the Route 222 corridor extending into the Lehigh Valley from Reading as a potential future widening project. LVPC traffic data does not point to a need for this work in Lehigh County. In addition completion of the Route 222 relocation, the American Parkway bridge in Allentown, Route 412 on Bethlehem's south side and upgrading of Route 22 are higher priority projects. The turnpike proposal and Route 222 may require attention in the future, but they are not considered high priority projects in the current Lehigh Valley transportation plan.

Written comments were received from the Lehigh Valley Economic Development Corporation (LVEDC), Community Action Committee of the Lehigh Valley (CACLV), and the Lehigh County Authority (LCA). Members of the LVPC staff met with members of the Lehigh-Northampton Airport Authority staff. Map changed recommended by LVEDC were made on Map 16.

CACLV and others recommended that LVPC include comments on the Brookings Report. The LVPC has reviewed the report and has written a separate paper that endorses many of the 36 recommendations of the report that are pertinent to planning issues in the Lehigh Valley. A number of these recommendations are covered in various policies and implementation strategies stated in this comprehensive plan. Reorganizing local government is not a mission of the Lehigh Valley Planning Commission even though it might be beneficial to do so. The CACLV report also recommends stronger statements concerning funding for housing and opposition to discriminatory zoning policies. We believe we have strong policies on these issues. Finally, CACLV recommends stronger statements concerning federal, state and local funding programs that support sprawl. We have programmed transportation projects that give high priority to urban areas and we have advocated land use and utility policies that are consistent with the recommended development plan. We have strengthened a number of our policies and recommendations concerning use of federal and state funding outside of designated urban areas.

LCA recommended that LVPC address cost of water service to low income households, support regionalization and consideration of water services, and create a policy that stormwater management plans should not jeopardize water supplies. In addition LCA believes that water withdrawal ordinances are illegal under existing

law; that there should be greater cooperation between water suppliers and water supply planning efforts at the county and municipal levels, and that central water systems should comply with water supplier specifications. The LVPC has made changes to the text in the water supply and stormwater management sections of this report to address the LCA recommendations.

The Airport Authority recommends that LVPC endorse the most recent edition of the Airport Layout Plan. This plan proposes expansion of one airport runway northward across Race Street and also the construction of a new parallel runway north of Race Street. These are projects that have been discussed for many years. There is also a proposal for a new roadway north of Race Street. These projects would be constructed on property owned by the Airport Authority. In the past the LVPC has stated a preference for future runway expansion on property owned by the Airport Authority south of Race Street unless need for expansion beyond this limit is demonstrated. Since the Airport Authority has acquired sufficient land north of Race Street for future expansion they will probably expand in that area at some future time. However, the Airport Authority has not presented convincing data that demonstrated future need. We have modified our policy on this matter to reflect Airport Authority land acquisition and express our views concerning demonstration of future needs.

In reviewing municipal comments the Lehigh Valley Planning Commission first considered multimunicipal planning efforts in the Lehigh Valley. Recommendations from the six municipality multimunicipal plan in northern Lehigh County and the three municipality multimunicipal plan in the Wind Gap/Pen Argyl/Plainfield area were included in the county comprehensive plan. A number of changes were made in the county plan to reflect recommendations of the southern Lehigh County multimunicipal plan. Two major issues were not resolved. The southern Lehigh County plan is not consistent with the county plan for agricultural preservation in Lower Milford Township. The multimunicipal plan recommends low density residential. Also the southern Lehigh plan does not include a satisfactory housing element. The 10 municipality Nazareth Area plan is being prepared by LVPC staff. At this writing it is incomplete. The LVPC will make every effort to assure consistency between this plan and the county plan. There are four municipalities in the Bangor Area plan. It is in the early stages of development at this writing.

In addition to multimunicipal plans the LVPC staff notified municipalities of its availability to meet and discuss the county plan in relationship to particular local plans. The staff met with the following municipalities: Easton, Palmer, Bethlehem Township, Lower Nazareth, Upper Mount Bethel, Lower Mount Bethel, Lower Saucon, Allen, and Upper Saucon. We made changes in the draft county comprehensive plan map to reflect municipal plans in Upper Saucon, Lower Saucon, Lower Mount Bethel and Lower Nazareth. We support the renewal and redevelopment goals of the City of Easton. We also received correspondence from most of these municipalities plus Lynn Township and Upper Milford in Lehigh County. Mostly, the county comprehensive plan is consistent with local plans in these areas. In the case of Palmer Township there is still an area of inconsistency in the northwestern part of the township. The township wants to develop this area for urban uses. The county plan calls for rural uses because there are no funds to support highway improvement needs and the area has a sinkhole problem. The LVPC received no comments from boroughs, townships not mentioned above, Allentown, and Bethlehem. In addition to the comments above LVPC received text corrections, editorial suggestions, and procedural recommendations from some of the above municipalities. All comments will be given consideration.

Ideally there should be a high level of consistency between the county plan and municipal plans and zoning. The multimunicipal plans and a number of the municipal plans are moving in that direction. The county plan does not strive to manage every land use activity in the Lehigh Valley. Many decisions are purely local and of no concern at the county and regional levels. The proper function of the county plan should be to establish an overall Lehigh Valley growth strategy that takes into consideration conservation of natural resources, logical areas for economic growth, and proper planning for future infrastructure coordinated with land use considerations. Unfortunately, there are still many challenges to overcome in achieving these goals. Following are the major issues:

- Some municipalities need to become more proactive in preserving environmentally sensitive areas. Key implementation measures include property acquisition and environmental zoning protection. The LVPC will continue its advocacy for environmental protection.

- This plan recommends farmland protection in a number of townships. Most areas recommended for farmland preservation are zoned for agricultural, but only four townships have strong agricultural zoning of the type recommended in this plan. Municipalities that intend to preserve farmland should adopt effective agricultural zoning. County agricultural preservation boards need more money to acquire additional land.

- The three cities and numerous boroughs have good plans for renewal and revitalization. They will need a lot more money from outside sources to implement them. Implementation of recommendations from the Brookings Report to change Pennsylvania law to facilitate municipal mergers and consolidation could also help. However, Pennsylvania history does not indicate that this will happen easily or soon. The LVPC will continue to offer strong support for urban revitalization efforts.

- Many suburban municipalities have zoning ordinances that do not allow the variety of housing types and densities that are recommended in the county plan to provide affordable housing. Municipalities need to address this issue in multimunicipal plans and individual plans.

- Most municipalities do not address local transportation issues. Municipalities fail to consider the transportation impacts of their land use plans. Most rely too heavily on PENNDOT for access management controls. Some municipalities maintain very unrealistic expectations concerning the availability of federal and state funds for new interchanges on major highways and bypass roadways around their communities. The LVPC will continue to point out inconsistencies between land use and transportation plans. We will also develop a model access management ordinance for local implementation.

- Many municipalities do not adequately relate land use planning and planning for sewer and water infrastructure. Municipalities need to recognize these connections in local plans and they need to keep their sewer plans mandated by Act 537 up-to-date.

- Planning and zoning in many municipalities is reactive. Municipal plans need to address the goals of the municipality not just react to proposals of developers. Municipalities also need to make fuller use of planning tools enabled by the planning codes.

SUPPLEMENTAL PLANNING ACTIVITIES

There are a number of supplemental programs that are important to future planning in the Lehigh Valley. Following is a review of these programs.

(1.) ***Lehigh Valley Transportation Study (LVTS).*** Participation in a comprehensive process of transportation planning is mandated by the federal government in areas that exceed 200,000 population. The LVPC has collaborated with PENNDOT in this process since the early 1960s. LVPC staff provides technical services to LVTS and serves as secretary of the local technical and coordinating committees. A transportation plan covering future highway and transit needs has been adopted. A Transportation Improvement Program (TIP) that includes a detailed program that lists costs and construction schedules for transportation projects is updated every two years.

(2.) ***Stormwater Management Planning (Act 167).*** Stormwater management planning is mandated by the state. Under this act, counties are mandated to prepare stormwater management plans for watersheds within their boundaries. The Lehigh Valley Planning Commission has prepared these plans for all watersheds in Lehigh and Northampton counties. After adoption by the county and approval by the Pennsylvania Department of Environmental Protection, local municipalities are required to enact ordinances that implement the plan.

(3.) ***Sewer and Water Planning.*** The Lehigh Valley Planning Commission has prepared and maintained a regional sewer and water plan since the late 1960s. Information in the plan is updated on a two year schedule. It is used to monitor sewer and water problems in the Lehigh Valley and to advocate consistent policies at the local level.

(4.) ***Park & Open Space Plan.*** The LVPC has an extensive involvement in park and open space planning at the county and local level. County park and open space plans were first prepared in the late 1960s. The LVPC has updated and maintained these plans ever since. Park and open space planning is supported by Lehigh and Northampton counties.

(5.) ***Land Use Planning.*** As noted earlier in this plan, Pennsylvania places most of the authority to control land uses in the hands of local townships, boroughs and cities. The counties are required to prepare comprehensive plans that include a land use element, but they are not empowered to regulate land uses except where local jurisdictions have not created their own local zoning and subdivision regulations.

(6.) ***Economic Development.*** The Lehigh Valley Planning Commission collaborates with the Lehigh Valley Economic Development Corporation and Lehigh and Northampton counties in the preparation of economic development plans and other recommendations regarding the Lehigh Valley economy.

(7.) ***Capital Improvements Programming.*** Capital improvement programs are used to plan and prioritize funds for capital projects. The LVPC staff annually reviews the Lehigh County capital program and the Lehigh County Authority capital program. This process helps to assure coordination with the recommendations in the comprehensive plan. In addition, the LVPC has a major role in the Pennsylvania Twelve Year Transportation Program. This program is updated every two years. Transportation projects must be on the Twelve Year Program in order to receive state funding.

(8.) ***Geographic Information Systems.*** A geographic information system has been created by the LVPC to provide mapped information to municipalities, organizations and individuals in the Lehigh Valley. The information is available to the public on a compact disc.

(9.) ***Local Planning.*** Since the early 1960s the LVPC staff has written comprehensive plans, zoning ordinances and subdivision

regulations for nearly two-thirds of the municipalities in the Lehigh Valley. The Commission continues to perform municipal planning services under contract with Lehigh Valley communities and school districts. In the early 2000s the commission staff prepared work programs and planning studies for a number of multimunicipal comprehensive plans. In addition to comprehensive plans and land use regulations, the LVPC staff is experienced in preparing transportation plans, demographic studies, resident attitude surveys, and reproducible base maps. The Commission has prepared many model planning regulations that have been used at the local level.

(10.) ***Local Government Academy.*** The Lehigh Valley Planning Commission annually offers courses in planning, zoning and various other subjects that are topical and of interest to local units of government in the Lehigh Valley.

APPENDIX A

GLOSSARY

ACCESS MANAGEMENT. The process that provides (or manages) access to land development while simultaneously preserving the flow of traffic on the surrounding road system in terms of safety, capacity, and speed.

AGRICULTURAL EASEMENT. An agricultural conservation easement (referred to as an agricultural easement in this plan) is a legally binding document that restricts the use of land to agricultural purposes for which compensation is paid. Compensation is the value of the development rights, or the difference between the market value and an agricultural value of the subject farm. Landowners retain all other rights and privileges of the private land ownership. The conservation easement runs with the land and legally binds future owners to the easement provisions.

AGRICULTURAL SECURITY AREAS. Areas established pursuant to the Agricultural Area Security Act, which gives special consideration to farmers who voluntarily participate in a local Agricultural Security Area or "District". An Agricultural Security Area is defined as a unit of 500 or more acres of land used for agricultural production. The parcels do not have to be adjacent to each other or in the same municipality. The Act prohibits local and state government from imposing laws and regulations which impede farm operations. Land in Agricultural Security Areas is eligible for preservation using funding from Act 149.

ALLUVIAL SOILS. Soils that have been deposited by flood waters.

ARTERIAL ROAD. A road serving a large volume of comparatively high-speed and long-distance traffic. The primary function of an arterial road is to provide for through-traffic movement, linking collector roads with highways. The provision of access to abutting properties is a secondary function.

CARBONATE GEOLOGY. Limestone or dolomite rock formations formed by carbonate sedimentation in shallow sea waters.

CEDS. Comprehensive Economic Development Strategy. A report required by the Economic Development Administration of the U.S. Department of Commerce for the purpose of maintaining eligibility for infrastructure improvement grants for economic development projects in the Lehigh Valley.

CENTRAL SEWAGE SYSTEM. A publicly or privately-owned system of piping, tanks, pumping facilities and treatment works which provides for collection, conveyance and treatment of sewage or process wastewater designed primarily to serve a single subdivision, land development or rural public use involving two or more lots or domestic sewage disposal in excess of one EDU on a single lot.

CENTRAL WATER SYSTEM. A publicly or privately-owned system of piping, tanks, pumping facilities and treatment works for the treatment and distribution of drinking water designed primarily to serve a single subdivision, land development or rural public use involving two or more lots or domestic water use in excess of one EDU on a single lot.

COLLECTOR ROAD. A road which balances the functions of providing access to abutting properties and providing for through-traffic movement. Collector roads link local streets with the network of arterial roads and highways.

COMMUNITY WATER SYSTEM. A system of piping, tanks, pumping facilities and treatment works which provides for treatment and distribution of drinking water serving a generalized service area and designed independently of specific land developments or subdivisions.

COMPREHENSIVE PLAN. A long-range plan intended to guide the growth and development of a community or region, prepared in accord with the requirements of the Pennsylvania Municipalities Planning Code. At a minimum the plan includes: 1) a statement of objectives regarding future development, 2) a land use plan, 3) a housing plan, 4) a plan for the movements of people and goods, 5) a community facilities and utilities plan, 6) a statement of the relationship of the plan to contiguous municipalities.

CONGESTION. In the Lehigh Valley congestion is defined as level of service "D" or worse. Level of service describes driver comfort and ease of maneuvering in traffic and by the ratio of traffic volume to road capacity. It ranges from A (best) to F (worst). LOS D is the level at which speeds begin to decline slightly with increasing flows. Freedom to maneuver within the traffic stream is noticeably limited, and the driver experiences reduced comfort levels. Even minor incidents can be expected to create queueing, because the traffic stream has little space to absorb disruptions. Level of service D volume/capacity (V/C) ratios range between .81 and .91.

CONSERVATION DEVELOPMENT. A residential development in a rural area that is characterized by clustered compact lots and common open space, and where agriculture and/or natural resources are protected in the design and construction of the development.

COUNTY COMPREHENSIVE PLAN. A land use and growth management plan prepared by the county planning commission and adopted by the county commissioners which establishes broad goals and criteria for municipalities to use in preparation of their comprehensive plan and land use regulation.

DEP. Pennsylvania Department of Environmental Protection.

DRBC. The Delaware River Basin Commission. An organization created by the federal government for the purpose of managing water resources in the Delaware River watershed.

EFFECTIVE AGRICULTURAL ZONING. Zoning which prevents the extensive or widespread conversion of farmland to non-agriculturally oriented development including, but not limited to, housing, commercial, employment and institutional uses.

FLOODWAY. The watercourse channel and adjacent land areas in the 100-year floodplain which must be reserved to carry the base flood without cumulatively increasing the base flood elevation more than a designated height. One foot is the maximum increase allowed by the National Flood Insurance Program.

FLOODWAY FRINGE. The part of the 100-year floodplain that lies outside of the floodway.

HYDRIC SOILS. Hydric soils are soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part of the soil.

IMPORTANT WOODLANDS. Woodlands of unique scenic, historic, geologic or ecologic significance or large contiguous tracts of forest land.

INDUSTRIAL WASTE. Any liquid, gaseous, radioactive, solid or other substance which is not sewage resulting from manufacturing or industry or other plant or works. The term shall include all such substances whether or not generally characterized as waste.

INFILL. The continued development of vacant or underutilized properties in urban or development districts that can be supported by existing infrastructure and which is compatible with adjacent intensive land uses.

INFRASTRUCTURE. The basic facilities, equipment, services and installations needed to support the growth and functioning of an urban area or developing community. Infrastructure includes, but is not limited to, roads, sanitary sewers and water supply systems.

LANTA. Lehigh and Northampton Transportation Authority. The public transit organization that serves Lehigh

and Northampton counties.

LEHIGH VALLEY. An area composed of Lehigh and Northampton counties, Pennsylvania.

LOCAL/CLOSE-TO-HOME SPACE. Outdoor recreation areas including mini-parks, neighborhood parks/ playgrounds, and community parks. Local/close-to-home space may include areas suited for intense recreation facilities such as game fields or passive recreation activities.

LNAA. Lehigh-Northampton Airport Authority. The organization that operates the Lehigh Valley International Airport.

LVEDC. Lehigh Valley Economic Development Corporation. The economic development organization that serves Lehigh and Northampton counties.

LVPC. Lehigh Valley Planning Commission. The official planning commission for Lehigh County and Northampton County and the regional planning commission for the Lehigh Valley.

LVTS. Lehigh Valley Transportation Study. An organizational partnership between PENNDOT, Lehigh County, Northampton County, Allentown, Bethlehem, Easton, LANTA, LNAA for the purpose of planning and programming transportation facilities in the Lehigh Valley.

MAJOR INSTITUTIONS AND EMPLOYMENT CENTERS. Facilities designed to serve and draw from regional and interregional areas rather than close-by local areas.

MOBILE SOURCE EMISSIONS. Tailpipe exhaust from any motor vehicle commonly used for street or highway travel.

MPC. The Pennsylvania Municipalities Planning Code. A Pennsylvania law governing planning, zoning, subdivision regulations and other matters related to the creation and implementation of community plans by municipalities and counties in Pennsylvania.

MULTIMUNICIPAL PLAN. A plan developed and adopted by any number of contiguous municipalities, including a joint municipal plan as authorized by the Pennsylvania Municipalities Planning Code.

MUNICIPAL WASTE. Waste including garbage, refuse, industrial lunchroom or office waste and other material including solid, liquid, semi-solid or contained gaseous material resulting from operation of residential, municipal, commercial or institutional establishments, and from community activities and any sludge not defined as residual or hazardous waste from a municipal, commercial or institutional water supply treatment plant, wastewater treatment plant or air pollution control facility. The term does not include source-separated recyclable materials. Municipal waste does not include residue from a municipal waste incineration facility or infectious or chemotherapeutic waste.

ON-LOT SEWAGE SYSTEM. A system of piping, tanks or other facilities serving a single lot and collecting and disposing of sewage in whole or in part into the soil or into any waters of the Commonwealth or by means of non-fixed pipe conveyance to another site for final disposal.

OPEN SPACE. Any land or area, the preservation of which in its present use would: (1) conserve and enhance natural or scenic resources including farmland; or (2) protect streams or water supply; or (3) promote conservation of soils, wetlands, beaches, or tidal marshes; or (4) enhance the value to the public of abutting or neighboring parks, forests, wildlife preserves, nature reservations, or sanctuaries; or (5) enhance recreation opportunities.

PARATRANSIT. Any form of public transportation which is distinct from conventional urban or interregional

fixed-route transit service.

PENNDOT. Pennsylvania Department of Transportation.

POINT SOURCE EMISSIONS. Air pollution originating from stationary sources such as factories or power plants.

PRIME AGRICULTURAL LAND. Land used for agricultural purposes that contains soils of the first, second, or third class as defined by the United States Department of Agriculture Natural Resource and Conservation Services county soil survey.

PUBLIC SEWAGE SYSTEM. A system of publicly-owned piping, tanks, pumping facilities and treatment works which provides for collection, conveyance and treatment of sewage and process wastewater serving a generalized service area and designed independently of specific land developments or subdivisions.

REGIONAL SPACE. Outdoor natural recreation facilities including regional/metropolitan parks and regional park reserves. Regional spaces are generally at least 200 acres in size and may include active play areas and lands reserved for conservation and natural resource management.

RELIEF INTERCEPTOR. Fixed-pipe sewage conveyance facilities, whether gravity or pressure flow, which provide additional capacity where existing facilities have inadequate capacity for existing or future flows.

RURAL. A sparsely developed area where the land is primarily used for farming, forestry, resource extraction, very low-density residential uses or open space uses.

SEDIMENT. Mineral or organic matter moved by wind, water or gravity which is suspended in water.

SIGNIFICANT WETLANDS. Wetlands which perform one or more of the following: 1) serve important natural biological functions, 2) have been set aside for study or as sanctuaries or refuges, 3) would negatively affect natural drainage, sedimentation or other environmental characteristics if destroyed, 4) shield other areas from erosion or storm damage, 5) provide storage areas for storm or floodwaters, 6) provide prime natural groundwater recharge areas.

SMART GROWTH. A perspective, method, and goal for managing the growth of a community. It focuses on the long-term implications of growth and how it may affect the community, instead of viewing growth as an end in itself. The community can vary in size; it may be as small as a city block or a neighborhood, or as large as a city, a metropolitan area, or a region. It is designed to create livable cities, promote economic development, and protect open spaces, environmentally sensitive areas, and agricultural lands. It promotes compact building forms, infill development, reduced land consumption, mixed uses, variety in housing types, use of existing infrastructure, walking, cycling and transit.

SPRAWL. A haphazard and disorderly form of urban development with the following characteristics: residences far removed from stores, parks, and other activity centers; scattered or “leapfrog” development that leaves large tracts of undeveloped land between developments; commercial strip development along major streets; large expanses of low-density or single-use development; major form of transportation is the automobile.

STORMWATER MANAGEMENT. Any stormwater management technique, apparatus, or facility that controls or manages the path, storage, or rate of release of stormwater runoff. Such facilities may include storm sewers, retention or detention basins, drainage channels, drainage swales, inlet or outlet structures, or other similar facilities.

STRIP DEVELOPMENT. A form of development characterized by the following: (1) the primary uses are commercial or retail in nature; (2) the development site takes direct access from an arterial or collector

road; (3) the site contains parking located above ground level and lying between the accessed roadway and the primary buildings; and (4) the site is characterized by substantial frontage along the road or roads from which it takes primary or secondary access, or by numerous access points along a roadway serving primarily retail or commercial uses.

SUBURBAN. Low- to medium-development patterns that surround the urban areas of a city. The suburbs are often residential in character with single-family detached houses as the primary use of land. Increasingly, the suburbs contain employment and service centers as well as residential areas. The automobile historically determines the form of the suburbs.

TRANSFERABLE DEVELOPMENT RIGHTS. The attaching of development rights to specified lands which are desired by a municipality to be kept undeveloped, but permitting those rights to be transferred from those lands so that the development potential which they represent may occur on other lands where more intensive development is deemed to be appropriate.

URBAN DEVELOPMENT. Residential, commercial, industrial, institutional or other development which produces process wastes or sewage in excess of one equivalent dwelling unit per acre, or which, by its nature and size, does not require a rural location or is designed to mainly serve a widespread or urban area.

WELLHEAD PROTECTION. A strategy for preventing the contamination of groundwater sources of water supply involving land use controls, contaminant management practices and local planning and monitoring initiatives.

WETLAND. Lands transitional between terrestrial and aquatic systems where the water table is usually at or near the surface or the land is covered by shallow water. For purposes of this definition, wetlands must have the following three attributes: (a) have a predominance of hydric soils; (b) are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support a prevalence of hydrophytic vegetation typically adapted for life in saturated soil conditions; and (c) under normal circumstances support a prevalence of such vegetation.

APPENDIX B

LEHIGH VALLEY SURFACE TRANSPORTATION PLAN: 2011-2030

MAJOR PROJECTS		
Project Name	**Municipality**	**Description**
Route 22	Various — Route 33 to I-78	Widen
American Parkway	Allentown	4 Lane Extension
Route 412	Bethlehem	Widen
Route 145 Safety Project	Whitehall Twp.	Turn Lanes, Widen Existing Lanes
Fifteenth St. Bridge	Allentown	Replace
Route 22 Bridge over Lehigh River	Whitehall/Hanover (L) twps.	Replace and Widen
Easton Intermodal Center	Easton	Construct Transfer Center
Coplay/Northampton Bridge	Coplay/Northampton	Rehabilitate
Rt. 100/Claussville	Lowhill Twp.	Signalize; Safety Improvements
Rt. 22 Section 400 Phase I	Whitehall Twp.	Improve interchange @ MacArthur Rd.
Rt. 22 Section 400 Phase II	Whitehall Twp.	Improve Interchange @ Fullerton Ave.
Chapman Bridge	Upper Macungie Twp.	Replace
Tilghman St. Bridge	Allentown	Rehabilitate
8th St. Bridge	Allentown	Rehabilitate
Rt. 611 Bushkill Creek Bridge	Easton	Rehabilitate
Messinger St. Bridge	Bangor	Replace
Lynn Ave. Bridge	Bethlehem	Replace

NOTE: Updated June 2010, Lehigh Valley Planning Commission.

APPENDIX C

November 29, 2001 *Resolution #7-01*

LEHIGH VALLEY PLANNING COMMISSION DEALING WITH GENERAL CONSISTENCY OF MUNICIPAL PLANS WITH THE COUNTY COMPREHENSIVE PLAN

WHEREAS, Section 301.4(a) of the Pennsylvania Municipalities Planning Code as amended requires: "Municipal comprehensive plans which are adopted shall be generally consistent with the adopted county comprehensive plan." and

WHEREAS, Section 301.4(b) of the Pennsylvania Municipalities Planning Code further requires: "County planning commissions shall publish advisory guidelines to promote general consistency with the adopted county comprehensive plan. These guidelines shall promote uniformity with respect to local planning and zoning terminology and common types of municipal land use regulations." and

WHEREAS, the Lehigh Valley Planning Commission serves as the official county planning commission for Lehigh and Northampton counties and in that capacity intends to comply with the requirements of the planning code, and

WHEREAS, Lehigh and Northampton counties have adopted the *Comprehensive Plan for Lehigh and Northampton Counties;*

NOW, THEREFORE BE IT RESOLVED, that the Lehigh Valley Planning Commission hereby adopts the following guidelines to promote general consistency with the adopted county comprehensive plan,

Advisory Guidelines for Determining General Consistency with the Comprehensive Plan for Lehigh and Northampton Counties

In order to be generally consistent with the *Comprehensive Plan for Lehigh and Northampton Counties,* municipal plans shall meet the following guidelines:

(1.) The amount, location, density, intensity, character and timing of future land use as proposed in the text, tables or maps in any municipal plan or amendment thereto shall be in accord with recommendations in the county comprehensive plan pertaining to these features;

(2.) Goals and policies relating to natural and historic resources such as wetlands, aquifer recharge zones, woodlands, steep slopes, prime agricultural land, flood plains, unique natural areas, historic sites and such other historic, natural or environmental features shall be compatible with the goals, policies, and maps in the county comprehensive

plan or other supplemental studies adopted by the Lehigh Valley Planning Commission;

(3.) The housing element of the proposed municipal comprehensive plan or amendment thereto shall provide adequate housing opportunities to meet the needs of present and future residents in accord with guidelines pertaining to housing type and density prescribed in the county comprehensive plan;

(4.) The location, timing, and character of transportation facilities, community facilities, water, sewer, stormwater management, and other utilities contained in applicable elements of the proposed municipal comprehensive plan or amendment(s) thereto shall be in accord with the policies of the county comprehensive plan, or specific functional components of the plan;

(5.) The goals and policies in the proposed municipal plan or amendment thereto shall be in accord with the goals and policies of the county comprehensive plan insofar as they are relevant to the comprehensive plan. It is recognized that municipal plans may incorporate issues that are important locally but are not relevant to goals and policies of the county comprehensive plan. In such cases, the Lehigh Valley Planning Commission will make a determination that such matters are of local concern only;

(6.) Any finding of general consistency with the county comprehensive plan shall be based on finding of consistency for each of the five items listed above. In reviewing municipal plans for general consistency with the county plan, the Lehigh Valley Planning Commission staff is directed to specify those items that are inconsistent, missing, or incomplete and make recommendations to the local municipality on actions that should be taken to create consistency between the municipal and county plans.

ATTEST:

Michael N. Kaiser, AICP
Executive Director

December 11, 2001
(Date)

LEHIGH VALLEY PLANNING COMMISSION

Ira J. Faro
Chair

December 11, 2001
(Date)

APPENDIX D

RESOLUTION 2-05

RESOLUTION ADOPTING A COMPREHENSIVE PLAN AND RECOMMENDATION THAT THE PLAN BE ADOPTED BY LEHIGH AND NORTHAMPTON COUNTIES.

WHEREAS, the Lehigh Valley Planning Commission (LVPC) was organized in 1961 to create a comprehensive plan for Lehigh and Northampton counties;

WHEREAS, the Pennsylvania Municipalities Planning Code, mandates that counties prepare and update a comprehensive plan ;

WHEREAS, Lehigh and Northampton counties adopted a comprehensive plan in July, 1993;

WHEREAS, the Lehigh Valley Planning Commission has prepared an update to the previously adopted comprehensive plan and that update is entitled *Comprehensive Plan The Lehigh Valley ... 2030*;

WHEREAS, the LVPC has conducted a public opinion survey, held workshops, and distributed the draft plan to all municipalities and school districts in Lehigh and Northampton counties, agencies, organizations, authorities and to neighboring counties for review and comment, and has taken the comments of these entities into consideration in preparation of the final draft of the plan;

WHEREAS, the LVPC has held at least one public meeting pursuant to public notice before forwarding the *Comprehensive Plan The Lehigh Valley ... 2030* to Lehigh and Northampton counties;

NOW, THEREFORE, BE IT RESOLVED, that the Lehigh Valley Planning Commission adopts the document entitled *Comprehensive Plan The Lehigh Valley ... 2030* as its official plan and recommends that the governing bodies of Lehigh and Northampton counties adopt it in accord with the provisions of Article III of the Pennsylvania Municipalities Planning Code as amended.

Michael N. Kaiser, Executive Director

Nils Hovik, Vice Chair

April 28, 2005

APPENDIX E

APPROVED First Reading: 06/08/05
Passed 7-0: 06/22/05

COUNTY OF LEHIGH, PENNSYLVANIA
COMMISSIONERS BILL 2005 - NO. 64
SPONSORED BY THE BOARD OF COMMISSIONERS
REQUESTED DATE: MAY 13, 2005
ORDINANCE 2005 – NO. 167

ADOPTING A LEHIGH COUNTY COMPREHENSIVE PLAN

WHEREAS, the Lehigh Valley Planning Commission serves as the official planning commission for Lehigh County; and

WHEREAS, the Lehigh Valley Planning Commission acts in a research and consulting capacity for Lehigh County (and its municipalities); and

WHEREAS, the Lehigh Valley Planning Commission was formed by Lehigh and Northampton Counties in 1961 for the purpose of creating a Comprehensive Plan and conducting other studies for the management of land and other resources; and

WHEREAS, Section 301.4 of the Pennsylvania Municipalities Planning Code requires that counties prepare and adopt a Comprehensive Plan and that municipal plans be generally consistent with the adopted county Comprehensive Plan.

NOW, THEREFORE, IT IS HEREBY ENACTED AND ORDAINED by the Board of Commissioners of Lehigh County, Pennsylvania that:

1. The Lehigh County Board of Commissioners recognizes the Lehigh Valley Planning Commission of Lehigh and Northampton Counties as the official planning commission for Lehigh County.

2. The Comprehensive Plan presented and adopted by the Lehigh Valley Planning Commission on April 28, 2005 is hereby adopted by the Lehigh County Board of Commissioners as the official Comprehensive Plan of Lehigh County, superseding the Plan adopted in July 1993.

3. The Lehigh County Board of Commissioners will follow the guidelines and policies presented in this Plan when dealing with planning issues requiring action by the Board.

4. The Lehigh County Board of Commissioners strongly encourages all the Authorities, Boards, Commissions and Departments in Lehigh County to follow the recommendations of the Comprehensive Plan that may apply to them. The Board of Commissioners will, when reviewing action by its Authorities, Boards, Commissions and Departments, monitor said action for compliance with the Comprehensive Plan.

5. The Lehigh County Board of Commissioners strongly urges all of the municipalities in Lehigh County to follow the recommendations and studies of the Lehigh Valley Planning Commission, and closely follow the Comprehensive Plan as it applies to both local and regional planning.

6. The County Executive, the Executive Secretary, the County Solicitor and other appropriate officers and staff of the County are hereby authorized to take all necessary and incidental actions necessary to carry out the actions set forth in this Ordinance.

7. The County Executive shall distribute copies of this Ordinance to the proper officers and other personnel of Lehigh County whose further action is required to achieve the purpose of this Ordinance.

8. Any Ordinance or part of an Ordinance conflicting with the provisions of this Ordinance is hereby repealed insofar as the same affects this Ordinance.

9. This Ordinance shall become effective in ten (10) days.

ADOPTED BY THE LEHIGH COUNTY BOARD OF COMMISSIONERS on the 22 day of June, 2005, by the following vote:

	AYE	NAY
Kurt J. Derr	X	
Percy H. Dougherty	X	
Nicholas E. Englesson (absent)		
Marc J. Grammes	X	
Joan L. Fredericks	X	
James L. Kelly	X	
Daniel K. McCarthy (absent)		
Sterling H. Raber	X	
Andy Roman	X	

ATTEST: _____
Clerk to the Board of Commissioners

APPROVED this 27th day of June, 2005.

_____
Jane R. Ervin, Lehigh County Executive

ENACTED this 27 day of June, 2005.

COUNTY OF LEHIGH ORDINANCE 2005 - No. 167

CERTIFICATION

I, Christopher Christman, Acting Clerk to the Board of Commissioners of Lehigh County, do hereby certify that the attached is a true and correct copy of the ordinance adopted at a regular meeting of the Commissioners of Lehigh County held on the **22nd** day of **June, 2005**, and approved on the **27th** day of **June, 2005** by the Lehigh County Executive, and effective on the **7th** day of **July**, **2005**.

CHRISTOPHER S. CHRISTMAN
Acting Clerk
Board of Commissioners

APPENDIX F

THE COUNTY OF NORTHAMPTON

RESOLUTION

Number 20-05

WHEREAS, the Lehigh Valley Planning Commission serves as the official planning commission for Northampton County; and

WHEREAS, the Lehigh Valley Planning Commission acts in a research and consulting capacity for Northampton County (and its municipalities); and

WHEREAS, the Lehigh Valley Planning Commission was formed by Northampton and Lehigh Counties in 1961 for the purpose of creating a Comprehensive Plan and conducting other studies for the management of land and other resources; and

WHEREAS, Section 301.4 of the Pa. Municipalities Planning Code requires that Counties prepare and adopted a Comprehensive Plan and that municipal plans be generally consistent with the adopted County Comprehensive Plan;

NOW, THEREFORE, IT IS HEREBY RESOLVED BY THE COUNTY COUNCIL OF NORTHAMPTON COUNTY, PENNSYLVANIA, THAT:

1. The Northampton County Council recognizes the Lehigh Valley Planning Commission of Lehigh and Northampton Counties as the official planning commission for Northampton County;

2. The Comprehensive Plan presented and adopted by the Lehigh Valley Planning Commission is hereby adopted by the Northampton County Council as its official Comprehensive Plan, superceding the Plan adopted in July 1993;

3. The Northampton County Council will refer to the guidelines and policies presented in the plan when dealing with planning issues requiring action by the Council;

4. The Northampton County Council strongly encourages all the Authorities, Boards, Commissions and Departments in Northampton County to follow the recommendations of the Comprehensive Plan that may apply to them. The County Council will, when reviewing action by its Authorities, Boards, Commissions and Departments, monitor said action for compliance with the Comprehensive Plan;

5. The Northampton County Council strongly urges all of the municipalities in Northampton County to follow the recommendations and studies of the Lehigh Valley Planning Commission, and closely follow the Comprehensive Plan as it applies to both local and regional planning;

6. The Clerk to the County Council is hereby instructed to forward a copy of this resolution to the Lehigh County Board of Commissioners, the members of the Lehigh Valley Planning Commission of Lehigh-Northampton Counties, all Northampton County Authorities, Boards Commissions, all Northampton County Departments, and all of the municipalities of Northampton County;

7. Any resolution or part of a resolution conflicting with the provisions of this resolution is hereby repealed insofar as the same affects this resolution;

8. The County Executive shall distribute copies of this resolution to the proper officers and other personnel of Northampton County whose further action is necessary to achieve the purpose of this resolution.

ATTEST:

Frank E. Flisser
Clerk to Council

INTRODUCED BY:

Timothy B. Merwarth

The above resolution was adopted by the Northampton County Council at the meeting held June 16, 2005.

(J:\2005\res\res20-05)

APPENDIX G

RESOLUTION NO. 2-10

RESOLUTION OF THE LEHIGH VALLEY PLANNING COMMISSION ADOPTING POLICIES RELATED TO THE PLACEMENT OF WIND ENERGY FACILITIES IN AREAS DESIGNATED FOR NATURAL RESOURCE PROTECTION IN THE LEHIGH VALLEY COMPREHENSIVE PLAN.

WHEREAS, the Lehigh Valley Planning Commission (LVPC), the official planning commission for Lehigh and Northampton counties, was formed in 1961 for the purpose of creating a comprehensive plan to guide orderly growth in the Lehigh Valley region; and

WHEREAS, the Lehigh Valley comprehensive plan entitled *Comprehensive Plan The Lehigh Valley ... 2030* identifies significant natural resources that should be conserved based upon careful studies by the LVPC, the Pennsylvania Science Office of the Nature Conservancy and others, and the installation of wind energy facilities may modify the natural habitat and can have significant adverse impacts on wildlife, especially when located in sensitive natural areas; and

WHEREAS, scientific studies have documented that birds and bats are vulnerable to collisions with wind turbine blades, turbine towers and associated infrastructure, and the Kittatinny Ridge (also known as Blue Mountain) is a significant fall migration flyway used annually by tens of thousands of birds and has been designated as an Important Bird Area by the Pennsylvania Audubon Society; and

WHEREAS, the development of wind energy facilities and their associated support infrastructure (e.g., support roads, storage and maintenance facilities, and power lines) can result in habitat destruction and fragmentation, threatening species survival and biodiversity; and

WHEREAS, wind energy facilities, with their long rows of wind turbines, can span hundreds of acres and could intrude upon significant portions of the Lehigh Valley's scenic landscapes if placed upon scenic greenways such as Blue Mountain or South Mountain; and

WHEREAS, the wind resource at a given site can be classified according to wind power classes, ranging from Class 1 (the lowest) to Class 7 (the highest), and it is generally accepted by wind energy research and industry groups, including the United States Department of Energy National Renewable Energy Laboratory (NREL) and the American Wind Energy Association, that sites with a Class 3 or greater wind power rating may be suitable, and sites with a Class 4 or greater wind power rating are preferred, for wind energy facilities; and

WHEREAS, based upon information contained in wind resource maps created by the NREL, Lehigh and Northampton counties are only marginally suitable for wind energy facilities as they do not contain any large concentrations of land with a Class 3 wind power rating or any sites with a Class 4 or greater wind power rating; and

WHEREAS, the LVPC is concerned that the placement of wind energy facilities within the natural resource protection areas identified in the Comprehensive Plan will create a potential danger to natural landmarks, natural resources, wildlife and scenic views;

NOW, THEREFORE BE IT RESOLVED that the Lehigh Valley Planning Commission hereby adopts the following policies related to the placement of wind energy facilities to promote consistency with the tural resource protection policies of the *Comprehensive Plan The Lehigh Valley ... 2030.*

LEHIGH VALLEY PLANNING COMMISSION
WIND ENERGY FACILITIES POLICIES

Goal

To minimize the adverse environmental impacts of wind energy facilities and to protect and preserve very high and high priority natural resources as depicted in the Comprehensive Plan The Lehigh Valley ... 2030.

Definitions

- WIND ENERGY FACILITY – An electric generation facility, whose main purpose is to supply electricity, consisting of one or more wind turbines and other accessory structures and buildings, including substations, meteorological towers, electrical infrastructure, transmission lines and other appurtenant structures and facilities. The term does not include stand-alone wind turbines constructed primarily for residential or farm use.
- WIND TURBINE – A wind energy conversion system that converts wind energy into electricity through the use of a wind turbine generator and includes the nacelle, rotor, tower and pad turbine, if any.

Policies

- Wind energy facilities should not be developed in areas designated as very high or high conservation priorities in the Comprehensive Plan. These areas are identified on Map 8 – Natural Resources Plan in the Comprehensive Plan.
- Depending on local conditions, wind energy facilities may be appropriate in agricultural and rural areas with an adequate wind resource if they are compatible with the local environment and land use regulations and consistent with the standards of the Pennsylvania Wind and Wildlife Collaborative.

Implementation

- During the review of local comprehensive plans, zoning ordinances, and subdivision and land development ordinances, the LVPC will recommend natural resource protection policies as they relate to wind energy facilities, as needed.
- Any conflicts with policies on wind energy facilities will be noted during LVPC reviews of subdivisions and land developments.

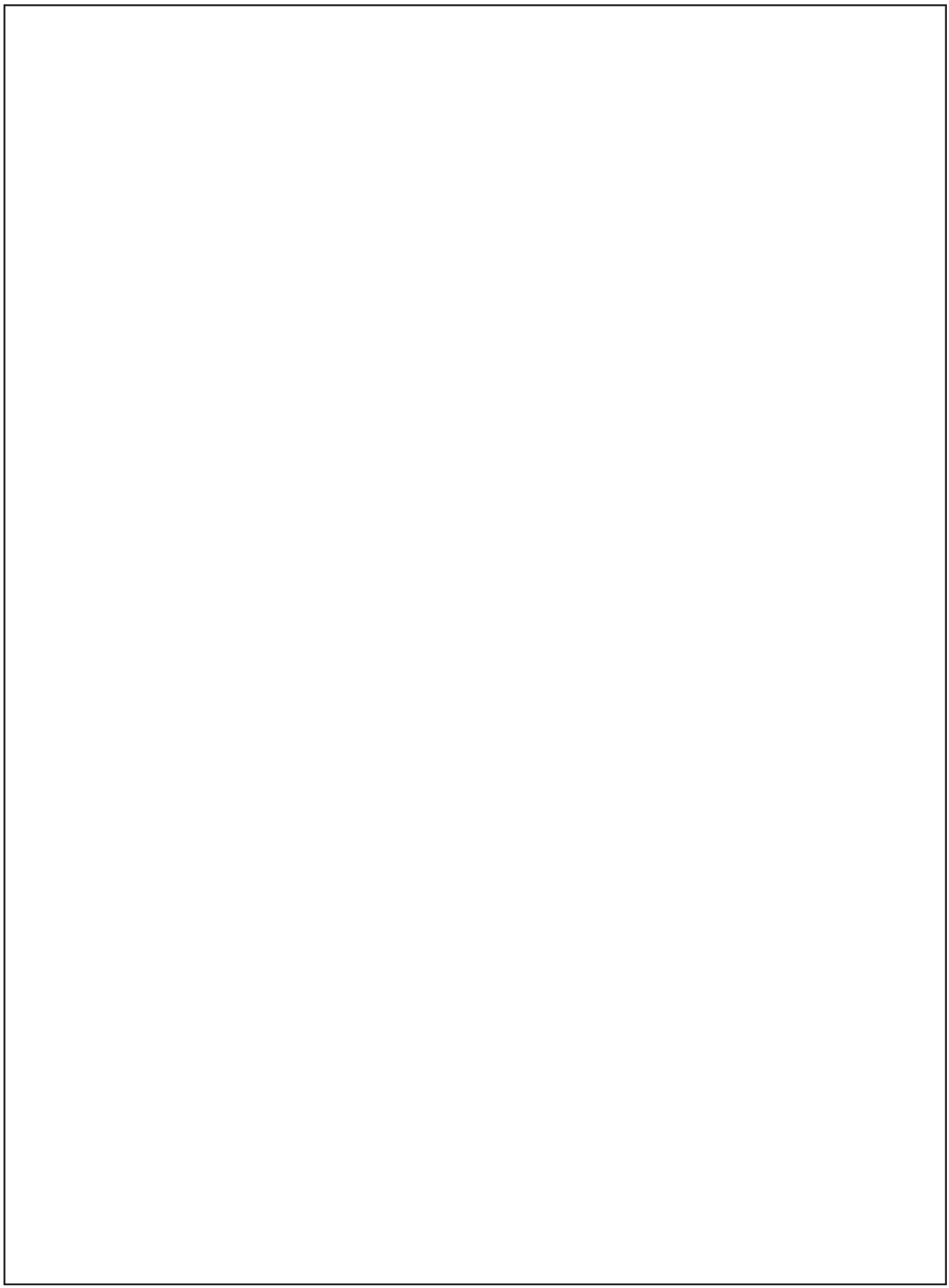
Adopted by the Lehigh Valley Planning Commission this 28th day of January, 2010.

ATTESTED BY:

Michael N. Kaiser, Executive Director

LEHIGH VALLEY PLANNING COMMISSION

Steven L. Glickman, Chair



MODEL REGULATIONS

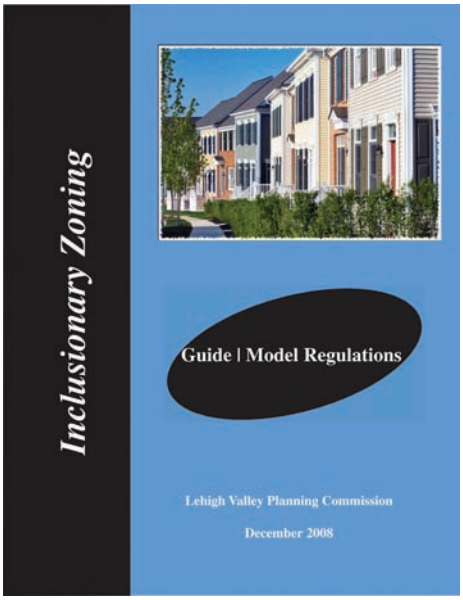
and

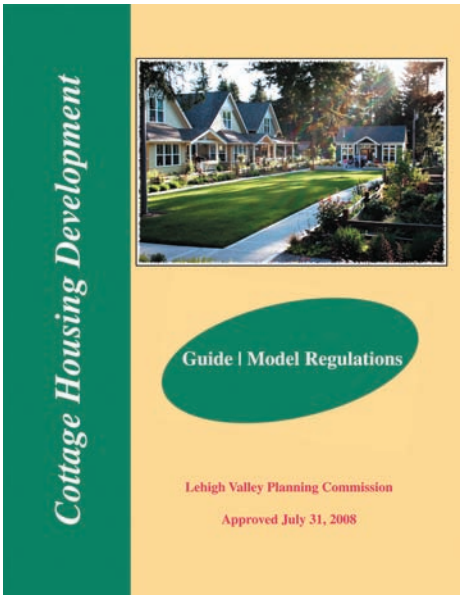
SUPPLEMENTAL PLANNING STUDIES

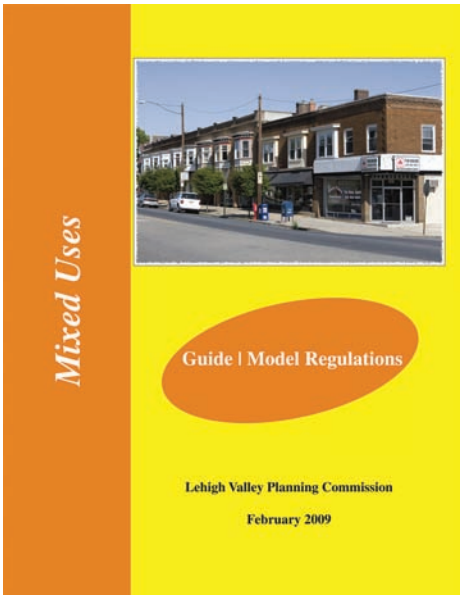
Prepared by the
Lehigh Valley Planning Commission

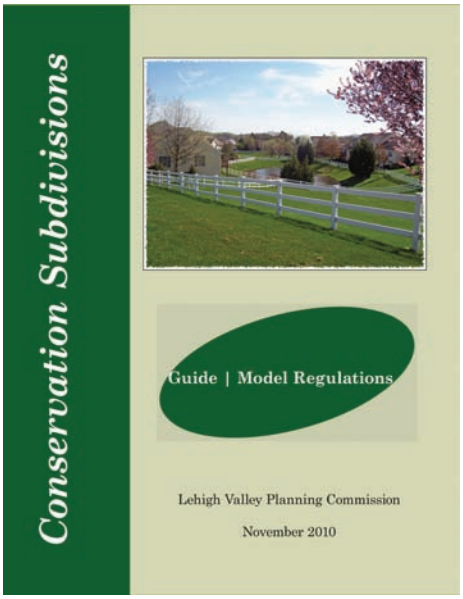
Full text available at www.lvpc.org

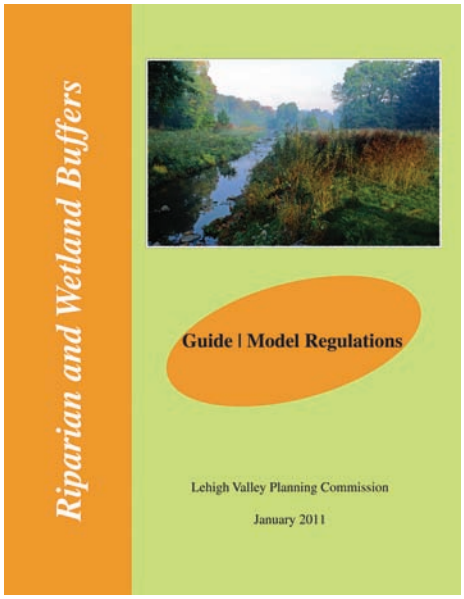
MODEL DEVELOPMENT REGULATIONS

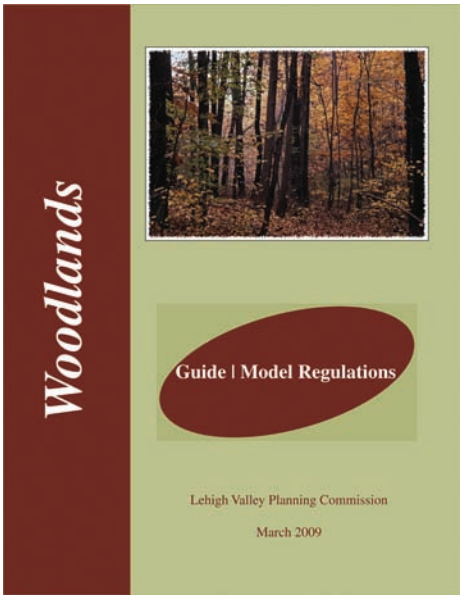


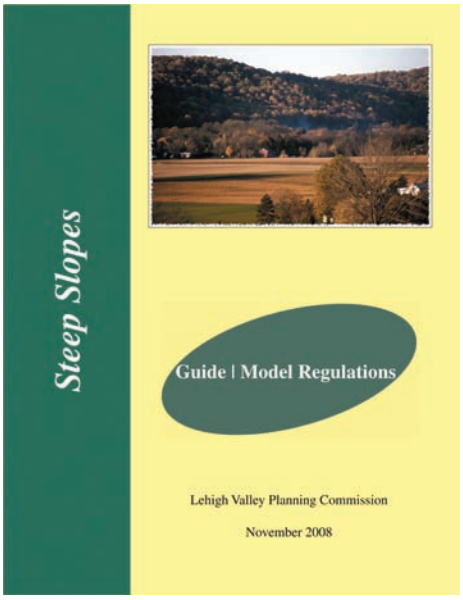


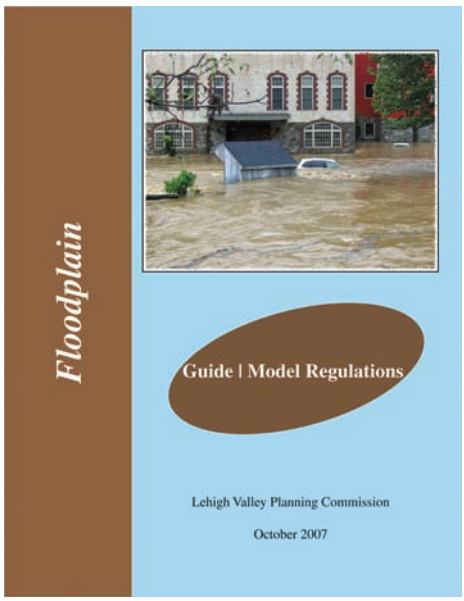












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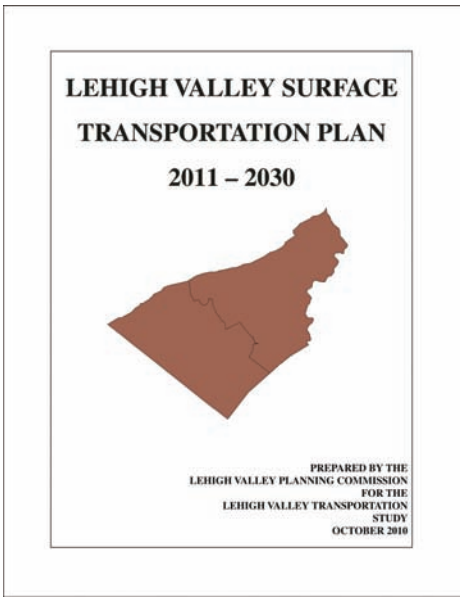
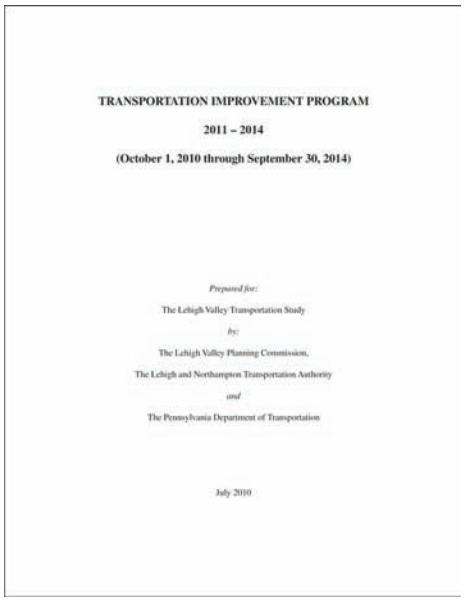
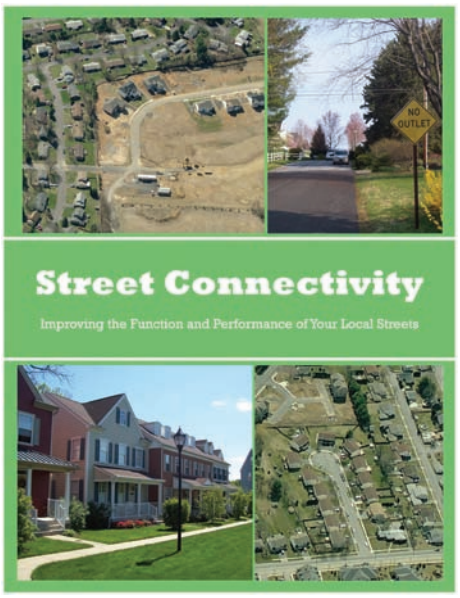
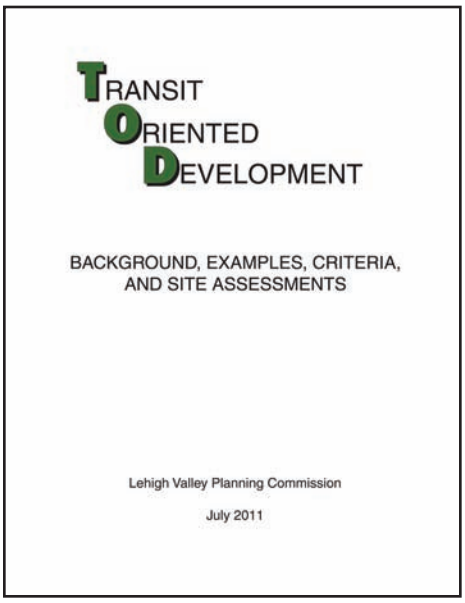
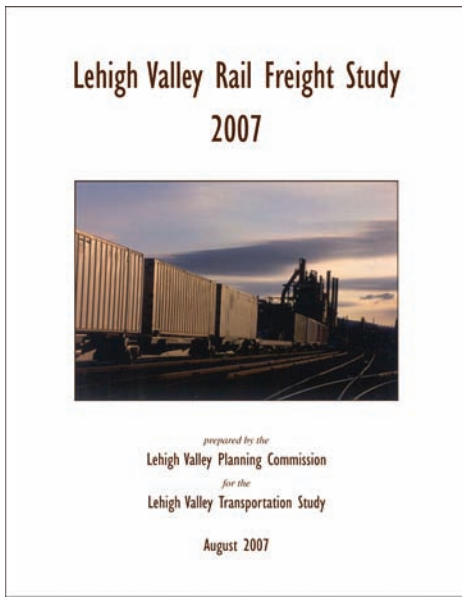
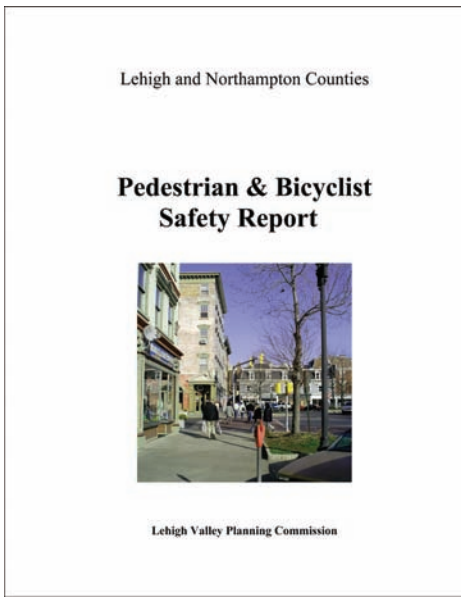


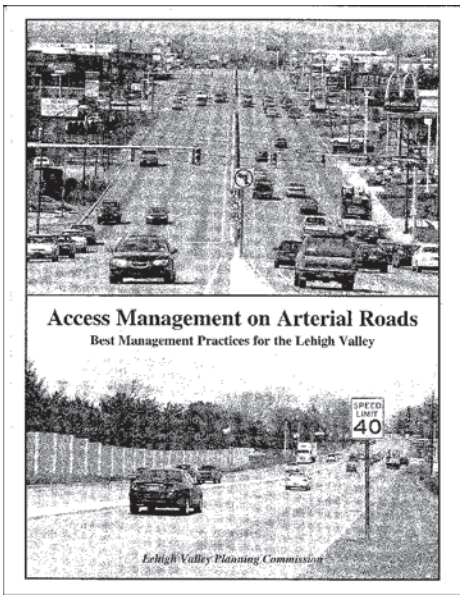


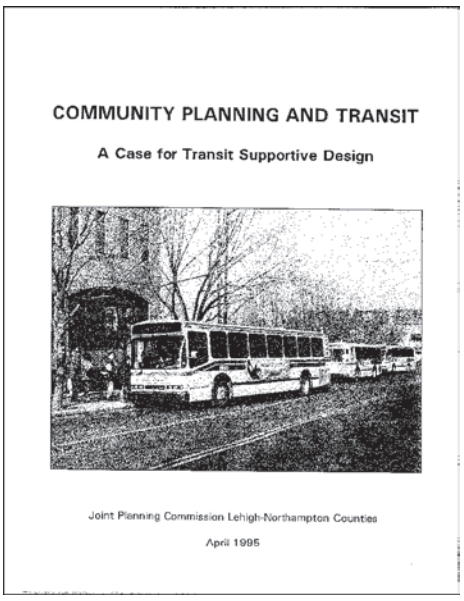


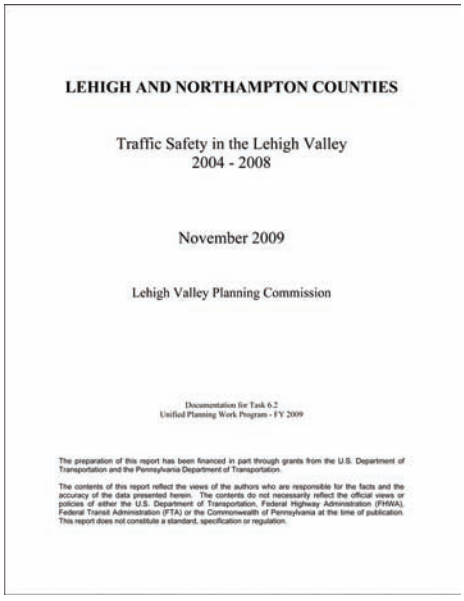




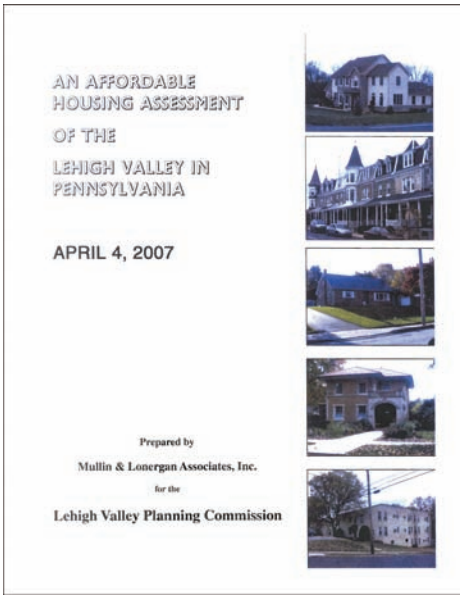


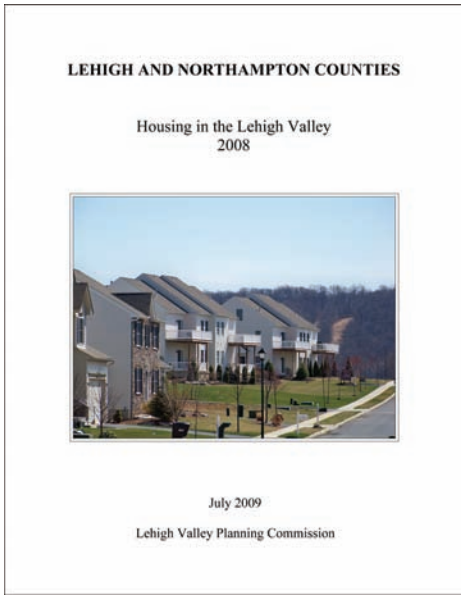


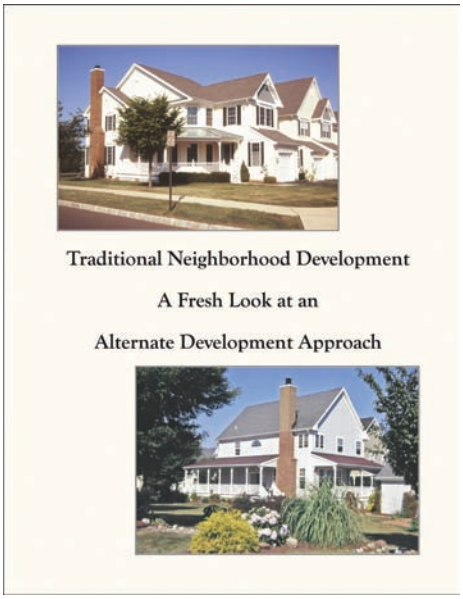




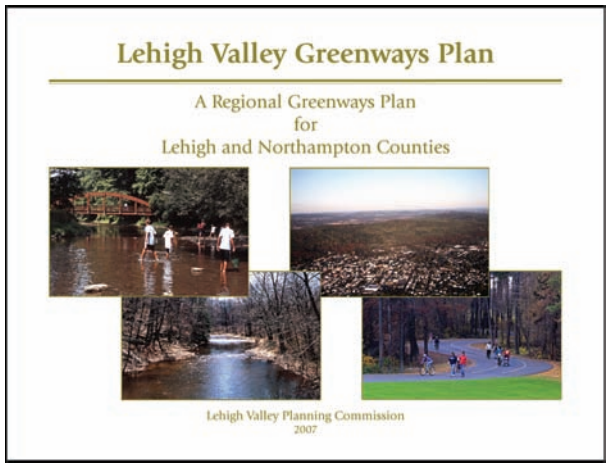
HOUSING

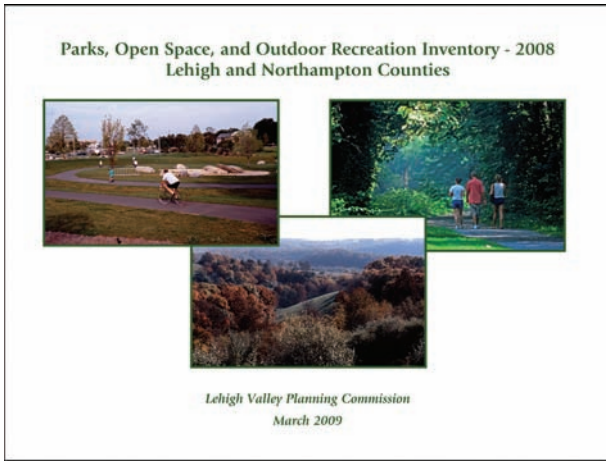


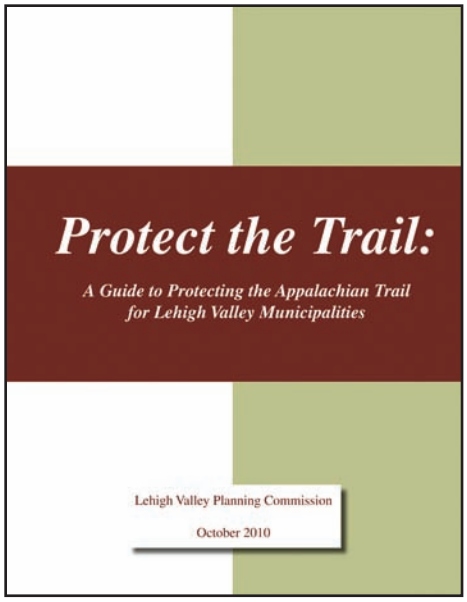


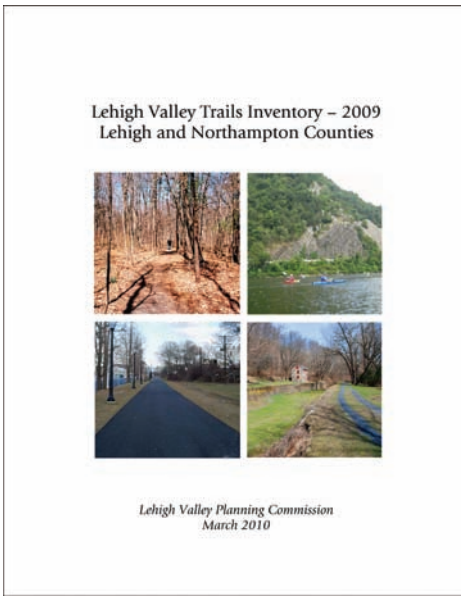


PARKS AND OPEN SPACE









GENERAL INFORMATION