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Many people were instrumental in the development of this Plan. Their time commitment and input were greatly appreciated.

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Cover photo courtesy of Becky Bradley, LVPC
Executive Summary
Purpose of the Livable Landscapes Plan

Many valuable open space resources worthy of discovery and preservation exist throughout Northampton County—scenic moun-
tains and farmland views, river corridors and large forests, parks and history sites. These features are an integral part of a high quality of life. Northampton County (County) residents have long been interested in open space resources as documented through public opinion surveys by the Lehigh Valley Planning Commission (LVPC) in 1974, 1988, 1999 and 2010. The 2010 survey revealed that nearly 71% of respondents indicated that parks, recreation facilities and open space are needed. Northampton County voters also have strongly supported state and county referendums to fund the creation of parks, protect important natural areas and preserve farmland. In a survey of active registered voters conducted specifi-
cally for this Plan, two of the key findings are: 1) Protecting lakes, rivers, streams, and preserving water quality were most frequently (71%) ranked the highest priority for the County, and 2) 95% of the respondents strongly agreed or agreed that protecting farmland in the County is important. Recent population growth and land use changes show the region is experiencing a strong development trend which could impact much of what residents find appealing about what makes the County special. To gain an understanding of the needs and opportunities related to open space in Northampton County, the public participation process to develop Livable Landscapes included multiple components. The main ele-
ments used to solicit input were a steering committee, public meet-
tings, key person interviews and a public opinion survey. The Plan’s Steering Committee was created to provide insight and input into the planning process; comment on information and mapping developed by the LVPC staff; act as a resource for localized activities pertaining to park, recreation and open space planning; and suggest alterna-
tives and make recommendations to the Plan. Four meetings were held—March and June 2014 and March and September 2015. Two rounds of public meetings were conducted throughout the County in June 2014 and April 2015, presenting the project and existing findings, key person interviews and a public opinion survey. The Plan’s Steering Committee was created to provide insight and input into the planning process; comment on information and mapping developed by the LVPC staff; act as a resource for localized activities pertaining to park, recreation and open space planning; and suggest alterna-
tives and make recommendations to the Plan. Four meetings were held—March and June 2014 and March and September 2015. Two rounds of public meetings were conducted throughout the County in June 2014 and April 2015, presenting the project and existing findings, key person interviews and a public opinion survey.]

Livable Landscapes – An Open Space Plan for Northampton County is an update to the current County parks plan—Northampton Coun-
ty Parks – 2010 published in November 2002 by the Lehigh Valley Planning Commission. Since the publication of that plan, many tasks have been accomplished and milestones reached that further the ad-
ancement of the open space network in the County. These accom-
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The purpose of Livable Landscapes – An Open Space Plan for Northampton County is to guide the conservation, restoration and enhancement of the County’s open space resources and create linkages between the County’s vast natural resources; outdoor rec-

Accomplishments

Livable Landscapes – An Open Space Plan for Northampton County is an update to the current County parks plan—Northampton Coun-
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plishments prompted recognition from the Pennsylvania Land Trust Association, which in May 2015, awarded Northampton County the 2015 Conservation Leadership Award for leadership in the con-

• 1,503 acres of natural areas were preserved, totaling $4.20 million, through the Natural Areas and Open Space component of the Open Space Program.

• 56 projects were funded through the Municipal Park Acquisition and Development component, totaling $5.94 million.

• Trails were constructed in the City of Easton, Palmer and Bushkill townships and Tatamy and Stockertown boroughs as part of the effort to connect the City of Easton to the Kittatiny Ridge.

• Seven municipalities in Northampton County approved a 0.25% Earned Income Tax for the preservation of farmland and natural areas since 2005.

• The County farmland preservation program preserved 10,000-acres by 2008, and the 100th farm was preserved in 2010.

• In 2010, the farmland preservation program created the Town-
ship Partnership Program.

• 13,000 acres on 152 farms, totaling $17.73 million, were pre-

Benefits of Open Space

Open space plays a vital role in many aspects of Northampton County’s quality of life by 1) protecting the environment; 2) providing community needs; 3) generating economic activity, and 4) providing health and wellness benefits. To document the economic benefits of open space, the Lehigh Valley Return on Environment study was completed in 2014. Results of the analysis found that open space adds significant value to the regional economy, with benefits accruing to agriculture and buildings provided by Northampton County open space is estimated to be $27.8 million.

Outdoor Recreation: An estimated $351.2 million is spent on outdoor recreation each year in Northampton County. Recreational activity on open space in Northampton County creates an estimated 4,518 jobs both inside and outside the County. These jobs generate about $27.1 million in state and local taxes.

Property Value: The average premium afforded each home within ¼ mile of protected open space is $15,400 in Northampton County.

Public Participation

To gain an understanding of the needs and opportunities related to open space in the County, the public participation process to develop Livable Landscapes included multiple components. The main ele-

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miles of protected open space is $15,400 in Northampton County.
goals and soliciting feedback on needs and opportunities during the second round. Key person interviews were held with County staff and business owners in Northampton County. The County staff provided insight into the state of the County parks and the Open Space Program components. Finally, the public opinion survey was administered and analyzed by the LVPC, which collected mail and electronic survey data from a random sample of active registered voters in the County in 2014. A total of 898 surveys were returned from the mailing to 5000 voters.

Vision

Our Livable Landscape – a mosaic of parks, farmland, natural areas, scenic views and historical and cultural sites promoting healthy lifestyles, natural diversity and community identity.

Goals

Presented below are the goals established for the Northampton County Livable Landscapes plan. Policies and implementation strategies associated with each goal are presented in the Plan.

Goal 1 – Conserve, restore and enhance natural resources

Goal 2 – Provide and maintain an exemplary park, trail and recreation system to meet residents’ needs and enhance tourism opportunities.

Goal 3 – Conserve, restore and enhance a greenways and blueways network.

Goal 4 – Preserve farmland and farming to meet food production, economic and open space needs.

Goal 5 – Preserve historic, cultural, and scenic resources and landscapes.

Goal 6 – Advance County open space resources and usage through funding, promotion, education, partnerships and other strategies.

Action Plan

The Action Plan Matrix is a compilation of the recommendations from the different component sections in this Plan. Each recommendation is assigned a priority and responsible parties. The prioritization balances the needs, capacity of County agencies and budgetary realities. The priority levels are Immediate (1 to 3 years), Short-Term (4 to 7 years), or Long-Term (8 or more years). A few key recommendations are:

- Develop a master site plan for Gall Farm to guide development of the park.
- Complete development of Phases 3 through 9 at Wayne A. Grube Memorial Park.
- Work with federal and state partners to create additional regional parkland of at least 660 acres by 2030, 1,200 acres by 2050 and 1,770 acres by 2060, in addition to the currently proposed park sites, to reach or exceed 15 acres/1,000 population. Note that acquisition projects currently underway would add over 1,000 acres to regional outdoor recreation space and lessen the need for additional acquisitions to meet minimum standards.
- Consider recommended modifications to the Open Space Program and guidelines.
- Maintain or enhance funding for the County Open Space Program for all four components including Open Space and Natural Areas, Municipal Park Acquisition and Development, County Parks and Farmland Preservation.
Purpose of the Livable Landscapes Plan

Many valuable open space resources worthy of discovery and preservation exist throughout Northampton County—scenic mountains and farmland views, river corridors and large forests, parks and historic sites. These features are an integral part of a high quality of life. Northampton County (County) residents have long been interested in open space resources. This has been documented throughout regional public opinion surveys conducted by the Lehigh Valley Planning Commission (LVPC) in 1974, 1988, 1999 and 2010. The 2010 survey revealed that nearly 73% of Northampton County respondents agreed that more parks, recreation facilities and open space should be acquired and/or developed in the County. Northampton County voters also have strong support for County referendums to fund the creation of parks, protect important natural areas and preserve farmland. In a survey of active registered voters conducted specifically for this Plan, two of the key findings are: 1) Protecting lakes, rivers, streams, and preserving water quality were most frequently (71%) ranked the highest priority for the County, and 2) 95% of the respondents strongly agreed or agreed that protecting farmland. In a survey of active registered voters conducted specifically for this Plan, two of the key findings are: 1) Protecting lakes, rivers, streams, and preserving water quality were most frequently (71%) ranked the highest priority for the County, and 2) 95% of the respondents strongly agreed or agreed that protecting farmland.

The purpose of Livable Landscapes—An Open Space Plan for Northampton County is to guide the conservation, restoration and enhancement of the County’s open space resources and create linkages between the County’s vast natural resources; outdoor recreational facilities; greenways and byways; farmlands; and historic, cultural and scenic resources. The County, municipalities, conservation organizations, landowners and developers can use this Plan in decision making that will maintain and enhance the County’s quality of life. Further, the Plan seeks to encourage partnerships to achieve common open space goals.

Accomplishments

Livable Landscapes – An Open Space Plan for Northampton County is an update to the current County parks plan—Northampton County Parks—2010 published in Northampton Valley Planning Commission. Since the publication of that plan, many tasks have been accomplished and milestones reached that further the advancement of the open space network in the County. These accomplishments prompted recognition from the Pennsylvania Land Trust Association, which in May 2015, awarded Northampton County the 2015 Government Conservation Leadership Award for leadership in the conservation of particular landscapes and crucial natural resources.

1. Northampton County was selected in 2004 by the Department of Conservation and Natural Resources (DCNR) to pilot a new conservation landscape initiative, leading to the formation of Lehigh Valley Greenways, a two county partnership that strives to connect natural and cultural resources across the Lehigh Valley.

2. The Northampton County 21st Century Open Space Initiative (Open Space Program) was established in December 2004 after County voters cast ballots on a non-binding referendum in November 2002 to authorize $37 million to preserve natural areas ($14 million), assist municipalities in the acquisition and development of parks and recreation sites ($11 million), and provide funding for farmland preservation ($12 million).

3. The Golf Farm, 149 acres, was acquired in 2003 by the Northampton County Bank as a future park.

4. Phases 1 and 2 (approximately 50 acres) of nine-phases scheduled were completed at the County’s Wayne’s A. Glube Memorial Park.

5. 1,503 acres of natural areas were preserved, totaling $4.20 million, through the Natural Areas and Open Space component of the Open Space Program.

6. 56 projects were funded through the Municipal Park Acquisition and Development Program, totaling $5.34 million.

7. Construction is scheduled and a trail easement is in process for the western end of the Non-Bath Trail to connect Northampton Borough to the D&L Trail.

8. Trails were constructed in the City of Easton, Palmer and Bushkill townships and Tatamy and Stockton boroughs as part of the effort to connect the City of Easton to the Kintnersville Railroad.

9. The County farmland preservation program preserved 10,000 acres by 2008, and the 100th farm was preserved in 2010.

10. In 2010, the farmland preservation program created the Township Partnership Program.

11. 13,920 acres in 152 farms, totaling $17.73 million, were preserved through the Farmland Preservation component.

12. Six trail gaps in Northampton County were identified in the Lehigh Valley Planning Commission’s Lehigh Valley Trails Inventory—2013.

13. Funding was secured for the implementation of a County-wide Trail Gap Closure Program from the Act 13 Marcellus Shale Tax, totaling $300,000 for 2015.

14. Seven municipalities in Northampton County approved a 0.25% Earned Income Tax for the preservation of farmland and natural areas since 2005.

15. A ½ mill tax increase was provided in the 2007 County budget to provide funding for the Open Space Program.

16. 915 acres were acquired through the Act 13 Marcellus Shale Tax, totaling $5.34 million.

17. The economic and health and wellness benefits are then further highlighted.

Benefits of Open Space

Open space plays a vital role in many aspects of Northampton County’s quality of life by protecting the environment, providing social needs, generating economic activity and providing health and wellness benefits. The benefits of the County’s open space network—natural resources; outdoor recreation resources; greenway and blueway resources; historic; cultural and scenic resources; agricultural resources—are far reaching and are summarized below. The economic and health and wellness benefits are then further highlighted.
Environmental Benefits
- Clean water and air
- Preservation of natural resources
- Reduce pollution
- Protect riparian ecosystems
- Provide a place to enjoy nature’s beauty

Community Benefits
- Reduce crime and delinquency
- Connect families
- Strengthen neighborhoods
- Offer lifelines for elderly

Economic Benefits
- Increase tourism
- Enhance land and property value
- Assist in business retention
- Reduce vandalism and crime

Health and Wellness Benefits
- Increase life expectancy
- Create balance between work and play
- Promote physical activity and healthy lifestyles
- Reduce obesity

Economic Benefits - Highlight
Open space is an integral part of Northampton County’s quality of life, health and lower cost of living. Open space can be as large as the Kittatinny Ridge or as small as the setback on a tree-lined street. Open space can be public or private land. People expect an unend-
New growth. The incidence of childhood asthma worldwide has increased two decades, in part due to climate-related factors. In a report released by the Global Environment, an increase in asthma incidence of 160% among preschool children in the United States was documented from 1980-1994. Key air quality findings from the Lehigh Valley Return on Environment study are:

- Air quality services provided by trees removing pollutants are estimated at $24.7 million annually.
- Tree-covered open space stores 2,814,665 tons of carbon over the life of the current woodlands in Northampton County.
- Without carbon storage by trees, damage due to increased carbon emissions would cost $59.1 million to mitigate in Northampton County, which, if divided by an assumed average tree life of 50 years, represents a value of about $1.2 million annually.
- Photosynthesis by trees removes CO2 from the atmosphere, releases oxygen and sequesters 92,792 tons of carbon each year in Northampton County, providing health and other benefits of about $1.5 million per year.

In summary, the total annual avoidable healthcare costs and damage to agriculture and buildings provided by Northampton County open space is estimated to be $27.8 million.

Outdoor Recreation: Open space generates value as residents enjoy engaging in recreation and exercise. Residents recognize that outdoor recreation and open space create an estimated 4,518 jobs both inside and outside the County. These jobs generate about $7.1 million in state and local taxes.

Property Value: Square footage, quality of schools, landscaping and structural condition can raise or lower the value of a home. So can the structural condition can raise or lower the value of a home. So can the presence of water, open space and proximity to open space. Whether it is a trail, park, scenic area or waterfront, people will pay a premium to be near open space. As a result, Northampton County’s existing open space adds to the overall value from the flow of goods and services supported by natural resources. These benefits represent the return on environment for the Lehigh Valley.

Natural Environmental Services: Considering the importance of Northampton County’s open space, it is essential to recognize the role that trees, fields, meadows and wetlands play in keeping the cost of living low by filtering water, cleaning the air, controlling flooding and providing other environmental services. Key findings are:

- The highest natural service system value on a per acre basis is found in riparian corridors and forests. Maintaining and restoring connected habitats and corridors will provide the full potential value of natural system services.
- The current green infrastructure along streams in Northampton County reduces tax dollars by avoiding more than $66.1 million annually in expenditures for water supply ($24.1 million), drinking water (feeding) mitigation ($34.0 million) and water quality ($8.0 million).
- Natural areas provide over $11.4 million annually in pollination service value.
- Natural areas provide $0.4 million annually in soil formation/retention service value.
- Natural areas provide $12.1 million in habitat and soil formation/retention estimated at $20.7 million or more each year in Northampton County.

Air Quality: Northampton County faces substantial air quality problems. Poor air quality is a common problem in many rural and suburban areas and can lead to a variety of human health problems, including asthma and other respiratory ailments. Additionally, air pollution can damage buildings and plants, disrupt many natural system services and can cause reduced visibility and smog. Trees remove significant amounts of air pollution and, consequently, improve environmental quality and human health. In particular, trees can remove significant amounts of nitrogen dioxide (NO2), sulfur dioxide (SO2), carbon monoxide (CO) and particulate matter. Trees remove gaseous air pollution primarily by uptake via leaf stomata, though some gases are removed by the plant surface. Trees also remove pollution by intercepting airborne particles. Trees help mitigate climate change by removing carbon dioxide (CO2) from the air and sequestering the carbon in new biomass each year. As trees grow, they store more carbon by holding it in their accumulated tissue. As trees die and decay, they release much of the stored carbon back to the atmosphere. Carbon storage is an estimate of the total amount of carbon that is currently stored in the above and below ground biomass of woodlands, while carbon sequestration is a measure of how much new carbon is taken up by woodlands each year with new growth. The incidence of childhood asthma worldwide has paralleled the sharp increase in CO2 emissions, over at least the last two decades, in part due to climate-related factors. In a report released by the Harvard Medical School and the Center for Health and the Global Environment, an increase in asthma incidence of 150% among preschool children in the United States was documented from 1980-1994. Key air quality findings from the Lehigh Valley Return on Environment study are:

- Air quality services provided by trees removing pollutants are estimated at $24.7 million annually.
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- Without carbon storage by trees, damage due to increased carbon emissions would cost $59.1 million to mitigate in Northampton County, which, if divided by an assumed average tree life of 50 years, represents a value of about $1.2 million annually.
- Photosynthesis by trees removes CO2 from the atmosphere, releases oxygen and sequesters 92,792 tons of carbon each year in Northampton County, providing health and other benefits of about $1.5 million per year.

In summary, open space provides value in the form of natural system services estimated at $20.7 million or more each year in Northampton County.

The key findings for outdoor recreation are:

An estimated $351.2 million is spent on outdoor recreation each year in Northampton County. This represents the amount of money that residents in the County spend on outdoor activities and their total impact on the local economy.

- Recreational activity on open space in Northampton County creates an estimated 4,518 jobs both inside and outside the County. These jobs generate about $7.1 million in state and local taxes.

Property Value: Square footage, quality of schools, landscaping and structural condition can raise or lower the value of a home. So can the presence of water, open space and proximity to open space. Whether it is a trail, park, scenic area or waterfront, people will pay a premium to be near open space. As a result, Northampton County’s existing open space adds to the overall value from the flow of goods and services supported by natural resources. These benefits represent the return on environment for the Lehigh Valley.

Outdoor Recreation: Open space provides value in the form of natural system services estimated at $20.7 million or more each year in Northampton County.

In summary, open space provides value in the form of natural system services for water supply, water quality, flood control, pollination, biological control, habitat and soil formation/retention estimated at $20.7 million or more each year in Northampton County.
The average premium afforded each home within ¼ mile of protected open space is $15,400 in Northampton County.
A lot of the initial business when the Saucon Rail Trail opened was from residents bringing bikes in that they already owned, but had not been ridden for a while, that needed a tune-up. At one point, the shop had about 70 bikes waiting for tune-ups.

The Saucon Valley Farmers’ Market also expanded with the opening of the Saucon Rail Trail: 12 vendors before it opened, and 48 vendors after it opened. Some of the initial business increase that Saucon Valley Bikes had was from people wanting to buy baskets for their bikes so they could go to shop at the Farmers’ Market via bike. The trail is apparently helping to create a healthier lifestyle for local residents. One customer of the bike shop had commented that now “exercise is in.” Another customer lost 80 pounds in the first year from walking and biking on the trail.

Steve believes there will be a large influx of commuter bike and gear purchases in 2017 when the trail connection to the South Bethlehem Greenway is planned.

“Ride bikes! Talk about riding bikes!”

Klein Farms is a dairy and creamery located in Forks Township. The 84 acre farm is preserved land under the Northampton County Agricultural Easement Program. The farm was established by Roy Klein in 1935. The Klein family is originally from Long Island. Roy moved to the Midwest at an early age but moved back at 18 for the promise of a quarrying job that unfortunately was not available when he got here. An uncle had a farm about a mile away, and Roy was able to borrow money from his aunt in Phillipsburg to buy the property. Roy worked at Bethlehem Steel for about 18 months to get enough money to purchase the needed farming equipment. He and his wife Ruth ran the farm for many years until their son Layne and his wife Beth eventually took over. Layne and Beth still run the farm today and have grown and diversified the business along the way. For a long time, the business was strictly a dairy farm operation, however, the Kleins decided to start making cheese in 2003 as a way to try to improve the bottom line. Beginning to make cheese is no simple thing as there’s a lot of science involved. Beth especially took on the challenge, and the Kleins had many good connections to help—like a cousin in Ohio who was a head dairy inspector. They perfected the science and sold the first cheese at the farm store in December 2004. Today, they offer a wide variety of cheeses at the store, as well as farm-made yogurt and their own beef, plus local eggs, honey and maple syrup. By the end of 2015, the Kleins will open a larger store on the farm that will again feature something new—Happy Holstein Ice Cream! Layne and Beth have a lot of help from their children and grandchildren running the farm. Their hope for the future is that the farm can keep going, with kids and grandkids eventually continuing the business. The Kleins believe the key to longevity is to continue to diversify and offer more types of farm products to their customers.
Health and Wellness Benefits - Highlight

The way communities are planned, designed and built can greatly influence people’s health. The built environment influences people’s levels of physical activity, the safety of travel, the quality of the outdoor air, access to jobs and services, access to healthy food choices, and opportunities to enjoy the many local recreation opportunities—like local parks, pools and ball fields. A well-designed neighborhood offers transportation choices, accommodates people at all stages of life, encourages physical activity and social interaction, and offers a mix of housing that is close to a good range of jobs.

Recent statistics on mortality and morbidity (the state of being unhealthy or diseased) released by the Health Care Council of the Lehigh Valley (HCC) demonstrate the impact of open space resources on community health. Morbidity statistics include the number or percentage of residents who are overweight, have diabetes, and have cancer or heart disease. Mortality statistics track the manner of death and the frequency and total number of deaths caused by specific morbidity. As the numbers reveal, high quality hospitals and healthcare keep the Lehigh Valley’s mortality rankings as some of the best in Pennsylvania, but the overall occurrence of these negative health indicators—the morbidity—is often quite high. The Health Care Council is working to identify key health focus areas for the Lehigh Valley in a document to be finalized in June 2016.

County Health Rankings: The County Health Rankings & Roadmaps program is a collaboration between the Robert Wood Johnson Foundation and the University of Wisconsin Population Health Institute. The annual County Health Rankings measure vital health factors, including high school graduation rates, obesity, smoking, unemployment, access to healthy foods, the quality of air and water, income, and teen births in nearly every county in America. The annual Rankings provide a revealing snapshot of how health is influenced by where we live, learn, work and play and provide a starting point for change in communities. The Roadmaps provide guidance and tools to understand the data, and strategies that communities can use to move from education to action. The Roadmaps are helping communities bring people together from all walks of life to look at the many factors that influence health, focus on strategies that work, learn from each other, and make changes that will have a lasting impact on health.

The County Health Rankings has two components—Health Outcomes and Health Factors. Health Outcomes, which represent how healthy a county is now, has two elements that are measured—length of life and quality of life—that are weighted evenly (50% each) in the calculation. Health Factors, which represent what influences the health of a county, has four elements that are measured—health behaviors, clinical care, social and economic, and physical environment—that are weighted at 30%, 20%, 40%, and 10%, respectively. These elements consist of several data that are measured. In the 2015 rankings for Pennsylvania’s 67 counties, Northampton County has a Health Outcomes rank of 27 and a Health Factors rank of 12 (1 is best, 67 is worst). Details of the rankings are shown in the graphic on the following page.
Related Plans and Studies

State Level

Natural Connections – Pennsylvania’s State Comprehensive Outdoor Recreation Plan 2014–2019

The 2014 plan outlines five priorities to help foster outdoor recreation for all Pennsylvanians.

- Health and Wellness
- Local Parks and Recreation
- Tourism and Economic Development
- Resource Management and Stewardship
- Funding and Financial Stability

These five priorities address primary challenges and opportunities. Case studies at the end of each priority section highlight successes, but others exist that demonstrate examples of how recreation is improving the lives of Pennsylvanians. To help carry out these five priorities, key state and local agencies and recreation providers will be guided by the 20 recommendations and 83 action steps found in this plan. A matrix of these action items, along with implementing partners, is included in the plan.

Livable Landscapes addresses many of the 20 recommendations throughout this Plan. Health and wellness is highlighted in the Benefits of Open Space section as how the built environment can encourage physical activity, and the Transportation Linkages section asserts that providing transportation options such as walking and bicycling can have air quality and health benefits. Close-to-home outdoor recreation is described in the Municipal + School District Resources section, with an analysis of the distribution and amount of outdoor recreation opportunities in the Outdoor Recreation Guidelines section, and is emphasized by several goals, policies, implementation strategies and recommendations. Increasing community prosperity through economic benefits is primarily detailed in the summary of the Lehigh Valley Return on Environment in the Benefits of Open Space section. The Natural Resources section summarizes the elements of the Natural Resources Plan and the conservation priority areas in the County. The County’s Open Space Program is used to preserve these natural areas and maintaining or enhancing the funding to this program is recommended, plus pursuing a variety of other funding opportunities.


This action plan is designed to provide a coordinated and strategic approach to creating connections through the establishment of greenways in Pennsylvania and was the direct response to Governor Ridge’s Executive Order 1998-3, charging Pennsylvania’s Department of Conservation and Natural Resources (DCNR), Department of Environmental Protection (DEP), and Department of Transportation (PennDOT), assisted by the Pennsylvania Greenways Partnership Commission, to develop an action plan for advancing a Pennsylvania greenways partnership program. Four goals—Plan and Establish Greenways Connections, Create a Greenways Organizational Framework, Provide Greenways Funding, Provide Greenways Technical Assistance and Outreach—and 12 related strategies were developed to aid in accomplishing the program vision.

Regional Level

Monroe County Open Space, Greenway & Recreation Plan (2014)

This plan is an update to the Monroe County Open Space Plan An Action Guide to Preserving and Enhancing Monroe County’s Green Infrastructure (2001). Twelve years later, public support remains as strong as ever, with priorities shifted slightly to refocus future conservation and recreation efforts. Priorities identified in the plan include: 1) Conserving Open Space and Habitat; 2) Farmland Preservation; 3) Connecting Greenways and Trails; 4) Protecting Water Resources; 5) Supporting Recreation Commissions to Improve Recreation

Carbon County Comprehensive Plan & Greenway Plan (2013)

The Carbon County Comprehensive Plan and Greenway Plan provides an overall set of policies for the future development and conservation of Carbon County over the next 15 years. The purpose of the plan is to help ensure this change is positive and that Carbon...
County retains the qualities that make people want to live, work and visit the county. Issues considered during the development of the plan include:
1. What are the community’s assets and how to build upon them,
2. What are the community’s concerns and how to overcome them,
3. What does the community want to change and to encourage the changes, and
4. What does the community consider most valuable and how to preserve those features.

Lehigh County Parks—2005 (1997)
The purpose of this plan is to update the 1990 plan, which contained recommendations that were implemented by Lehigh County. Additional sections were included in this update, such as important natural areas, potential greenways, rail-to-trail projects, the Delaware and Lehigh National Heritage Corridor, management of Lehigh County parks and open space, and recommendations for specific County parks and open space properties.

Bucks County Open Space and Greenways Plan (2011)
The Bucks County Open Space and Greenways Plan provides a decision-making, implementation and management tool designed to protect and create linkages between the County’s vast natural resources, open space and farmland, recreational facilities, and historic and cultural resources. The plan is designed to identify an interconnected network of greenways that protect ecologically valuable lands, provide open space and recreational opportunities, protect important habitat areas and migration paths for wildlife, and provide access to the County’s historic and cultural resources. Specifically, the plan identifies corridors that could potentially host trails for public recreation, wildlife viewing, lessons in history and alternative transportation.

The Open Space Plan provides a blueprint of what the Monroe County Planning Board recommends as areas that should be preserved as public open space in the county, irrespective of the jurisdiction or ownership of the land. The plan discusses specific projects and target areas that should be pursued by the county’s land preservation program. These target areas are intended to be pursued by the county, and where possible, as partnerships with other jurisdictions, nonprofit groups, and other county agencies to meet the objectives of the plan.

County Level Comprehensive Plan The Lehigh Valley — 2030 (2010)
The Comprehensive Plan deals mainly with the future physical environment of the Lehigh Valley (Lehigh and Northampton counties) between 2000 and 2030. The plan presents a balanced program of environmental, economic and development 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 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.

Key development concepts advocated in the 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; and
The plan identified four types of greenways in the Lehigh Valley:  
- Cultural/recreational greenways, which support human activity and education of public and individual purposes  
- Multi-use greenways, which support a combination of human and conservation activities  
- Scenic greenways, which provide a visual connection across the landscape  

The plan analyzed existing resources within the Lehigh Valley to identify a greenways network of hubs, nodes and corridors. Hubs are large centers of activity (e.g., parks, cities, boroughs) that serve to anchor the greenway network; nodes are natural, recreational, cultural or historic places of interest; and corridors are the linear connecting elements, linking hubs and nodes. The plan identified 31 corridors, eight hubs and 63 nodes. The plan also provides information on a range of techniques that can be used to conserve open space from minimal to high intensity. 

**MOVE LV Long Range Transportation Plan (2015-2040)**  
The MOVE LV Long Range Transportation Plan (LRTP), covering both Lehigh and Northampton counties, is the $2.5 billion transportation investment strategy for the Lehigh Valley. The LRTP considers the improvement of the region’s roads, highways, bridges, transit system, sidewalks and trail networks. The LRTP is updated every four years, is federally mandated and helps guide the transportation decision-making process through policy and investment decisions. There are three main goals that the LRTP achieves:  
- To document the current operational status of the transportation network  
- To identify travel network deficiencies  
- To identify projects to mitigate those deficiencies  
The LRTP introduces the various travel modes found within the Valley, including highway, transit, rail freight, air, bicycling and pedestrian facilities. The LRTP discusses the importance of asset management, system maintenance, access management and public safety in the planning process. An emphasis on safety is incorporated into every aspect of transportation planning and across all modes of travel. The LRTP also speaks to the relation between transportation projects and the natural environment. 

**Natural Heritage Inventory of Lehigh and Northampton Counties**  
The Natural Heritage Inventory of Lehigh and Northampton Counties, which is completed every four years, is a document compiled and written by the Pennsylvania Natural Heritage Program (PNHP), which is a partnership between The Pennsylvania Department of Conservation and Natural Resources, the Western Pennsylvania Conservancy (WPC), the Pennsylvania Fish and Boat Commission. The PNHP is a member of NatureServe, an international network of natural heritage programs that gather and provide information on the location and status of important ecological resources (plants, vertebrates, invertebrates, natural communities and species). This information is used to help improve environmental decisions. The 2013 update builds on the original Natural Areas Inventory of Lehigh and Northampton Counties completed in 1999 by the Pennsylvanial Science Office of The Nature Conservancy and updated in 2005. The document contains site descriptions on the locations of rare, threatened, and endangered species and the highest quality natural communities. These include:  
- Plants  
- Mammals  
- Birds  
- Reptiles  
- Amphibians  
- Fish  
- Mussels  
- Dragonfly  
- Butterflies  
- Moths  
- Birds  
- Plants  

The plan stems from the inventory and analysis of the Lehigh Valley Greenways Plan (2007) and creation of natural, recreational, cultural, historical and scenic areas of interest in the Lehigh Valley. The plan was developed to take full advantage of the opportunities they present. The development of greenways and trail linkages, the long-term preservation and protection of priority natural resources, and the enhancement and creation of natural, recreational, cultural, historical and scenic areas of interest in the Lehigh Valley. 

Lehigh Valley Trails Inventory—2013  
In 2009, the LVPC completed a comprehensive update to the trails inventory for Lehigh and Northampton counties. The update documented data from municipal plans and studies across the two counties and produced the Lehigh Valley Trails Inventory—2009. The goal of the 2009 inventory was to assist local officials in planning for future trails in the Lehigh Valley. The 2013 update is strictly corroborating and updating trail information, includes two new components: identifying priority trail gaps and providing guidelines to design safe road crossings for trails. These two new components are part of a state-wide effort by the DCNR to help organizations and municipalities implement trail initiatives. The inventory now documents 59 trails or trail networks in the Lehigh Valley (Northampton County numbers are reported in the Inventory + Assessment chapter under Trails), totaling approximately 652 miles (all trail types—Open, Under Construction, Proposed or Conceptual) in the two counties, with 333 miles of Open trails. 

Lehigh Valley Return On Environment (2014)  
This report is summarized in the Economic Benefits section in the Inventory + Assessment chapter.
Planning Process

Phases

The Livable Landscapes preparation process consisted of the following steps:

- Inventory of existing open space resources
- Gather input from County staff and from various public participation strategies
- Analysis of needs and opportunities for open space resources
- Development of vision, goals, policies, implementation strategies and recommendations
- Action plan development
- Plan review and development of final plan

Public Participation

To gain an understanding of the needs and opportunities related to open space in the County, the public participation process to develop Livable Landscapes included multiple components. The main elements used to solicit input were a steering committee, public meetings, key person interviews, and a public opinion survey. A summary of these components is described below.

Steering Committee: The Plan Steering Committee (Committee) was created to provide insight and input into the planning process, comment on information and mapping developed by the LVPC staff, act as a resource for localized activities pertaining to park, recreation and open space planning, and suggest alternatives and make recommendations to the Plan. Four meetings were held—March and June 2014 and March and September 2015. The following is an overview of each of these meetings:

Meeting 1: March 28, 2014 — Background information about the project was presented, including:
1. a review of the LVPC 2010 Lehigh Valley Land Use Public Opinion Survey as related to parks, natural resources and farmland preservation, and
2. previous LVPC efforts related to open space—the Natural Resources Plan; Lehigh Valley Greenways Plan; data inventories of natural resource features, parks, trails, greenways, historic sites, agricultural security areas, and agricultural easements.

An overview of the scopes for the open space plan and the Lehigh Valley Return on Environment study were presented. A draft of the public opinion survey was distributed and committee members were asked to complete the survey and offer suggestions for changes.

Meeting 2: June 6, 2014 — Existing open space conditions were reviewed by LVPC staff to inform the committee about the various information available (data and existing plans) for completing the plan. Eight maps of different open space resources related to the project were presented. The existing goals from the Comprehensive Plan The Lehigh Valley … 2030 and the Lehigh Valley Greenways Plan were reviewed with the Committee to solicit input on any changes to existing goals or suggestions for new topics to be addressed. Northampton County staff provided an update on the results of getting approximately 200 surveys completed at various events and locations across the County. These results are separate from the survey of registered voters conducted at a later time during this planning process. LVPC provided an update on the Return on Environment study.

Meeting 3: March 4, 2015 — The LVPC presented a short summary of the results from the Lehigh Valley Return on Environment study, the results of the public opinion survey of Northampton County active registered voters, and the draft goals. An exercise was conducted to obtain ideas on developing the vision statement. General information about vision statements was reviewed, and a few examples from national organizations were presented. Six vision statements from other county park, recreation and open space plans were presented to obtain comments from the committee. The plan’s draft Table of Contents was presented. Northampton County staff discussed the upcoming public meetings and asked for ideas on locations to hold them.

Meeting 4: September 15, 2015 — The LVPC presented an overview of the preliminary draft plan through a PowerPoint presentation. The actual draft plan would be forwarded to the Steering Committee the following Monday, September 21, after the draft was presented to the LVPC Environment Committee at their monthly meeting. The PowerPoint reviewed the following topics of the Plan—Benefits of Open Space (Highlighting the Economic Benefits, with the Lehigh Valley Return on Environment report, and Health and Wellness Benefits), Demographics and Land Use, Existing Resources, Public Participation, County Staff Meetings, Field Work, Data Analysis, and the Vision, Goals, Policies and Selected Recommendations. Comments were solicited and discussed.
Public Opinion Survey: This survey was administered and analyzed by the LVPC, which collected mail and electronic survey data from a random sample of 5,000 active registered voters in Northampton County from October 7, 2014 through November 26, 2014. The random nature of the survey is intentional to obtain opinions from the full cross-section of County residents rather than a survey of existing park and open space users. The purpose of this survey is to assist Northampton County staff, the LVPC and the Plan’s Steering Committee to understand the open space needs of the community. The mail survey included an optional QR code (accessible by smartphones) unique to an online version of the survey. A total of 870 mail surveys and 28 electronic surveys were completed—an 18% response rate.

The number of completed surveys results in a margin of error of +/- 3% at the 95% confidence interval. This means that if the same survey of Northampton County active registered voters were conducted with 100 different sample populations, the percentage of respondents who would answer the same way would be within 3% of the data collected for at least 95 of those 100 sample populations. Weights were calculated for the data based on the age of respondents. Subsequent analysis was performed using the weighted data. The weighted sample helps correct for under/over represented demographic groups in relation to the actual Northampton County active registered voter population. Highlights of the results are presented below, with the complete survey results available in the Appendix.

Public Meetings: Two rounds of public meetings were conducted over the course of the project. The first round was held in June 2014 in Allen Township, City of Easton and Washington Township. A general overview of the project was presented along with maps displaying existing conditions for different open space resources. The second round was held in April 2015 in Hellertown, Nazareth and Wind Gap boroughs. The random survey results were reviewed along with the draft goals and vision statement. An opportunity was provided for public input on needs and opportunities for open space resources. In both rounds of meetings, outreach/education/promotion and trails/biking/ connectivity were the topics with the most comments. Other comment topics included development, farmland, historic sites, scenic views, accessibility/mobility, dog/pet areas, signage, health, park locations, etc.

Key Person Interviews: Key person interviews were held with County staff and owners of local outdoor recreation businesses and a preserved farm with a dairy/creamery business. The County staff provided insight into the state of the County parks (Gordon Hailer, Superintendent, Department of Public Works, Parks and Recreation Division) and the Open Space Program components (Maria Bentzon, Farmland Preservation Administrator, Department of Administration; Bryan Cope, Open Space Coordinator, Department of Community and Economic Development). Owners and staff of two bike shops (Tomias Hinchcliff, President, and Rob McVeigh, Marketing + Event Coordinator—Genesis Bicycles; Steve LaBrake, Saucon Valley Bikes), an outdoor recreation equipment business (Adair Fairchild, Easton Outdoor Company) and the preserved farm (Layne and Beth Klein, Klein Farms Dairy & Creamery) revealed how their businesses are impacted by, and are a part of, the open space system. Summaries of the business interviews are included as case studies in the Economic Benefits – Highlight section of this Plan.
Livable Landscapes Public Opinion Survey

- Value protection of lakes, rivers, streams + water quality: 71%
- Strongly agree or agree with protection of farmland: 95%
- Familiar with parks, trails, open space + natural areas: 94%
- Visit parks, trails and natural areas weekly or monthly: 52%
- Open space activity = farmer’s markets + farmstands: 68%
- Open space activity = walk, hike, run on natural surfaces: 68%

- Municipal parks are the most frequently visited open spaces: 62%
- The Delaware + Lehigh Trail is the most frequently visited: 33%
- The Lehigh River is the most frequently visited waterway: 35%
- Restrooms are the most desired amenities: 78%
- Prioritize maintaining existing trails: 69%
- Receive open space information via the newspaper: 53%
County Profile
Established in 1752, Northampton County is part of a two-county region (along with Lehigh County) known as the Lehigh Valley and is located in central eastern Pennsylvania. The region is located within 300 miles of several large metropolitan areas of the eastern United States, including Pittsburgh, Boston, Baltimore and Washington, D.C., and is particularly accessible to Philadelphia and New York City.

Northampton County is bounded on the north by Kittatinny Ridge (Blue Mountain), on the east by the Delaware River, on the south by the Pennsylvania Highlands, and on the west by Lehigh County. The County encompasses approximately 377 square miles, or 241,438 acres.

Northampton County is a third class Pennsylvania County (population between 250,000 and 500,000) comprised of 38 municipalities, including two cities, 17 townships and 19 boroughs.

Demographics

The demographics of a region play an important role in identifying the open space and recreational needs of the community. Planning for the needs of all residents and age groups should be considered, as well as planning for the demographic changes over time.

Population Trends

Northampton County has experienced steady and sustained population increases over the last several decades. During the 1980s and 1990s, decennial growth remained steady; however, between 2000 and 2010, the County’s growth increased by approximately 30,700 residents. Not only did this 11.5% growth rate exceed the state’s growth rate of 3.4% between 2000 and 2010, it was also higher than the 9.7% rate for the nation overall, substantiating the notion that Northampton County is experiencing considerable growth.

Northampton County ranked 9th out of all 67 Pennsylvania counties in percentage growth between 2000 and 2010. Census estimates for 2014 indicate that Northampton County grew from 287,735 persons in 2010 to 300,654 persons in 2014, or 1.0% growth over this period. Based on this percentage growth, the County ranked 16th out of all Pennsylvania counties.

Projections prepared by the LVPC in 2012 anticipate continued population increases within the County through 2040. From 2010 to 2040, the County’s population will increase by almost 106,000 residents, or 11.9% growth per decade, bringing the total population to approximately 403,979. In comparison, the County’s population grew at a rate of 10.7% per decade over the previous 30 years.

Age

The age composition of the County’s population has changed considerably over the last 20 years. Northampton County, like many areas of the country, has experienced a general aging of its population. This is reflected in the considerable increase in median age for the County (34.9 years to 40.9 years) from 1990 to 2010. Population in the age-groups of 65 years and older and persons under 20 exhibited sustained growth over the past two decades. Conversely, the young adults (20-24) and the formative household age group (25-44) exhibited erratic growth trends during this time.

LVPC forecasts indicate that all age groups in the County will increase in population from 2010 to 2040. The largest increase, both numeric and in percentage, during this time period is for the 65 and older group, with approximately 47,000 additional persons, or a 101% increase. The under 20 age group has the next largest increase, with approximately 25,400 additional persons, or a 34% increase from 2010 to 2040. The 25-34 age group will also see about 9,700 additional persons, or a 30% increase. The smallest increase identified is for the 20-24 age group, with a gain of about 2,500 persons over the 30-year period, or a 13% increase.

By 2040, the number of people age 65 and older is projected to be approximately 93,700, or over 23% of the County’s population. In 2010, this group accounted for almost 16% of the population. The number of people in the under age 20 group is projected to be 100,200, or approximately 25% of the County’s population in 2040. This age group accounted for the same percentage of population in 2010. Even though there is a 30% increase in persons in the 25-34 age group from 2010 to 2040, the percentage of the total County population for this age group for 2010 and 2040 is relatively unchanged. All other age categories see a drop in percentage of total population by 2040.

Source: Derived from U.S. Census Bureau, 2010 Decennial Census and Lehigh Valley Planning Commission, 2020-2040 Projections.
Land Use

An assessment of land use data can be used to identify land development trends, the extent of development and the availability of additional land areas to provide for County residents’ open space and recreation needs. The LVPC has been estimating existing land use since the mid-1960s. The existing land use estimates have been used for general planning, forecasting and measuring land use change throughout the years. The LVPC utilizes eight categories of land use in its estimation process. These categories are residential; commercial; industrial, wholesale and warehousing; transportation, communications and utilities; public/quasi-public; parks and recreation; and agriculture/undeveloped. Non-residential development has generally taken place in both the urban core and the slate belt region of the County. Residential development, on the other hand, has expanded into the more rural areas of the County, consuming large amounts of open space in the process. As the County’s population continues to grow, more pressure to develop in these rural areas is likely to occur.

Since 1972, residential and non-residential uses in Northampton County have increased from 27% of the land area to 44% in 2012, with residential uses accounting for the majority of the increase. As a result of this urbanization, agriculture/undeveloped land has continued to decline, indicating that these areas remain under intense development pressure in the County. In 1972, agriculture/undeveloped land accounted for 70% of the land area of Northampton County; in 2012, this land use type accounted for less than half of the land area of the County. Parks and recreational land uses have more than doubled since 1972, accounting for 8% of the County’s land area in 2012.

These development patterns, combined with the projected population growth, underscore the vulnerability of the County’s remaining undeveloped lands and highlight the importance of planning for the open space and recreational needs of the County’s residents.
Inventory + Assessment

Photo courtesy of Becky Bradley, LVPC
Natural Resources
Natural resources in the Lehigh Valley include rivers and streams, wetlands, floodplains, natural heritage areas, mountains and woodlands. Interconnected natural resources provide numerous benefits. They provide habitat and maintain biodiversity; protect and enhance water quality; provide aesthetically pleasing areas to experience; filter pollutants from water; and recharge groundwater aquifers; provide recreation opportunities; and buffer developed areas from flooding ultimately saving lives, money and property. Voters have spoken very clearly in public opinion surveys conducted over the past 40 years that they want to preserve these important natural resources.

The LVPC maintains databases of the open space resources in the County. Over 2,400 acres of land are classified as natural resource areas, which do not have any recreational facilities, with approximately 75% of these sites being protected (i.e. lands owned by federal, state, County, or municipal governments or conservancies; or privately-owned property with a conservation easement). The largest sites are the County-owned Greater Minsi Lake Corridor, municipal reservoir lands, and conservation easements on private lands. Although the Slate Game Lands occur on the largest contiguous wooded areas in the County, they are not included in this section because of their associated outdoor recreation component. They are included in the Outdoor Recreation Resources Discussion later in this chapter. Three County sites are currently classified as Natural Resource Areas and are reported below, but possible future plans to add recreation components would result in them being re-classified as outdoor recreation resources. See County parks map in the Outdoor Recreation Resources section for locational information.

County-Owned Natural Resource Areas

Gertrude B. Fox County Park
Location: Center Street and Byerly's Bridge Road, City of Bethlehem and Hanover Township
Size: 7 acres
Description: A wooded area along Monocacy Creek established in 1987 by the County to connect park’s remnant, who was an environmental activist in the Bethlehem area. She was one of the recipients of the first Theodore Roosevelt Conservation Award, presented by President George H.W. Bush in 1990. The parcel is landlocked and is only accessible from Monocacy Creek. The site is within the Monocacy Creek Greenway as identified in the Lehigh Valley Greenways Plan (LVGP). An active rail line runs along the southeastern side of the property. No amenities or recreation facilities exist at this site.
Assessment: The original plan was to connect this site upstream to the County-owned Archibald Johnston Conservation Area (AJCA), which is less than one stream mile away, but the previous adjacent property owner was not interested at that time. Although owner-ship should be considered.

Recommendations: Pursue discussions with the new property owner(s) of adjacent parcels to connect this park upstream to the Archibald Johnston Conservation Area. Transfer ownership to City of Bethlehem and/or Hanover Township should be considered.

Greater Minsi Lake Corridor
Location: Along Blue Mountain and National Park drives and Institute and Totts Gap roads in Upper Mount Bethel Township
Size: 545 acres
Description: A natural area corridor consisting of several parcels, connecting Minsi Lake in the south to the Delaware Water Gap National Recreation Area (ZWIGNRA) in the north. The majority of the site is located within the Minsi Lake Vernal Pools and Totts Gap Swamp Natural Heritage Areas, both of State Significance. The headwaters of Slateford Creek, designated as Exceptional Value Waters by the Pennsylvania Department of Environmental Protection (DEP), are located in the easternmost parcel. The site is within the Greater Minsi Lake Corridor Greenway and adjacent to The Nature Conservancy’s Minsi Lake Vernal Pool Preserve. A pair of manmade lakes (Twin Lakes) were constructed by the previous owner and are only accessible through a locked gate along Totts Gap Road. No facilities exist at this site.
Assessment: In addition to providing a habitat connection between Minsi Lake and the ZWIGNRA, a trail connection between the two was also part of the original intent. If the trail is to be aligned on County land, additional property would need to be acquired to provide area for trail development. If additional development of the site is intended to provide more formal public access, a feasibility study should be conducted to determine if developing the site as a nature preserve is the best use of the site.
Recommendations: Acquire land or an easement in the southern part of the corridor to create better County-owned or managed connectivity for proposed trail development.

Greater Minsi Lake Corridor
Location: Along Blue Mountain and National Park drives and Institute and Totts Gap roads in Upper Mount Bethel Township
Size: 545 acres
Description: A natural area corridor consisting of several parcels, connecting Minsi Lake in the south to the Delaware Water Gap National Recreation Area (ZWIGNRA) in the north. The majority of the site is located within the Minsi Lake Vernal Pools and Totts Gap Swamp Natural Heritage Areas, both of State Significance. The headwaters of Slateford Creek, designated as Exceptional Value Waters by the Pennsylvania Department of Environmental Protection (DEP), are located in the easternmost parcel. The site is within the Greater Minsi Lake Corridor Greenway and adjacent to The Nature Conservancy’s Minsi Lake Vernal Pool Preserve. A pair of manmade lakes (Twin Lakes) were constructed by the previous owner and are only accessible through a locked gate along Totts Gap Road. No facilities exist at this site.
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Recommendations: Acquire land or an easement in the southern part of the corridor to create better County-owned or managed connectivity for proposed trail development.

Mud Run
Location: Lower Mud Run Road near South Delaware Drive (Rt. 611), Lower Mount Bethel Township
Size: 10 acres
Description: A mostly wooded site along Mud Run, a Cold Water Fishes designated stream. The site is located in the Mud Run Greenway and is adjacent to the Delaware River Greenway as identified in the LVGP. The Martins Jacoby Watershed Trail Network (conceptual) runs through the site.
Assessment: The site has not identified any future plans for this property, but the property should remain as a natural area as part of the Mud Run Greenway.
Recommendations: The site should remain as is. There are no future plans to develop this site at this time, but the site could be used for trail access if the Martins Jacoby Watershed Trail Network were to be developed. Transfer ownership to Lower Mount Bethel Township should be considered.

Greater Minsi Lake Corridor
Location: Along Blue Mountain and National Park drives and Institute and Totts Gap roads in Upper Mount Bethel Township
Size: 545 acres
Description: A natural area corridor consisting of several parcels, connecting Minsi Lake in the south to the Delaware Water Gap National Recreation Area (ZWIGNRA) in the north. The majority of the site is located within the Minsi Lake Vernal Pools and Totts Gap Swamp Natural Heritage Areas, both of State Significance. The headwaters of Slateford Creek, designated as Exceptional Value Waters by the Pennsylvania Department of Environmental Protection (DEP), are located in the easternmost parcel. The site is within the Greater Minsi Lake Corridor Greenway and adjacent to The Nature Conservancy’s Minsi Lake Vernal Pool Preserve. A pair of manmade lakes (Twin Lakes) were constructed by the previous owner and are only accessible through a locked gate along Totts Gap Road. No facilities exist at this site.
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Recommendations: Acquire land or an easement in the southern part of the corridor to create better County-owned or managed connectivity for proposed trail development.
Topography

The predominant geographic features of Northampton County are the Kittatinny Ridge—referred to locally as the Blue Mountain, separating Northampton County from Monroe and Carbon counties to the north—and the Pennsylvania Highlands, which form a scenic mountainous backdrop for the cities of Bethlehem and Easton to the south. The Delaware River forms the eastern boundary with New Jersey, and the Lehigh River and Monocacy Creek form the majority of the western boundary with Lehigh County. Between the Kittatinny Ridge and the Pennsylvania Highlands is a seven mile wide limestone valley where most people in Northampton County live and work. The topography ranges from 1,700 feet above sea level along the northern ridge to 200 feet above sea level in the river valleys and creates a landscape with abundant natural landmarks and scenic beauty.

Geology

Pennsylvania is a state rich with exceptional geologic features and heritage. The DCNR’s Pennsylvania Geological Survey is striving to promote the awareness, appreciation and conservation of such outstanding geologic features by documenting their presence. The geologic mapping service has mapped six physiographic provinces throughout Pennsylvania. Each province is made up of sections characterized by terrain, subsurface rock type, soil and history. Northampton County primarily contains two physiographic provinces—the Ridge and Valley, and New England—with a very small area of the Piedmont Province in the southern tip of the County.

The Ridge and Valley Province, characterized by forested, flat-topped ridges and fertile valleys, contains seven sections, two of which, the Blue Mountain and Great Valley sections, are found in Northampton County. The Kittatinny Ridge along the northern edge of the County contains the Blue Mountain Section. South of the Kittatinny Ridge is the Great Valley Section, a very broad lowland area characterized by carbonate bedrock and well-drained, fertile soils. The flat, undulating terrain of the central portion of Northampton County has been used intensively for agriculture, and most of the areas where urban development has taken place are underlain by limestone bedrock. In Northampton County, 26 of the 38 municipalities are underlain entirely or in part by carbonate rock. These carbonate formations are located in the urban core, provide the primary raw material for the local cement industry, and lie under the most fertile soils. Carbonate rock has the potential for sinkhole formations, which are fairly common in the County. 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.

The New England Province in the County has one section, the Reading Prong, which consists of isolated hills and ridges divided by stream valleys. South Mountain, a landmark ridge on the southern border of the City of Bethlehem, is part of the Reading Prong and a larger region of mountains called the Highlands, which extend from eastern Pennsylvania through New Jersey and New York to northwestern Connecticut, forming a vital linkage between the Berkshires and the Blue Ridge Mountains.

The Piedmont Province area in the County has the Gettysburg-Newark Lowland Section, with most of the Section located in Bucks County and running west. The Gettysburg-Newark Lowland Section is characterized by rolling low hills and valleys and isolated ridge tops.
Steep Slopes

Slopes with grades of 15% or greater are steep, and slopes with grades of 25% or greater are very steep as classified by the Comprehensive Plan The Lehigh Valley... 2030. Steep slopes (inclusive of very steep) are vulnerable to damage resulting from site disruption, particularly related to soil erosion. Erosion of steep slopes can be a serious problem as all soils are subject to movement as the slope of the landscape increases. If disturbed, these areas can yield heavy sediment loads on streams and wetlands degrading water quality and disturbing aquatic habitat. Increased sedimentation also increases flood hazards by reducing the floodwater storage capacity of drainage ways. The steepest slopes in Northampton County are located on the Kittatinny Ridge, South Mountain, along the Lehigh and Delaware rivers and in the stream valleys. Approximately half of all steep slopes are wooded; very few steep slopes are used for cropland or pastures due to their lack of suitability for agriculture.

Woodlands

Woodlands are valued for many reasons, providing recreational opportunities such as nature study, hunting, hiking and horseback riding. Woodlands can be used for firewood harvesting, commercial timbering, and as land use buffers and boundaries between non-compatible land uses. Many species of birds and wildlife depend on large, unbroken wooded tracts for survival. Woodlands also mitigate environmental stressors by reducing stormwater runoff, filtering groundwater recharge, controlling erosion and sedimentation, moderating local microclimates, and purifying the air. There are over 55,000 acres of woodlands (in stands of greater than five acres) in Northampton County. The largest concentrations are found along the mountain ranges and hillsides adjacent to major stream and river corridors. Woodlands are commonly found on other environmentally sensitive areas such as steep slopes and floodplains, adding to their significance and need for protection. Communities can minimize the loss of the region's woodland resources with land development and site design ordinances or policies.

Interior Woodlands

Interior woodlands are areas that are a minimum of 300 feet from the edge of the woodland patch and, therefore, do not have the environmental conditions that exist along the edges of the woodland, which is known as the edge effect. The habitat characteristics—light, wind, moisture, predation rates, tree density and composition—found at the edges are quite different from the conditions in the forest interior. Many wildlife species (e.g., certain songbird species) require the habitat characteristics provided in interior woodlands for survival. The size of the interior woodland is a factor in determining the number of species that exist (i.e. a higher number of species are found in larger tracts). The majority of interior woodlands in Northampton County are found on the Kittatinny Ridge, along the isolated hill and mountain tops of the Highlands, and the northern parts of Bushkill and Upper Mount Bethel townships.

Many forested areas in the County have been fragmented, a trend across Pennsylvania and other historically forested states. Development is encroaching along the edges of the woodlands, increasing the area where the edge effect dominates. Conversely, some isolated wooded areas may become reconnected due to succession (the natural change in vegetation species and structure over time), occurring when farmland is abandoned and reverts to woodlands. Striving to keep large tracts of interior woodlands intact will help to preserve native ecosystems across the landscape and provide habitat for many wildlife species.
Riparian Woodlands

Riparian woodlands are recognized as a vital feature for protecting and restoring waterways. A riparian buffer is an area of natural vegetation that is maintained along the shore of a water body to protect water quality and stabilize channels and banks. 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. The buffer serves to reduce the amount of pollutant runoff entering the stream by trapping sediment and reducing soil erosion.

Grassland and forested buffers are both effective at trapping sediment, however, forested buffers provide many additional benefits. Riparian woodlands supply food for aquatic organisms in the form of leaf-litter and debris, maintain and cool water temperatures through shading, and provide habitat for many desirable species of amphibians, reptiles, mammals and birds. If wide enough, riparian buffers function as corridors for the movement of large and small mammals. Riparian buffers also provide numerous benefits to landowners and the community by: 1) protecting groundwater recharge areas, 2) providing flood control, 3) providing stormwater management, and 4) stimulating economic opportunities by creating valuable open space that increases residential property values and the tax base.

Riparian buffers in Northampton County have been seriously impacted over the years. Farming operations often have been practiced without sufficient regard to protecting streams. Residential and other forms of urban development have put stress on local streams as structures are located close to stream edges. Proper planning, education and improved subdivision and land development ordinances may help change some of these practices.

Hydrography

The rivers and streams of Northampton County have played a significant role in its history and development. The County's two cities and some of its major boroughs grew along the banks of the Lehigh and Delaware rivers as major industries began their existence along the Lehigh and Delaware Navigation Canals. Today, the industrial heritage of the County is reflected and interpreted by commemorative parks, historical remnants and museums. Many municipal parks and trails in Northampton County are located near rivers and streams and along canal towpaths. River and stream corridors can also serve, or have the potential to serve, as blueways (defined in Greenways and Blueways section), providing a link between population centers and recreation areas. The multitude of recreational activities associated with waterways is an important County asset. The Lehigh and Delaware rivers are large enough to provide boating and fishing opportunities. Wildlands Conservancy's annual Lehigh River Sojourn is a multiple-day paddling adventure down the Lehigh River, starting in the Pocono Mountains in Carbon County to Northampton Borough in Northampton County. Hundreds of people have participated in this recreational opportunity over the years, learning about and experiencing the river.

In addition to their historical and recreational benefits, the waterways of Northampton County provide critical wildlife habitat areas. Many species of birds, aquatic animals and mammals depend on river and stream corridors for travel, cover and nesting places. The Delaware River, the longest undammed river east of the Mississippi River, and its adjacent forested watersheds comprise one of the major corridors for the movement of trout in eastern Pennsylvania. Additionally, some of the best trout habitat and fishing in eastern Pennsylvania can be found in Northampton County in the Monocacy and Bushkill creeks. Consequently, high quality rivers and streams are of critical importance for the preservation of wildlife and the recreational opportunities they support.
Recognizing the importance of water quality for the preservation of Pennsylvania’s water supply and wildlife, and as required by the federal Clean Water Act, the Pennsylvania Department of Environmental Protection (DEP) established a Water Quality Standards program documented in 25 Pa. Code, Chapter 93. The standards are based upon water use: 1) Designated Use — specified for each water body or segment whether or not the use is being attained, and 2) Existing Use — the use actually attained in the water body on or after November 28, 1975 whether or not the use is included in the water quality standards. All Commonwealth waters are protected for a designated aquatic life use as well as a number of water supply and recreational uses as listed below:

- **Exceptional Value (EV)** 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 have been characterized by the Pennsylvania Fish and Boat Commission as “Wilderness Trout Streams,” and other waters of substantial recreational or ecological significance.
- **High Quality (HQ)** Waters — a stream or watershed with surface waters that have high quality which exceeds levels needed to support propagation of fish, shellfish and wildlife and recreation plus environmental features that require special protection.
- **Cold Water Fishes (CWF)** — maintenance and/or propagation of fish species and flora that are native to cold water habitats.
- **Trout Stocking Fishes (TSF)** — maintenance of stocked trout from February 15 to July 31 and maintenance and propagation of fish species and flora which are native to warm water habitats.
- **Migratory Fishes (MF)** — passage, maintenance and propagation of fish which ascend to flowing waters to complete their life cycle.
- **Warm Water Fishes (WWF)** — maintenance and propagation of fish species and flora that are native to warm water habitats.

The majority of streams in Northampton County have a Designated Use of either HQ-CWF (e.g., Monocacy and Bushkill creeks) or CWF. Northampton County has two streams with a Designated Use of EV—Slaterford Creek in Upper Mt. Bethel Township and Cooks Creek headwater tributaries in Lower Saucon Township. The northern part of Sobers Run in Bushkill Township has an EV Existing Use classification higher than its Designated Use. DEP is evaluating this stream segment to determine if the Designated Use should be upgraded to match the Existing Use. The associated riparian buffers and surrounding floodplains of streams and rivers represent opportunities for blueway development.

**Floodplains**

A floodplain is the low lying area adjacent to a stream, river or watercourse that is subject to periodic flooding. Naturally vegetated areas within floodplains help to trap sediment from upland surface runoff, ultimately leading to the creation of proper downstream conditions required for aquatic life. These areas also store large amounts of water, which can be a source of aquifer recharge and prevent loss of life, health hazards and property damage. Many of the most scenic areas in Northampton County are found within the floodplains of the Lehigh and Delaware rivers and the larger streams. Regulation of floodplains further helps to protect open space and critical habitat areas, and preserve and enhance water quality and quantity.

For regulatory purposes, a floodplain is defined by the Federal Emergency Management Agency (FEMA) as the flood elevation that has a 1% chance (100-year flood area) or a 0.02% chance (500-year flood area) of being equaled or exceeded each year. Thus, although...
unlikely, the 100-year flood could occur more than once in any given year. The 100-year flood, which is the standard used by most federal and state agencies, is used by the National Flood Insurance Program (NFIP) as the standard for floodplain management. 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 NFIP. To minimize flood damage and protect floodplains, the County Comprehensive Plan recommends municipalities prohibit new structures and fill in the 100-year floodplain, except for certain infrastructure as recommended by the Pennsylvania Code, Pennsylvania’s official publication of rules and regulations.

Wetlands and Hydric Soils

Wetlands are areas that are filled by surface or groundwater sufficiently often and long enough to support a variety of vegetation typically adapted for life in saturated soil conditions. According to the DEP and United States Army Corp of Engineers, a wetland must have hydrophytic vegetation (plant life that thrives in oxygen poor/saturated soil conditions) and hydric soils (soil formed when oxygen was lacking due to prolonged inundation or saturation) to be designated as such. Wetlands include swamps, marshes and bogs. Many of these areas are considered seasonal wetlands (i.e. they are dry during one or more seasons every year). The quantity of water present and the timing of its presence determine the functions of a wetland. Even wetlands that appear dry for significant portions of the year (e.g., vernal pools) can provide significant habitat for a variety of species. An excellent example of wetland habitat is found in the Minsi Lake Corridor of Upper Mount Bethel Township. The Minsi Lake Vernal Pools area, identified as a Natural Heritage Area with a State Significance rank, is recognized by many conservation groups as a critical area for preservation. (Note: A natural heritage area’s significance rank represents the site’s biodiversity importance. Ranks are calculated by a score that represents the ranks of each species of concern present at the site weighted by the quality of those populations.)

Wetlands are one of the most biologically diverse systems in the world and perform a variety of important physical and biological functions. Wetlands have important filtering capabilities for collecting runoff before it reaches rivers and streams, maintaining stream flow during periods of drought, and assisting in groundwater replenishment. As documented in the Lehigh Valley Return on Environment study (2014), wetlands provide higher natural system service benefits on a per acre basis than any other land cover.

According to the U.S. Fish & Wildlife Service’s National Wetland Inventory, Northampton County has 939 individual sites that are classified as wetlands. Wetlands and their associated hydric soils are found in every municipality; however, the largest concentrations occur in Upper Mt. Bethel Township and along the base of the Kittatinny Ridge. There are many problems associated with developing on or near wetlands and hydric soils (e.g. wetlands located in floodplains are often flooded, hydric soils are easily compacted, and high groundwater table areas are not suitable for the installation of on-lot septic systems). Aside from the issues associated with developing on wetlands, the environmental value of these areas make them critical for preservation.

Natural Heritage Areas

Northampton County has many natural areas worthy of protection, such as rare plant and threatened and endangered animal species locations, highest quality natural habitats, and outstanding geologic features. Working with the Western Pennsylvania Conservancy, in

Wetlands provide higher natural system service benefits on a per acre basis than any other land cover.
The LVPC updated and released the Natural Areas Inventory for the Lehigh Valley titled—Natural Heritage Inventory of Lehigh and Northampton Counties, Pennsylvania—Update 2013. The study updated the previous versions from 1999 and 2005. The update identified 87 Natural Heritage Areas in Northampton County, 77 sites having a core habitat and supporting landscape boundary and 10 sites having only a watershed supporting landscape boundary. The core habitat/supporting landscape mapping process is a new way to delineate the site boundary. Core habitats represent critical habitat that cannot absorb significant levels of activity without substantial negative impacts to the species of concern or natural community. Supporting landscapes are directly connected to core habitat and maintain vital ecological processes and/or secondary habitat that may be able to withstand some lower level of activity without substantial negative impacts to elements of concern.

The Natural Heritage Areas are known to contain the plants, animals, natural communities and habitats most at risk of extinction at the local or global level. The study identified 111 species of concern in the Lehigh Valley, including several of global conservation concern and eight high quality natural community types. The majority of Natural Heritage Areas (NHA) identified in the Natural Heritage Inventory are associated with wetlands, riparian zones, floodplains and vernal pools. Two NHAs in Northampton County—Coffeetown Woods and Minsi Lake Vernal Pools—have been partially protected by land conservancies and are open to the public for nature exploration as the Mariton Wildlife Sanctuary (Natural Lands Trust) and the Minsi Lake Vernal Pools Preserve (The Nature Conservancy).

The Natural Resources Plan was developed as part of the Comprehensive Plan The Lehigh Valley ... 2030 and identifies the important natural resource areas in the Lehigh Valley and how to preserve them. Eleven different natural resource components were used to produce the Natural Resources Plan: floodplains, hydric soils, the Blue Mountain natural area, Natural Areas Inventory, river resource areas, steep slopes, water quality, wetlands, woodlands, interior woodlands and riparian woodlands. The eleven elements were weighted and layered using a Geographic Information System (GIS). The calculations resulted in a range of values, with the higher numbers indicating where the greatest combination of natural resources occurs in the Lehigh Valley. Three conservation priority levels were created for the range of values. The three conservation priority areas total 80,411 acres in the County, with only 17% being protected to date.

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<thead>
<tr>
<th>Conservation Priority</th>
<th>Description</th>
<th>Acreage</th>
<th>Protected Acreage</th>
</tr>
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<tbody>
<tr>
<td>Very High</td>
<td>Areas that should be given first consideration for public and private conservation acquisition programs</td>
<td>36,966</td>
<td>11,329</td>
</tr>
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<td>High</td>
<td>Areas that 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 floodplains and steep slopes, high priority areas might be adequately protected through municipal zoning.</td>
<td>16,044</td>
<td>1,191</td>
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<td>Medium</td>
<td>Areas that should be protected through zoning regulations, conservation subdivisions, design and conservation farming practices. Many of these areas may include small stands of woodland or poorly drained soils that are either part of local farm operations or are part of larger residential lots.</td>
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Natural Resources Plan

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Northampton County residents have grown accustomed to high quality local and regional outdoor recreation sites that include parks, trails and natural areas. A number of municipalities have long been committed to their park systems and preservation of natural areas. Protecting the natural environment and creating public parks are a tradition resulting in outstanding places like Hugh Moore Park in the City of Easton and Monocacy Complex in the City of Bethlehem. The County has a wide variety of outdoor recreational opportunities—520 sites totaling 21,001 acres (8.7% of the County land area) that are owned by federal, state, County, municipal and private entities. The outdoor recreation sites are classified based on their function, a variation of the National Park and Recreation Association’s classification system adjusted to meet local needs. Of these sites, 87% are open to the public, with a small number of these (5%) that may have limitations to their use (e.g., private land with conservation easements, public school properties). The remaining 13% are not open to the public (e.g., homeowner’s association recreation areas, proposed parklands leased for farming, private school properties). Natural resource areas that do not have a recreation component are reported in the Natural Resources section of this chapter.

Federal Resources

Delaware Water Gap National Recreation Area (DWGNA) is a 70,000-acre park that stretches north to Interstate 84 in Pennsylvania and New Jersey and has approximately 1,200 acres in the northeastern part of the County. The DWGNA provides nature and historic site experiences for visitors, featuring more than 100 miles of hiking trails along streams, ridges, and mountaintops and historic villages, structures, and landscapes from the colonial past. The Slateford Loop Trail, a 3.1 mile hiking and cross-country skiing trail located at the southern end of the park in the County, runs through a former slate quarry and farm.

Appalachian National Scenic Trail (A.T.) is a 2,185 mile long public footpath that traverses the scenic, wooded lands of the Appalachian Mountains. The trail was built by private citizens and completed in 1937. Currently the trail and its associated lands are managed by the National Park Service, U.S. Forest Service, Appalachian Trail Conservancy, numerous state agencies, and thousands of volunteers. The A.T. runs along the top of the Kittatinny Ridge, weaving for 54 miles between Northampton County and Monroe and Carbon counties to the north, primarily located within the County’s State Game Lands, but also runs through 525 acres of National Park Service trail lands and less than 3 acres of private land.

<table>
<thead>
<tr>
<th>Owner</th>
<th>Number of Sites</th>
<th>Acres</th>
</tr>
</thead>
<tbody>
<tr>
<td>Federal</td>
<td>2</td>
<td>1,738</td>
</tr>
<tr>
<td>State Game Lands</td>
<td>1</td>
<td>5,400</td>
</tr>
<tr>
<td>State Parks</td>
<td>2</td>
<td>1,384</td>
</tr>
<tr>
<td>Pennsylvania Fish &amp; Boat Comm.</td>
<td>4</td>
<td>480</td>
</tr>
<tr>
<td>County</td>
<td>14</td>
<td>982</td>
</tr>
<tr>
<td>Municipal</td>
<td>265</td>
<td>4,055</td>
</tr>
<tr>
<td>Private</td>
<td>205</td>
<td>8,509</td>
</tr>
</tbody>
</table>
### Outdoor Recreation

<table>
<thead>
<tr>
<th>Classification</th>
<th>General Description</th>
<th>Location Criteria</th>
<th>Size Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mini-Park</strong></td>
<td>Used to address limited, isolated or unique recreational needs, active or passive.</td>
<td>Less than a ¼ mile distance.</td>
<td>Less than 5 acres.</td>
</tr>
<tr>
<td><strong>Neighborhood Park</strong></td>
<td>Neighborhood park remains the basic unit of the park system and serves as the recreational and social focus of the neighborhood. Focus is on informal active and passive recreation.</td>
<td>½ to 3 mile distance and non-interrupted by nonresidential roads and other physical barriers.</td>
<td>0.5 acres is considered minimum size; 5 to 10 acres is optimal.</td>
</tr>
<tr>
<td><strong>School Recreation Area</strong></td>
<td>These are the recreation and sports facilities associated with public and private schools.</td>
<td>Determined by location of school district property.</td>
<td>Variable—depends on function.</td>
</tr>
<tr>
<td><strong>Community Park</strong></td>
<td>Serves broader purpose than neighborhood park. Focus is on meeting community-based recreation needs, as well as preserving unique landscapes and open spaces.</td>
<td>Determined by the quality and suitability of the site. Usually serves two or more neighborhoods and ½ to 1 mile distance.</td>
<td>As needed to accommodate desired uses usually between 30 and 50 acres.</td>
</tr>
<tr>
<td><strong>Large Urban Park</strong></td>
<td>Large urban parks serve a broader purpose than community parks and are used when community and neighborhood parks are not adequate to serve the needs of the community. Focus is on meeting community-based recreational needs, as well as preserving unique landscapes and open spaces.</td>
<td>Determined by the quality and suitability of the site. Usually serves the entire community.</td>
<td>As needed to accommodate desired uses. Usually a minimum of 50 acres.</td>
</tr>
<tr>
<td><strong>Regional Park</strong></td>
<td>Area of natural or ornamental quality for outdoor recreation, such as picnicking, boating, fishing, swimming, camping, and trail uses; may include play areas.</td>
<td>Several communities, approximately ½ hour driving time.</td>
<td>100 acres.</td>
</tr>
<tr>
<td>Classification</td>
<td>General Description</td>
<td>Location Criteria</td>
<td>Size Criteria</td>
</tr>
<tr>
<td>--------------------------------</td>
<td>--------------------------------------------------------------------------------------</td>
<td>-----------------------------------------------------------------------------------</td>
<td>---------------</td>
</tr>
<tr>
<td>Passive Recreation</td>
<td>Parks that provide only passive recreation opportunities (e.g., walking, fishing) can be natural or in lawn, or a mix. Minimal facilities (e.g., benches) may be provided.</td>
<td>Variable</td>
<td>Variable</td>
</tr>
<tr>
<td>Green Space</td>
<td>Green areas with no facilities, usually owned by municipalities, including subdivision open space areas, urban parks. Can be lawn or mix of lawn and nature.</td>
<td>Variable</td>
<td>Variable</td>
</tr>
<tr>
<td>Natural Resource Area</td>
<td>Lands set aside for preservation of natural resources, remnant landscapes, and visual aesthetics/buffering.</td>
<td>Resource availability and opportunity.</td>
<td>Variable</td>
</tr>
<tr>
<td>Greenway/Trail</td>
<td>Portions of green space, with or without a trail.</td>
<td>Resource availability and opportunity.</td>
<td>Variable</td>
</tr>
<tr>
<td>Special Use</td>
<td>Covers a broad range of parks and recreation facilities oriented toward single-purpose use.</td>
<td>Variable—dependent on specific use.</td>
<td>Variable</td>
</tr>
</tbody>
</table>

*Variation of the National Park and Recreation Association’s classification system adjusted to meet local needs.

### Federal + State Resources

**Delaware & Lehigh National Heritage Corridor and State Heritage Area (DLNHC)** is a joint effort of private groups and interested citizens, county and municipal governments, the Commonwealth of Pennsylvania and the federal government to conserve cultural and natural resources in the five-county region of Pennsylvania that traverses the historic Delaware and Lehigh canals. Since the DLNHC’s designation by Congress in 1988 as a National Heritage Area, their mission has been to restore historic places, conserve green space for public use, and preserve and interpret our heritage to enhance life for generations to come. The DLNHC stretches 165 miles from Wilkes-Barre to Bristol, passing through five counties—Luzerne, Carbon, Lehigh, Northampton and Bucks. Fifteen municipalities in Northampton County along the Delaware or Lehigh rivers are within the corridor.

**State Resources**

- **Jacobsburg Environmental Education Center** is 1,146 acres and provides programs for pre-school aged children to college students, focusing on the natural and cultural history of the park. The Henry Rifle was once made here, and the Jacobsburg National Historic District lies almost entirely within the park and gives visitors insight into a colonial gun manufactory. Henry’s Woods, an old growth forest, surrounds Bushkill Creek. There are 18.5 miles of trails for hiking, mountain biking and horseback riding. Other activities available in the park include picnicking, fishing, hunting and cross-country skiing.

- **Delaware Canal State Park** is a 60-mile long towpath park, paralleling the Delaware River between Easton and Bristol, with 7 miles located in the County. The park consists of river islands, farm fields and historic towns. The Delaware & Lehigh Trail, designated as a National Recreation Trail, runs on the towpath once trod by mule teams pulling cargo-laden boats along the canal. Activities include hiking, biking, cross-country skiing, picnicking, canoeing, boating, fishing, hunting and education.

- **State Game Land #168 (SGL)** is the largest outdoor recreation resource in the County, with 5,400 acres on the Kittatinny Ridge in four municipalities (Lehigh, Moore, Bushkill and Plainfield townships) and is part of nearly 1.5 million acres of SGLs across the state. The SGL is managed by the Pennsylvania Game Commission, whose mission is to manage Pennsylvania’s wild birds and mammals and their habitat for current and future generations. Lawful hunting and trapping are permitted during open seasons. The Appalachian Trail has most of its Northampton County alignment within the boundaries of the SGL.

- **Pennsylvania Fish and Boat Commission (PFBC)** has four sites totaling 460 acres within the County, providing fishing and boating access at the East Bangor Dam, Rt. 33 Boat Access (Lehigh River), Sandt’s Eddy Boat Access (Delaware River), and Minsi Lake. Through a lease agreement with the PFBC, the County is responsible for light maintenance of the land surrounding Minsi Lake.
In response to recommendations made by the LVPC, Northampton County started a major County-wide park program in the late 1960s. The County and the LVPC have been actively involved in park planning, acquisition and development ever since. In 1971, the LVPC completed the first Regional Recreation and Open Space Plan (updated in 1986). Subsequently, the LVPC staff prepared a parks plan in 2002—Northampton County Parks—2010.

To help generate funds for park and open space projects, the Lehigh Valley Green Future Fund was created in 2000 to explore the possibility of bond issues in Northampton and Lehigh counties. The group, composed of local civic leaders and government officials, recommended that each county adopt a $30 million bond issue. The monies from the bond would be used to: 1) acquire important natural areas, 2) create and improve parks, 3) enhance trail and greenway networks, and 4) preserve agricultural lands. In 2002, nonbinding referendums were put on the ballot and were strongly supported by voters in each county (64% in Northampton and 70% in Lehigh).

In 2010, the LVPC conducted a land use public opinion survey of 4,500 to 5,000 Lehigh Valley residents. This method, involving a mail-out/mail-back survey, was used successfully by the Commission in 1974, 1988 and 1999. All of these public opinion surveys were conducted in conjunction with updates to the Comprehensive Plan for Lehigh and Northampton Counties. Results from the 2010 survey indicate a desire for more open space—73% strongly agreed or agreed that more parks, recreation facilities and open space should be acquired and/or developed in their county. The 2002 survey results, along with the support shown in the 2002 referendum, provides a clear vision of what the residents value about the Lehigh Valley—the long-term preservation of its natural and cultural heritage.

Northampton County owns 14 park and outdoor recreation sites totaling 957 acres, plus a lease agreement with the PFBC to maintain the 185 acres of land surrounding Minsi Lake. These sites range in size from 0.6 acre to 251 acres; are located in urban, suburban and rural areas; and include active and passive recreation opportunities. Two parks—Wayne A. Grube Memorial Park and the Diefenderfer Tract—are partially developed. In 2003, the County also acquired a property for future park space called the Gall Farm, which is not yet developed as a park. The County park and natural lands, summarized below, offer a wide variety of recreational opportunities for residents and tourists.

The primary focus of the County park system is to provide passive recreation opportunities. Active recreation facilities are available at some sites for use by groups renting pavilions or for general public use if available.
Archibald Johnston Conservation Area

Location: Routes 22 and 191, Township Line and Santee Mill roads, Bethlehem Township and City of Bethlehem

Size/Classification: 48 acres/natural resource area

Description: A wooded stream corridor along the Monocacy Creek. The site is mostly located within Dutch Springs Natural Heritage Area (State Significance) and is within the Monocacy Creek Greenway as identified in the LVGP. An active rail line runs along the stream and through the middle of the site. Facilities are minimal—an unimproved former driveway along the stream is usable as a trail (but there is no parking at the entrance off Santee Mill Road) and an empty kiosk by the stream. Formal access is through the adjacent Bethlehem Township’s Janet Johnston Housesick & William D. Housesick Memorial Park, a passive recreation park that is being developed.

Assessment:
The site is classified as a Natural Resource Area, but it does have a recreational component, although not formally developed—the streamside former driveway used as a trail. There is no signage indicating entrance to this County site when entering from the township park. Walk-in access is possible from Santee Mill Road on the former driveway. The original plan was to connect this site downstream to the Gertude B. Fox County Park, which is less than one stream mile away, but the previous adjacent property owner was not interested at that time. Although ownership of this site may be transferred to Bethlehem Township in the future, connecting this site to the Gertrude B. Fox County Park would preserve the stream corridor as part of the Monocacy Creek Greenway.

Recommendations:
• Transfer the site to either Bethlehem Township or a land conservancy when the opportunity arises.
• Cooperate with Bethlehem Township and land conservancies in planning the conservation area component of this County site.
• Pursue discussions with the new property owner of the adjacent parcels to the west of the site to connect downstream to the Gertude B. Fox County Park.

Bear Swamp Archery Complex

Location: Lake Minsi Drive, Upper Mount Bethel Township

Size/Classification: 251 acres/Regional park

Description: An archery complex and natural area of woodlands, wetlands and a tributary to and the main stem of the East Fork Martins Creek. Bear Swamp and Bear Swamp Powerline Natural Heritage Area (State Significance) are partially located on County property and protected, a large portion remains in private ownership. To protect the swamp in its entirety and the Bear Swamp Natural Heritage Area as defined in the County Natural Heritage Inventory, more land would have to be added to this County site.

Recommendation:
• Cooperate with partners to acquire land adjacent to the south-eastern boundary of the Bear Swamp Archery Complex and the part of the East Fork Martins Creek corridor that flows west from the swamp.
Circle Park
Location: Centre Square, Northampton and 3rd streets, City of Easton
Size/Classification: 0.6 acre/special use
Description: This park was the site of the first Northampton County courthouse, built in 1765 and demolished in 1882, on the steps of which one of only three readings of the Declaration of Independence occurred on July 8, 1776. This historic event is celebrated each year on Easton’s Heritage Day, when the event is reenacted. The park also has several plaques commemorating other historic events. Currently, there is a Civil War monument, a 75-foot obelisk topped by what is locally called “The Bugler.” Formally named the Soldiers & Sailors Monument, the obelisk was designed to honor all of the armed forces who fought in the Civil War and was dedicated to local veterans in 1900. Each year, the monument is shrouded by a 100-foot Peace Candle, which is ceremoniously lit the Friday evening after Thanksgiving and remains on display through January. The park hosts the oldest, continuously operating outdoor farmers’ market (1791) in America. The park is surrounded by three greenways—Bushkill Creek Corridor, Lehigh River and Delaware River, lies within a National Register Historic District and a Local Historic District, and is along the Karl Stirner Arts Trail.
Assessment: The park is located in Centre Square, a site that is integral to the City of Easton’s various cultural events throughout the year. Transferring the park to the City of Easton would put all of Centre Square into the City’s ownership, not just the outside perimeter.
Recommendation: • Transfer ownership to the City of Easton should be considered.

Diefenderfer Tract (Proposed)
Location: Airport and Hanoverville roads, Hanover Township
Size/Classification: 33 acres/community park
Description: The land was donated to the County when the owner passed away for use as a park or farmer education site and was formally accepted by County Council in September 2008. The property is comprised of two parcels separated by a UGI right-of-way on the north side, where a local trail (conceptual) is aligned. Currently the land is leased for farming, except for a 1-acre community garden with 26 plots in the southeast corner of the property. The site is within an agricultural security area (ASA).
Assessment: The property is too small and is too close to Wayne A. Grube Memorial Park to be a viable future regional park and is more the size of a community park. There are residential areas to the east and southeast. Incorporating a unique recreation facility (e.g., nature playground, disc golf course) that is currently not offered at regional parks is one option. Another option would be to expand on the community garden theme and start a farmer education facility (as was the original intent of the donation) modeled on The Seed Farm in Lehigh County. If the demand warrants a second facility in the Lehigh Valley.
Recommendation: • Conduct a development alternatives study to determine the best use for the property.
Frost Hollow Overlook

**Location:** Rt. 611, Forks Township

**Size/Classification:** 3 acres/passive recreation

**Description:** Site consists of two non-adjacent wooded parcels along the Delaware River. The northern parcel has a scenic overlook of Delaware River, although the woods prevent an unobstructed view. The southern parcel has no access. An unnamed tributary of the Delaware River is along the northern boundary of the northern parcel. The site is in close proximity to Forks Township’s Gollub Park. Facilities include one picnic table and one bench, eight parking spaces, and steps (railroad ties) down to the river. The site is located within the Delaware River Greenway and along the Delaware River Scenic Drive.

**Assessment:** One of the drainage blocks in the parking area collapsed from the multiple storms from 2004 to 2006. This damage does not prevent use of the site but should be fixed to help with stormwater control.

**Recommendations:**
- Repair the damaged infrastructure.
- Transfer ownership to Forks Township should be considered.

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Fry’s Run Park

**Location:** South Delaware Drive (Rt. 611) and Royal Manor Road, Williams Township

**Size/Classification:** 6 acres/passive recreation

**Description:** A passive recreation park, partially wooded with a large open grassy area, along Fry’s Run—a High Quality-Cold Water Fishery/Migratory Fishery stream and designated as Class A Wild Trout Waters by the PFBC. The historic M. Opp Bridge, which is a stone bridge that was built in 1824 and a National Register of Historic Places Eligible site, is one of the oldest structures along the Delaware River. Facilities include four picnic tables, an observation deck, which is built around one of the two historical trolley piers, and two parking lots. Access to the western parking lot is only available during specific events, due to misuse by individuals causing a disturbance to neighbors. The park is within the Fry’s Run Greenway, Delaware River Greenway, and Pennsylvania Highlands Scenic Greenway as identified in the LVGP.

**Assessment:** Stream bank and riparian restoration was completed in early 2015, but a majority of the work was washed away during a summer storm in 2015. Picnic tables are old, weathered or warped. The park has historical features but with no educational material presented.

**Recommendations:**
- Add interpretive signage about the historical significance of the bridge and the trolley piers.
- Restore the historic M. Opp Bridge for preservation purposes and the safety of park visitors.
- Transfer ownership to Williams Township should be considered.
Gall Farm Park (Proposed)

Location: Gall and Berhel roads, Plainfield Township

Size/Classification: 150 acres/regional park

Description: The land was acquired by the County in 2003 to be developed into a regional park. The property—made up of four parcels, two north and two south of Gall Road—has farmland (leased), woodlands and the Little Bushkill Creek, with steep slopes on the eastern side of the stream. Scenic views are available in almost all directions from the highest elevation on the largest parcel. Two old quarries exist on the site, one of which is surrounded by a chain link fence. The Plainfield Township Recreation Trail runs through the western part of the property. An agricultural easement is on the northeast side and an agricultural security area is located on the eastern side of the property. The site is partially within and adjacent to the Bushkill Creek Corridor Greenway. A transmission line runs through the property in a north/south direction. Two farm buildings are located on the largest parcel on the north side of Gall Road.

Assessment: The southwestern portion of the property has gently sloping areas that could be used to develop more active recreation facilities. Also the highest elevation is gently sloping, possibly allowing for a scenic view area. To maintain the views, reforestation areas would have to be carefully located. The transmission line is not large scale and does not detract greatly from the setting. The riparian buffer along the Little Bushkill Creek is minimal in some areas. The site could potentially provide an active/passive County site readily accessible to residents in the northeast part of Northampton County.

Recommendations: • Develop a master site plan for this property to guide the development of the Gall Farm as a regional park. • Increase the riparian buffer width along the Little Bushkill Creek to 150 feet as needed.

Louise W. Moore Park

Location: Country Club Road, Lower Nazareth and Bethlehem townships

Size/Classification: 100 acres/regional park

Description: A regional park that is centrally located within the County, consisting of three parcels, two on the west side and one of the east side of Country Club Road that were donated by Hugh Moore, founder of Dixie Cup Company, on his death in 1972. A constructed 2-acre wetland exists on the western side, which was designed to treat stormwater runoff and to provide wildlife habitat and aesthetic enhancement for park users. Facilities include one softball field, two tennis courts, two playgrounds, two sand volleyball courts, one grass volleyball court, fitness trail stations, four pavilions, loop trails, three water fountains, wildflower areas, and a windmill. The more active recreation facilities are located on the east side of Country Club Road.

Assessment: Louise W. Moore Park is heavily used because of its central location within the County and its proximity to large population centers. On the west side of Country Club Road, although a wooded part of the park is separated from the main part by a narrow strip (35 feet) of non-County-owned land and no formal trail connection exists, park users use this wooded area. A lot of open lawn area exists on the western side, which has high maintenance costs for mowing. The County owns a parcel adjacent to the park along Country Club Road where the estate house is located. Renovations were started to convert the building to another use, possibly housing the County’s Park and Recreation Division, but a moratorium was put on the construction in Janu-ary 2015 by County Council until a definite plan for the reuse of the building was determined. The current maintenance facility at the park is inadequate and obsolete.

Recommendations: • Naturalize more of the west side of the park by restoring woodlands. • Complete restoration of the estate farmhouse to transition the County parks administrative staff to this location. • Complete the site plan for a centralized park maintenance facility. • Re-establish a planting buffer along Route 33 and Country Club Road.
Minsi Lake (owned by Commonwealth of Pennsylvania)

Location: Upper Mount Bethel Township, near intersections of Blue Mountain, Lake Minsi and East Shore drives.

Size/Classification: 302 acres/regional park

Description: A natural area of woodlands, wetlands and a 120-acre lake, which is owned by the Commonwealth of Pennsylvania. The Pennsylvania Fish & Boat Commission (FFBC) manages the lake and the water structures. The County, under a lease agreement with the PFBC through December 1, 2020, maintains the land surrounding the lake. The site is located within the Greater Minsi Lake Corridor Greenway as identified in the LVGP. The Minsi Lake Vermont Pools Natural Heritage Area is partially located within the site on the north side of the lake. The southern boundary of the site about a regional trail, primarily at the conceptual stage but with a short existing segment on East Shore Drive approximately 0.2 mile east of Lake Minsi Drive. Facilities include two paved boat launches, parking facilities and two trails. One trail runs through the woods, around the north side of the lake, connecting the west and east parking lots. Another trail runs from the west parking lot through the picnic area and then along the dam wall. Portable toilets are typically available in season.

Assessment: The Minsi Lake dam is one of 23 Pennsylvania-owned dams that were, or currently are, considered as high-hazard and unsafe. Minsi Lake’s dam revitalization has an estimated repair cost of $3.25 million and the funding source has not yet been identified. The project status on the PFBC website is listed as “Design and permitting initiated.” The pit toilets are not working, and the porta-potties are only available during fishing season.

Recommendations:
• Work with the PFBC to identify funding for the dam revitalization project to eliminate their safety issue.
• Replace the pit toilets with modern facilities.

Monocacy Meadow

Location: Rt. 191 and Brodhead Road, Bethlehem Township

Size/Classification: 8 acres/passive recreation

Description: Meadow and woodlands along the Monocacy Creek, a High Quality-Cold Water Fishery, that provides fishing access for catch and release only as designated by the Pennsylvania Fish and Boat Commission. The site is adjacent to the Dutch Springs Natural Heritage Area to the west, within the Monocacy Creek Greenway as identified in the LVGP, and adjacent to the Bethlehem Township Trail Network (conceptual status at this location) along the southern boundary. No facilities are available, except a gravel parking lot for approximately 8 to 10 cars.

Assessment: Expansion potential is minimal, with roads located on the east and south sides and an active rail line on the west side of the site. The stream bisects the tract, restricting access to the northern portion. The parking lot is currently in poor condition.

Recommendations:
• Improve the condition of the parking area.
• Transfer ownership to Bethlehem Township should be considered.
Mount Jack
Location: Riverton and River roads, Upper Mount Bethel Township
Size/Classification: 61 acres/natural resource area
Description: A wooded bluff and banks along the Delaware River comprised of four non-contiguous parcels. The site is located within the Delaware River Greenway and partially within the Allegheny Creek Greenway. Mill Creek and two unnamed tributaries of the Delaware River run through three of the parcels. The Martins-Jacoby Watershed Trail Network (conceptual stage at this location) is adjacent to two parcels and runs through a third parcel. The three westernmost parcels are partially within the Mount Jack Natural Heritage Area, State Significance. The easternmost parcel (27 acres), which is woods and farmland, is landlocked and is not accessible. The southernmost parcel, Doe Hollow, has river access but sustained damage during the storms from 2004 to 2006. Prior to storm damage, there was parking for 5 to 6 cars or 2 cars with trailers. Parking for one car is available on the west side of Riverton Road just north of the access road to the river.
Assessment: Although there is a small area to park on the west side of Riverton Road near the southern parcel, the full potential of this site for river access is not being met until the repairs are made at this location. Access to the landlocked parcel could be attained through acquisition of land along River Road. This is potentially a good location for a riverfront park but similar township and private facilities are located 3 to 4 miles to the south (Lower Mount Bethel Township Recreation Complex and the PPL Martins Creek Environmental Preserve).
Recommendations:
• Complete the needed repairs to the southernmost parcel, Doe Hollow, to return the site to its full pre-storms use.
• Conduct a feasibility study to determine if a County-owned riverfront park is appropriate at this location.

Nor-Bath Trail
Location: Clear Springs Road, Northampton Borough, through Allen Township, ending in East Allen Township, north of Jacksonville Park
Size/Classification: 5 mile length/greenway/trail
Description: The Nor-Bath Trail is a rail-trail converted from the Northampton & Bath Railroad corridor that was incorporated by the Atlas Portland Cement Company in 1902. The railroad transported raw material to the cement plant and cement to metropolitan markets. The trail is used for walking, biking, cross-country skiing and interpretive education. The entire trail is in the Nor-Bath Trail Greenway, the western end is in the Hokendauqua Creek Greenway, and the eastern end is in the Monocacy Creek Greenway, all identified in the LVGP. Three municipal recreational facilities and one County park (Wayne A. Grube Memorial Park) are adjacent to the trail. The Allen Township Trail (conceptual stage) and the East Allen Township Trail (proposed stage immediately adjacent and conceptual stage approximately 0.5 mile away) connect to this County trail. The trail crosses Dry Run and Hokendauqua Creek. Parking is available at a trailhead on Savage Road and within the adjacent parks. The trail crosses through the Allentown Farm State Hospital National Historic District Eligible site and is adjacent to four agricultural security areas.
Assessment: The County has renewed their efforts to connect the Nor-Bath Trail westward to the D&L Trail in Northampton Borough at the south end of Canal Street Park. The eastern end of the trail needs to be extended into Bath Borough to complete the trail as originally proposed. Signage, width and surfacing do not meet current design standards.
Recommendations:
• Complete the current efforts to connect the trail to the D&L Trail in Canal Street Park (Trail Gap #4, Lehigh Valley Trails Inventory—2013).
• Extend the trail westward into Bath Borough.
• Improve the trail’s signage, width and surfacing to meet current design standards.
Portland Waterfront Park

Location:
Rt. 611, Portland Borough and Upper Mount Bethel Township

Size/Classification:
10 acres/passive recreation

Description:
A wooded area along the Delaware River that provides walk-in access from Delaware Avenue in Portland Borough. The site is in two parts, separated by a privately-owned property that includes the original toll taker's house—the part south of the Delaware River footbridge is publicly accessible, and the part north of the footbridge is not publicly accessible. Jacoby Creek's mouth is located on the southern part of the site. The site is within the Delaware River Greenway and the Jacoby Creek Greenway as identified in the LVGP. The Martins-Jacoby Watershed Trail Network (conceptual stage), the Liberty Water Gap Trail (conceptual), and the September 11th National Memorial Trail (conceptual) are adjacent to the park. Facilities include two picnic tables south of the footbridge. No parking is available onsite, but is available along North Delaware Drive, and there is no ability to create parking because there is an active Norfolk Southern rail line between Delaware Drive and the park, and only pedestrian crossing is allowed.

Assessment:
To enter the park, users must cross an active Norfolk Southern rail line at the Delaware River footbridge, which is the only crossing that Norfolk Southern has approved. This entrance area is on private property, which also separates the two County-owned parcels and restricts public access to the southern part. A location that could provide better canoe and kayak access is at the southern end of the park, but there are a few issues with this location: 1) The old driveway on the south side of the vacant building at the south end of Portland Borough (previously Cramer’s Home Center) provides access to the park, but it is on private land. 2) At the end of the driveway, the active rail line must be crossed, which Norfolk Southern would have to grant approval for a vehicle crossing. 3) The area that is not wooded east of the park is the road right-of-way for the Rt. 611 bridge.

Recommendations:
• Pursue access easements to cross the privately-owned property to access the northern part of the park.
• Cooperate with the development efforts for the Liberty Water Gap Trail and the September 11th National Memorial Trail, which crosses from New Jersey on the footbridge and is proposed to head north toward the Delaware Water Gap.
• Explore the feasibility of creating a vehicle entrance and parking lot south of the park on the Delaware River Joint Toll Bridge Commission property.
• Install a County park sign to let the public know the park exists.
• Transfer ownership to Portland Borough and/or Upper Mount Bethel Township should be considered.

Wayne A. Grube Memorial Park

Location:
Willow Brook and East Bullshead roads, Allen and East Allen townships

Size/Classification:
202 acres/regional park

Description:
The 1997 master site plan for this park recommended developing the park in nine phases to be similar to Louise W. Moore Park. The total cost was expected to exceed $8 million. Approximately 55 acres of this 202-acre park site have been developed (Phases I and II) and are open for public use. The park is being reforested in certain areas (fenced to prevent deer damage). The Cataquaq Creek flows through the southern part of the park (south of Bullshead Road). Cataquaq High School is adjacent to the park. The park is partially within the Nor-Bath Trail Greenway as identified in the LVGP. The park is within the old Allentown Farm State Hospital property and adjacent to the 1813 Farmstead, both of which are National Register of Historic Places – Eligible sites. Two small (9.5 and 13 acres) agricultural security areas are adjacent to the park. Facilities include a connection to the Nor-Bath Trail, a trail connecting the southern part with the northern part via a bridge over the creek, three picnic pavilions, playgrounds and a softball field. Modern restrooms are open April through October.

Assessment:
Only two of the nine phases of the park development have been completed to date. The amount developed is considered the size for a larger community park, so the park currently is not fulfilling the role of a regional park. Once the remaining phases are completed, the park will be functioning as a regional park and fill the service area gap in the western part of the County. When visiting the park, the reason for the fenced reforestation area was not obvious. Signage could help explain to the public the reason for this.

Recommendations:
• Complete Phases 3 through 9 at Wayne A. Grube Memorial Park.
• Add an interpretive sign describing the fenced reforestation area.
Regional Parks Outside of Northampton County

Several regional parks exist in neighboring counties, including federal, state (Pennsylvania and New Jersey), county and municipal facilities, that provide outdoor recreation opportunities for Northampton County residents.

Federally-owned nearby outdoor recreation sites include the majority of the National Park Service’s 70,000-acre Delaware Water Gap National Recreation Area, located in Monroe and Pike counties (Pennsylvania), and in Warren and Sussex counties (New Jersey), and described in more detail under the Federal heading at the beginning of the Outdoor Recreation Resources section. The U.S. Fish and Wildlife Service has the Cherry Valley National Wildlife Refuge, located in Monroe County, which was established in December 2008 for the conservation of migratory birds and federal trust species (i.e. migratory birds, threatened species, endangered species, intertidal forest birds, marine mammals, and other species of concern) and their habitats. The lands and waters of Cherry Valley have been widely recognized for their valuable natural resources. These include a diverse mosaic of wetland and upland habitats that support an unusually large number of federal trust species, including five federally listed threatened or endangered species. The Kittatinny Ridge (which flanks the south side of Cherry Valley) has been designated an Important Bird Area by the Pennsylvania Audubon Society and is a well-known migration flyway for up to 20,000 migrating raptors and more than 140 bird species every fall. Large blocks of unfragmented forest along the ridge also serve as valuable breeding areas for interior forest birds.

The Pennsylvania state park system has several parks within 25 miles of the County boundary, with the closest being Beltzville State Park and Nockamixon State Park. Beltzville State Park is 3,000 acres and is located in Carbon County in the southern foothills of the Poconos. Pohopoco Creek, an excellent trout stream, feeds the 949-acre Beltzville Lake, which is a rest stop for migrating waterfowl and is a destination for boaters and anglers. The sand beach and picnic pavilions are very popular. Recreational facilities are a result of a cooperative effort of the U.S. Army Corps of Engineers, the Department of Conservation and Natural Resources - Bureau of State Parks and the Pennsylvania Game Commission. Nockamixon State Park is almost 5,300 acres and is located in the rolling hills of Bucks County. Tiontin Creek, Three Mile Run and Haycock Run feed the 1,450-acre Lake Nockamixon, which is a rest stop for migrating waterfowl and a destination for boaters and anglers. Visitors can stay the night in a cabin or enjoy the many activities of the park for the day. Popular activities are picnicking, visiting the pool, hiking, biking, fishing and boating. Across the Delaware River, New Jersey offers several state parks, state forests and recreation areas that are within driving distance for Northampton County residents, with the closest ones being Wharton State Forest, Jenny Jump State Forest, Allamuchy Mountain State Forest, Stephens State Park, Voorhees State Park, Spruce Run Recreation Area, and Round Valley Recreation Area.

To the west in Lehigh County, county- and municipally-owned parks offer regional outdoor recreational opportunities, such as Trexler Nature Preserve, Walking Purchase Park, South Mountain/Robert Rodale Reserve, and the Little Lehigh Parkway.

Municipal + School District Resources

Local parks are where most residents participate in outdoor recreation activities, as reported in the results of the survey conducted for this Plan, and providing these close-to-home facilities is the responsibility of the municipalities. These facilities, often located at municipal office properties, are the primary source for active recreation opportunities compared to the passive recreation that is often provided by county and state parks. School district facilities also provide close-to-home recreation opportunities, such as playgrounds.
and athletic fields, and may be available to the public when not in use by the school.

Private Resources

Another component of the park system is outdoor recreation facilities and natural area lands. These lands are typically held by nonprofit and for-profit organizations and businesses. Public access to these facilities may or may not exist. Some of the specialized recreation opportunities play a vital role in meeting residents’ desires and acquire and/or develop the parkland needed to provide these facilities to their communities. In 1983, the document was updated and published as Recreation, Park and Open Space Standards and Guidelines. The guidelines suggested that a park system have 6.25 to 10.5 acres of developed open space per 1,000 persons. Standards were also provided for specific facilities and service areas. These guidelines were subsequently updated in the 1996 Park, Recreation, Open Space and Greenway Guidelines by James D. Mertes, Ph.D., CLP and James R. Hall, CLP. This resource advocates a systems approach to park and open space planning, using a level of service guideline that is needs-based, facilities driven and land measured. Although this analysis would still be based on providing a specific recreation acreage per 1,000 persons, an essential component of this analysis included community involvement, which allows communities and municipalities to quantify the minimum acceptable amount of parkland to accommodate the recreation facilities desired by their residents. In the past few years, NRPA has developed a new tool for parks and recreation planning known as PRORAGIS (Parks and Recreation Operating Ratio and Geographic Information System), which allows users to compare themselves to departments that they identify as similar to themselves from across the country. Users complete an online form with data about their agency and its responsibilities and then are able to analyze their data and compare themselves to individual agencies or aggregated groups of agencies.

Outdoor Recreation Acreage Guidelines

The National Recreation and Park Association (NRPA), formed in 1965, is dedicated to the advancement of public parks, recreation areas and natural areas. As park and recreation agencies have faced many private property rights and to live on and use their land. In a conservation easement, a landowner agrees to sell or donate certain rights associated with his or her property—often the right to subdivide or develop—and a private organization or public agency agrees to hold the right to enforce the landowner’s promise not to exercise those rights. If the conservation easement is funded with grants from public agencies, some extent of public access is part of the grant agreement.

Conservation easement lands and land trust lands account for 28% of private parklands in the County. Land trust organizations operating in the County include Wildlands Conservancy (Alfheim Woods Conservancy, Natural Lands Trust and The Nature Conservancy. Conservation easement lands and land trust lands account for 28% of private parklands in the County. Land trust organizations operating in the County include Wildlands Conservancy (Alfheim Woods Conservancy, Natural Lands Trust and The Nature Conservancy. Conservation easements protect land for the future while allowing owners to retain many private property rights and to live on and use their land. In a conservation easement, a landowner agrees to sell or donate certain rights associated with his or her property—often the right to subdivide or develop—and a private organization or public agency agrees to hold the right to enforce the landowner’s promise not to exercise those rights. If the conservation easement is funded with grants from public agencies, some extent of public access is part of the grant agreement.

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## Close-to-Home Park Acreages by Municipality

### Population Projections for Lehigh and Northampton Counties: 2010-2040

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1. Acreage is any park within or intersecting the boundary of a municipality. Includes Large Urban, Community, Neighborhood and Mini-Parks and open to the public. No proposed Community Parks or Neighborhood Parks are included.
2. U.S. Census Bureau, 2010 Decennial Census

## Close-to-Home “Plus” Park Acreages by Municipality

### Population Projections for Lehigh and Northampton Counties: 2010-2040

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1. Close-to-Home “Plus” — Mini-Parks, Neighborhood Parks, Community Parks, Large Urban Parks, Regional Parks, Trail and most Special Use facilities.
2. U.S. Census Bureau, 2010 Decennial Census
all the close-to-home proposed parklands are developed, the acreage increases to 7.4 per 1,000 population. But even at this level, the park acreage/1,000 population in 2040 would only be 5.5 per 1,000 population. Parks that are partially developed are classified to their current use. For example, a community park that is being built in phases may initially be classified as Special Use because the only facilities at the park are athletic fields. As additional facilities are added in future phases, the classification is changed to Community Park, which is a close-to-home category, and increases the close-to-home park acreage to meet the demand of future population increases.

For regional sites, the analysis was first conducted on currently existing park acreage (3,394 equals 11.3 acres/1000 population) and then with all the currently proposed parkland (Greater Minsi Lake Corridor, 545 acres; Wayne A. Grube Memorial Park, 202 acres and Gall Farm, 149 acres) developed (4,291). The 2002 plan used a park acreage guideline of 15 to 20 acres/1,000 population for the regional classification. A review of several Pennsylvania county park, recreation and open space plans revealed a variety of regional acreage guidelines and definitions of what is considered regional. For this Plan, the County parklands greater than 100 acres were considered regional along with the federal National Recreation Area, the two state parks, and a city-owned park that functions as a regional park. The results of the analysis indicate that the County does not have enough regional park acreage for all years reported even if all proposed sites are developed using the current plan’s standard of 15 to 20 acres/1,000 population of regional park space. Note that acquisition projects currently proposed would add over 1,000 acres to regional outdoor recreation space and lessen the need for additional acquisitions to meet minimum standards.

Various service area analyses were also conducted for close-to-home, County-owned and regional park and outdoor recreation sites to see the geographic coverage of outdoor recreation facilities. Service areas were based on: 1) NRPA Location Criteria distances from the 1996 guidelines for the Mini-Park, Neighborhood Park and Community Park classifications, and 2) LVPC staff input for the Large Urban Park, Regional Park and Regional-Lake classifications.

The close-to-home parks analysis revealed four areas—eastern Lehigh/western Moore townships, northern Upper Mount Bethel, southern Plainfield/western Lower Mt. Bethel townships and southern Williams Township—that were not covered by the service areas. The northern parts of the eastern Lehigh/western Moore townships and the Upper Mt. Bethel Township area is dominated by the Kittatinny Ridge and would not be a suitable location for close-to-home park space. Also, Plainfield Township is in the process of developing a community park that would fill part of the Plainfield/Lower Mt. Bethel townships gap once completed.

County-owned park sites were mapped using the same service area size criteria, adding Regional (10 miles) and Regional-Lake (20 miles) classifications. Mini-Parks were omitted because no County parks sites are classified as Mini-Parks. Service area size was assigned based on existing function classification, not future function classification (e.g., Wayne A. Grube Memorial Park currently functions as a community park until park buildout is complete). The three existing County regional parks were also sub-classified as family active/passive, Louise W. Moore Park, or passive, Bear Swamp Archery Complex and Minsi Lake. The County-owned park site service area analysis revealed that the northwest, northeast and very southern parts of the County are not served by Louise W. Moore Park. Also, the Minsi Lake service area covers most of the County except the far western and southern parts. The northwest part of the County will be covered by a County regional family active/passive park site once Wayne A. Grube Memorial Park, located primarily in Allen Township, is built out to a stage to be classified as a regional park. Most of the northeastern part will be served once Gall Farm, located in Plainfield Township, is developed as a family active/passive regional park. The southern tip of the County is served by surrounding
Recommendations:

To fill service area gaps and meet overall County park acreage standards, the following general recommendations are provided. Recommendations related to specific County facilities are provided in the County Resources section of this chapter:

• Municipalities with close-to-home park service area gaps (southern Plainfield and western Lower Mt. Bethel townships, eastern Lehigh/Middlesex townships, northern Up- per Saucon Township, and Southern Williams Township) should finish developing existing parks or acquire and develop new parks to fill the areas currently not served by community parks if supported by a residents’ needs analysis.

• Municipalities should gather information from their residents about how the community desires and acquires and develop the parkland needed to provide these opportunities.

• Work with federal and state partners to create additional campus, municipal active park sites and regional passive parks (Nockamixon area, eastern Lehigh/western Moore townships, northern Up- per Saucon Township, and Southern Williams Township) should finish developing existing parks or acquire and develop the parkland needed to provide these opportunities.

• Municipalities should gather information from their residents about how the community desires and acquires and develop the parkland needed to provide these opportunities.

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Ten priority trail gaps were identified in the Lehigh Valley Trails Inventory—2013. These gaps occur either within a single open trail (e.g., Trail Gap #5 – D&L Trail) or between two individual open trails (e.g., Trail Gap #7 – South Bethlehem Greenway to Saucon Rail Trail). Reasons for the trail gaps vary and include stream crossings, permitting and land ownership issues. Significant effort to close these trail gaps is underway by the County, municipalities and nonprofit organizations to provide more outdoor recreation opportunities.
Bicycle Routes

BicyclePA is the name for a network of cross-state bicycle routes that guide the bicycle tourist across the Commonwealth. The routes generally use existing highways that have been identified as desirable roads for bicycling. In some cases, the route uses improved rail trails to bypass difficult sections. Northampton County has a short section of one BicyclePA route described as follows:

BicyclePA Route V – 355 miles, starts in Lawrence County at the Ohio state line and travels across the Commonwealth roughly following the I-80 corridor. The route enters Northampton County on Rt. 611 from Delaware Water Gap in Monroe County and ends in Portland Borough at the pedestrian bridge that crosses the Delaware River.

Recommendations:
1. Close the six trail gaps in the County as identified in the Lehigh Valley Rails Inventory—2013.
2. Engage the Two Rivers Area Trail Group to assist in implementing the recommendations in the Two Rivers Area Greenway Trail Feasibility Study and Martins-Jacoby Trail Conceptual Plan and promote the trail network.
3. Complete a feasibility study of a Northern Tier Rail Trail from Walnutport to Portland.

Greenways and Blueways

Greenways and blueways are critical landscape components because they protect the environment, provide alternative routes of transportation, supply recreational opportunities, and connect natural and cultural areas to one another, providing a linear resource for a variety of users. A greenway is defined as a corridor of open space that may vary greatly in scale from narrow strips of green that run through urban, suburban and rural areas to wider corridors that incorporate diverse natural, cultural and scenic features. A blueway is a greenway corridor that includes a watercourse, which provides additional recreational opportunities and/or wildlife habitat. Water trails, which are recreational blueways, are boat routes suitable for canoes, kayaks and small motorized watercraft comprised of access points, boat launches, day-use sites, and, in some cases, overnight camping areas. Connectivity is the defining characteristic that distinguishes greenways from isolated paths and pockets of open space. While individual parks, preserved lands, undisturbed natural areas and waterways are valuable resources, their conservation and recreational value is enhanced if they are linked together.

Types of Greenways and Blueways

Greenways and blueways come in a variety of forms and serve many functions. The Pennsylvania Greenways Program identifies three major types of greenways: 1) cultural/recreational, which support human activity, 2) conservation, which support ecological and conservation purposes, and 3) multi-use, which support a combination of human and conservation activities. The LVPC identified a fourth type in the Lehigh Valley Greenways Plan (LVGP) that is present in the Lehigh Valley: 4) scenic, which provide a visual landscape connection. A description of these four types is as follows:

Cultural/Recreational: Cultural/recreational greenways and blueways supply the human population with an array of low-impact recreational opportunities and quality of life benefits. They provide solace from the hustle and bustle of daily life and undisturbed interfaces with nature. In suburbanized areas subject to sprawl, they offer alternative transportation routes and provide linkage to close-to-home exercise opportunities. Natural, cultural and historical areas of interest can be preserved, interpreted and enjoyed through these corridors.

Conservation: Conservation greenways and blueways exist primarily to protect natural resources. They are undisturbed corridors that fulfill their ecological potential by serving as habitat, buffers, corridors and/or destinations. Enabling greenways to fulfill their conservation role depends on a thorough understanding of landscape ecology.

Multi-Use: Multi-use greenways and blueways accommodate cultural/recreational activities and provide conservation opportunities, serving both human and wildlife interests. These greenways connect people to the many features that make our community unique, providing a much needed and desired sense of place in a rapidly developing region.

Scenic: Scenic greenways and blueways enhance the quality of life by providing scenery for residents and visitors to enjoy. Scenic greenways are visual connections across the landscape so people can enjoy the natural environment around them. Northampton County is framed by the Kittatinny Ridge, locally known as the Blue Mountain, to the north and the Pennsylvania Highlands mountains and hills to the south, providing a beautiful backdrop to almost any view in the County.

Northampton County is framed by the Kittatinny Ridge, locally known as the Blue Mountain, to the north and the Pennsylvania Highlands mountains and hills to the south, providing a beautiful backdrop to almost any view in the County.
Pennsylvania’s greenways network will ultimately take the form of “hubs and spokes.” The “hubs” of this network are large centers of activity and include national, state, or local parks; forests and game lands; lakes and headwaters; and historical, cultural and other significant destinations, including our communities. The “spokes” will be corridors connecting these destinations to our communities, including greenways of statewide significance, as well as local and regional networks. Northampton County’s greenways and blueways network is based on this model but with an additional component—nodes, which are natural, recreational, cultural and/or historical places of interest located throughout the network.

The LVPC identified 21 greenways in Northampton County in the 2007 Lehigh Valley Greenways Plan. Several of those have more than one type assigned to different segments depending on the function of that segment. A majority of these greenways (16) follow stream and river corridors and are, therefore, blueways. Six greenways and blueways extend outside of the County—Blue Mountain/Kittatinny Ridge, Cooks Creek, Delaware River, Lehigh River, Pennsylvania Highlands, Saucon Creek; six greenways and blueways are located within one municipality—Allegheny, Bertsch Creek, East Branch Saucon Creek, Fry’s Run, Greater Minsi Lake Corridor, Jacoby Creek; and the remaining nine are located in two or more municipalities. The Delaware River and Lehigh River greenways are each identified by DCNR as a Pennsylvania Major Greenway Corridor. The greenways and blueways are summarized by type as follows:

- conservation (10) – Allegheny, Bartsch Creek, East Branch Saucon Creek, Fry’s Run, Greater Minsi Lake Corridor, Jacoby Creek; and the remaining nine are located in two or more municipalities. The Delaware River and Lehigh River greenways are each identified by DCNR as a Pennsylvania Major Greenway Corridor. The greenways and blueways are summarized by type as follows:
  - conservation (10) – Allegheny, Bartsch, Cooks, East Branch Saucon, Fry’s, Holendauqua, Indian, Jacoby, Martins creeks and Mud Run
  - conservation and multi-use (3) – Bushkill Creek Corridor, Monocacy Creek, Saucon Creek
  - conservation and scenic (1) – Pennsylvania Highlands

Hubs identified were:
- City of Bethlehem
- City of Easton
- Coplay/Northampton boroughs
- Slatington/Walnutport boroughs
- Jacobsburg Environmental Education Center
- Delaware Water Gap National Recreation Area

A total of 33 nodes were identified within the greenways, with eight located in more than one greenway.

For a more detailed discussion about Northampton County greenways, refer to the Lehigh Valley Greenways Plan (2007).

Historical, Cultural and Scenic Resources

The historical, cultural and scenic resources of Northampton County offer a wide variety of activities and attractions for the enjoyment of both residents and visitors. These resources are found at the centers of our cities and in the rural countryside. Ranging from a visit to an art museum to a drive through a covered bridge to attending a music festival to a fun day at a science center, there is something for everyone. The cultural resources offer a glimpse of who we are today, while the historical resources offer a glimpse of who we were in the past, and the scenic resources make Northampton County unique.

Greenways Components

<table>
<thead>
<tr>
<th>Greenway Type</th>
<th>Number of Greenways</th>
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<tr>
<td>Cultural/Recreational</td>
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<tr>
<td>Multi-Use</td>
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<tr>
<td>Conservation and Multi-Use</td>
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<td>2</td>
</tr>
<tr>
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</tbody>
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Historical, Cultural and Scenic Resources

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A total of 33 nodes were identified within the greenways, with eight located in more than one greenway.

For a more detailed discussion about Northampton County greenways, refer to the Lehigh Valley Greenways Plan (2007).
Northampton County has a wealth of historical resources (e.g., buildings, structures and canals), which 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. In 1970, the LVPC completed a report titled Historic Structures and Sites. The report 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. Most of the recommendations of the report have been accomplished through public and private efforts.

There have been several major efforts since 1970 to identify and survey the remaining historical resources in Northampton County. Some communities prepared thorough history studies for the 1976 bicentennial celebration. Another important effort in the 1970s involved communities prepared thorough 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. The Pennsylvania Historical and Museum Commission has money available for funding comprehensive historical resources surveys. Forts Township conducted a comprehensive survey using state funding.

Many development projects now require an analysis of historical resources before they can proceed. Under state and federal law, state and federal agencies must consider the effects of their actions on all historic and prehistoric features eligible for inclusion on the NRHP. 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. The Pennsylvania Historical and Museum Commission has money available for funding comprehensive historical resources surveys. Forts Township conducted a comprehensive survey using state funding.

Many more historical resources have been recognized by the Pennsylvania Historical and Museum Commission as eligible for NRHP listing, including 120 in Northampton County. Before any of these properties can be listed on the NRHP, application forms are required to be completed and submitted for review. Many development projects now require an analysis of historical resources before they can proceed. Under state and federal law, state and federal agencies must consider the effects of their actions on all historic and prehistoric features eligible for inclusion on the NRHP. 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. 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. 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. The Pennsylvania Historical and Museum Commission has money available for funding comprehensive historical resources surveys. Forts Township conducted a comprehensive survey using state funding.

National Register of Historic Places: The National Register of Historic Places (NRHP) is the official list of historic and cultural resources worthy of preservation in the United States and is administered by the National Park Service. The NRHP is part of a national program to coordinate and support public and private efforts to identify, evaluate and protect our historical and archeological resources. Places listed on the NRHP include districts, sites, buildings, structures and objects that are significant in American history, architecture, archeology, engineering and culture. Northampton County has 104 historical resources listed on the NRHP. Detailed information about these sites is available on the Pennsylvania Historical and Museum Commission's Cultural Resources Geographic Information System (CRGIS) website at https://www.dot7.state.pa.us/CRGIS/main.htm.

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Historic Marker Program: The Pennsylvania Historical Marker program was established in 1946. This popular Pennsylvania Historical and Museum Commission (PHMC) program is responsible for the blue and gold roadside markers that highlight people, places and events significant in state and national history. There are over 2,000 markers across the entire state, with 72 markers in Northampton County. Any person or organization may submit nominations for historical markers. A panel of independent experts from across the state evaluate the nominations followed by a review by the PHMC commissioners.

Cultural Resources

Northampton County has a wide range of cultural venues for residents and visitors to enjoy, including museums, universities, the arts (music, theater and dance), a wine trail and an ale trail. In addition to these year-round attractions, annual festivals (e.g., Musikfest) draw thousands of residents and tourists to Northampton County. Several museums are located in Northampton County—art, history and company-sponsored. The art museums and galleries attract thousands of people each year to view a variety of fine and decorative art objects (e.g., Kemerer Museum of Decorative Arts, City of Bethlehem; Williams Center for the Arts, Lafayette College, City of Easton; Zoellner Arts Center, Lehigh University, City of Bethlehem). History museums provide visitors with exhibits and collections that tell the story of the County’s diverse heritage (e.g., Moravian Museum of Bethlehem, City of Bethlehem; National Canal Museum and Sigal Museum, City of Easton). Additionally, local companies whose products are used worldwide sponsor museums in the County (e.g., Crayola Factory, City of Easton; Martin Guitar Company, Upper Nazareth Township; and the Atlas Cement Memorial Museum, Northampton Borough). Visitors may see how the products are made and learn the background and history of the company.

Theater, music and dance venues and organizations exist throughout Northampton County. In addition to the arts centers listed in the above paragraph, the State Theater Center for the Arts is located in the City of Easton and The Banana Factory in the City of Bethlehem. The latter offers art instruction in addition to art galleries that are open to the public. StelaStacks, an ArtsQuest venue, the Bach Choir and the Pennsylvania Youth Theater, all in Bethlehem, along with other organizations, offer many opportunities for experiencing the arts in Northampton County.

Other types of activities that residents and visitors can enjoy that are found in Northampton County include the Lehigh Valley Wine Trail (LVWT) and the Lehigh Valley Ale Trail (LVAT). The LVWT allows visitors to experience nine family-owned wineries and taste award-winning wines. Three of the nine wineries on the LVWT are located in the County—Amore Vineyards & Winery in Lower Mt. Bethel Township, Franklin Hill Vineyards in Lower Mt. Bethel Township, and Tolino Vineyards in Washington Township. The LVAT is a list of the best local microbrew bars where patrons can experience great craft beers. Bars and pubs were carefully selected that have upwards of 60% of their taps consistently dedicated to craft brews. Many of them also pour locally brewed beers and even host events showcasing them.

Scenic Resources

Northampton County’s outstanding scenic quality and sense of place is created from the interrelationship between the natural features, rural areas, undeveloped open space, and the cities and boroughs. The result is a rural character, punctuated by significant community, natural and historical resources. This character has made Northampton County a destination as a visitor attraction and also as an attractive place to live and work. Thus, the protection of scenic resources is critical to maintaining the sense of place. 
Northampton County has an abundance of scenic resources, including mountains, waterways, farmland, natural areas, geologic features and historic sites. Scenic resources differ from scenic greenways in that they are scenic from specific vantage points and do not provide the long range connectivity that defines a greenway. Examples of scenic resources in the County include:

- Delaware River
- Lehigh River
- Bushkill Creek
- South Mountain lookout (Lehigh University)
- Stouts Valley
- Bethlehem Historic District
- The Bethlehem Star
- Nazareth town square
- Minis Lake
- Outstanding Scenic Geologic Features (e.g., Wind Gap, Delaware River Water Gap, Hexenkopf Rock)

Scenic roadways are another type of scenic resource, specifically byways and drives. Another corridor concept in the scenic greenway category is a scenic byway. Scenic byways, also known as scenic roadways, are either roadways that have cultural or historical significance where the surrounding landscape is natural and pastoral, and where the view provides a glimpse of this heritage or roadway, are designated the Delaware River Scenic Drive, portions of which are driving restriction and local support. Local, state or federally-owned roadways may be nominated by any governmental entity provided that they are scenic from specific vantage points and do not provide the long range connectivity that defines a greenway. Examples of scenic byways in Pennsylvania, one of which is designated by the owner of the roadway agrees with the nomination. Currently, 22 scenic byways are designated in Pennsylvania, one of which is located along Rt. 611 in Lower Mount Bethel Township. Tourist stops along these roads include the Delaware River, the Hunter Martin Settlement Museum, Martins Creek Ferry, Hunters Ferry and outdoor recreational opportunities, such as boating, biking, hunting, fishing, walking and many acres of preserved farmland.

A scenic drive is another type of scenic roadway designation found in Pennsylvania. In November 1987, Pennsylvania House Bill No. 1232 designated the Delaware River Scenic Drive, portions of which are located within Northampton County. The aforementioned designated drive and byway, along with other scenic roadways within the County, are listed below:

- Pennsylvania Scenic Byway (Rt. 611, Little Creek Road and Belvidere Highway, Lower Mount Bethel Township)
- Delaware River Scenic Drive (Route 611, Belvidere Highway; Riverton Road and River Road in the eastern part of the Coun-
  ty)
- Wassergass/Raubsville roads (Williams Township)
- Mountain View Drive (Rt. 946) west of Rt. 987 (Moore Town-
  ship)

Northampton County has a variety of farming resources, ranging from thousands of acres of farmland to urban farming to community gardens. The farmland is some of the best in Pennsylvania. Over 69,000 acres are classified as prime farmland as defined by the U.S. Department of Agriculture. Although farms are not natural landscapes, they can complement parks and natural areas by providing open space and adding to the pastoral scenery that residents treasure. Although at a much smaller scale than the vast farmland acreage, urban farming and community gardens contribute to the agricultural output in the County. These two forms of agriculture are very similar in some aspects, with the major difference being that an urban farm’s produce is for consumers, whereas a community garden’s produce is for personal consumption. Northampton County has 23 community gardens as reported by the Assessment Report: Lehigh Valley Local Food Economy (2014), which provides a more detailed review of urban farming and community gardens.

Northampton County has lost a tremendous number of farms and amount of farmland. Between 1954 and 2012, there was a 56% decrease in farmland acreage, with the sharpest decrease occurring between 1954 and 1974. The number of farms followed the same pattern from 1954 to 1974, with a slower decline until 1992 and a subsequent upswing and leveling off through 2012, resulting in a 73% decrease between 1954 and 2012. These decreases compare to the decreases across Pennsylvania during the same time period of 41% and 54% for farmland acreage and number of farms, respectively. One reason for the decline in farmland acreage is land development. In 2014 alone, Northampton County’s municipalities approved residential and non-residential subdivision or land develop-
ment projects for 1,488 acres of land, including agricultural land developed as classified by the LVPC.

Pennsylvania has different measures that can be used to protect farming interests and preserve farmland. Municipalities, under the authority of the Agricultural Security Area Law (Act of June 30, 1981, P.L. 128, No. 43) (3 P.S. §§ 901-915), are able to create and adminis-
ter a agricultural security area to register farm properties as a mea-
sure to protect farming interests. Individual farm owners voluntarily apply to create the agricultural security area, which protects farmers from complaints about normal farming practices and operations from adjacent non-farming landowners. Northampton County municipalities have designated agricultural security areas on 28,042 acres.

An agricultural conservation easement is a legal restriction on devel-
opment that limits the use of land to agricultural purposes. Under the agricultural conservation easement program (see program descrip-
tion below), the property owner sells the rights to develop land for non-agricultural purposes to the County. The property owner retains ownership and continues to farm the land. Municipalities, as provided by the Municipalities Planning Code, can also preserve farmland through regulatory approaches. For example, local agricultural zoning can preserve farmland by designating areas where agriculture is the principal use and constrains non-agricultural development and uses.

Agricultural Resources

Agricultural Resources

- Mountain View Drive (Rt. 946) west of Rt. 987 (Moore Town-
  ship)
In the Comprehensive Plan The Lehigh Valley … 2030, the LVPC recommends the preservation of approximately 25% of the County as agricultural land (over 60,000 acres). Support for farmland preservation is evident from the 2014 Livable Landscapes public opinion survey—96% of surveyed active registered voters feel it is important to protect farmland. These voters have consistently and strongly supported open space and farmland preservation. Northampton County maintains a very robust farmland preservation program (see program description below) that leverages County and municipal funding with matching funds from the Pennsylvania Agricultural Conservation Easement Purchase Program. The County acquired its first agricultural conservation easements in 1993. As of July 2015, the County provided $17,734,346 to preserve 152 farms totaling 13,920 acres, equating to 6% of Northampton County land.

Agricultural Conservation Easement Purchase Programs

Federal and state funding programs are available for farmland preservation. The federal funding is available through the Agricultural Conservation Easement (ACE) (formerly known as the Farm and Ranch Land Protection Program) portion of the Farm Bill re-instituted in 2014 (Agricultural Act of 2014). State funding is provided through the Pennsylvania Agricultural Conservation Easement Purchase Program.

The federal ACE program has significantly more requirements than state funding in terms of appraisal requirements, farming operations, land use restrictions, requirements for best management practices (BMPs) on the property and long-term monitoring. Nine farms in Northampton County have been preserved under the federal program. Property owners are reluctant to meet the more stringent federal standards, especially for implementation of required and possibly expensive BMPs. Northampton County is one of 57 out of 67 Pennsylvania counties that have a farmland preservation program; counties that do not have any county funding for the program compete for the federal funding.

The Pennsylvania Agricultural Conservation Easement Purchase Program was established in 1988. Northampton County provides funding for the farmland preservation program on an annual basis as part of the Northampton County 21st Century Open Space Initiative, because the original proposed funding mechanism from the 2002 non-binding referendum that authorized $12 million was never instituted.

Recommendation:

- The County should consider whether to pursue funding through the federal Agricultural Conservation Easement Program in addition to the state program.
Northampton County 21st Century Open Space Initiative

The Northampton County 21st Century Open Space Initiative (Open Space Program) was established December 5, 2004 by Northampton County Ordinance No. 423 after extensive public input. On November 5, 2002, County voters cast ballots on a non-binding referendum to authorize borrowing $37 million for open space preservation ($14 million), municipal park acquisition and development ($11 million), and farmland preservation ($12 million). The Northampton County Open Space Committee (Committee) conducted public meetings covering each component of the program since November 2002 to allow County residents the opportunity to comment and make recommendations related to implementing this program. Guidelines were developed by the Committee with the assistance of the LVPC, which summarize the program components and provide information on the application process. Although the proposed funding mechanism from the non-binding referendum approved by voters in 2002 was never instituted, annual County budgeting provided monies for the program. In 2006, the County Executive recommended a ½ mill tax increase to fund the program, which was adopted for the 2007 budget. The Committee recommended a 1½ mill tax increase to fund the program, which was adopted for the 2007 budget.

Open Space and Natural Areas – The purpose of this component is to protect the County’s important natural resources by assisting municipalities and nonprofit organizations acquire and preserve land where these resources are found. Protecting these lands not only assures that the land is available for various sorts of public use but also helps provide natural resource benefits, such as drinking water filtration, stormwater and flood protection and maintaining air quality. The LVPC’s Natural Resources Plan, which is a component of the Comprehensive Plan, identifies lands of county significance for land conservation that are within or adjacent to the Natural Heritage Inventory of Lehigh and Northampton Counties. The plan, completed in 2013, is organized around six Conservation Priority areas: (1) Very High Conservation Priority areas, (2) High Conservation Priority areas, (3)的质量 and high conservation priority areas, (4) Moderate Conservation Priority areas, (5) Low Conservation Priority areas, and (6) Least Concern areas. When the open space and natural area preservation program is implemented, the LVPC's Natural Resources Plan, which is a component of the Comprehensive Plan, identifies lands of county significance for land conservation that are within or adjacent to the Natural Heritage Inventory of Lehigh and Northampton Counties. The plan, completed in 2013, is organized around six Conservation Priority areas: (1) Very High Conservation Priority areas, (2) High Conservation Priority areas, (3) Quality and High Conservation Priority areas, (4) Moderate Conservation Priority areas, (5) Low Conservation Priority areas, and (6) Least Concern areas.

The funding provided in this component of the program is the mechanism that enables municipalities and nonprofit organizations to purchase land for the protection of various conservation values, such as drinking water filtration, stormwater and flood protection, and maintaining air quality. The LVPC’s Natural Resources Plan, which is a component of the Comprehensive Plan, identifies lands of county significance for land conservation that are within or adjacent to the Natural Heritage Inventory of Lehigh and Northampton Counties. The plan, completed in 2013, is organized around six Conservation Priority areas: (1) Very High Conservation Priority areas, (2) High Conservation Priority areas, (3) Quality and High Conservation Priority areas, (4) Moderate Conservation Priority areas, (5) Low Conservation Priority areas, and (6) Least Concern areas. When the open space and natural area preservation program is implemented, the LVPC’s Natural Resources Plan, which is a component of the Comprehensive Plan, identifies lands of county significance for land conservation that are within or adjacent to the Natural Heritage Inventory of Lehigh and Northampton Counties. The plan, completed in 2013, is organized around six Conservation Priority areas: (1) Very High Conservation Priority areas, (2) High Conservation Priority areas, (3) Quality and High Conservation Priority areas, (4) Moderate Conservation Priority areas, (5) Low Conservation Priority areas, and (6) Least Concern areas.

Municipal Park Acquisition and Development – The purpose of this component is to assist the County’s municipalities acquire land for new parks, develop existing parks or rehabilitate existing parks. In the initial phase of the Open Space Initiative, the County funded 26 municipal park projects, costing the County $4,006,003. The municipalities who participated contributed their own funds and also received other grant contributions totaling $10,652,727. Phase I of the municipal component of the Open Space Initiative was completed in 2010. Phase II began in 2013 with $5,000,000 allocated to $1,000,000 per year for five years. For 2013 and 2014, 29 municipal park projects, costing the County $2.0 million, have been funded. To continue to assist municipalities with their park programs, funding for this component should be maintained or enhanced.

County Parks – As part of the County Open Space Program, $3,876,948 has been committed to the Wayne A. Grube Memorial Park development to date. Future County park development will be contingent upon available funding.

Farmland Preservation – The purpose of this component is to provide County funds annually that can be used to match state funds for the purchase of agricultural conservation easements. For each dollar of local funding, the state will provide a match, calculated based on a complicated formula that includes amounts requested by other counties. Northampton County also has instituted a unique program, Township Partnership Program, which allows for leveraging of state funds based on dollars committed by local municipalities. In a system that has been approved by the state’s Bureau of Farmland Preservation, Northampton County combines County funds for farmland preservation with municipal dollars pledged for farmland preservation. The municipalities typically raise these funds through a voter-approved Earned Income Tax program. The combined County/municipal funding is used by the state to determine its matching funds. Under the state requirements, counties are not required to use the dedicated municipal funds to preserve farmland in those municipalities that committed funding. However, under the Northampton County program, the County guarantees that the municipalities committing funds will receive matching dollars in return to preserve farms within that municipality. This, of course, provides the incentive for municipalities to participate.
Farmers/landowners voluntarily participate in both the agricultural security area and agricultural easement programs. The law requires that properties must be located in the agricultural security area program to be considered for the easement program. Properties for consideration of state easement funding must satisfy all state requirements. The ranking system used by Northampton County is established based on the state guidelines that provide a framework for the ranking but leave the specific numeric scoring criteria for the county to create, subject to state approval. An example is that the state guidelines include a required factor to consider consistency with the county planning map in the scoring system. Northampton County uses the LVPC farmland preservation map from the comprehensive plan and assigns 30 points in the contiguity criteria if a farm is within the farmland preservation boundary.

The allocation of state, county, and municipal dollars to preserve farms is based on the ranking of farms using the County scoring criteria, plus the consideration that state dollars and County dollars must be fully allocated each year, while municipal dollars do not. The state is most interested in, for example, preserving larger farms, farms having the highest production soils (Capability Class I – IV), and those that are contiguous to other preserved farms. These farms score the highest in the County ranking system. Farmers/landowners submit applications to be considered for the easement program, and they are approached by the County in descending priority order that properties must first be in the agricultural security area program. Northampton County should consider the following changes to the Open Space Program and guidelines:

1. Maintain or enhance funding for the County Open Space Program including the Open Space and Natural Areas component, Park Acquisition component, County Parks component and the Farmland Preservation component.

2. Modify the program and guidelines to specify that restoration projects are eligible, such as stream and floodplain restoration or land restoration to natural vegetation.

3. Specify in the guidelines that restoration within an existing park or restoration of acquired land adjacent to a park is part of the Municipal Park component.

4. Clarify whether the acquisition of land to create a passive recreation park, whether within a natural state or one restored to a natural state, should be a part of the Natural Areas and Open Space component or the Municipal Park component.

5. Clarity how properties that do not qualify for either the Natural Areas and Open Space component or for the Farmland Preservation component as a whole can be submitted to the respective program components separately, splitting the property into two easements—natural areas and agricultural.

6. Allow a signpost program for the funded sites to include the county logo or Program logo, with a portion of the cost paid by the property owner that provided the use of property.

7. Modify the application review process to run more efficiently in terms of meetings and project presentations required.

8. Add the option to use the Act 13 Marcellus Shale Funding for this component should be maintained or enhanced. One inconsistency noted in the Northampton County program guidelines under the eligibility criteria for farms is that they be located within either the Farmland Preservation or the LVPC Comprehensive Plan, but in practice this is not used as a firm criterion. Farms outside of these boundaries have been considered eligible but simply score lower in the ranking system. Therefore, some of these farms could be and have been funded.

9. Update the wording in Frequently Asked Questions #3 and #4 to remove specific site references for the Natural Resources Plan and the Natural Heritage Inventory to state the most recently adopted or completed, respectively.

10. Clarify that any proposed conservation easement application needs to have language that specifies that public access has to be provided by the easement holder, with a minimum of guided tours and/or supervised access.

11. Review the appraisal process and determine a way to handle the County appraisal requirements in conjunction with the Pennsylvania Department of Conservation and Natural Resources’ appraisal requirements.

12. Adopt the Pennsylvania Department of Conservation and Natural Resources guidelines, “BRIC Acquisition Grant Policy: Requirements for Property Appraisals, Boundary Surveys and Title Work.”

13. Require any appraisal and/or easement be restrictive to the highest level of authority from funding sources. (i.e. federal, state, and county)

14. Require the option of a Technical Review by a certified appraiser to be conducted after the 1st appraisal instead of a second one.

15. Work with the Pennsylvania Department of Conservation and Natural Resources to identify and clarify minimal protection areas and highest protection areas.

16. Clarify that no funding will be provided to landowners for projects that are eligible, such as stream and floodplain restoration within an existing park or restoration of acquired land adjacent to a park.

17. Clarify that properties under Act 319 (tax freeze) that have a minimal protection/homestead area need to have the property surveyed and identify metres and bounds for taxing purposes.

18. Clarify that any proposed conservation easement application needs to have language that specifies that public access has to be provided by the easement holder, with a minimum of guided tours and/or supervised access.

19. Separate and highlight that any easement holders with funding from Northampton County need to provide monitoring reports on a bi-annual timeline.
Municipal Park Acquisition and Development component:

20. Specify that a contract with the municipality be created after a grant is awarded.
21. Add to the guidelines that municipal projects provide close-to-home park space and County park space provides passive recreation, often based on water resources.
22. Specify that funding only be applied toward the active recreation component itself and not accessory facilities (e.g., bleachers for observers of recreation).
23. Amend the guidelines to restrict funding for routine maintenance equipment purchases.
24. Clarify eligible safety expenditures (e.g., fencing, gates).
26. Modify the maximum soft cost requirement if more flexibility is desired.
27. Modify the strict allocation provision into some combination with competitive funding, perhaps 50% competitive and 50% allocation, with a cap established for the grant amount.
28. Modify the grant application window to January, possibly phasing in over two years.
29. Add a requirement that projects are shovel-ready when submitted.

Farmland Preservation component:

30. Modify the Program guidelines and scoring criteria to require preserved farmland to be identified in the Farmland Preservation area of the Comprehensive Plan. The Lehigh Valley area is of particular focus.

Regional Landscape and Connectivity

Northampton County has a wide variety of open space resources, ranging in size from small pocket parks in urban areas to large-scale natural features that cover thousands of acres and extend beyond the County’s borders. Four such regional resources form the boundaries of the County: the Kittatinny Ridge to the north, the Lehigh River to the west, the Delaware River to the east and the Highlands to the south. All of these resources form connections to neighboring counties and states, creating a regional network that provides recreational opportunities, wildlife habitat, heritage tourism and scenic views to residents and tourists. Looking beyond the County’s borders is critical to optimizing the preservation of these natural and heritage resources. In addition to these regional natural features, many recreational resources occur at a regional level and are often located within the natural features reported above. Regional trails are the primary example, with several regional trails running through the County: Appalachian Trail, September 11th National Memorial Trail, D&L Trail and Highlands Trail. A third type of regional open space resources is designated, such as Delaware and Lehigh National Heritage Corridor and State Heritage Area, Delaware Canal State Park, state game lands, greenways and conservation priority areas. These areas may be designated in one county and may or may not be so designated in a neighboring county although the resource itself exists. Adjacent counties’ plans were reviewed for these regional resource connections and are presented on the following pages.
Bucks County (southern border)

Existing connections include:
• Delaware and Lehigh National Heritage Corridor
• Delaware Canal State Park
• Delaware River/Delaware River Water Trail

Open space resources without an identified connection or differing designations:

Greenways:
• Cooks Creek Greenway, located along a Cooks Creek tributary that reaches into southern Northampton County, is identified in the Lehigh Valley Greenways Plan (LVGP) as a conservation greenway, but this tributary is not identified as a greenway in the Bucks County Open Space and Greenways Plan (2011). The Cooks Creek main stem is part of the Unami – Beaver – Tockahoma – Kimples – Cooks Conservation Greenway identified in that plan.
• Pennsylvania Highlands, a common geographic region to southern Northampton County and northern Bucks County, is identified in the LVGP as a conservation and scenic greenway but is not identified in the Bucks County Open Space & Greenways Plan (2011) as a greenway.

Cooks Creek Conservation Landscape, located in northern Bucks County, was identified in the Bucks County, Pennsylvania, Natural Areas Inventory Update (2011). The Natural Heritage Inventory for Lehigh and Northampton Counties, Pennsylvania – Update 2013 did not identify conservation landscapes for Lehigh and Northampton counties.

Lehigh County (western border)

Existing connections include:
• Appalachian Trail
• Delaware & Lehigh National Heritage Corridor/D&L Trail
• Greenways—Blue Mountain/Kittatinny Ridge, Lehigh River, Monocacy Creek, Pennsylvania Highlands, Saucon Creek; Hubs—City of Bethlehem, Coplay/Northampton, Slatington/Walnutport
• Lehigh River/Lehigh River Trail
• Pennsylvania Highlands
Carbon County (northwestern border)
Existing connections include:
- Appalachian Trail
- Kittatinny Ridge
- State Game Lands #168 (small area [40 acres] on eastern side)
- Greenways – Lehigh River is designated as a multi-use greenway in the LVGP and as a recreation and conservation greenway in the Carbon County Comprehensive and Greenway Plan (2013).

Open space resources without an identified connection or differing designations:
- Greenways – Blue Mountain/Kittatinny Ridge is designated as a multi-use and scenic greenway in the LVGP and partly as a conservation greenway and partly as a recreation greenway in the Carbon County Comprehensive and Greenway Plan (2013).

Monroe County (northeastern border)
Existing connections include:
- Appalachian Trail
- Kittatinny Ridge
- September 11th National Memorial Trail
- State Game Lands #168

Open space resources without an identified connection:
- A proposed Greenway, Trail & Bike Route is designated along the Rt. 33 alignment in the Monroe County Open Space, Greenways & Recreation Plan (2013), but Northampton County does not have the route identified in a plan.
Warren County, New Jersey (eastern border)

Existing connections include:

• Delaware River/Delaware River Water Trail
• Delaware Water Gap National Recreation Area
• Greenways – Delaware River and Highlands are designated as greenways in both the LVGP and in the New Jersey Green Acres State Land Acquisition Program.
• Liberty Water Gap Trail
• September 11th National Memorial Trail
• Warren Highlands Trail

Proposed connection:

• Phillipsburg and the Morris Canal Greenway to the City of Easton, Delaware and Lehigh National Heritage Corridor and the D&L Trail via a pedestrian bridge using the abandoned railroad bridge.
Vision, Goals, Policies + Implementation Strategies
Vision

Our Livable Landscape – a mosaic of parks, farmland, natural areas, scenic views and historical and cultural sites promoting healthy lifestyles, natural diversity and community identity.

The Livable Landscapes vision statement was created to express the overall intention for the open space resources within Northampton County. It was created through the work of the Steering Committee and with input from the public at meetings held across the County and through a specific public opinion survey conducted for this Plan. The short form of the vision statement is “Our Livable Landscape” expressing ownership by the residents of Northampton County, using the term livable to express healthy lifestyles, natural diversity and community identity and using the term landscape to refer to the interconnected or interwoven open space features creating the backdrop to our everyday lives. The vision statement establishes the breadth of the open space plan, referring to parks, natural areas, scenic views and historical and cultural sites, that leads directly to the expression of goals, policies, implementation strategies and recommendations to accomplish the vision.

Presented below are the goals established for the Livable Landscapes plan. Under each goal are policies providing more specific details associated with each goal. Implementation strategies are also provided for each goal and set of policies to describe the specific actions needed. Note that the policies and implementation strategies are in many cases adapted from existing sources, primarily the LVPC Comprehensive Plan The Lehigh Valley … 2030 and the LVPC Lehigh Valley Greenways Plan.

Photo courtesy of Becky Bradley, LVPC
POLICIES

1. Protect rivers, streams, lakes, ponds and floodplains by preserving or restoring riparian buffers (150 feet wide along Exceptional Value and High Quality streams and 75 feet wide along all other waterways) where feasible using a variety of native vegetation.

2. Protect the quality and quantity of existing groundwater by monitoring withdrawals to not adversely impact present or future uses during both drought and non-drought conditions.

3. Preserve wetlands and provide a vegetated buffer (150 feet wide in Exceptional Value and High Quality watersheds and 75 feet in all other watersheds).

4. Avoid development on steep slopes greater than 25% and provide development restrictions on steep slopes of 15% to 25% to prevent erosion.

5. Preserve and restore woodlands to increase habitat connectivity.

6. Preserve Natural Heritage Areas core habitats with a Global or Regional Significance Rank.

7. Protect very high and high conservation priority natural resource areas as depicted on the LVPC Natural Resources Plan map as included in the Comprehensive Plan the Lehigh Valley ... 2030 through acquisition or conservation easements.

8. Monitor and manage publicly-owned natural areas to maintain the health and quality of the site and to regulate public access.

9. Advocate a variety of approaches to enhance natural resources connectivity.

Goal 1 - Conserve, restore and enhance natural resources
IMPLEMENTATION STRATEGIES

Northampton County should:

• support conservation organizations in their efforts to acquire open space and important natural areas consistent with the Livable Landscapes plan.
• give higher priority to park and natural area projects that would protect land with surface waters.
• maintain or enhance funding for acquisition or easement purposes to preserve lands with very high or high priority conservation value.

Northampton and municipalities should:

• work with state and federal agencies and conservation organizations to provide information and technical assistance to landowners to encourage conservation and sustainable management of natural resource lands.
• manage wetlands on publicly-owned land to maintain and enhance their environmental, scenic and educational values.

Northampton County, municipalities and conservation groups should:

• use the recommendations of the Natural Heritage Inventory of Lehigh and Northampton Counties, Pennsylvania – Update 2013.
• encourage public and private landowners to use best management practices in forestry, stewardship and lawn care activities.
• take advantage of state and federal grant programs for open space preservation.
• maintain a GIS database that provides current information about natural resources and conservation priorities.
• encourage private landowners to place conservation easements on portions of their property that are located in very high and high priority natural resource protection areas.

Goal 1 - Conserve, restore and enhance natural resources

Municipalities should adopt zoning and subdivision and land development ordinances consistent with the LVPC model regulations to:

• prohibit or otherwise control development in the 100-year floodplain.
• protect riparian buffers and wetlands and test for wetlands if soils classified as predominantly hydric are present.
• manage development, grading and forestry on steep slopes.
• identify and mitigate risks of development in areas with carbonate bedrock.
• control tree removal and the indiscriminate cutting of trees during subdivision and land development activities.
• encourage conservation design practices in the subdivision of land that involves natural resources recommended for conservation.
• require developers to include open space or recreation land (or fee in lieu) as part of all new residential and commercial development proposals.

Municipalities should:

• identify natural resource areas in comprehensive plans.
• invest in local open space acquisitions.
• adopt an official map to preserve very high and high conservation priority natural resources.
• establish a program to purchase or accept donations of land located within very high and high priority natural resource areas.
Goal 2 - Provide and maintain an exemplary park, trail and recreation system

POLICIES

• Provide and maintain a wide variety of park, trail and recreation facilities for all ages and abilities.
• Improve community health by providing convenient access to park, trail and recreation opportunities for all residents.
• Use current recreation activity trends and local demographics when planning for new recreation facilities and programs.
• Encourage schools to have their recreation facilities available to the public, if feasible.
• Encourage the private sector to provide special use recreation facilities.
• Support efforts to close trail gaps as the opportunities arise.
• Use existing linear corridors (rail, roadways, riparian buffers) for bicycle and pedestrian facilities.
• Encourage trail linkage to create a network connecting residential areas, schools, parks, town centers, employment areas and other transportation facilities.
Implementation Strategies

Northampton County should:

• implement the recommendations in the Livable Landscapes plan, which should be updated on a regular basis.
• consult with a landscape architect to review and update existing and design new County parks as needed.

Northampton County and municipalities should:

• cooperate in acquiring, developing and maintaining parks and other outdoor recreation facilities.
• improve existing and design new outdoor recreation facilities to be compliant with the Americans With Disabilities Act.
• conduct playground safety audits and address identified deficiencies.
• acquire rail- rights-of-way needed for recreation or alternative transportation purposes.
• consider opportunities to use floodplains and riparian buffers for trails.
• use an official map to proactively plan for future trails and bicycle and/or pedestrian pathways.
• use DCNR’s publications, Pennsylvania Trail Design & Development Principles and Creating Sustainable Community Parks and Landscapes, for park and trail development.

Municipalities should:

• prepare and implement park and recreation plans.
• 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.

• amend subdivision regulations to assure street connectivity and provide for sidewalks and bikeways.
• adopt an official map to help reserve sites for future parks, trails and bicycle or pedestrian pathways.
• establish a program to purchase or accept donations of land for outdoor recreation facilities.
• coordinate with schools, public and non-profit organizations to provide adequate recreational space for residents.
• pursue opportunities for the development of trails and bicycle lanes when roadways are constructed or repaired.
• Municipalities along the Kittatinny Ridge should use regulatory approaches to protect lands near the Appalachian Trail consistent with the LVPC’s Protect the Trail: A Guide to Protecting the Appalachian Trail for Lehigh Valley Municipalities.

Northampton County, municipalities and local conservation organizations should:

• encourage dialogue with rail and utility companies on the use and/or acquisition of existing or abandoned rights-of-way for trail development.
• work with PennDOT and local road departments to include bicycle and pedestrian-friendly facilities when new roads or road improvements are planned.

Pennsylvania Department of Transportation (PennDOT) and municipalities should:

• add bicycle lanes/shared use lanes to appropriate roads during construction improvements, if demand warrants.
• adopt bicycle/pedestrian design and performance standards.

PennDOT and the LVPC should:

• create bicycle/pedestrian design and performance standards.
POLICIES

- Preserve the natural, recreational, cultural, historical and scenic lands within greenways and blueways identified in LVPC’s Lehigh Valley Greenways Plan, emphasizing the greenways and blueways designated as early implementation (Blue Mountain/Kittatinny Ridge, Bushkill Creek Corridor, Greater Minis Lake Corridor, and the Pennsylvania Highlands) and other priority greenways and blueways (Delaware River, Lehigh River and Monocacy Creek).

- Use cultural/recreational and multi-use greenways and blueways to provide local, close-to-home recreation opportunities.

- Promote the development of new outdoor recreation facilities at strategic locations throughout the greenway and blueway network.

- Establish greenways and blueways to provide buffers between non-compatible land uses, where feasible.

Goal 3 - Conserve, restore and enhance a greenways and blueways network

Photo courtesy of Teresa Mackey, LVPC
IMPLEMENTATION STRATEGIES

Northampton County and municipalities should:

• acquire or obtain easements on properties within greenways and blueways identified in the Lehigh Valley Greenways Plan.

• adopt regulatory measures to preserve greenways and blueways, including updated comprehensive plans, zoning ordinances, natural resources protection ordinances and official maps.

• coordinate efforts with local land trusts, conservancies, school districts and the private sector to establish greenway and blueway connections through acquisitions and easements.

• use cultural/recreational and multi-use greenways and blueways to meet recreational acreage standards of their communities.

Northampton County, the LVPC and municipalities should:

• coordinate the planning and development of the greenways and blueways network with transportation, economic development, tourism, recreation and open space priorities in the region.

Municipalities should:

• require developers to include open space or recreation land (or fee in lieu) as part of all new development proposals.

• establish a program to purchase or accept donations of land for greenway and blueway protection.
Goal 4 - Preserve farmland and farming to meet food production, economic and open space needs

POLICIES

• Support effective agricultural zoning, agricultural security areas and purchase of agricultural easements in areas recommended for farmland preservation in the County Comprehensive Plan.

• Support the retention and expansion of local family farms.

• Encourage farm-related businesses in areas recommended for farmland preservation.

• Protect agricultural uses from residential development and non-farm activities that interfere with normal farming practices.

• Support retention and expansion of 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.

• Support the efforts of regional institutions, extension services and other agencies engaged in agricultural development efforts.

• Identify, support and implement market and needs-based solutions that provide ready access to nutritious and healthy food choices in the region’s areas of limited food access.

• Support alternative agricultural strategies suitable for areas with high existing levels of development.

• Strengthen regional food systems by linking food production, processing, distribution, consumption and waste management to facilitate development and consumption of the County’s food resources.

• Encourage the implementation of programs that mentor new farmers and those interested in farming.

IMPLEMENTATION STRATEGIES

The Northampton County Farmland Preservation Board should:

• preserve farmland in the areas designated for farmland preservation in the County Comprehensive Plan.

Northampton County and municipalities should:

• maintain or enhance the financial support to leverage against available state and federal funding for acquisition of agricultural conservation easements.

Municipalities should:

• participate in the agricultural security program to protect farming from non-farming activities.

Northampton County, the LVPC and municipalities should:

• coordinate with Buy Fresh Buy Local Greater Lehigh Valley to create a Fresh Food Access Plan to identify detailed implementation strategies for providing fresh, local food to Northampton County residents.

Goal 4 - Preserve farmland and farming to meet food production, economic and open space needs
Goal 5 - Preserve historic, cultural and scenic resources and landscapes

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 used by the private sector should be given a high priority in restoration programs.
• Acquisitions for parks should include historical features whenever possible.
• Highway projects and other public infrastructure improvements should avoid features that are listed, or are eligible for listing, on the National Register of Historic Places, unless reasonable alternatives are not available.
• Encourage historic preservation planning and adopt historic district regulations pursuant to the Pennsylvania Historic District Act (Act 167).
• Develop trails for historic interpretation and education.
• Preserve cultural resources whenever possible.
• Preserve, through acquisition or easement, scenic landscapes in areas that have not been substantially urbanized.
• Preserve the scenic qualities of the Delaware and Lehigh rivers.
• Protect and enhance a network of designated scenic transportation corridors.
• Retain the rural character of the County.
IMPLEMENTATION STRATEGIES

Municipalities should:

- conduct comprehensive historic sites surveys.
- designate historic districts through adoption of historic district regulations pursuant to Act 167.
- reduce impacts of development in rural communities to retain the rural character of the County.
- restrict structures to be located or extend above ridgeline elevations to preserve scenic vistas.
- implement the goals and objectives of the LVPC Delaware River Scenic Drive Plan.
- encourage the creation of a scenic drive along the D&L Drive. Implement the goals and objectives of the Heritage Conservancy publication, Shaping the D&L Drive.

Private property owners of historic sites should:

- preserve the features that make such sites historic.
Goal 6 - Advance County open space resources and usage through funding, promotion, education, partnerships and other strategies

POLICIES

• Promote the open space resources available in the County to residents and tourists.
• Educate about the value of open space and preservation using the Livable Landscapes plan and the Lehigh Valley Return on Environment report.
• Build and maintain partnerships with public and private entities, such as conservation, transportation, educational, public health, utility companies and government agencies, to maximize limited resources.
• Expand and improve staff capabilities to facilitate the expansion and maintenance of the open space network.
• Maintain or enhance funding to provide and maintain open space resources.
• Pursue a variety of funding and incentive opportunities to leverage for acquisitions and enhancements to the open space network.
• Advocate using a variety of tools and techniques to preserve open space resources.

Photo courtesy of Teresa Mackey, LVPC
IMPLEMENTATION STRATEGIES

Northampton County should:

• use the County’s website and social media to provide open space resources material to the public.
• develop a promotional brochure to educate residents and tourists about the County park resources.
• design and install a standardized wayfinding system to and within County-owned parks.
• provide an annual tour of County parks for County Council members to keep them informed of current projects and issues.
• maintain or enhance funding to the Northampton County 21st Century Open Space Initiative.
• develop a capital improvements program to ensure the continued funding for maintaining the County park sites.

Goal 6 - Advance County open space resources and usage through funding, promotion, education, partnerships and other strategies

Municipalities should:

• explore alternative funding sources to leverage with funding provided by the County.
• use state and federal transportation funds to build trails.
• commit the financial resources and efforts needed to acquire, develop or maintain open space facilities.
• take advantage of grant programs to acquire, develop or maintain open space lands and facilities.
• ensure that land acquired for open space is not converted to other uses.
• establish Environmental Advisory Councils (EACs) for the review of zoning and rezoning proposals, subdivision and site plans and similar projects for their impact on the open space resources.

Discover Lehigh Valley should:

• develop a mobile optimized web application of active and passive cultural/recreational attractions in the County to foster interest in, and provide information about, the many opportunities available.

Northampton County, the LVPC, municipalities and local conservation organizations should:

• educate elected officials and the general public on the benefits of open space to the environmental, economic and cultural and physical health of a community.

Northampton County and municipalities should:

• partner with PennDOT District 5 for trail and bicycle/pedestrian projects.
Implementation Tools
Increasing development pressures in many parts of Northampton County have resulted in increased awareness and interest in preserving open space. A range of techniques can be used to conserve open space from absolute to minimal protection. Since it is neither practical nor desirable for local government to regulate everything, a combination of landowner stewardship and public sector regulation is fundamental to the preservation of natural resources, as conservation is most effective when various techniques are applied together. The options available to local governments include regulatory, nonregulatory and administrative measures. Any of the available measures described below should be carefully evaluated and implemented to meet the environmental and political needs of each municipality.

Land Conservation Techniques

Permanently protecting environmentally sensitive, historically important and/or culturally significant lands from undesirable development can be a challenging and time-consuming task. Choosing the appropriate method of preservation involves evaluating the landscape to identify the features needing protection, assigning priority to the land to assure the most sensitive and at-risk features are protected, and selecting suitable methods and entities to accomplish the conservation objectives. Many valuable resources would have been developed from their natural undisturbed state had it not been for the hard work and collaboration of local governments and nonprofit organizations that aim to acquire and protect land identified by the LVPC as high priority resource lands. Land trusts that are actively protecting lands in Northampton County include:

Wildlands Conservancy, Emmaus, PA – Since 1973, Wildlands Conservancy has been working to protect and enhance the quality of place enjoyed in the Lehigh River watershed, as well as elsewhere in eastern Pennsylvania. As a nonprofit, member-supported organization, they work on ways to protect water quality throughout the watershed, and they assist efforts to create, enhance, maintain, and promote parks and trails. Wildlands Conservancy has protected more than 40,000 acres of critical farmland and wild lands in eastern Pennsylvania. They also foster responsible stewardship of resources through education of youth and by raising the environmental awareness of the general public.

Natural Lands Trust, Media, PA – Natural Lands Trust is a nonprofit land conservation organization protecting land in communities throughout the greater Philadelphia region. They envision and work to build an interrelated system of permanently protected open space comprised of the region’s most important natural areas, cultural landscapes, and sustainable agricultural lands. Within this open space network, Natural Lands Trust: 1) creates, owns and manages signature preserves, 2) protects and monitors lands under conservation easement, 3) helps conservation-minded partners and clients conserve land, and 4) actively manages thousands of preserved acres and teaches others best practices in land stewardship.

Heritage Conservancy, Doylestown, PA – Heritage Conservancy preserves the open spaces and historic places that are so essential to Northampton County’s quality of life by working with citizens, community groups, private landowners, municipalities, and state and federal agencies to promote and implement open space and natural resource protection, green urban planning, agricultural land protection, innovative land use practices, preservation and/or adaptive re-use of historic structures, wildlife habitat restoration and best land management practices.

The Nature Conservancy, Arlington, VA – Founded in 1951, The Nature Conservancy is the leading conservation organization working around the world to protect ecologically important lands and waters for nature and people. The mission of the organization is to conserve the lands and waters on which all life depends. They believe they have been so successful because they: 1) use good science, 2) pursue non-confrontational, pragmatic solutions to conservation challenge, 3) partner with indigenous communities, businesses, governments, multi-lateral institutions, and other nonprofits, and 4) have the support of more than 1 million members who continue working on a scale that matters and implement solutions that endure.

Appalachian Trail Conservancy, Boiling Springs, PA – The Appalachian Trail Conservancy is a volunteer-based, private nonprofit organization dedicated to the conservation of the 2,175-mile Appalachian National Scenic Trail, a 250,000-acre greenway extending from Maine to Georgia. Their mission is to ensure that future generations will enjoy the clean air and water, scenic vistas, wildlife and opportunities for simple recreation and renewal along the entire trail corridor. The most commonly used land conservation techniques are: simple acquisition, conservation easements and land management/stewardship.
Conservation Easement:

Easements. The state and federal funds are available to encourage acquisition projects that preserve natural, cultural and recreation- al areas. The donor, the receiving entity will hold the deed and be responsible for the land. Either by purchase or donation (tax benefits may apply to the donor), the receiving entity will hold the deed and be responsible for the insurance, taxes, liabilities and long-term management of the property. Through the Community Conservation-to-Partnership Program (C2P2), DCNR provides technical assistance and grant funding to counties, municipalities, land trusts and preservation organizations for the acquisition of private property, cultural and recreation- al areas. The state and federal funds are available to encourage the preservation of publicly available open space and natural areas either through fee simple acquisition or acquisition of conservation easements.

Conservation Easement: A conservation easement is a method of protecting the significant resources of a property with deed restrictions that target only the rights necessary to protect the land’s conservation value. Through a conservation easement a landowner voluntarily assigns restrictions on the future use of the land; therefore, protecting sensitive environmental features, riparian buffers, greenways, historic resources, scenic vistas, and agricultural lands in perpetuity. Once again, through purchase or donation a landowner conveys their development rights to the receiving entity yet retains ownership of the property, including the ability to sell or pass it on to heirs. Future owners of the land will also be bound by the conservation easement terms. Conservation easements are a popular option among landowners as the responsibilities and rewards of ownership continue, but control over public access is just as before granting the easement. However, in most instances when public dollars are used, this method of land preservation may require monitored public access when it is compatible to the conservation objectives. Also attractive to local governments, easement decisions that target only those rights necessary to protect the land’s natural features from the development or use of a property.

Comprehensive Plan: The municipal comprehensive plan, although not required for every municipality, is a legal document that sets the framework for more specific land-use and decision-making guide for both officials and citizens. It is intended to assist local municipalities in making decisions about future growth and development. The process of developing the plan is perhaps as important as the final document. The process examines existing conditions and issues unique to the municipality and establishes goals and policies that support the municipality’s desired future char- acter and form. Relative to open space and environmental features proper comprehensive land use plan can include guidelines and recommended actions designed to ensure the provision of open space in the future municipality. Further, it can include observations on how the planning regulations may need to be modified on open space sites that would serve as the foundation for a municipal open space plan. Essentially a roadmap for the future, the goals and policies of the comprehensive plan serve as the document which the official map and/or municipal ordinances are based upon.

Fee Simple Acquisition:

Fee simple acquisition is the most straightforward method of preservation. A fee simple acquisition provides the greatest level of protection as a landowner sells their rights, title and interest in the property to the buyer, who then owns and maintains the land. Either by purchase or donation (tax benefits may apply to the donor), the receiving entity will hold the deed and be responsible for the insurance, taxes, liabilities and long-term management of the property. Through the Community Conservation-to-Partnership Program (C2P2), DCNR provides technical assistance and grant funding to counties, municipalities, land trusts and preservation organizations for the acquisition of private property, cultural and recreation- al areas. The state and federal funds are available to encourage the preservation of publicly available open space and natural areas either through fee simple acquisition or acquisition of conservation easements.

Land Management/Stewardship:

The least expensive land pres- ervation technique is land stewardship through the careful man- agement of land alteration to ensure that the natural (and cultural resources) are maintained and/or enhanced. This method of pro- tection involves the thorough understanding of the value and roles of the resources present and incorporating this understanding into the development of management plans that include objectives and monitoring protocols. Conservation-based development is one method of stewardship guided by the preservation of the conservation value of the property, as well as its ability to achieve or maintain the goal of the landowner. Careful planning and design that incorporates open areas into a development’s site design ensures that the highest priority natural areas are preserved. These areas can be used for recreation or preserved as open space. This method may use a combination of many preservation techniques and is an alternative to traditional development.

Regulatory Measures:

The Pennsylvania Municipalities Planning Code (MPC), in effect since 1969, and updated several times since, provides the enabling legislation to municipalities for the creation of comprehensive plans and the establishment and use of regulatory land use ordinances. The general intent of the MPC is to give municipalities the authority to guide coordinated development; guide uses of land, structures, streets and public facilities; and to promote preservation of natural and historic resources. Comprehensive ordi- nances are often the primary means a municipality uses to both guide potential open space acquisitions and enforce the protection of natural features from the development or use of property.

Official Map:

The Pennsylvania Municipalities Planning Code (MPC) enables municipalities to prepare an official map and take proactive measures in shaping important components of their future development, in contrast to simply reacting to developers’ proposals. Accepted by ordinance, it serves as a visionary document that specifies properties the municipality wants to acquire for public improvements. The official map is a seminal used land management tool that can help municipalities plan the location and layout of future roads and public areas and present rights-of-way. By doing so, it reserves this land for future public use. When consistent with a municipal subdivision and land development ordinance (SALDO), zoning ordinance and comprehensive plan, it can give strength and validity to a municipality’s wants and needs for future growth. Further, the official map can be used to monitor and protect areas of the land intended for open space or park facilities. For example, mapping future parks and recreation areas demonstrates that the municipality has proactively planned for these improvements, in- stead of reacting to unanticipated needs. A wide variety of elements can be shown on this map, including streets, parks, and land parcels with the MPC. The official map can include features such as:

- Existing and proposed public streets, waterfronts and public grounds, including wide- ing, extensions, openings or closings.
- Bikeway routes (both separate trails and those proposed along existing roads).
- Existing and proposed public parks, playgrounds and open space parks.
- Pedestrian ways and easements.
- Railroad and transit rights-of-way and easements (including those that may be vacated or abandoned and have potential use as trails).
- Stream valley corridors and other environmentally critical areas such as unique and scenic areas, or habitats of endangered species.
- Floodways, floodway basins, floodways, stormwater management areas and drainage easements.
- Potential public well sites or groundwater resources areas.
- Historical and archeologically significant areas.

The official map is not a taking of private land. If by virtue of the official map a landowner is denied reasonable use of his property, he or she can apply for a special encroachment permit that would allow them to build on the site. If a landowner notifies the municipality of their intention to develop a site identified on the map, the municipality has one year to acquire the site or the reservation of that land be- comes invalid. The landowner is protected from the development of portions of the land in accordance with the municipality’s zoning and subdivi- sion regulations. The official map need not be surveyed. A metes and bounds description of the parcel of land is not required. The approval of a land easement or preservation easement is proposed by the municipality. It does not obligate the municipality to open, maintain or improve mapped roads or build the
improvements cited on the map. It does not serve as the municipali-
ity’s zoning map or comprehensive plan as it is a document of limited pur-
purpose and its legal impact is quite specific. The creation of the
official map is not necessarily an expensive undertaking. It can be
simple or complex, with varying levels of detail. The level of complex-
ity largely depends on the vision and the role of the map in helping
elected officials make land use decisions. In Northampton County,
the following municipalities have adopted ofﬁcial maps:

- Allen Township (April 2006)
- Bath Township (August 2009)
- East Allen Township (August 2009)
- Hanover Township (August 2006)
- Moore Township
- Tatamy Borough (January 2015)

More information on official maps is available in the publication
The Official Map: A Handbook for Preserving and Providing Public Lands
& Facilities (2011) written by the Pennsylvania Land Trust Associa-
tion in partnership with DCNR, PennDOT and Pennsylvania Depart-
ment of Community and Economic Development.

Municipal Ordinances: In addition to comprehensive planning, a
municipality can enact regulatory measures to protect valuable natural
resources through the following methods:

Mandatory Dedication/Fee in Law – The MPC provides for the
mandatory public dedication of lands suitable for recrea-
tion purpose, or the purchase of the fee in lieu of the dedication of
such lands. Municipal SALDOs can require fees paid by the developer
to be deposited into a fund speciﬁcally for the construction of
recreational facilities, reservation of land for parks or open space
or a combination thereof. The MPC requires the formal adoption of a recreation plan to im-
plementation of these provisions. The fee in lieu of option en-
ures that all subdivisions provide for a proportionate share of the
open space needs of the municipality. Both lands and fees obtained
must be used to provide park or recreation facilities accessible to future residents of the development
from which they were obtained.

Stormwater Management Best Management Practices (BMPs) – Preserving open space in a natural and undevel-
oped condition is an excellent best management practice (BMP) for preserving water quality, both for surface and
groundwater supplies, by filtering runoff and pollutants from
impervious areas. It also provides additional area for other
BMPs. They capture, treat and inﬁltrate stormwater to the extent
helping to maintain the natural hydrology as development occurs. Municipalities in Northampton County have adopted
BMP provisions as part of ordinances created by the County and the LVPC under the Pennsylvania Stormwater Manage-
ment Act (Act 167 of 1978).

Zoning Techniques – The Pennsylvania Municipalities Plan-
ning Code (MPC) designates zoning as a tool for regulating land
uses, including open space and recreational facilities. The prima-
ry function of zoning should be to implement the municipality’s comprehensive plan. It regulates the use of property in
the public interest and may be used to protect natural resources.

Overlay districts – An overlay district directs development away from sensitive or environmentally important lands. It
is a set of regulations that are included in a specific or multiple
zoning districts and is usually applied to speciﬁc locations within the municipality. Techniques such as conservation subdivisions, buffer strips and numerous performance standards are usu-
ally included in overlay regulations.

Performance Standards – “Performance zoning” is a ﬂexi-
table alternative to traditional land use zoning. Where tradition-
al zoning speciﬁes the intensity of land use that is acceptable in
consideration of the surrounding environment. With per-
formance standards, municipalities may specify the land use
away from natural features, limit the intensity of develop-
ment, and limit negative effects of development on public
infrastructure. This option allows developers more ﬂexibility in
design since the use of a property is not restricted as long as the
impacts to the surrounding land are not negative.

Sizing Scales – Sizing scale zoning limits the number of
lots, structures, wetlands, by making adjacent lots smaller and locating them
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sell development rights to developers in areas designated for higher density development (receivers). The municipality or a nonprofit agency can act proactively, by purchasing the development rights and “retire” them, making them unavailable for future development, thus making them available to interested developers for use in receiving areas. An excellent resource on the TDR option is Transfer of Development Rights from the Environmental Management Center of Brandywine Conservancy.

Protecting Environmental Features through Zoning – Outside of creative methods to shape or otherwise limit development, significant natural features can be protected by specific standards or sections of the zoning ordinance. In practice, across the Lehigh Valley, it is the most proactive and successful approach a municipality can undertake in protecting natural features.

Floodplains – Floodplain areas absorb and store large amounts of water, which is a source of aquifer recharge. The floodplain is defined by the 100-year or base flood which has a 1 percent chance of being equaled or exceeded in a given year. The floodplain includes floodways and flood fringes. Communities have floodplain regulations of varying regulatory restrictiveness. Natural vegetation supported by floodplains helps trap sediment from upland surface runoff, stabilizes stream banks and reduces soil erosion. Floodplains also provide shelter for wildlife and provide current stream channels and adjacent floodplain areas to carry flood waters; and to encourage the use of flood prone land for open space uses.

Riparian buffers – A riparian buffer is an area of trees and other vegetation adjacent to a watercourse to form a transition area between land and the water course. A riparian buffer ordinance establishes riparian buffers and regulates the size and permitted disturbances of the buffer. The riparian buffer is designed to intercept runoff from upland sources for the purpose of neutralizing the effects of nutrients, organic matter, pesticides or other pollutants before they enter the watercourse. To be most effective, buffers should be considered as the total area of land intended to be riparian in character. The effectiveness of a riparian buffer can be improved by limiting impervious surfaces and strictly enforced on-eriele sediment controls. Both grassed and forested buffers are effective at trapping sediment, although forested buffers provide other benefits as well, such as providing wildlife habitat and shading for the water body.

Steep slopes – Steep slope regulations limit or prohibit development on areas of steep slope. The definition of steep slope varies from municipality to municipality, with 15 percent typically the minimum gradient classified as steep. Steep slopes are vulnerable to damage resulting from soil disruption, primarily related to soil erosion. Such damage is likely to spread to areas that were not originally disturbed. Such erosion reduces the productivity of the soil, and results in increased sedimentation in drainage ways, wetlands and streams. Development of steep slopes, especially adjacent to stream corridors, can increase erosion of stream banks, resulting in pollution and decreased water quality. Increased sedimentation also increases flood hazards by reducing the floodwater storage capacity and elevating the flood level of the drainage system in low-lying areas. Beyond these threats to public safety, disruption of steep slopes also increases the likelihood of slippage and slumping—unstable soil movements, which may trigger landslides, floods, and other life-threatening events. Municipalities can limit both tree loss and tree loss vigor because of damage sustained during construction. Development can lead to tree loss, and remaining trees lose vigor because of damage sustained during construction. The protection of native, non-invasive species and older specimens of trees is accomplished along all streams, including intermittent and ephemeral channels. The effectiveness of a riparian buffer is limited to sites with a 1 percent chance of being equaled or exceeded in a given year. The floodplain includes floodways and flood fringes.

Woodlands and Trees – Woodland and tree preservation regulations control and regulate the excessive removal, cutting, alteration and destruction of trees. Woodlands stabilize the soil, control water pollution, provide air quality benefits and provide a natural habitat for wildlife. Development can lead to tree loss, and remaining trees lose vigor because of damage sustained during construction. Municipalities can limit both tree loss and tree damage with well-conceived tree preservation ordinances or policies. The goals of tree preservation are twofold. First, it seeks to protect designated trees. Second, it attempts to minimize impact to those trees during construction. The protection of native, non-invasive species and older specimens of trees is accomplished by designing standards that regulate the type of vegetation to be removed and the circumstances under which it can be removed.

Wetlands – Wetlands are all lands regulated as wetlands by the Pennsylvania Department of Environment Protection and/or the United States Army Corps of Engineers. Such areas are inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soils, including swamps, marshes, bogs and similar areas. Many of these wetlands are seasonal (they are dry one or more times every year). The quantity of water present and the timing of its presence in part determine the function of a wetland and its role in the environment. Even wetlands that appear to be dry much of the time have a vital role to play in maintaining the water balance of the landscape.

Wetlands have important filtering capabilities for collecting runoff from higher dry land before the runoff reaches streams and rivers, maintaining stream flow during periods of drought and can assist in replenishing groundwater. They also serve an important role in flood management since the holding capacity of a wetland can lessen the effects of a flooding event.

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The conservation of land for open space and/or greenways can create costs (lost tax revenue) and benefits (e.g., increased values for nearby properties, recreational and other amenities) for the County and municipalities. There are several options for acquiring open space, ranging from a combination of pay-as-you-go using revenue, borrowing funds via traditional loans or general obligation bonds, or federal, state, local and private grant programs.

Funding Measures

The LVPC has created a variety of natural resource protection guides/model ordinances for use by municipalities:

- Floodplains (2014)
- Sleep Stoops (2008)
- Riparian and Wetland Buffers (2011)
- Woodlands (2009)
- Conservation Subdivisions (2010)

The “Net Out” of features refers to the technique of deducting environmentally constrained resources and reduce the frequency of property damage due to sinkhole collapse. The “Net Out” of resources moves through the rock’s fractures and openings. The goal of this type of regulation is to protect groundwater by leaving the water vulnerable to contamination that moves through the rock’s fractures and openings. When areas within a municipality are underlain with carbonate bedrock, these areas are often unstable and susceptible to collapse and the formation of closed depressions and sinkholes. This process can threaten the local groundwater supply and the formation of closed depressions and sinkholes.

Nethead protection is intended to protect and preserve environmentally constrained areas by reducing or eliminating the credit given for these lands toward the amount of density calculations. The netting out is intended to protect groundwater resources and reduce the frequency of property damage due to sinkhole collapse.

The “Net Out” of features – The net out of resources refers to the technique of deducting environmentally constrained lands from development density calculations. Netting out is intended to protect and preserve environmentally constrained areas by reducing or eliminating the credit given for these lands toward the amount of development permitted on a given site.

Sinkholes: – The majority of Northampton County is underlain with carbonate bedrock. When areas are underlain with carbonate bedrock, these areas are often unstable and susceptible to collapse and the formation of closed depressions and sinkholes. This process can threaten the local groundwater supply and the formation of closed depressions and sinkholes.

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Sinkholes 

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Wellhead Protection (1992)

- Wellhead Protection (1992)
- Sinkhole Prevention (1985)
- Wellhead Protection (1992)

Another less commonly known method is the Installment Purchase Agreement (IPAs). An IPA puts the purchase price into a tax-free annuity for open space acquisition. Revenues from the dedicated tax pay off the debt. Additional purchases or complete projects than could otherwise be made over the short term. Since the municipality will own the easement forever, spreading the payments over time means that the cost is distributed between present and future residents. The implementation of a municipal open space program is based on many variables and all options should be carefully considered to fit local natural resources protection goals and political needs.

Wellhead protection – A wellhead protection ordinance regulates land use activities within defined critical recharge areas. It can be a stand-alone ordinance or be part of a zoning or subdivision and land development ordinance.

Sidewalks – The majority of Northampton County is underlain with carbonate bedrock. When areas within a municipality are underlain with carbonate bedrock, these areas are often unstable and susceptible to collapse and the formation of closed depressions and sinkholes. This process can threaten the local groundwater supply and the formation of closed depressions and sinkholes.

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Archibald Johnston Conservation Area

1. Transfer the site to either Bethlehem Township or a land conservancy when the opportunity arises.
   - Priority = Immediate | 1-3 years
   - Responsibility = Northampton County, Bethlehem Township, land conservancies

2. Cooperate with Bethlehem Township and land conservancies in planning the conservation area component of this County site.
   - Priority = Short-Term | 4-7 years
   - Responsibility = Northampton County, Bethlehem Township, land conservancies

3. Pursue discussions with the new property owner of the adjacent parcels to the west of the site to connect downstream to the Gertrude B. Fox County Park.
   - Priority = Immediate | 1-3 years
   - Responsibility = City of Bethlehem, Hanover Township

Bear Swamp Archery Complex

4. Cooperate with partners to acquire land adjacent to the southern boundary of the Bear Swamp Archery Complex and the part of the East Fork Martins Creek corridor that flows west from the swamp.
   - Priority = Long-Term | 8 or more years
   - Responsibility = Northampton County, land conservancies

Circle Park

5. Transfer ownership to the City of Easton should be considered.
   - Priority = Immediate | 1-3 years
   - Responsibility = Northampton County, City of Easton

Defenderfer Tract

6. Conduct a development alternatives study to determine the best use for the property.
   - Priority = Short-Term | 4-7 years
   - Responsibility = Northampton County

Frost Hollow Overlook

7. Repair the damaged infrastructure.
   - Priority = Immediate | 1-3 years
   - Responsibility = Northampton County

8. Transfer ownership to Forks Township should be considered.
   - Priority = Immediate | 1-3 years
   - Responsibility = Northampton County, Forks Township

Fry’s Run Park

9. Add interpretive signage about the historical significance of the bridge and the trolley piers.
   - Priority = Immediate | 1-3 years
   - Responsibility = Northampton County

10. Restore the historic M. Opp Bridge for preservation purposes and the safety of park visitors.
    - Priority = Long-Term | 8 or more years
    - Responsibility = Northampton County

11. Transfer ownership to Williams Township should be considered.
    - Priority = Immediate | 1-3 years
    - Responsibility = Northampton County, Williams Township
GALL FARM

12 - Develop a master site plan for this property to guide the development of the Gall Farm as a regional park.
   Priority = Short-Term | 4-7 years
   Responsibility = Northampton County

13 - Increase the riparian buffer width along the Little Bushkill Creek to 150 feet as needed.
   Priority = Immediate | 1-3 years
   Responsibility = Northampton County

GERTRUDE B. FOX COUNTY PARK

14 - Pursue discussions with the new property owner of adjacent parcels to the east of the site to connect upstream to the Archibald Johnston Conservation Area.
   Priority = Short-Term | 4-7 years
   Responsibility = City of Bethlehem, Hanover Township

15 - Transfer ownership to City of Bethlehem and/or Hanover Township should be considered.
   Priority = Immediate | 1-3 years
   Responsibility = Northampton County, Bethlehem Township, Hanover Township

GREATER MINSI LAKE CORRIDOR

16 - Acquire land or an easement in the southern part of the corridor to create better County-owned or managed connectivity for proposed trail development.
   Priority = Short-Term | 4-7 years
   Responsibility = Northampton County

17 - Develop a trail connecting Minsi Lake to the Delaware Water Gap National Recreation Area.
   Priority = Short-Term | 4-7 years
   Responsibility = Northampton County

GREATER MINSI LAKE CORRIDOR - CONTINUED

18 - Conduct a feasibility study to determine the best use of the property in addition to the proposed trail.
   Priority = Short-Term | 4-7 years
   Responsibility = Northampton County

LOUISE W. MOORE PARK

19 - Naturalize more of the west side of the park by restoring woodlands.
   Priority = Short-Term | 4-7 years
   Responsibility = Northampton County

20 - Complete restoration of the estate farmhouse to transition the parks administrative staff to this location.
   Priority = Short-Term | 4-7 years
   Responsibility = Northampton County

21 - Complete the site plan for a centralized park maintenance facility.
   Priority = Immediate | 1-3 years
   Responsibility = Northampton County

22 - Re-establish the planting buffer along Rt. 33 and Country Club Road.
   Priority = Immediate | 1-3 years
   Responsibility = Northampton County

MINSI LAKE

23 - Work with the Pennsylvania Fish & Boat Commission to identify funding for the dam revitalization project to eliminate their safety issue.
   Priority = Short-Term | 4-7 years
   Responsibility = Pennsylvania Fish & Boat Commission, Northampton County

24 - Replace the pit toilets with modern facilities.
   Priority = Immediate | 1-3 years
   Responsibility = Northampton County
MUD RUN

29 - The site should remain as is. There are no future plans to develop this site at this time, but the site could be used for trail access if the Martins Jacoby Watershed Trail Network were to be developed.
Priority = Long-Term | 8 or more years
Responsibility = Northampton County

30 - Transfer ownership to Lower Mount Bethel Township should be considered.
Priority = Immediate | 1-3 years
Responsibility = Northampton County, Lower Mount Bethel Township

NOR-BATH TRAIL

31 - Complete the current efforts to connect the trail to the D&L Trail in Canal Street Park.
Priority = Immediate | 1-3 years
Responsibility = Northampton County, Northampton Borough, Delaware and Lehigh National Heritage Corridor

32 - Extend the trail eastward into Bath Borough.
Priority = Short-Term | 4-7 years
Responsibility = Northampton County, Bath Borough, Wildlands Conservancy

33 - Improve signage, width and surfacing to meet current trail design standards.
Priority = Short-Term | 4-7 years
Responsibility = Northampton County

MONOCACY MEADOW

25 - Improve the condition of the parking area.
Priority = Short-Term | 4-7 years
Responsibility = Northampton County

26 - Transfer ownership to Bethlehem Township should be considered.
Priority = Immediate | 1-3 years
Responsibility = Northampton County, Bethlehem Township

MOUNT JACK

27 - Complete the needed repairs to the southernmost parcel, Doe Hollow, to return the site to its full pre-storms use.
Priority = Immediate | 1-3 years
Responsibility = Northampton County

28 - Conduct a feasibility study to determine if a County-owned riverfront park is appropriate at this location.
Priority = Short-Term | 4-7 years
Responsibility = Northampton County, Bethlehem Township
PORTLAND WATERFRONT PARK

34 - Pursue access easements to cross the privately-owned property to access the northern part of the park.
   Priority = Immediate | 1-3 years
   Responsibility = Northampton County, Bethlehem Township, land conservancies

35 - Cooperate with the development efforts for the Liberty Water Gap Trail and the September 11th National Memorial Trail, which crosses from New Jersey on the footbridge and is proposed to head north toward the Delaware Water Gap.
   Priority = Immediate | 1-3 years
   Responsibility = Northampton County, September 11th National Memorial Trail Alliance, Liberty Water Gap Trail, Pennsylvania Department of Transportation

36 - Explore the feasibility of creating a vehicle entrance and parking area south of the park on the adjacent Delaware River Joint Toll Bridge Commission property.
   Priority = Short-Term | 4-7 years
   Responsibility = Northampton County, Delaware River Joint Toll Bridge Commission

37 - Install a County park sign to build public awareness of the park.
   Priority = Immediate | 1-3 years
   Responsibility = Northampton County

38 - Transfer ownership to Portland Borough and/or Upper Mount Bethel Township should be considered.
   Priority = Immediate | 1-3 years
   Responsibility = Northampton County, Portland Borough, Upper Mount Bethel Township

OTHER OUTDOOR RECREATION RECOMMENDATIONS

43 - Close the six trail gaps in the County as identified in the Lehigh Valley Trails Inventory—2013.
   Priority = Short-Term | 4-7 years
   Responsibility = Northampton County, municipalities, land conservancies and private entities

44 - Engage the Two Rivers Area Trail Group to assist in implementing the recommendations in the Two Rivers Area Greenway Trail Feasibility Study and Martins-Jacoby Trail Conceptual Plan and promote the trail network.
   Priority = Immediate | 1-3 years
   Responsibility = Northampton County, Two Rivers Area Trail Group

45 - Complete a feasibility study of a Northern Tier Rail Trail from Walnutport to Portland.
   Priority = Short-Term | 4-7 years
   Responsibility = Northampton County
OTHER OUTDOOR RECREATION RECOMMENDATIONS - CONTINUED

46 - Cooperate with the development efforts for the Liberty Water Gap Trail and the September 11th National Memorial Trail, which crosses from New Jersey on the Portland footbridge and is proposed to head north toward the Delaware Water Gap.
   Priority = Immediate | 1-3 years
   Responsibility = Northampton County, September 11th National Memorial Trail Alliance, Liberty Water Gap Trail, Pennsylvania Department of Transportation

47 - Municipalities with close-to-home park service area gaps (southern Plainfield and western Lower Mt Bethel townships area, eastern Lehigh/western Moore townships, northern Upper Mount Bethel Township, and southern Williams Township) should finish developing existing parks or acquire and develop new parks to fill the areas currently not served by community parks if supported by a residents’ needs analysis.
   Priority = Long-Term | 8 or more years
   Responsibility = Municipalities

48 - Municipalities should gather information from their residents about what park and recreation facilities the community desires and acquire and/or develop the parkland needed to provide these opportunities.
   Priority = Long-Term | 8 or more years
   Responsibility = Municipalities

49 - Work with federal and state partners to create additional regional parkland of at least 660 acres by 2020, 1,200 acres by 2030 and 1,770 acres by 2040, in addition to currently proposed parks sites, to increase the regional park acreage to reach or exceed 15 acres/1,000 population.
   Priority = Long-Term | 8 or more years
   Responsibility = County, Commonwealth of Pennsylvania, or National Park Service

50 - Investigate and implement innovative strategies that integrate transportation with open space.
   Priority = Short-Term | 4-7 years
   Responsibility = LVPC, municipalities

OTHER OUTDOOR RECREATION RECOMMENDATIONS - CONTINUED

51 - Develop a regional multimodal strategic plan that helps decision makers integrate transportation network improvements with land use decision making.
   Priority = Long-Term | 8 or more years
   Responsibility = LVPC

52 - Complete a regional sidewalk inventory.
   Priority = Immediate | 1-3 years
   Responsibility = LVPC

53 - Develop a regional bicycle-pedestrian plan, including a bicycle-pedestrian transportation working group.
   Priority = Immediate | 1-3 years
   Responsibility = LVPC

AGRICULTURAL RESOURCES RECOMMENDATIONS

54 - The County should consider whether to pursue funding through the federal Agricultural Conservation Easement Program in addition to the state farmland preservation program.
   Priority = Immediate | 1-3 years
   Responsibility = Northampton County

COUNTY OPEN SPACE PROGRAM RECOMMENDATIONS

55 - Consider recommended modifications to the Northampton County 21st Century Open Space Initiative program and guidelines.
   Priority = Immediate | 1-3 years
   Responsibility = Northampton County

56 - Maintain or enhance funding for the County Open Space Program including the Open Space and Natural Areas component, Municipal Park Acquisition and Development component, County Parks component and the Farmland Preservation component.
   Priority = Long-Term | 8 or more years
   Responsibility = Northampton County
## Survey Summary

### 1. Please check the zip code where you live.

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### 2. Gender:

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### 4. How long have you lived in Northampton County?

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<td>321</td>
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<tr>
<td>Do not live in Northampton County</td>
<td>0.0%</td>
<td>0</td>
</tr>
</tbody>
</table>

answered question | 879 |
skipped question | 12 |
6. Is it important to protect farmland in Northampton County?

<table>
<thead>
<tr>
<th>Answer Options</th>
<th>Response Percent</th>
<th>Response Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly Agree</td>
<td>68.7%</td>
<td>599</td>
</tr>
<tr>
<td>Agree</td>
<td>24.6%</td>
<td>231</td>
</tr>
<tr>
<td>Unsure</td>
<td>0.8%</td>
<td>7</td>
</tr>
<tr>
<td>Strongly Disagree</td>
<td>0.8%</td>
<td>7</td>
</tr>
<tr>
<td>Not Sure</td>
<td>2.1%</td>
<td>18</td>
</tr>
<tr>
<td>No</td>
<td>0.8%</td>
<td>8</td>
</tr>
</tbody>
</table>

7. If you agree or strongly agree with the statement in Question 6, which is the one most important reason for your answer?

<table>
<thead>
<tr>
<th>Answer Options</th>
<th>Response Percent</th>
<th>Response Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not at all</td>
<td>2.4%</td>
<td>21</td>
</tr>
<tr>
<td>Somewhat</td>
<td>40.6%</td>
<td>353</td>
</tr>
<tr>
<td>Familiar</td>
<td>43.1%</td>
<td>375</td>
</tr>
<tr>
<td>Very</td>
<td>13.9%</td>
<td>121</td>
</tr>
</tbody>
</table>

8. How familiar are you with the parks, trails, open space and natural areas in Northampton County?

<table>
<thead>
<tr>
<th>Answer Options</th>
<th>Response Percent</th>
<th>Response Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Occasionally</td>
<td>37.4%</td>
<td>323</td>
</tr>
<tr>
<td>Monthly</td>
<td>25.4%</td>
<td>245</td>
</tr>
<tr>
<td>Weekly</td>
<td>24.3%</td>
<td>210</td>
</tr>
<tr>
<td>Never</td>
<td>6.5%</td>
<td>56</td>
</tr>
<tr>
<td>Daily</td>
<td>3.4%</td>
<td>29</td>
</tr>
</tbody>
</table>

9. In the past 12 months, approximately how often have you visited parks, trails and natural areas in Northampton County?

<table>
<thead>
<tr>
<th>Answer Options</th>
<th>Response Percent</th>
<th>Response Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Occasionally</td>
<td>37.4%</td>
<td>323</td>
</tr>
<tr>
<td>Monthly</td>
<td>25.4%</td>
<td>245</td>
</tr>
<tr>
<td>Weekly</td>
<td>24.3%</td>
<td>210</td>
</tr>
<tr>
<td>Never</td>
<td>6.5%</td>
<td>56</td>
</tr>
<tr>
<td>Daily</td>
<td>3.4%</td>
<td>29</td>
</tr>
</tbody>
</table>
10. In the past 12 months, which of the following activities have you participated in within the County? (Check all that apply)  

<table>
<thead>
<tr>
<th>Activity</th>
<th>Response Percent</th>
<th>Response Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Farmers markets/Farm Stands</td>
<td>69.2%</td>
<td>594</td>
</tr>
<tr>
<td>Walking/hiking on natural surfaces</td>
<td>73.8%</td>
<td>608</td>
</tr>
<tr>
<td>Walking/hiking on pavement</td>
<td>59.1%</td>
<td>508</td>
</tr>
<tr>
<td>Kayaking</td>
<td>46.4%</td>
<td>397</td>
</tr>
<tr>
<td>Biking on paved/unpaved trails</td>
<td>39.9%</td>
<td>343</td>
</tr>
<tr>
<td>Playground facilities</td>
<td>38.4%</td>
<td>334</td>
</tr>
<tr>
<td>Recreating with dogs</td>
<td>32.2%</td>
<td>277</td>
</tr>
<tr>
<td>Swimming</td>
<td>24.5%</td>
<td>210</td>
</tr>
<tr>
<td>Biking on roads</td>
<td>24.3%</td>
<td>208</td>
</tr>
<tr>
<td>Photography/drawing/painting</td>
<td>24.0%</td>
<td>203</td>
</tr>
<tr>
<td>Picnicking</td>
<td>24.0%</td>
<td>203</td>
</tr>
<tr>
<td>Fishing</td>
<td>24.0%</td>
<td>203</td>
</tr>
<tr>
<td>Cycling</td>
<td>23.5%</td>
<td>199</td>
</tr>
<tr>
<td>Winter activities (skiing, snowshoeing, etc.)</td>
<td>20.1%</td>
<td>173</td>
</tr>
<tr>
<td>Bird watching</td>
<td>15.0%</td>
<td>129</td>
</tr>
<tr>
<td>Environmental education programming</td>
<td>10.1%</td>
<td>88</td>
</tr>
<tr>
<td>Hunting</td>
<td>12.0%</td>
<td>103</td>
</tr>
<tr>
<td>Boating, non-motorized (canoe, kayak, etc.)</td>
<td>10.0%</td>
<td>86</td>
</tr>
<tr>
<td>Hiking</td>
<td>10.0%</td>
<td>86</td>
</tr>
<tr>
<td>Horseback riding</td>
<td>4.4%</td>
<td>38</td>
</tr>
<tr>
<td>Community Gardening</td>
<td>4.3%</td>
<td>37</td>
</tr>
<tr>
<td>Backyard facilities</td>
<td>3.5%</td>
<td>29</td>
</tr>
<tr>
<td>Rock Climbing/horizontal</td>
<td>2.8%</td>
<td>24</td>
</tr>
<tr>
<td>Snowboarding</td>
<td>2.4%</td>
<td>20</td>
</tr>
<tr>
<td>Other (please specify)</td>
<td>5.1%</td>
<td>44</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>859</strong></td>
<td><strong>73</strong></td>
</tr>
</tbody>
</table>

11. In the past 12 months, what parks and open space areas have you visited within the County? (Check all that apply)  

<table>
<thead>
<tr>
<th>Park/Space Area</th>
<th>Response Percent</th>
<th>Response Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Municipal Parks</td>
<td>62.4%</td>
<td>505</td>
</tr>
<tr>
<td>Jacobsburg State Park</td>
<td>54.5%</td>
<td>441</td>
</tr>
<tr>
<td>Douglas Moore Park</td>
<td>45.6%</td>
<td>363</td>
</tr>
<tr>
<td>Delaware Water Gap</td>
<td>34.0%</td>
<td>275</td>
</tr>
<tr>
<td>State Game Lands</td>
<td>24.2%</td>
<td>196</td>
</tr>
<tr>
<td>National Wildlife Refuge Area</td>
<td>18.8%</td>
<td>153</td>
</tr>
<tr>
<td>Wayne A. Grube Memorial Park</td>
<td>9.0%</td>
<td>73</td>
</tr>
<tr>
<td>By-Hil-Tuk Park</td>
<td>6.4%</td>
<td>52</td>
</tr>
<tr>
<td>Bushkill Trail</td>
<td>4.3%</td>
<td>35</td>
</tr>
<tr>
<td>Poconos Holiday Inlet</td>
<td>3.7%</td>
<td>30</td>
</tr>
<tr>
<td>Fry's Run Park</td>
<td>3.5%</td>
<td>29</td>
</tr>
<tr>
<td>Other (please specify)</td>
<td>13.0%</td>
<td>105</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>809</strong></td>
<td><strong>73</strong></td>
</tr>
</tbody>
</table>

12. In the past 12 months, what trails have you most often used? (Check all that apply)  

<table>
<thead>
<tr>
<th>Trail</th>
<th>Response Percent</th>
<th>Response Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delaware &amp; Lehigh Trail</td>
<td>32.6%</td>
<td>235</td>
</tr>
<tr>
<td>Easton-Phillips Trail</td>
<td>23.8%</td>
<td>171</td>
</tr>
<tr>
<td>Nor-Bath Trail</td>
<td>23.4%</td>
<td>168</td>
</tr>
<tr>
<td>Appalachiun Trail</td>
<td>21.5%</td>
<td>156</td>
</tr>
<tr>
<td>Bushkill Trail</td>
<td>20.5%</td>
<td>142</td>
</tr>
<tr>
<td>Poconos Holiday Inlet</td>
<td>19.0%</td>
<td>134</td>
</tr>
<tr>
<td>Nation Trail</td>
<td>19.8%</td>
<td>151</td>
</tr>
<tr>
<td>Manheim Township Recreation Trail</td>
<td>14.1%</td>
<td>100</td>
</tr>
<tr>
<td>South Bethlehem Greensway Trail</td>
<td>14.1%</td>
<td>100</td>
</tr>
<tr>
<td>Farr 3rds Aquatic Trail</td>
<td>3.1%</td>
<td>20</td>
</tr>
<tr>
<td>Other (please specify)</td>
<td>9.1%</td>
<td>64</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>707</strong></td>
<td><strong>115</strong></td>
</tr>
</tbody>
</table>
13. In the past 12 months, what waterway(s) have you used the most for recreational activities? (Check all that apply)

<table>
<thead>
<tr>
<th>Waterway</th>
<th>Response Percent</th>
<th>Response Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lehigh River</td>
<td>34.5%</td>
<td>262</td>
</tr>
<tr>
<td>Delaware River</td>
<td>33.4%</td>
<td>254</td>
</tr>
<tr>
<td>None</td>
<td>29.7%</td>
<td>229</td>
</tr>
<tr>
<td>Monocacy Creek</td>
<td>8.6%</td>
<td>66</td>
</tr>
<tr>
<td>Bushkill Creek</td>
<td>3.9%</td>
<td>32</td>
</tr>
<tr>
<td>Cattasquaque Creek</td>
<td>2.6%</td>
<td>21</td>
</tr>
<tr>
<td>Nancy Run</td>
<td>2.0%</td>
<td>15</td>
</tr>
<tr>
<td>Fry's Run</td>
<td>1.2%</td>
<td>10</td>
</tr>
<tr>
<td>Other (please specify)</td>
<td>4.2%</td>
<td>32</td>
</tr>
</tbody>
</table>

Response Options

Restrooms                | 77.8%            | 612            |
Drinking Water           | 59.8%            | 471            |
Parking Areas            | 44.6%            | 351            |
Trail Signage            | 42.5%            | 338            |
Picnic Facilities        | 40.7%            | 320            |
Informative Signage      | 33.5%            | 264            |
Canoe & Kayak Launch Sites | 19.7%         | 155            |
ADA Accessibility         | 19.2%            | 151            |
Bicycle Racks            | 14.0%            | 116            |
Bike Trail Stands        | 10.0%            | 81             |
Other (please specify)   | 4.6%             | 36             |

Answer Options

Maintain existing trails  | 68.5%            | 566            |
Establish trail connections between existing trails | 44.3% | 356 |
Acquire abandoned railroad corridors for the purpose of establishing trails | 29.2% | 244 |
Upgrade amenities to existing trails | 36.1% | 295 |
Acquire land for public trails | 18.0% | 140 |
Establish multi-use trails | 16.2% | 134 |
Ensure that all multi-use trails are ADA accessible | 12.0% | 96 |
Select land for greenways without public trails | 11.4% | 92 |
Establish separate trails for different user groups (e.g. equestrian, kayak, bicycles, etc.) | 11.1% | 92 |
Other (please specify)   | 7.0%             | 56             |

15. Select the three most important trail and greenway priorities you would like to see in Northampton County.

Answer Options

No time                  | 36.8%            | 114            |
Not aware of natural areas or facilities | 20.3% | 63 |
Feels unsafe             | 13.5%            | 42             |
Not enough parking       | 10.3%            | 32             |
Too many people           | 6.8%             | 21             |
Other (please specify)   | 6.8%             | 21             |
Unsuitable conditions of facilities/amenities | 6.8% | 21 |
Regulations are too restrictive | 5.8% | 19 |
Not enough parking       | 4.2%             | 13             |
Other (please specify)   | 3.9%             | 12             |
No way to get there       | 2.7%             | 8              |
Other (please specify)   | 26.5%            | 82             |

16. If you do not use parks, trails or natural areas in Northampton County, what are the reasons? (Check all that apply)

Answer Options

No time                   | 36.8%            | 114            |
Not aware of natural areas or facilities | 20.3% | 63 |
Feels unsafe             | 13.5%            | 42             |
Not enough parking       | 10.3%            | 32             |
Too many people           | 6.8%             | 21             |
Other (please specify)   | 6.8%             | 21             |
Unsuitable conditions of facilities/amenities | 6.8% | 21 |
Regulations are too restrictive | 5.8% | 19 |
Not enough parking       | 4.2%             | 13             |
Other (please specify)   | 3.9%             | 12             |
No way to get there       | 2.7%             | 8              |
Other (please specify)   | 26.5%            | 82             |

Answer Options

Restrooms                | 74.8%            | 622            |
Drinking Water           | 44.6%            | 351            |
Parking Areas            | 44.6%            | 351            |
Trail Signage            | 42.5%            | 338            |
Picnic Facilities        | 40.7%            | 320            |
Informative Signage      | 35.5%            | 284            |
Canoe & Kayak Launch Sites | 19.7%         | 155            |
ADA Accessibility         | 19.2%            | 151            |
Bicycle Racks            | 14.0%            | 116            |
Bike Trail Stands        | 10.0%            | 81             |
Other (please specify)   | 4.8%             | 35             |

Answer Options

Lehigh River            | 34.5%            | 262            |
Delaware River          | 33.4%            | 254            |
None                   | 29.7%            | 229            |
Monocacy Creek         | 8.6%             | 66             |
Bushkill Creek         | 3.9%             | 32             |
Cattasquaque Creek     | 2.6%             | 21             |
Nancy Run              | 2.0%             | 15             |
Fry's Run              | 1.2%             | 10             |
Other (please specify) | 4.2%             | 32             |

Answer Options

Hokendauqua Creek 7.0% 53
Catasauqua Creek 3.3% 25
Nancy Run 2.6% 21
Fry's Run 2.0% 15
Other (please specify) 4.2% 32
17. Please indicate the number of people in your household that fall within the following age categories.

<table>
<thead>
<tr>
<th>Age Range</th>
<th>Response Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 - 5 years old</td>
<td>113</td>
</tr>
<tr>
<td>6 - 12 years old</td>
<td>135</td>
</tr>
<tr>
<td>13 - 18 years old</td>
<td>125</td>
</tr>
<tr>
<td>19 - 25 years old</td>
<td>222</td>
</tr>
<tr>
<td>26 - 30 years old</td>
<td>167</td>
</tr>
<tr>
<td>31 - 39 years old</td>
<td>207</td>
</tr>
<tr>
<td>40 - 49 years old</td>
<td>247</td>
</tr>
<tr>
<td>50 - 59 years old</td>
<td>340</td>
</tr>
</tbody>
</table>

18. How does your household usually receive information about trails, parks, environmental education programs and nature-based activities? (Check all that apply)

<table>
<thead>
<tr>
<th>Source</th>
<th>Response Percent</th>
<th>Response Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Local newspaper</td>
<td>45.2%</td>
<td>452</td>
</tr>
<tr>
<td>At the site</td>
<td>44.2%</td>
<td>452</td>
</tr>
<tr>
<td>Internet/websites</td>
<td>40.0%</td>
<td>340</td>
</tr>
<tr>
<td>Local TV station</td>
<td>23.6%</td>
<td>201</td>
</tr>
<tr>
<td>Flyers/posters</td>
<td>18.5%</td>
<td>164</td>
</tr>
<tr>
<td>Mobile devices/smart phones</td>
<td>12.5%</td>
<td>106</td>
</tr>
<tr>
<td>Facebook page</td>
<td>11.9%</td>
<td>94</td>
</tr>
<tr>
<td>E-mail</td>
<td>10.2%</td>
<td>87</td>
</tr>
<tr>
<td>Naturalist &amp; educational programs</td>
<td>6.6%</td>
<td>56</td>
</tr>
<tr>
<td>Social</td>
<td>6.6%</td>
<td>51</td>
</tr>
<tr>
<td>Newsletters</td>
<td>4.8%</td>
<td>41</td>
</tr>
<tr>
<td>Public meetings</td>
<td>3.9%</td>
<td>33</td>
</tr>
<tr>
<td>Twitter</td>
<td>3.6%</td>
<td>31</td>
</tr>
<tr>
<td>Other (please specify)</td>
<td>3.9%</td>
<td>31</td>
</tr>
</tbody>
</table>

19. What is the best way for your household to receive the information mentioned in Question 18?

<table>
<thead>
<tr>
<th>Source</th>
<th>Response Percent</th>
<th>Response Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Local newspaper</td>
<td>40.2%</td>
<td>343</td>
</tr>
<tr>
<td>Internet/websites</td>
<td>38.8%</td>
<td>330</td>
</tr>
<tr>
<td>E-mail</td>
<td>26.7%</td>
<td>226</td>
</tr>
<tr>
<td>Local TV station</td>
<td>24.0%</td>
<td>206</td>
</tr>
<tr>
<td>At the site</td>
<td>17.9%</td>
<td>153</td>
</tr>
<tr>
<td>Flyers/posters</td>
<td>17.6%</td>
<td>150</td>
</tr>
<tr>
<td>Facebook page</td>
<td>16.9%</td>
<td>144</td>
</tr>
<tr>
<td>Mobile devices/smart phones</td>
<td>15.6%</td>
<td>133</td>
</tr>
<tr>
<td>Mobile devices/smart phones</td>
<td>15.6%</td>
<td>133</td>
</tr>
<tr>
<td>Mobile devices/smart phones</td>
<td>13.8%</td>
<td>118</td>
</tr>
<tr>
<td>Mobile devices/smart phones</td>
<td>13.8%</td>
<td>118</td>
</tr>
<tr>
<td>Mobile devices/smart phones</td>
<td>11.0%</td>
<td>94</td>
</tr>
<tr>
<td>Mobile devices/smart phones</td>
<td>11.0%</td>
<td>94</td>
</tr>
<tr>
<td>Mobile devices/smart phones</td>
<td>9.9%</td>
<td>87</td>
</tr>
<tr>
<td>Mobile devices/smart phones</td>
<td>9.9%</td>
<td>87</td>
</tr>
<tr>
<td>Mobile devices/smart phones</td>
<td>6.6%</td>
<td>56</td>
</tr>
<tr>
<td>Mobile devices/smart phones</td>
<td>6.6%</td>
<td>56</td>
</tr>
<tr>
<td>Social</td>
<td>5.3%</td>
<td>45</td>
</tr>
<tr>
<td>Other (please specify)</td>
<td>5.3%</td>
<td>45</td>
</tr>
</tbody>
</table>

answered question 854
skipped question 29
20. In the past 12 months, which of the following activities have members of your household participated in within the County? (Check all that apply)

<table>
<thead>
<tr>
<th>Activity</th>
<th>Response Percent</th>
<th>Response Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Farmers markets/Farm Stands</td>
<td>63.6%</td>
<td>562</td>
</tr>
<tr>
<td>Walking/hiking/running on pavement</td>
<td>58.6%</td>
<td>517</td>
</tr>
<tr>
<td>Walking/hiking/running on natural surfaces</td>
<td>57.3%</td>
<td>506</td>
</tr>
<tr>
<td>Biking on paved/unpaved trails</td>
<td>45.3%</td>
<td>400</td>
</tr>
<tr>
<td>Playgroup facilities</td>
<td>37.9%</td>
<td>335</td>
</tr>
<tr>
<td>Watching wildlife</td>
<td>38.9%</td>
<td>328</td>
</tr>
<tr>
<td>Biking on roads</td>
<td>38.1%</td>
<td>319</td>
</tr>
<tr>
<td>Recreational with dogs</td>
<td>38.2%</td>
<td>311</td>
</tr>
<tr>
<td>Picnicking</td>
<td>30.6%</td>
<td>270</td>
</tr>
<tr>
<td>Flag/track sports (soccer, lacrosse, football)</td>
<td>28.8%</td>
<td>254</td>
</tr>
<tr>
<td>Swimming</td>
<td>27.4%</td>
<td>242</td>
</tr>
<tr>
<td>Yoga</td>
<td>26.1%</td>
<td>224</td>
</tr>
<tr>
<td>Photography/drawing/painting</td>
<td>24.8%</td>
<td>219</td>
</tr>
<tr>
<td>Archery</td>
<td>23.5%</td>
<td>209</td>
</tr>
<tr>
<td>Visiting wineries</td>
<td>23.0%</td>
<td>203</td>
</tr>
<tr>
<td>Large group picnicking (10+ people)</td>
<td>18.8%</td>
<td>166</td>
</tr>
<tr>
<td>Shooting/archery</td>
<td>16.5%</td>
<td>137</td>
</tr>
<tr>
<td>Winter activities (ice skating, skiing, snowshoeing)</td>
<td>15.5%</td>
<td>137</td>
</tr>
<tr>
<td>Boating, non-motorized (canoe, kayak, etc.)</td>
<td>14.9%</td>
<td>129</td>
</tr>
<tr>
<td>Camping</td>
<td>13.8%</td>
<td>122</td>
</tr>
<tr>
<td>Hunting</td>
<td>13.8%</td>
<td>122</td>
</tr>
<tr>
<td>Environmental Education programming</td>
<td>9.4%</td>
<td>83</td>
</tr>
<tr>
<td>Horseback riding</td>
<td>6.9%</td>
<td>60</td>
</tr>
<tr>
<td>Community Gardening</td>
<td>4.9%</td>
<td>38</td>
</tr>
<tr>
<td>Rock climbing/bouldering</td>
<td>3.1%</td>
<td>27</td>
</tr>
<tr>
<td>Astrophotography</td>
<td>2.6%</td>
<td>24</td>
</tr>
<tr>
<td>Crosscountry</td>
<td>2.4%</td>
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</tr>
<tr>
<td>Other (please specify)</td>
<td>4.1%</td>
<td>36</td>
</tr>
</tbody>
</table>

Note: Response percent calculated using total number of respondents per question (varies by question).

21. If you would like to be contacted on upcoming meetings, events and other activities, please provide an e-mail for us to contact you:

<table>
<thead>
<tr>
<th>Response Options</th>
<th>Response Count</th>
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</thead>
<tbody>
<tr>
<td>answered question</td>
<td>71</td>
</tr>
<tr>
<td>skipped question</td>
<td>812</td>
</tr>
</tbody>
</table>

Note: Response percent calculated using total number of respondents per question (varies by question).

22. Please share any additional comments:

<table>
<thead>
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<th>Answer Options</th>
<th>Response Count</th>
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<tbody>
<tr>
<td>answered question</td>
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<tr>
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