

NORTH WHITEHALL TOWNSHIP

LEHIGH COUNTY, PA

OPEN SPACE ACTION PLAN

NOVEMBER 2025

G&A
GILMORE & ASSOCIATES, INC.
ENGINEERING & CONSULTING SERVICES

NORTH WHITEHALL TOWNSHIP, LEHIGH COUNTY

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PREPARED BY:

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PREPARED FOR: NORTH WHITEHALL TOWNSHIP, LEHIGH COUNTY, PENNSYLVANIA

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COMMUNITY BACKGROUND

This Open Space Action Plan is a continuation of the previous Open Space Plan for North Whitehall Township. It is designed to identify actionable steps the Township can take to acquire, preserve, and manage open spaces within the Township, building on the goals and recommendations set forth in the Open Space Plan. The Action Plan provides specific actions and strategies to ensure that the Township can address evolving community needs and growth while preserving its natural and recreational resources.

As the Township experiences population growth and plans for future development, planning for open spaces has become increasingly important. This Action Plan sets out a comprehensive framework to meet these challenges, focusing on acquiring new open spaces, enhancing existing recreational areas, providing new recreational opportunities, and preserving natural landscapes within the Township. It outlines both immediate and long-term actions that will ensure North Whitehall Township continues to provide quality open spaces for current and future generations.

The Action Plan proposes a system for acquiring new open space and preserving existing open space. It also establishes a clear set of guidelines for how the Township can partner with community organizations, leverage funding, and incorporate environmentally sustainable practices into the development and management of open space properties. The recommendations and policies of this Plan are to be used only as a guide for potential acquisition and/or future development of Township parks, recreation facilities, open space areas and programs. Any and all future funding of goals, objectives and action items outlined in the Plan must have the prior approval of the North Whitehall Township Board of Supervisors.



Figure 1: Farm near Orefield

INTRODUCTION

As North Whitehall Township plans for the future and faces new development, it is vital that the Township establishes measures for the preservation of open space to safeguard its natural resources, historically or culturally significant sites, and provide areas for recreation. The terms “open space” and “preservation” can have varying definitions depending on the perspective of the general public, developers, and local government. This plan seeks to provide a clear and unified understanding of what constitutes open space and emphasize the importance of its conservation as a key priority for the Township. It outlines strategies to engage the community and raise public awareness, while also reviewing existing Township, County, and regional documents that support open space preservation.



Figure 2: Jordan Creek

WHAT IS OPEN SPACE?

The term “open space” refers to areas of land set aside, dedicated, designated, or reserved for public or private use or enjoyment, or for the use and enjoyment of the land by the landowners, occupants, and their guests, or for the general benefit of the community as preserved lands. Open space is maintained for recreational, educational, or environmental purposes. Open space is a broad term which includes Township, County, and State parks, private recreation spaces, agricultural lands, vacant lands, greenways, trails, natural resource areas, and historic areas. Open space provides critical benefits to communities, including areas for physical activity, social interaction, and environmental preservation. As per the *Lehigh Valley Return on Environment, 2014,* open space creates economic value in the following ways:

“1) revenue generation (sale of goods and services),
2) wealth generation (higher property values and earnings from open-space related activities),
3) increased tax revenues (increased property tax due to higher property values), and

4) avoided costs (dollars that would be spent on environmental services)."[1]

North Whitehall Township contains a variety of open space areas, including agricultural areas, natural resource areas, and areas that provide passive and/or active recreation opportunities. Agricultural areas are a testament to an area's history and culture, and the preservation of working farms maintains the production of food, retains jobs and livelihoods, and can create educational opportunities. North Whitehall Township contains many natural resource areas, including multiple Natural Heritage Areas of Statewide Importance and large swaths of prime agricultural lands. The Pennsylvania Natural Heritage Program's Natural Heritage Areas are designated areas of rare, threatened, and endangered species, and high-quality natural communities. The protection of open spaces with natural resource elements is crucial to the preservation of these ecological systems. Retaining natural resource areas also maintains scenic viewsheds. Natural areas may also offer opportunities for passive recreation, including hunting, fishing, hiking, biking, birding, camping, boating, or simply enjoying nature. The Township parks and other recreation facilities, which contain passive and active recreation areas provide places to play, exercise, relax, and gather.

North Whitehall Township, and many municipalities in the Lehigh Valley, are experiencing an increase in development. New development brings an increased need for functional open space, as the population level rises, and vacant or agricultural land is developed. New development trends, particularly large distribution warehouses, require large swaths of land that might otherwise be used for open space. The Lehigh Valley is vulnerable to large warehouse developments, due to its location within "one of the fastest growing freight corridors in the nation,"[2] its proximity to major roadways, and the amount of undeveloped or vacant land.

Open space areas can preserve the habitats of native species through the preservation of existing natural areas. The naturalization of an existing area can create or improve habitat for native species. These natural areas can be linked and serve as greenways and trails, linking open spaces and communities.

The purpose of this Open Space Action Plan is to guide the preservation, development, and management of open spaces in North Whitehall Township. By focusing on sustainability, accessibility, and community needs, this plan aims to create a network of open spaces that improves the quality of life for all residents. This includes addressing diverse recreational needs, ensuring equitable access to parks, and preserving natural resources.

The purpose of the Open Space Action Plan is to guide the Township in creating a cohesive, sustainable, and inclusive open space network. By addressing community needs, prioritizing environmental sustainability, and ensuring that all residents have access to a diverse range of recreational opportunities, this plan aims to enhance the quality of life for the entire community, fostering a healthier, more connected, and more resilient North Whitehall Township.

PUBLIC PARTICIPATION PROCESS

A key component of this action plan is the public participation process, which ensures that community members have a voice in the planning and acquisition of open spaces. Through committee meetings, key person interviews and a public outreach program which included soliciting input at a local community event and a public survey, opinions were gathered from residents about their needs and preferences regarding open space.

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[1] Lehigh Valley Planning Commission, "Lehigh Valley Return on Environment," 2014, page 1.
[2] Lehigh Valley Planning Commission, "Community Guide High Cube and Automated Warehousing," 2021. https://drive.usercontent.google.com/download?id=1n7hJvfRTkKR-96vobXDRl9JW4C4FkvrS&authuser=0&acrobatPromotionSource=GoogleDriveNativeView



Figure 3: Farm on Rising Sun Road

FARMLAND PRESERVATION AND OPEN SPACE COMMITTEE MEETINGS

The Farmland Preservation and Open Space Committee was the guiding force for developing this action plan. The Farmland Preservation and Open Space Committee meets quarterly, and all meetings are open to the public. The consultant team met with the committee four times during the process. Committee members are as follows:

Name	Title
Al Geosits	Supervisor
Bob Korp	Member
Dennis Klusaritz	Supervisor
Heather Skorinko	Member
Mark Yatcilla	Member
Marlene Stofflet	Member
Mike Kukitz	Director of Grants, Preservation, and Trails
Paul Semmel	Member
Randy Cope	Township Manager
RJ Heintzelman	Supervisor
Susan Williams	Member

KEY PERSON INTERVIEWS (KPIS)

Key person interviews (KPIs) were held on January 16, 2025. Participants were chosen by the Township to represent a cross-section of residents, Township staff, community leaders, and preservation professionals representing County and non-profit organizations. The interviews were organized around key questions designed to identify the issues concerning open space needs in the Township. Nine interviews were conducted.

Persons interviewed included:

Name	Title, Affiliation
Joel Newhard	Local Farmer
Kevin Remaly	Local Farmer
Chris Kocher/Dawn Gorham	Wildlands Conservancy
Jeff Johnson	Large Landowner and PC Member
Bob Stiffler	Lehigh County Parks
Dave Jaindl	Large Landowner/Industrial Farmer
Tim Chorones	Assistant Superintendent, Parkland School District
Donna Wright	County Farmland Program
Tim Geiger	Local Farmer

Issues noted during the interviews include the following:

- Strong support for farmland preservation and land preservation.
- Increasing development pressures make finding viable farmland difficult, faming is not an “easy” way of life, and the younger generations often sell land for profit rather than continue farming it.
- Development impacts farming, particularly increasing traffic, and number of nuisance complaints against farmers.
- Strong support for farmland preservation, however funding is limited compared to the financial incentives from developers.
- Support for natural areas to be preserved in conjunction with agricultural land.
- Emphasis on Lehigh County’s role in preserving farmland.
- Farming is an important cultural heritage in the Township, which is threatened by development pressures and increasing costs to farm the land.
- Concern with Township funding – spending funds on properties which can’t be developed due to environmental constraints, should taxpayer’s dollars be put toward open space acquisition (is that the priority?).

COMMUNITY EVENT

On December 3, 2024, the G&A team staffed a table at the Township’s Christmas Tree Lighting Ceremony to gather input from residents.

The G&A team facilitated an interactive voting process, asking residents to prioritize the Township's open space preservation goals: natural resource protection, farmland preservation, passive recreation opportunities, or active recreation opportunities. The table had four (4) bowls, labelled “Natural Resource Protection,” “Farmland Preservation,” “Active Recreation,” and “Passive Recreation.” Participants were provided with one (1) pinecone, which they placed in the bowl that best represented what they thought North Whitehall Township’s top priority

should be while planning for open space. This approach was open to all attendees, and a total of 135 Township residents, both adults and children, participated in the voting. See Appendix A: Community Event Booth Display Question.



Figure 4: Special event booth

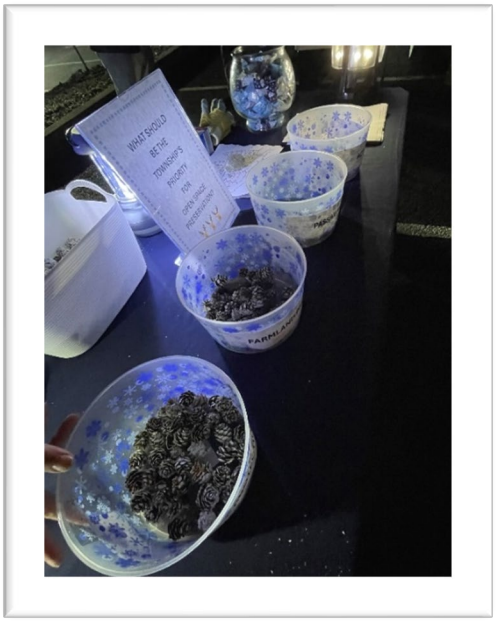
The results of the public vote on the Township's open space preservation priorities reveal clear community preferences:

- **Farmland Preservation (45 votes)** emerged as the top priority, with 33% of participants selecting it. This indicates a strong community interest in maintaining agricultural land and, based on comments heard from the residents, highlights concern about the loss of farmland to development.
- **Natural Resource Protection (43 votes)** emerged as the second priority, with 32% of the vote. This suggests that residents highly value environmental conservation.
- **Active Recreation (37 votes)** garnered 27% of the vote. This reflects a moderate desire for spaces dedicated to physical activities, such as sports fields or fitness areas, indicating that many residents also prioritize areas for active use.
- **Passive Recreation (10 votes)** received the fewest votes, with only 7% of the total. This suggests that while some residents enjoy quiet, low-impact spaces like walking trails or parks for relaxation, it is not seen as a major priority compared to other uses like active recreation or natural resource protection.

Overall, the data shows a clear preference (of those who participated in the activity) for preserving farmland and protecting natural resources, followed by support for recreation spaces.



Figure 5: Public voting



PUBLIC SURVEY

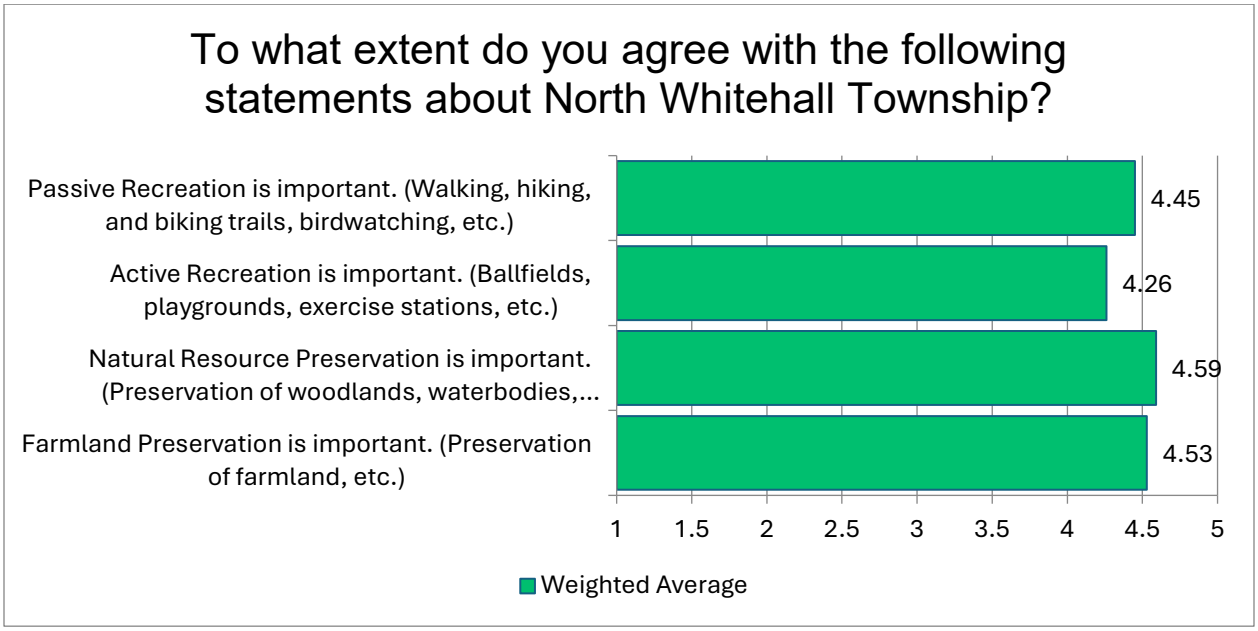
The North Whitehall Township Open Space Action Plan Survey was available from April 1, 2025, to May 3, 2025, and a total of 1075 respondents completed the questionnaire. This response rate is approximately 7% of the total Township population and 9% of the Township population over age 18. Based on the Township's population size, a 95% confidence level and a 5% margin of error, the sample size needed for a statistically significant survey is 376. With over 1,000 responses the results of this survey can be categorized as statistically significant, meaning it is an adequate representation of the community. See Appendix C: Questionnaire Responses for a breakdown of each question.

The majority of the respondents were North Whitehall Township residents. The survey asked respondents the extent to which they agree with the following statements:

- Farmland Preservation is important.
- Natural Resource Preservation is important. (Protection of woodlands, waterbodies, riparian corridors, steep slopes, etc.)
- Active Recreation is important. (Ballfields, playgrounds, exercise stations, etc.)
- Passive Recreation is important. (Walking, hiking, and biking trails, birdwatching, etc.)

Respondents ranked their answers on a Likert scale from 1-5, with 1 being a "Strongly disagree," 2 being a "Disagree," 3 being "Neutral," 4 being "Agree," and 5 being "Strongly agree." The intent of this question was to gather information on the degree of importance respondents place on various types of open space. The weighted average of the Likert scale measures the intensity of opinions on the importance of preservation of farmland, natural resources, and active and passive recreation in North Whitehall Township. A low weighted average, closer to 1, would indicate that the majority of respondents disagreed with the statements provided. A weighted average of around 3 would indicate that respondents felt neutral. A high weighted average (5) would indicate that respondents strongly agree, and found farmland and natural resource preservation, and active and passive recreation to be important.

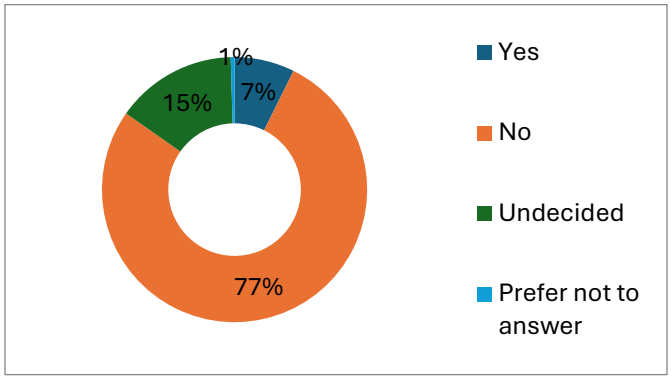
"Natural Resources Preservation is important" had the highest weighted average of 4.59, indicating that respondents felt the most strongly about the preservation of natural resources. Natural Resource Preservation was followed closely by "Farmland Preservation" (4.53), "Passive Recreation" (4.45), and "Active Recreation" (4.26). Overall, there was strong support for all the open space categories, indicating that generally, open space is considered important to respondents.



The survey asked respondents whether they consider the existing preserved 653 acres of land, approximately 12% of land categorized as agricultural and/or vacant within the Township, as enough area to be preserved.

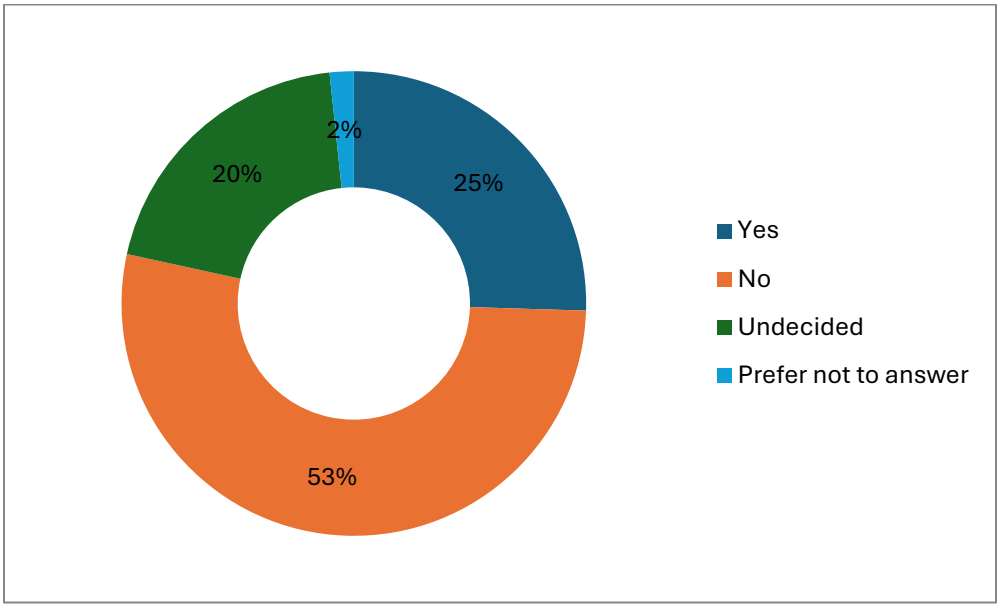
The survey asked respondents whether they consider the existing amount of land preserved as adequate. The majority of respondents, approximately 77%, indicated that they do not feel that enough land within the Township has been preserved. A minority of respondents indicated that they were either undecided (15%) about the existing amount of land preserved or that there was enough land preserved (7%). Less than 1% of respondents indicated that they preferred not to answer. This indicates that the majority feel there is an inadequate amount of land preserved within the Township.

The Township, in conjunction with partnering agencies, has preserved approximately 653 acres of land (eleven properties) in North Whitehall to date. This is roughly 12% of land categorized as agricultural and/or vacant within the Township. Do you feel enough land within the Township has been preserved already?



The survey asked respondents about the existing financing mechanisms for the Township, and whether the projected estimates of preserving one property per year is sufficient. The majority of respondents (53%) indicated that that they did not believe preserving one property per year is sufficient. Approximately 25% of respondents indicated that preserving one property per year is sufficient, 20% indicated they were undecided, and 2% indicated they preferred not to answer.

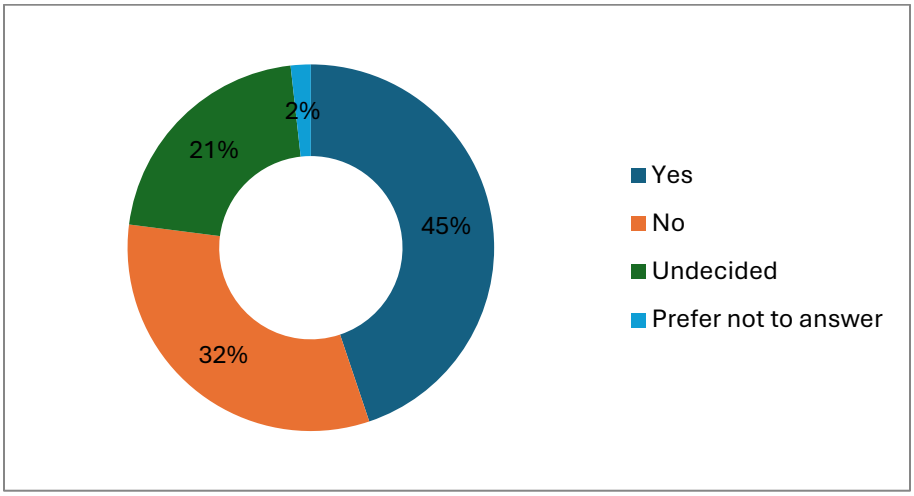
In 2019, the voters of the Township approved an assessment of 0.1 mill of property tax to be used for Farmland and Open Space Preservation. This assessment was estimated to generate about $140,000 dollars annually. Utilizing this funding, the Township has acquired easements on approximately 213 acres (four properties) since 2020. There are currently twelve additional property owners that have expressed interest in preserving their land. Continuing with this funding source, the Township can potentially preserve one property per year. However, there is no guarantee that these properties will be available for preservation indefinitely, i.e., development pressure, loss of interest, change in ownership, etc. Do you feel preserving one property per year is sufficient?



The survey asked respondents whether they would support an increase to the earned income tax to fund the preservation of open space at a faster rate in North Whitehall Township.

Approximately 45% of respondents indicated they would support an increase in the earned income tax, 32% of respondents indicated they would not support an increase in the earned income tax. Approximately 21% of respondents indicated they are undecided, and about 2% preferred not to answer. Due to the number of undecided votes, it can be inferred that additional information needs to be provided in order for residents to confidently answer this particular question.

Knowing that the Township has a backlog of property owners seeking to preserve their land without sufficient funding available to preserve them in a timely manner, would you support an increase to the earned income tax to fund the preservation of open space at a greater rate in North Whitehall Township?



TOWNSHIP CHARACTERISTICS

North Whitehall Township is located in the northern part of Lehigh County, Pennsylvania, within the Allentown-Bethlehem-Easton metropolitan area and the greater Lehigh Valley region. The Township is bounded on the north and northeast by the Lehigh River, which separates it from Northampton County. Across the Lehigh River in Northampton County, North Whitehall Township is bordered by Lehigh Township to the northeast and Allen Township to the east. Within Lehigh County, North Whitehall Township is bordered by Washington Township to the north, Heidelberg Township to the northwest, Lowhill Township to the west, Upper Macungie Township to the southwest, South Whitehall Township to the south, and Whitehall Township to the east.



Figure 6: Schlicher's Covered Bridge

Typical of many early settlements, the Township was first established as an agricultural community. The Lehigh Valley was characterized by easily cultivated and irrigated land comprised primarily of silt loams underlain by limestone.

The Township is accessible by major roads, including Route 145, which runs north-south through the Township, and Route 309, which provides access to Allentown, and areas further south. The Pennsylvania Turnpike and Interstate 78 are nearby, offering access to other regions.

DEMOGRAPHIC OVERVIEW

Since the 2000 Census, North Whitehall Township has seen consistent population increase, which will continue based on the forecasts from the Lehigh Valley Planning Commission. This Action Plan will provide direction to ensure that the Township will be able to accommodate this future growth and provide the required open space facilities to meet the needs of its residents.

In 2023, the population of North Whitehall Township was estimated at 15,702 individuals, which is an increase of 0.6% from 2010 (15,602 persons).[3] North Whitehall's population increase is generally consistent with the population growth in the adjacent municipalities. The Lehigh Valley Planning Commission (LVPC) prepared population forecasts for the municipalities in the Lehigh Valley Region (Lehigh and Northampton Counties) based on 10-year increments from 2020-2040. Over these two decades, Lehigh County is projected to grow by 181,794 people, a 41.8% increase. By the year 2040, North Whitehall Township's population is projected to reach 23,973, which is a 52.7% increase from the 2023 American Community Survey 5-Year Estimates. This growth rate is generally on trend with the growth that is forecasted for the region.

[3] American Community Survey 5-Year Estimates.
https://www.census.gov/quickfacts/fact/table/PA,lehighcountypennsylvania,northwhitehalltownshiplehighcountypennsylvania/TAW120217#TAW120217

Household data provides an important glimpse into who resides within a community. In 2023, North Whitehall Township was estimated to have a total of 5,992 households, which is a 3.2% increase compared to 2010 households (5,805). Lehigh County saw an 8.0% increase in the total number of households between 2010 (132,879) and 2023 (143,445). North Whitehall is experiencing a growth in households at a rate slower than Lehigh County.



Figure 7: Farm along Rising Sun Road

Generally, North Whitehall Township has an aging population. In 2023, the median age in North Whitehall Township was 44.3 years. According to the North Whitehall Township Comprehensive Plan, the Township is experiencing the following population trends:

- Increase in the population cohorts of people aged 50 to 64 years and 65 years and older.
- Decrease in the population of school aged persons, including the population cohorts of people aged Under 5 years and 5-19 years.

SOCIO-ECONOMIC FACTORS

The Township is well-educated, with 96.4% of the population 25 years or older attaining a level of high school graduate or higher, and 39.4% of the population 25 years or older holding a bachelor's degree or higher. These percentages are higher than Lehigh County percentages.

In 2023, the median household income was estimated to be $113,190 which is higher than the Lehigh County and Pennsylvania state average. The percentage of owner-occupied housing within the Township is 91.1%, and the median home value is $326,000.

LAND USE

Residential is the predominant use of land within North Whitehall Township, comprising almost 50% of land within the Township. Agriculture/vacant is the second largest use of land within the Township amounting to 30% of the total land area. Commercial and office uses account for less than 2% of the total land area within North Whitehall Township. Industrial land uses make up about 6% of the land area in North Whitehall Township. Public and quasi-public land uses, including Township owned properties, schools, churches, and recreational uses account for approximately 4% of land area within North Whitehall Township. Parks and other outdoor recreational facilities amount to approximately 8% of land area within North Whitehall Township. Transportation and utility purposes amount to approximately 1% of land area in North Whitehall Township. See Appendix D: Land Use Map and Appendix E: Zoning Map.

Land Uses	Acreage	Percentage
Residential	8,568	48.96%
Agriculture/ Vacant	5,397	30.84%
Parks and Other Outdoor Recreational Facilities	1,377	7.87%
Industrial	1,039	5.94%
Commercial and Office	251	1.44%
Transportation/ Utility	216	1.24%
Source: *North Whitehall Comprehensive Plan, 2023, DVRPC*		

DEVELOPMENT TRENDS: MEGA-WAREHOUSES

The rise of e-commerce has significantly impacted warehouse development, with a growing demand for facilities capable of handling rapid order fulfillment and ensuring quick shopping times. In response, mega-warehouses have emerged as large-scale facilities designed to efficiently store, manage, and distribute goods. The strategic location of the Lehigh Valley, with proximity to key transportation routes such as Interstate 78, and the PA Turnpike, Route 22, Route 309, and Route 145 further enhances its appeal as a logistics and distribution hub. The accessibility to these regional highways makes the area an attractive choice for businesses looking to streamline transportation and delivery operations.



Figure 8: Independence Drive

NATURAL FEATURES

GEOLOGY AND TOPOGRAPHY

North Whitehall Township is situated in the Great Valley physiographic section of the Piedmont Province. This area is primarily characterized by expansive valleys with low to moderate relief, ranging from an approximate minimum elevation of 140 feet to a maximum of 1,100 feet. The underlying rock type of the Great Valley section is shale, sandstone and slate in the northwest half, and limestone and dolomite in the southeast half. Slopes are generally protected by the Township Zoning Ordinance by excluding these areas from the lot area. See Appendix F: Physiographic Providences of Pennsylvania and Appendix G: Geological Map of Pennsylvania.

SOILS

The Natural Resources Conservation Service (NRCS) classifies Prime Agricultural Soils [Classes I-II] as soils that are deep, not prone to erosion, nearly level, well-drained, and generally devoid of stones and rocks. These productive agricultural soils are resources that are not considered renewable once developed. North Whitehall Township contains large tracts of Prime Agricultural Soils.

HYDROLOGIC FEATURES

North Whitehall Township is located within the Jordan Creek Watershed and the Coplay Creek Watershed. Floodplain areas are associated with the Jordan Creek in the western half of the Township, the Coplay Creek in the central area of the Township, a tributary of Mill Creek in the northwest area of the Township, and the Lehigh River and a few of its tributaries to the east of the Township.



Figure 9: Jordan Creek

The Pennsylvania Floodplain Management Act (Act 166 of 1978) requires that municipalities adopt regulations with National Flood Insurance Program (NFIP) standards as a minimum and encourages planning and development in floodplains that is consistent with sound land use practices. Municipalities are required to adopt zoning regulations to control development in floodplains to participate in the NFIP. The North Whitehall Township Zoning Ordinance has provisions for areas subject to flooding. See Appendix H: Natural Features Map.

VEGETATION

The majority of woodlands are found adjacent to waterways and floodplain areas and in recreation areas. The Zoning Ordinance has provisions for the preservation of trees and woodlands. See Appendix H: Natural Features Map.

EXISTING OPEN SPACE INVENTORY

Open space resources are considered permanently protected through deed restrictions, or when the development rights of those resources have been retired, such as through agricultural and/or conservation easements. For this plan, publicly owned open spaces are considered permanently protected open space resources, while privately-owned open spaces are considered either permanently or temporarily protected, based on the restrictions in place.

The Township has implemented a farmland and open space preservation program, supported by a 0.1 mill property tax increase approved by voters in May 2019. The funds from this tax are placed in a dedicated account, exclusively for farmland and open space preservation, and cannot be used for other Township purposes. The money is then allocated by the Board of Supervisors to purchase Farmland Preservation Easements, Conservation Easements, or land for Open Space. For the first year, 2020, the dedicated millage yielded $140,000.[4] The projected yearly revenue generation is $160,000. The Farmland Preservation Committee has established a website that provides resources for preservation of farmland and land for conservation.

EXISTING OPEN SPACE INVENTORY

North Whitehall Township currently has a variety of open space parcels, including agricultural lands, parks, and nature preserves. These areas play a key role in maintaining the township's rural character while providing spaces for outdoor activities, environmental conservation, and agricultural production. The agricultural lands help preserve the area's farming heritage and provide space for food production. The parks offer both active and passive recreational opportunities for residents, including playgrounds, sports fields, walking trails, and picnic areas. Nature preserves and natural areas, including wetlands and stream corridors, are crucial for protecting local wildlife habitats and maintaining ecological balance. Together, these open spaces contribute to the overall quality of life in North Whitehall, offering both recreational benefits and environmental protection. See Appendix I: Preservation Map.



Figure 10: Agricultural field

[4] Finance/Taxes, North Whitehall Township. https://northwhitehall.org/fin_about.html

AGRICULTURAL:

North Whitehall is recognized for its rural character. A generous portion of the Township is designated Agricultural Security Areas (ASAs). An ASA is a tool for protecting farms and farmland from non-agricultural uses. There are 126 parcels within North Whitehall Township which are designated as Agricultural Security Areas, amounting to a total acreage of 2792.07.

Within North Whitehall Township there are currently eleven agricultural properties which are permanently preserved, through Agricultural Conservation Easements, including the following:

Preserved Farms	
Tract	Acreage
Mantz	190.55 acres
Peischler	46.9 acres
Semmel	142.25 acres
Schmidt	50.2 acres
Gardner	17.17 acres
Hoffman	84.14 acres
Marushak	49.47 acres
Anthony/Santarelli	0.97 acres
Jaindl Lot 10	2.95 acres
Wagner	61.37 acres
Muth	77.49 acres
TOTAL	**723.46 ACRES**

NATURAL RESOURCES:

The Natural Heritage Inventory of Lehigh and Northampton Counties – Update 2013 (CNHI) identifies that North Whitehall Township is home to four (4) Natural Heritage Areas, all of which are designated as areas of Statewide Importance. The Pennsylvania Natural Heritage Program (PNHP) is a partnership between Western Pennsylvania Conservancy (WPC), the Pennsylvania Department of Conservation and Natural resources (DCNR), the Pennsylvania Game Commission (PGC), and the Pennsylvania Fish and Boat Commission (PFBC). The PNHP is responsible for collecting, tracking, and interpreting information regarding the Commonwealth's biological diversity, particularly the location and ecological information about rare plants, rare animals, unique plant communities, significant habitats, and geological features. See Appendix J: Natural Heritage Areas.

Natural Features	
Trexler Hollow	Steep, crumbly, exposed shale cliffs, slopes, and road cuts along the Jordan Creek in this area support scattered populations of two plant species of concern. These species are threatened by road construction, deer browsing and invasive vegetation.
Rockdale Cliffs	The site consists of sparsely vegetated vertical cliffs of the Martinsburg formation. Groundwater seepage and a northern exposure help keep the cliffs moist for part of the growing season and the resultant microclimate provides habitat suitable for a plant species of concern. It is excellent habitat for a variety of nesting and migrating birds as well as for reptile and amphibian species. This habitat is threatened by agricultural operations that provide little protection from storm water run-off that can uproot under-story vegetation.
Clearview Road Riverbank	The banks of the Lehigh River at this location are squeezed tightly between the river on one side, and a road and the former railroad bed. The narrow riparian zone has a few small floodplains scour areas where cobble and sand collect among the exposed bedrock of the riverbed. Flooding, deer browse, and invasive vegetation are threats to this habitat.
Laurys Station Floodplain	The narrow-forested floodplain of this section of the Lehigh River provides suitable nesting habitat for Ospreys, a bird species of concern. The adjacent river and its tributaries provide the Ospreys with fishing opportunities. Storm water and agricultural run-off can carry pesticide residue which has been linked to the decline of the osprey.
Source: Natural Heritage Inventory of Lehigh and Northampton Counties – Update 2013 (CNHI)	

The Township owns the following open space parcels, which are not currently accessible to the public (per the North Whitehall Comprehensive Parks, Recreation and Open Space Plan, 2022):

Township Open Space	Acres
Timberidge Open Space	1.72
Lehigh River Open Space	0.9
Grist Mill Open Space	13.4
Total	**16.02**



Figure 11: Agricultural field near Rising Sun Road

RECREATION:

North Whitehall Township owns and is responsible for managing several parks that offer a diverse range of recreational opportunities, including both active facilities, such as sports fields and play areas, and passive facilities, like walking trails and relaxation spaces.

Existing Municipal Park and Recreation Spaces			
Site	**Acreage**	**Address**	**Facilities**
Laurys Firehouse Park	31.9 Acres	5328 Egypt Road, Laurys Station	Baseball, baseball/softball Lacrosse/ Soccer Basketball Playground Areas Playground Pavilion Paved pathway Portable restrooms Open space Tables Benches Contract cleaning
Kolapechka	22.6 acres	Kolapechka Park – 4075 Coffeetown Road, Coplay	Baseball, baseball/softball Playground Area Paved pathway Dog park areas Pavilion Portable restrooms Stream and wetland Barn
Levans Park	10.2 acres	Levans Park – 3421 Levans Road, Coplay	Soccer Paved pathway Barn Wetland area Benches
Independence Park	8.77 acres 3.6 acres annex	3.6 acres annex, 4400 Independence Drive, Schnecksville	Paved walking trail Pavilions Horseshoe pits Portable restrooms Undeveloped acres
Township Recreation Park	18.0 acres	3256 Levans Road, Coplay	Baseball Fiels Baseball/softball Field Playground
Johnson's Pond Wildlife Park	20.2 acres	4375 Coplay Creek Road, Schnecksville	Pond Stone Path Interpretive sign Bench
Neffs Valley Park	15.0 Acres	3545 Neffs Laurys Road, Schnecksville	Baseball/softball Basketball court Playground Area Coplay Creek Corridor Disc golf course
Ironton Rail Trail	8.5 acres	Multi-municipal	Multiuse paved trail
Total	138.77 acres		



Figure 12: Laurys Firehouse Park

The County's ownership of properties within the Township also assists in preserving open space and providing public recreational areas. The County ensures that these areas remain protected from development and accessible for community use. A portion of the Delaware and Lehigh National Heritage Corridor runs adjacent to the Lehigh River within North Whitehall Township, providing boat launch areas and a multiuse trail. The Trexler Nature Preserve is within North Whitehall Township, and provides trails, a zoo, fishing, mountain biking, and picnicking. These properties offer opportunities for outdoor activities and environmental education, benefiting both current and future generations.

Lehigh County Parks	Acres*	Facilities
Delaware and Lehigh Trail Corridor	77	Multiuse trail Boat launch
Trexler Nature Preserve and Zoo	1033	Trails Paved paths Zoo Fishing Mountain biking Picnicking
TOTAL	1,110 acres	

*Approximate acreage located within North Whitehall Township

Quasi-public recreation refers to facilities that receive public funding and are accessible to the public during designated hours. These facilities may charge fees for use. In North Whitehall Township, quasi-public agencies include schools and fire companies. North Whitehall Township is part of the Parkland School District along with South Whitehall and Upper Macungie Townships. The Parkland School District consists of twelve schools, including

one high school, two middle schools, and nine elementary schools. Ironton Elementary, Kernsville Elementary, and Schnecksville Elementary are located within North Whitehall Township.

Quasi-Public Recreation Facilities	Acres	Recreation Facilities
Lehigh Carbon Community College	61.9	Baseball Softball Soccer Tennis Courts
Ironton Elementary	9.7	Basketball Walking Path Playground Area Multi-Use Fields
Kernsville Elementary	19.8	Basketball Courts Playground Ares
Schnecksville Elementary	17.3	Sports fields Playground Area
Old post fields	20	T ball Flag football Soccer field
Schnecksville Fire Company Field	7	Baseball
Keystone State Quarter Midget	4	Quarter midget race car dirt track
Laurys Firehouse Athletic Association	4.5	T-ball, softball
Tri-Clover Fire Company Fields	10.2	Baseball, softball
Ormrod Playground	32	Baseball Softball Playground area Basketball court
North Whitehall Ambulance Corps	1.9	Social Hall Event venue
Total	186.4 acres	



Figure 13: Landscape near Trexler Nature Preserve and Zoo

Private facilities may be owned/managed by for-profit or non-profit agencies and may charge a fee for the use of their facilities. Privately owned recreation facilities contribute to the community's quality of life and provide

opportunities for active and passive recreation. Although the Township is not responsible for operating or maintaining these facilities, it should keep an open line of communication with facility owners to stay informed about usage trends and future plans.

Private Recreation Facilities	Acres	Recreation Facilities
Grouse Hall Fish and Game Association	29.7	Lake Stocked Trout and Warm Water Fishes Target Shooting Food Social Hall Events
Copeechan Fish and Game Club	32.5	Lake Stocked Trout and Warm Water Fishes Food Social Hall Picnic Grove Outdoor Event Venue
Ranger Rod and Gun Club	71.1	Large Lake Boating Target Shooting Archery Food Merchandise Social Hall Events
Iron Lakes Country Club	126.4	18-Hole Championship Golf Course Event Center Social Hall Food Winter Dome
Iron Lakes Practice Center	4.5	Driving Range Merchandise
Spring Hill Mini Golf	1.9	Miniature Golf Course Concessions
Lehigh Valley Sporting Clays	134.0	Outdoor Target Shooting Courses Abandoned Quarry Merchandise Rentals Ammunition
Orchard View Swim Club	13.5	Swim Club Outdoor Swimming Pool Lessons Bathhouse Basketball Court
Valley Youth House	37.2	Camp Experiences Trails Outdoor Pool Soccer

		Softball Basketball
Kids Peace Campus and Recreation Area	249.8	Football Field Clubhouse Baseball Sand Volleyball Track Basketball Soccer Playground Administrative Offices
Church Spring Park	10.7	Playground Shed Picnicking
Sand Spring Park	7.7	Open Space within a Residential Development Tennis Courts Basketball Courts
Schnecksville North Open Space	3.6	Open Space within a Residential Development No facilities
Union Church Open Space	13.9	Former Picnic Grove, currently un-used
Fitness Central	1.6	Fitness Store Cycling Equipment Weekly Organized Cycling Events
Mantz Conservation Easement	182.2	Privately held land with Conservation Easement first large land area in North Whitehall Township dedicated to Conservation
Total	738.1 acres	

REGIONAL OPEN SPACE PROGRAMS

The principal function of this Plan is to present the Township with options for developing a sustainable financing mechanism(s) to fund the North Whitehall Open Space Preservation Program. The financing mechanism(s) would support the preservation of open space through the purchase of land, or through easements with the purchasing of development rights, as well as ensuring the maintenance and operation of any preserved open space areas.

Currently, the main financing mechanism for the open space preservation program is the 0.10 mills (0.0001) property tax increase approved by voters in May 2019, which generates approximately $140,000 annually.[5] This tax, titled the "Farmland and Open Space Tax Levy", is used to preserve farmland and open spaces from development. The intent is to have the funds "compensate landowners for the cost of not selling the property to developers. In turn, the landowners agree to a conservation easement which permanently encumbers the property from development."[6] The revenues and expenditures from the Farmland and Open Space Tax Levy are isolated in a dedicated fund. Additional funds for the preservation of open space may come from County, State, and/or Federal funds. North Whitehall also has partnered with Wildlands Conservancy on some conservation easements within the Township.

Consideration should be given to municipalities within the region, and their methods of funding open space preservation. This analysis focuses on municipalities within the region, including Lehigh County, Northampton County, and Bucks County. By studying the financing mechanisms employed by municipalities within the region, the Township can gain insights into best practices, potential challenges, and new opportunities for funding. Understanding how municipalities within the region implement open space funding sources can offer valuable insights for North Whitehall Township, particularly if the Township is seeking to diversify its open space financing mechanisms and establish a more sustainable open space program.

REFERENDUM-APPROVED FINANCIAL MECHANISM FOR OPEN SPACE PROGRAMS

An open space tax or bond referendum is an effective tool for raising funds specifically for conservation efforts. In Pennsylvania, local governments can use voter approved funds to protect open spaces with agricultural, recreational, natural, scenic, historic, or cultural value.

According to WeConservePA *Local Municipal Open Space Referendums in Pennsylvania,* 96 Pennsylvania municipalities have passed open space tax and bond referendums through the general election of 2023.[7] The majority of these municipalities are located within the Delaware River watershed in eastern Pennsylvania. Measures to increase and dedicate earned income taxes (EIT) to open space preservation are the most common funding mechanism approved.

Voter approval via a referendum is only legally required if the proposed conservation financing would put a local government over its statutory debt or tax limits. However, a referendum may still be desirable even if a local government is below its debt and tax limits because the referendum serves to *dedicate* the tax or bond revenue to the specific conservation purpose described in the referendum. Also, a referendum may be useful if the

[5] Finance/Taxes, North Whitehall Township. https://northwhitehall.org/fin_about.html
[6] Finance/Taxes, North Whitehall Township. https://northwhitehall.org/fin_about.html
[7] *Local Municipal Open Space Referendums in Pennsylvania: 2023 Status Report,* WeConservePA. https://weconservepa.org/blog/local-municipal-open-space-referendums-in-pennsylvania-2023-status-report-available-at-weconservepa-library/

government seeks to incur additional debt or raise taxes in the future for purposes that are subject to the statutory debt and tax limits.[8]

LandVote, developed by Trust for Public Land, tracks open space preservation referendums across the country at the state, county, and local level. Additional information on the status of these referendums can be found through WeConservePA, municipal websites, municipal codes, and local news outlets.

A municipal open space referendum may present voters with one or more of the following mechanisms to fund open space acquisition and stewardship:

- A dedicated earned income tax (EIT)
- A dedicated property tax, or
- Borrowing through bonds or other municipal loans to finance specific preservation projects.

Voters can be presented with more than one funding mechanism to approve or disapprove, for example, a dedicated earned income tax (EIT) to fund conservation in the long-term and borrowing to fund an important acquisition immediately. Separate votes on separate mechanisms may occur in the same election or years apart. There are no municipalities within Lehigh County or Northampton County that have joint funding mechanisms of voter-authorized bonds and voter-authorized taxes. Within Bucks County, Springfield Township, Richland Township, Milford Township, Bedminster Township, and Wrightstown Township have all passed joint funding mechanism referendums of voter-authorized bonds and voter-authorized taxes.

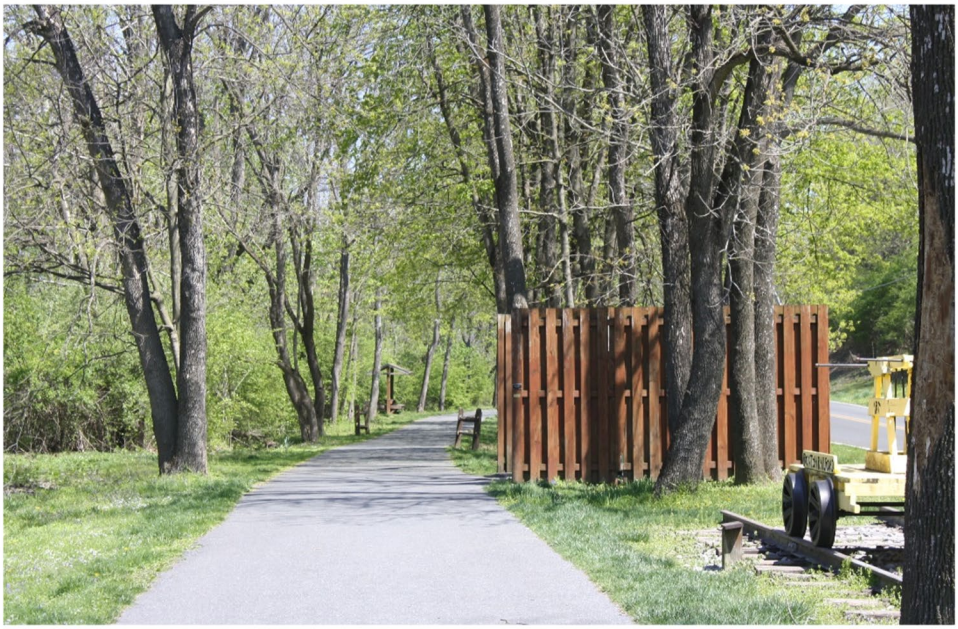


Figure 14: Ironton Rail Trail

If a referendum for open space funding fails to pass, there is the possibility for a future open space referendum to pass. There have been multiple instances where a municipality's referendum initially failed to gain voter approval, but then after some period of time, a new referendum receives voter approval. In Lehigh County, Upper Saucon Township failed to pass a 0.25% EIT increase for open space and recreational lands in 2008; then, in 2021, Upper Saucon Township passed a 0.10% increase. In Northampton County, Plainfield Township failed to pass a 0.25% increase in EIT proposal to purchase land, easements, and property rights in 2006; however, the referendum

[8] "Referendum to Authorize a Tax or Bond for Conservation," WeConservePA Library. https://library.weconservepa.org/guides/16-referendum-to-authorize-a-tax-or-bond-for-conservation

passed in 2007. This has occurred four times in Bucks County, for Hilltown Township, Newtown Township, Plumstead Township, and Springfield Township.

Earned Income Tax as a Financial Mechanism

A common and viable option for North Whitehall Township to pursue is an increase to the Earned Income Tax (EIT) to be used towards the purchase and maintenance of open space properties. This option has been used within the Lehigh Valley and throughout Pennsylvania. To pursue this option, the Township would need to submit a ballot referendum for public vote, following the provisions of Act 442 of 1967 "Preserving Land for Open Air Spaces" and the "Pennsylvania Election Code" in respect to submitting questions to the public ballot.

Table 1 below provides information regarding the municipalities in proximity to North Whitehall Township, within Lehigh County, Northampton County, and Bucks County, which have a voter referendum approved earned income tax financing mechanism dedicated to open space preservation. Table 1 below provides the county, municipality, EIT rate for open space preservation, as well as the date of the referendum approval. Richland Township has had multiple referendums to continue the EIT rate. East Rockhill and West Rockhill have passed referendums to establish an EIT rate and then to later increase the EIT rate. Lower Saucon Township had multiple referendums to continue their EIT, before it expired in 2021; however, the revenue accrued from previous years remains accessible in the municipal open space fund.[9]

[9] Township of Lower Saucon, Municipal Code, Chapter 150 Taxation. https://ecode360.com/6775348#6775349

MUNICIPALITIES WITH EARNED INCOME TAX AS FINANCING MECHANISM FOR OPEN SPACE PRESERVATION IN PROXIMITY TO NORTH WHITEHALL TOWNSHIP

Table 1: Municipalities with Earned Income Tax as Financing Mechanism for Open Space Preservation in Proximity to North Whitehall Township

County	Municipal Name	EIT Rate for Open Space	Year Approved
Lehigh	Lower Macungie Township	**0.15%**[10]	2021
Lehigh	Upper Milford Township	**0.138%**[11]	2016
Lehigh	Upper Saucon Township	**0.10%**[12]	2021
Northampton	Bushkill Township	**0.25%**[13]	2005
Northampton	East Allen Township	**0.25%**[14]	2022
Northampton	Lower Mt Bethel Township	**0.25%**[15]	2006
Northampton	Lower Nazareth Township	**0.25%**[16]	2019
Northampton	Lower Saucon Township*	**0.25%**[17]	2006, 2011, 2016
Northampton	Moore Township	**0.25%**[18]	2005
Northampton	Plainfield Township	**0.25%**[19]	2007
Northampton	Upper Mt Bethel Township	**0.25%**[20]	2007
Northampton	Upper Nazareth Township	**0.25%**[21]	2019
Bucks[22]	Bedminster Township	**0.25%**	2005
Bucks	East Rockhill Township	**0.125%**	1999
Bucks	East Rockhill Township	**0.25%**	2006
Bucks	Hilltown Township	**0.25%**	2000
Bucks	Milford Township	**0.25%**	2007
Bucks	New Britain Township	**0.125%**	2000
Bucks	Newtown Township	**0.10%**	2008
Bucks	Nockamixon Township	**0.25%**	2004
Bucks	Richland Township	**0.10%**	2002, 2016, 2023
Bucks	Springfield Township	**0.25%**	2000
Bucks	Tinicum Township	**0.25%**	2002
Bucks	West Rockhill Township	**0.125%**	2000
Bucks	West Rockhill Township	**0.25%**	2004
Bucks	Wrightstown Township	**0.25%**	2002
***Expired in 2021; however, the revenue** accrued **from previous years remains in the municipal open space fund.**[23]			

[10] *Earned Income Tax,* Lower Macungie Township. https://www.lowermac.com/161/Earned-Income-Tax
[11] Township of Upper Milford, Municipal Code, *§35.008 Imposition of Additional Earned Income Tax.* https://codelibrary.amlegal.com/codes/uppermilford/latest/uppermilfordtwp_pa/0-0-0-7550
[12] PUBLIC NOTICE OF SPECIAL MEETING UPPER SAUCON TOWNSHIP, Upper Saucon Township, July 21, 2021. https://www.uppersaucon.org/2021/07/21/public-notice-of-special-meeting-upper-saucon-township/
[13] Bushkill Township Open Space Plan. https://bushkilltownship.com/forms/openspaceplan.pdf
[14] "After 80% vote in favor of Open Space Plan, East Allen Township forges ahead", The Home News. https://homenewspa.com/2022/06/01/after-80-vote-in-favor-of-open-space-plan-east-allen-township-forges-ahead/
[15] *Finance/Taxes,* Lower Mount Bethel Township. https://www.lowermtbethel.org/finance.html
[16] *Taxes,* Lower Nazareth Township. https://lowernazareth.com/taxes
[17] Ordinance No. 2016-03, Lower Saucon Township. https://www.lowersauconotownship.org/ordinances/2016-03.pdf
[18] *Land Preservation,* Moore Township. https://mooretownship.org/landpreservation.html
[19] Township of Plainfield, Municipal Code, *§ 24-102 Imposition and Rate of Tax.* https://ecode360.com/31718316#31718317
[20] Township of Upper Mount Bethel, Municipal Code, *§ 305-78 Imposition of open space tax.* https://ecode360.com/38179861
[21] *Appendix D Governmental and Intergovernmental Affairs, Municipal Code,* Township of Upper Nazareth, PA. https://ecode360.com/31954065#31954066
[22] *Local Open Space Funding Programs: 2022/2023 (Spring) Election Update,* DVRPC. https://www.dvrpc.org/openspace/local/
[23] Township of Lower Saucon, Municipal Code, Chapter 150 Taxation. https://ecode360.com/6775348#6775349

PROPERTY TAX AS A FINANCIAL MECHANISM

North Whitehall Township passed a voter referendum to increase the property tax by 0.1 mill in May 2019 to fund open space preservation within the Township. At the time of this report and according to data from LandVote and WeConservePA, North Whitehall is one of the only municipalities in Lehigh County, Northampton County, and Bucks County to have a property tax dedicated to open space preservation.[24] In 1997, Milford Township in Bucks County approved a real estate tax of 2 mills to be used to protect and preserve open space in the Township; however, in 2007, this was repealed, and a 0.25% increase earned income tax was enacted in its place.[25]

BOND ISSUES AS A FINANCIAL MECHANISM

Voters may also approve borrowing by their county or municipality for conservation projects. An open space bond referendum is a ballot measure where voters decide whether local government can issue bonds to fund the acquisition and preservation of open spaces. Our research noted numerous municipalities within Bucks County that have passed an open space bond issue referendum.

Table 2: Municipalities with Bond Issue as Financing Mechanism for Open Space Preservation in Proximity to North Whitehall Township

County	Municipal Name	Bond Issue Amount	Year Approved
Bucks[26]	Bedminster Township	$ 2,500,000	2005
Bucks	Buckingham Township	$ 20,000,000	2008
Bucks	Lower Makefield Township	$ 15,000,000	2008
Bucks	Milford Township	$ 5,000,000	2007
Bucks	Plumstead Township	$ 4,500,000	2009
Bucks	Richland Township	$ 4,000,000	2002
Bucks	Solebury Township	$ 12,000,000	2019
Bucks	Springfield Township	$ 5,000,000	2006
Bucks	Upper Makefield Township	$ 10,000,000	2005
Bucks	Upper Southampton Township	$ 2,000,000	2002
Bucks	Warrington Township	$ 3,000,000	2012
Bucks	Warwick	$ 7,000,000	2006
Bucks	Wrightstown Township	$ 1,500,000	2006

[24] *Local Municipal Open Space Referendums in Pennsylvania: 2023 Status Report,* WeConservePA. https://weconservepa.org/blog/local-municipal-open-space-referendums-in-pennsylvania-2023-status-report-available-at-weconservepa-library/

[25] Milford Township Ordinance No. 144. https://milfordtownship.org/wp-content/uploads/2018/08/ord_144.pdf

[26] *Local Open Space Funding Programs: 2022/2023 (Spring) Election Update,* DVRPC. https://www.dvrpc.org/openspace/local/

LEHIGH COUNTY PARTNERSHIPS

Lehigh County partnerships primarily focus on the preservation of farmland, a type of open space. Municipalities within Lehigh County can partner to preserve open space through the municipal partnership program and conservation easements.

MUNICIPAL PARTNERSHIP PROGRAM

The County of Lehigh, in conjunction with the Sterling Raber Agricultural Land Preservation Board of Lehigh County, created the Municipal Partnership Program to assist Townships in the preservation of their farmland and boost funding for farmland preservation in Lehigh County.

1. Pay **"Over the Cap"** funds to landowners whose appraisals come in over the County Cap (2024 it is $6,000.00 per acre). Municipal funds can be used to exceed the cap set by the Farmland Preservation Board in cases where a proposed conservation easement's appraised value is above the county's purchased cap. The total price cannot exceed the appraised value of these easements. [27]

2. **"Out of Order Easement Purchase"** is another option for a municipality wishing to preserve farmland within their borders that does not fall high enough on the Ranking List for the available funding to preserve through the usual County/State funding methods. The municipality pays for the appraisal using the approved County Appraiser for the Program. The County Board will pay one-third (1/3) of the appraised value per acre up to and not over $2000/acre (based on the current Cap total of $6000/acre). The municipality agrees to pay the other 2/3rds (up to $4000/acre-rest of "cap") and certifies the total with the County's funding total for the year. The municipality has the option to pay more than 2/3rds if over the cap. [28]

Table 3: Lehigh County Municipal Partnerships Program Participants

Lehigh County Municipal Partnership Program Participants
Heidelberg Township
Lower Macungie Township
Lower Milford Township
North Whitehall Township
Upper Macungie Township
Upper Milford Township
Upper Saucon Township
Weisenberg Township
Whitehall Township

[27] *Municipal Partnership Program,* Lehigh County. https://www.lehighcounty.org/Departments/Agricultural-Land-Preservation/-Municipal-Partnership-Program

[28] *Municipal Partnership Program,* Lehigh County. https://www.lehighcounty.org/Departments/Agricultural-Land-Preservation/-Municipal-Partnership-Program

CONSERVATION EASEMENTS

The Lehigh County Agricultural Land Preservation Board will consider farms that do not meet all the above State minimum criteria for 100% County funded agricultural easement purchases. The minimum criteria for 100% Lehigh County-Funded Easement Purchases are as follows:

1. The farmland tract must be enrolled in an agricultural security area.
2. The farmland tract must be at least 10 acres of cropland or pasture.
3. Contain at least 40% of soils which are available for agricultural production and are of capability classes I-IV, as defined by the USDA-Natural Resources Conservation Service.[29]

North Whitehall has an existing relationship with Lehigh County, and there are multiple Lehigh County Agricultural Conservation Easements within North Whitehall Township. As seen in *Figure 1,* other municipalities within Lehigh County, particularly in the northwest portion of the county, have preserved a substantial amount of open space. Lynn Township, Heidelberg Township, and Weisenberg Township in the northwestern portion of Lehigh County, and Lower Milford in the southwestern portion of the county, have preserved a significant amount of their total land through Lehigh County Agricultural Conservation Easements, see *Figure 1*. Partnering with the county diversifies the financial resources for preserving open space, which will expand the Township's ability to preserve open space. [30]



Figure 15: Agricultural field near Orefield

[29] *Conservation Easements,* Lehigh County. https://www.lehighcounty.org/Departments/Agricultural-Land-Preservation/Conservation-Easements

[30] Lehigh County Agricultural Conservation Easements. https://www.lehighcounty.org/Departments/Agricultural-Land-Preservation/File-Upload

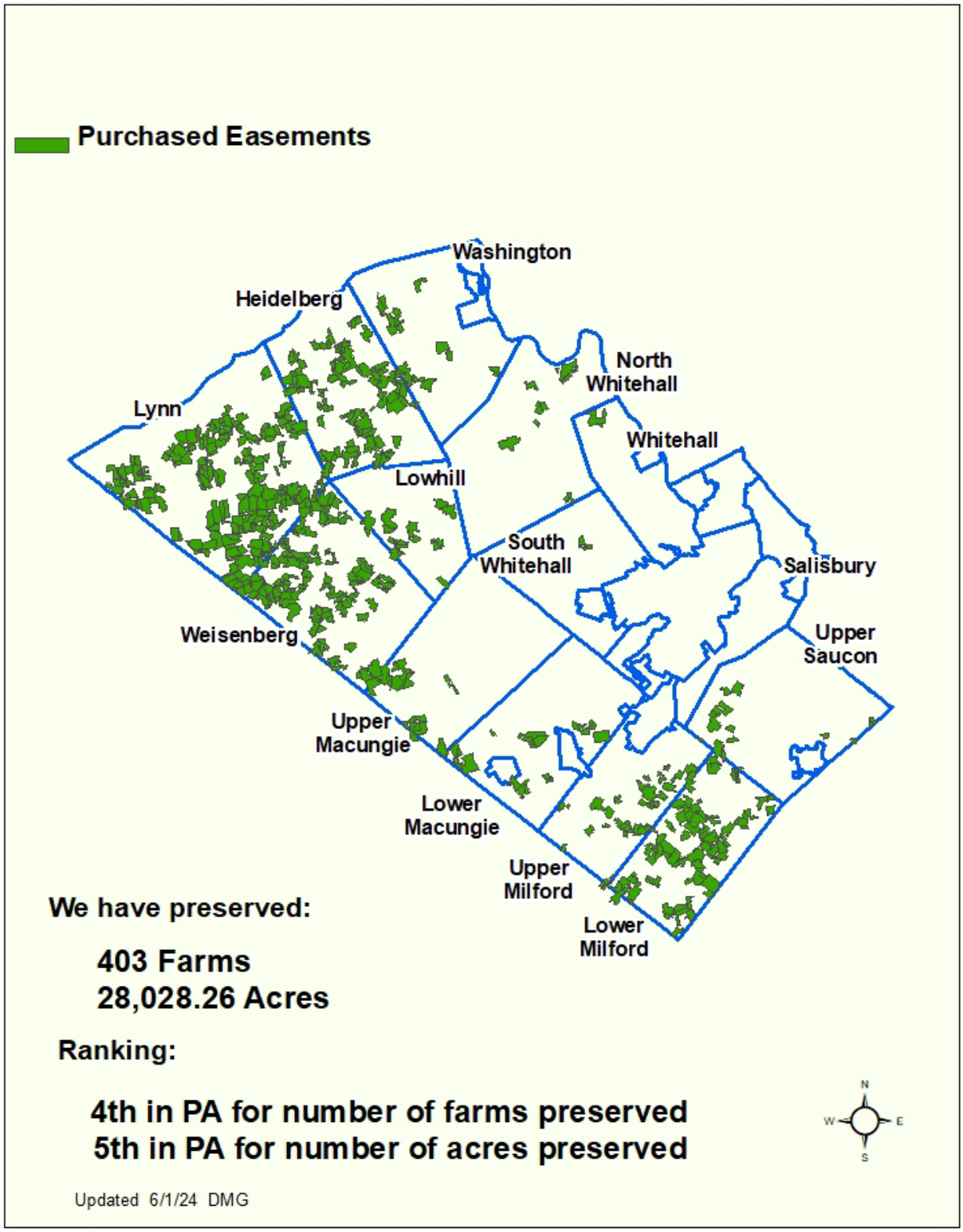


Figure 16: Lehigh County Agricultural Conservation Easements. Source: Lehigh County, PA

STATE FUNDING

The Commonwealth of Pennsylvania provides a variety of funding opportunities to support open space preservation. Municipalities within the Lehigh Valley can utilize state funding to support the preservation of open space and establishment of an open space preservation system. [31]

In particular, the Community Conservation Partnerships Program (C2P2 program) is administered by Pennsylvania's Department of Conservation and Natural Resources (DCNR) Bureau of Recreation and Conservation to provide financial and technical assistance to local governments, rail and trail organizations, land trusts and other non-profits for park, recreation, conservation and greenway projects. The Recreation and Conservation grant program is funded with a variety of state and federal funding sources including, the Keystone Recreation, Park, and Conservation Fund (Key 93) which includes Key-Community and Key-Land Trust; the Environmental Stewardship Fund (ESF). [32]

The U.S. Fish & Wildlife Service implements the Highlands Conservation Act Grant Program and seeks to protect the forested hills running through Connecticut, New York, New Jersey, and Pennsylvania. Funding from this program has been utilized to preserve open space in the Lehigh Valley. [33]



Figure 17: Ironton Rail Trail trailhead

[31] Lehigh Valley park projects get state funding.
https://www.wfmz.com/news/area/lehighvalley/northampton-county/lehigh-valley-park-projects-get-state-funding/article_2c9b6676-dd91-11ef-aad8-1f901f463609.html

[32] *Boscola Announces $2,612,200 in State Funding to Aid Conservation and Recreation Projects in the Lehigh Valley,* Pennsylvania Senate.
https://pasenate.com/boscola-announces-2612200-in-state-funding-to-aid-conservation-and-recreation-projects-in-the-lehigh-valley/#:~:text=%E2%80%9CThe%20Lehigh%20Valley's%20quality%20of%20life%20is,open%20space%20that%20benefits%20our%20residents%20and

[33] *Northampton County receives a Highland Conservation Act Grant Award,* Northampton County.
http://www.northamptoncounty.org/index.php?section=press-releases&prrid=182

OTHER PARTNERSHIPS

LEHIGH VALLEY GREENWAYS CONSERVATION LANDSCAPE

The Lehigh Valley Greenways Conservation Landscape is a proactive, partnership approach to regional landscape conservation in Lehigh and Northampton counties. This partnership provides "mini grants" assist non-profits, municipalities, and educational institutions to accomplish a variety of projects to benefit residents of the Lehigh Valley, including the conservation of natural areas, and supporting the creation of an open space system.[34]

CONSERVANCIES

Partnering with conservancies can diversify a municipality's financial mechanisms of preserving open space. Adjacent municipalities also pursue the preservation of open space through conservation easements. Conservancies, such as Natural Lands Trust, Wildlands Conservancy, and Heritage Conservancy may hold or co-hold the conservation easement with the municipality. In particular, Wildlands Conservancy preserves land within the Lehigh River Watershed through conservation easements, land acquisition and transfers, and nature preserves.[35] Wildlands Conservancy and North Whitehall Township have an existing partnership, as Wildlands Conservancy holds conservation easements within the Township. Partnering with conservancies enables municipalities to have a more diverse source of funding mechanisms, as the Township does not have to bear the full burden of financing, maintaining, or monitoring the conservation easements.



Figure 18: Woodlands

[34] Lehigh Valley Greenways. https://lvgreenways.org/about-the-partnership/partnership-work/
[35] *Land Protection,* Wildlands Conservancy. https://www.wildlandspa.org/land-protection/

TAXES IN NORTH WHITEHALL TOWNSHIP

North Whitehall Township levies a broad spectrum of taxes and assessments, which are designed to impact diverse tax bases or are used to fund particular programs and services. The existing property tax contributes financially to the purchase and maintenance of open spaces in the Township. An increase in the earned income tax dedicated to open space preservation could contribute significantly to the goals of purchasing and maintenance of open spaces.

PROPERTY TAXES

All real property which is determined to be taxable or partially taxable by the Lehigh County Assessment Office is subject to three categories of property taxation in the Township. Local property tax rates are referred to as "mills," which is one-thousandth of one dollar of assessed value, or one dollar per thousand. One mill is equal to a rate of 0.001 multiplied by a property's assessed value. The following are the Township's millage rates effective as of 2025:

- General Property Tax Levy: 0.65 mills (.00065)
- Fire Tax Levy (new in 2025): 0.45 mills (.00045)
- **Farmland Preservation Levy: 0.10 mills (.0001)**
- Total Millage Rate: 1.20 mills (.0012)

In 2019, the voters of the Township approved an assessment of 0.1 mill of property tax to be used for Farmland and Open Space Preservation. The Farmland and Open Space Tax Levy is used to preserve farmland from development. In general, the funds are used to compensate property owners for establishing a conservation easement on their property, which permanently encumbers the property from development.[36] Often these local preservation funds are leveraged with County, State, and/or Federal funds to stretch local tax dollars even further. All revenues and expenditures from this tax are isolated in a dedicated fund. The assessment was initially estimated to generate about $140,000 dollars annually; however, calculations now estimate it will generate $160,000 dollars annually.

Utilizing funding from the Farmland Preservation Tax Levy, the Township has acquired easements on approximately 213 acres (four properties) since 2020. In North Whitehall Township, as of 2025, there are twelve additional property owners that have expressed interest in preserving their land. These 12 properties measure a total of 529.26 acres, and it is estimated that it would require $2,063,639.20 to preserve all 12 of these properties. The current funding source, the Farmland and Open Space Tax Levy, has accrued funding, but it is not capable of preserving all these properties without depleting the current accrued funding and incurring significant debt, even if the funding is stretched out over several years.

Continuing with the current property tax assessment, the Township can potentially preserve one property per year; however, there is no guarantee that these properties will be available for preservation indefinitely. Delaying the preservation of these properties decreases the chances that the land will be preserved, as potential external factors, such as development pressure, loss of interest, and change in ownership, may impact the willingness of the property owner(s) to establish a conservation easement on their property.

[36] Finance/Taxes, North Whitehall Township. https://northwhitehall.org/fin_about.html

ACT 511 TAXES

Act 511 of 1965 (53 P.S. §6924.101 et seq.) grants local Pennsylvania local government the authority to levy special local taxes on various subjects, privileges, and transactions other than ownership of real property. North Whitehall Township uses Act 511 to collect Earned Income Tax (EIT), Realty Transfer Tax (RTT), and Local Services Tax (LST). North Whitehall Township 2025's respective rates are as follows:

- EIT: 1% of resident wages or net profits (split 50/50 with Parkland School District)
- RTT: 1% of arm's length real estate sales (split 50/50 with PSD)
- Local Services Tax: $52.00 annually for anyone employed within the Township ($47.00 to the Township and $5.00 to PSD)[37]

A viable option for North Whitehall Township to consider would be an increase in the Earned Income Tax (EIT) to be used for the preservation and maintenance of open space properties. A dedicated EIT could have the potential to significantly increase the ability of the Township to conserve land within the township. An increase in the EIT, by a rate of 0.15, 0.20, or 0.25, would expedite the Township's preservation efforts. While the Farmland Preservation Levy on Property Taxes produces a revenue of approximately $160,000/ year, an increase in an EIT at 0.15, 0.20, or 0.25 would produce the following addition revenue, which is significantly more than the Farmland Preservation Levy, and which would be dedicated towards open space preservation and the maintenance of preserved land.

At the time of this report, the existing Earned Income Tax Rate for North Whitehall Township is 1.00. *Table 4* outlines projected additional revenue that could be generated from increasing the Earned Income Tax (EIT) rate in North Whitehall Township between 2025 and 2030. The projections are based on three potential EIT rate scenarios: an increase from 1.00 to 1.15, 1.00 to 1.20, and 1.00 to 1.25. The estimates in *Table 4* indicate that increases in the EIT rate could provide significant additional revenue over time. This additional revenue would be dedicated for the purpose of preserving open space.

Table 4: Additional Revenue from an Increase in Earned Income Tax

PROJECTED ADDITIONAL REVENUE FROM AN INCREASE IN EARNED INCOME TAX						
EIT RATE* (% of Earned Income)	2025	2026	2027	2028	2029	2030
1.15	$502,500	$517,575	$533,102	$549,095	$565,568	$582,535
1.20	$670,000	$690,100	$710,803	$732,127	$754,091	$776,714
1.25	$837,500	$862,625	$888,504	$915,159	$942,614	$970,892

*At the time of this report the EIT Rate is 1.00%.

Assuming the estimated amount needed to preserve the 12 properties interested in conservation easements remains constant, revenue from the Farmland Preservation Levy remains constant, and the accrued funding is available, an increase of the EIT at a rate of 0.15 would accrue enough revenue to enable the Township to preserve all 12 properties in 3-year installments, without incurring debt. With the same assumptions, an increase of the EIT at a rate of 0.20 would accrue enough revenue to enable the Township to preserve all 12 properties in 2-year installments, without incurring debt. With the same assumptions, an increase of the EIT at a rate of 0.25 would

[37] Finance/Taxes, North Whitehall Township. https://northwhitehall.org/fin_about.html

accrue enough revenue to enable the Township to preserve all 12 properties in 2-year installments, without incurring debt.

The average individual income in North Whitehall Township, as of 2025, is $67,990. For the average individual income of $67,990, an increase by 0.15 would increase individual taxes by an estimated $101.99, an increase by 0.20 would increase individual taxes by an estimated $135.98, and an increase in 0.25 would increase individual taxes by $169.98.

As stated earlier, public opinion is central to the process of establishing a dedicated EIT, as the Township would need to submit a ballot referendum for public vote, following the provisions of Act 442 of 1967 “Preserving Land for Open Air Spaces” and the “Pennsylvania Election Code” in respect to submitting questions to the public ballot. The referendum would need to receive a majority of votes to be enacted.

Referendums can include time limits (i.e., a sunset date) for a proposed Earned Income Tax, such as a 5-year period, and after this time, the public would vote whether to continue the dedicated Earned Income Tax or eliminate it.

CONCLUSION AND RECOMMENDATIONS

North Whitehall Township, in conjunction with partnering agencies, has preserved 653.26 acres of land (eleven properties) in North Whitehall, to date, roughly 3.63% of the Township. If the Township were able to successfully fund and preserve all 12 properties that have currently expressed interest in the program (totaling 529.26 acres), this would nearly double the amount of preserved land in the Township.



Figure 19: Jordan Creek

The Township may wish to consider a dedicated EIT at a rate between 0.10 and 0.15. A dedicated EIT rate of between 0.10 and 0.15 would be a strategic approach for the Township toward additional land preservation and would ensure sufficient revenue to accelerate property preservation efforts. This would enable the Township to preserve properties at a faster rate than the current funding source would permit. The current projected funding would allow for the preservation of one property per year, whereas the addition of an EIT at a rate between 0.10 and 0.15 would allow for the purchase of multiple properties each year, without entering a deficit.

A proposed increase in EIT at a rate between 0.10 and 0.15 for North Whitehall Township is comparable to the EIT rates of municipalities within the region and could provide a meaningful increase in current funding, which could enable the Township to address preservation needs more effectively and efficiently. In Lehigh County, the three municipalities with a dedicated EIT are at a rate of 0.10, 0.138, and 0.15,[38] see *Table 1*. Municipalities in Northampton County and in Bucks County with dedicated EITs have rates that range from 0.10 to 0.25, see *Table 1*.

If desired, a proposed increase in EIT could have a time limit of 5 years, after which time, the public would vote whether to continue the dedicated Earned Income Tax or eliminate it. This time limit ensures public involvement, as residents would have 5 years to evaluate the effects of the EIT and then could vote on whether to continue or remove the dedicated earned income tax. If the EIT is established and then later eliminated after 5 years, any remaining funds accrued by the EIT would still be accessible for open space preservation. See Appendix L: Example Open Space Referendum.



Figure 20: Schlicher's Covered Bridge

[38] *Local Municipal Open Space Referendums in Pennsylvania: 2023 Status Report,* WeConservePA. https://weconservepa.org/blog/local-municipal-open-space-referendums-in-pennsylvania-2023-status-report-available-at-weconservepa-library/

METHODS AND PROCEDURES FOR OPEN SPACE PRESERVATION

The Township continues to acquire the majority of its open space through dedication from development, donation of funds, or from purchase of land or easements using funds specified for open space preservation in concert with local, county, state and federal grants and/or funds.

The Township and the Farmland and Open Space Preservation Committee is responsible for overseeing the development of the open space network in accordance with this Plan. The Farmland and Open Space Preservation Committee will be responsible for researching individual parcels and making recommendations to the Township Board of Supervisors on which properties should be pursued for preservation. The Farmland Preservation and Open Space Committee should consider economic, environmental, cultural, and social factors when making recommendations for preservation.



Figure 21: Wooded Area

While management of any open space budget is the responsibility of the Township Board of Supervisors and Township Staff, the Farmland and Open Space Preservation Committee is expected to be knowledgeable of the budget. Open space funds must be carefully managed to best serve the Township. These funds should be primarily used for open space preservation through purchase of land or easements. However, the funds should also be used to fund activities, information sessions, or seminars which may further the cause of open space preservation in the Township, involving an open space public information campaign.

It is the responsibility of the Farmland and Open Space Preservation Committee to consider the importance of each and to make recommendations to the Township Board of Supervisors regarding allocation of funds for open space preservation itself and related activities.

When considering a property for preservation, the Farmland Preservation/Open Space Committee is not expected to rely solely on their personal knowledge of that property but should instead rely on available facts. Open space preservation for the purpose of recreation acquisition shall involve the North Whitehall Township Recreation Board. One of the recommended action items in this Plan is to create and utilize a qualitative evaluation system to review potential parcels for acquisition. The evaluation system could be used as a reference to help guide the Township in making decisions regarding preservation of specific properties and determine whether a parcel is suitable for preservation.

EXISTING SYSTEM

The North Whitehall Township Farmland and Open Space Preservation[39] webpage contains information regarding Farmland Preservation Committee meetings, background information on Agricultural Security Areas (ASAs), farmland preservation through agricultural conservation easements, existing preservation efforts, maps of existing holdings, and application forms. The applications forms provided on the webpage are for the following:

- Agricultural Security Area creation/modifications,
- North Whitehall Township Farmland/Open Space Program applications,
- Lehigh County Agricultural Conservation Easement applications, and
- Bicentennial and Century Farm application.

There is additional information provided for Agricultural Security Areas and Lehigh County Agricultural Conservation Easements.

Existing North Whitehall Township Farmland/Open Space Program Application Form

The existing North Whitehall Township Farmland and Open Space Program Application Form provides for the initial identification of parcels/portions of parcels for potential preservation.[40] The application form indicates to "provide as much information as possible" and to "attach any additional information." The current application form provides areas to collect information including parcel identification, size of property and area to be preserved, open response for description of land to be preserved, landowner and/or contact person information, and the option to attach a site map.

Additionally, the existing North Whitehall Township Farmland and Open Space Program Application Form instructs "all applicants must first submit an application to Lehigh County Conservation Easement Program." The Lehigh County Agricultural Conservation Easement Program is a valuable potential source of funding for the preservation of farmland that meets the required minimum criteria.[41] While this guidance is relevant for farmland preservation projects, it may create confusion or impose unnecessary barriers for applicants seeking to preserve natural resources or open space for recreation rather than agricultural use.

The evaluation form should be applicable to open space preservation for farmland, natural resources, and/or recreation. To increase the applicability and clarity of the application form and ensure it accommodates all types of preservation, the following improvements are recommended:

1. Clarify or Modify the County Application Requirement
    - The evaluation form could either remove the requirement to submit an application to the county program, or specify the requirement is only for potential farmland preservation.
2. Clarify Submission Requirements
    - Clearly distinguish what is required vs. optional for application submission.
3. Online Application
    - Offer a simplified online fillable version to increase usability, encourage participation, and streamline submission process.

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[39] North Whitehall Township *Farmland & Open Space Preservation* https://northwhitehall.org/openspace.html
[40] North Whitehall Township Farmland/Open Space Program Application Form. https://northwhitehall.org/forms/open%20space%20program_application.pdf
[41] Lehigh County Agricultural Conservation Easements. https://www.lehighcounty.org/Departments/Agricultural-Land-Preservation/Conservation-Easements

4. Provide expected or sample timeline.
    - Provide an example of potential timeline of open space preservation process, such an example timeline.

Generally, the evaluation form serves as the initial stage of the process, indicating the owner has interest in the program while providing the Farmland and Open Space Preservation Committee with general background information. Sample updated evaluation forms can be found in Appendix K.



Figure 22: Agricultural fields, cemetery adjacent to Neffs

PUBLIC INFORMATION CAMPAIGN

Across surveys and interviews conducted for the Township Comprehensive Plan; the Park, Recreation and Open Space Plan; and this Open Space Action Plan residents repeatedly voiced opposition to the current pace of development scale, and residents continued to express support for open space preservation. However, the community may need additional information before supporting any financial commitments further needed to appropriately fund the Township's open space program. A public information campaign can be a way of communicating information to the public regarding open space preservation. The North Whitehall Township Farmland and Open Space Preservation webpage provides valuable information regarding open space preservation in the Township. However, a public information campaign could greatly increase public awareness of open space preservation and provide Township residents with relevant open space preservation sources. The public information campaign would promote transparency regarding the existing Township open space preservation process, existing open space preservation holdings, existing relevant Township, County, or regional documents, and information regarding any proposed changes to the existing Township preservation holdings or preservation process.

Open Space Referendum Public Information Campaign

The purpose of a Public Information Campaign for an open space referendum is to inform residents about what a potential open space referendum could mean for the community and using real examples and explanations to help residents make informed decisions. A public information campaign for open space preservation should clearly describe how a dedicated open space referendum would impact the Township as a whole, and individual residents, providing real life examples.

Engaging residents requires clear, relatable messaging that highlights the impacts of the potential implementation of a proposed open space referendum. The intent should be to provide real data. The approach would entail real life examples, including a cost breakdown, a land impact example, and the provision of relevant and credible resources.

1. Personal Financial Impact:
    - Cost breakdown, in relatable monthly terms, of the impact of the tax increase, and how that equates to acres of open space preserved.
    - "A tax increase of X% equates to $X monthly which could ultimately preserve X many acres of open space."
2. What We Saved vs. What Could Have Been:
    - Communicate the difference between preservation and potential development of a property.
    - "We preserved this farm, if we hadn't this is what could have been built."
3. Supporting Data and Resources:
    - Share links to relevant credible resources for residents to read further.
    - Lehigh Valley Planning Commission *Lehigh Valley Return on Environment (2014*),[42] which provides data on the economic benefits of land preservation.

[42] Lehigh Valley Planning Commission *Lehigh Valley Return on Environment,* 2014. https://library.weconservepa.org/library_items/1370-Lehigh-Valley-Return-on-Environment

- American Farmland Trust *Cost of Community Service Studies,*[43] which provides data on the fiscal contribution of existing local land uses.

Outreach and Communication Methods

To ensure that a public information campaign reaches the Township residents, a multi-platform communication strategy could be employed, combining traditional methods with digital platforms and storytelling. The public information campaign could be conveyed through a variety of methods of communication, including:

1. In-Person Engagement
    - Public Meetings: Host community forums to present information, answer questions, and gather feedback.
2. Township Website and Digital Outreach
    - Website: Provide dedicated pages with FAQs, case studies, program updates. This could include the expansion of the existing *Farmland & Open Space Preservation* page,[44] or a new dedicated page.
    - Maps: Consider providing a map with ASA properties, Preserved Properties, and natural areas (waterways, soils, woodlands, etc.). Consider the use of an interactive map.
3. Visual and Multimedia Tools
    - Create visual content: Develop a video, PowerPoint presentation, and infographics to demonstrate impact of potential open space referendum.
    - Aerial Footage: Use aerial footage via drone flyovers to showcase preserved properties, farmlands, natural resources, and recreation areas within the Township.
4. Social Media and Storytelling
    - Share testimonials and stories: Highlight landowners, farmers, and residents who have benefited from open space preservation.
    - Publicize Success Stories: Show real-life examples of preserved properties and indicate what was protected.
5. Print Materials
    - Printed newsletters (also available online) or mailings: Provide information directly to residents.

A public information campaign for any potential proposed open space referendum would ensure that public engagement remains a central aspect of open space preservation in North Whitehall Township. By combining traditional outreach with digital tools and storytelling, the township can ensure residents are well-informed of the goals and impact of the program.

[43] American Farmland Trust *Cost of Community Service Studies,* 2016. https://farmlandinfo.org/publications/cost-of-community-services-studies/

[44] North Whitehall Township, *Farmland & Open Space Preservation.* https://northwhitehall.org/openspace.html

GOALS AND OBJECTIVES

The action plan offers suggestions for a plan of action that North Whitehall Township should take into account in the upcoming years and beyond. The goals, action items, and objectives are not legally binding, and can be adjusted as necessary, and should be reviewed frequently.

The North Whitehall Township Board of Supervisors must approve any future financing. It is acknowledged that every potential action should be carefully examined to account for evolving conditions, practicality, and affordability before enacting.

Goals are stable and long ranging; they are not measurable actions and may take years to achieve. Objectives under each goal are statements indicating achievements necessary to meet an overall goal. Action items provide a further breakdown of tasks to be performed to meet the broader goals. Priority ratings indicate the approximate length of time for completion of the action item, or when the action item is to be completed. Immediate priority is to be completed within the next year, medium priority is to be completed within the next two (2) to five (5) years, long-term is to be completed between five (5) to ten (10) years after plan adoption, and on-going will not be completed within a specified amount of time.

Priorities can be adjusted in accordance with the following criteria: the initiative's overall viability and community value, weighed against the financial and non-financial resources required to achieve the objective. Prior to execution, adequate due diligence will be carried out, which may include but is not limited to studies, public meetings, surveys, strategic planning.

GOAL 1: CONTINUE TO PRIORITIZE LAND PRESERVATION AND CONSERVATION WITHIN THE TOWNSHIP.

Objective	Action Item	Priority	Responsible Entity
Revise existing system of evaluating vulnerable open space	Implement revised evaluation forms for potential open space preservation property acquisition.	Immediate	BOS/ Township Staff/ Farmland/Open Space Committee
Continue to review and make recommendations, and if necessary, update local ordinances and regulations regarding open space preservation.	Update ordinances and regulations as necessary to be generally consistent with current Lehigh County, LVPC, and PA state open space preservation guidelines and regulations.	Ongoing	BOS/ Township Staff/ Farmland/Open Space Committee
	Update the Parks, Recreation and Open Space Plan on 10-year cycle	Ongoing	BOS/ Township Staff/ Farmland/Open Space Committee
Develop additional financing streams to fund open space acquisition and preservation.	Consider municipal open space referendum to implement funding mechanism through a dedicated earned income tax.	Medium	BOS/ Township Staff/ Farmland/Open Space Committee
	Strengthen existing, and establish additional partnerships with conservancies to increase number of conservation easements.	Ongoing	BOS/ Township Staff/ Farmland/Open Space Committee

	Strengthen existing relationship with Lehigh County Municipal Partnership Program to establish additional agricultural conservation easements.	Ongoing	BOS/ Township Staff/ Farmland/Open Space Committee
	Utilize State funding opportunities, including grant opportunities, to acquire and/or improve open space parcels.	Ongoing	BOS/ Township Staff/ Farmland/Open Space Committee
Support and strengthen links between open space goals and other environmental goals, including climate change mitigation.	Reduce mowed lawn and impervious surfaces on municipal lands. Convert mowed lawn not used for active recreation purposes to wildlife habitat.	Immediate	BOS/ Township Staff/ Farmland/Open Space Committee
	Create sustainability plans for management of natural areas to reduce presence of invasive vegetation pests, exploring measures such as Integrated Pest Management and organic treatments. Consult with environmental professionals.	Ongoing	BOS/ Township Staff/ Farmland/Open Space Committee
	Select supplies and products that are sustainably produced, contain recycled components and can be recycled or composted at the end of their useful life.	Immediate	BOS/ Township Staff/ Farmland/Open Space Committee

GOAL 2: ENGAGE AND INFORM RESIDENTS OF TOWNSHIP OPEN SPACE PRESERVATION AND CONSERVATION EFFORTS.

Objective	Action Item	Priority	Responsible Entity
Develop Public Information Campaign to provide clear relatable messaging on the impacts of open space referendum.	Provide in person-engagement to present information, answer questions, gather feedback.	Medium	Township Staff/ Farmland/Open Space Committee
	Update Township website to provide FAQs, case studies, open space program updates.	Immediate	Township Staff/ Farmland/Open Space Committee
	Partner with organizations to provide visual content and aerial footage.	Medium	Township Staff/ Farmland/Open Space Committee
	Utilize social media to share testimonials and stories of open space preservation successes.	Ongoing	Township Staff/ Farmland/Open Space Committee
	Utilize print materials to provide information directly to residents.	Ongoing	Township Staff/ Farmland/Open Space Committee

Grow the Township's volunteer base to help with open space stewardship.	Provide and advertise opportunities for the public to volunteer to help with open space stewardship.	Ongoing	Township Staff/ Farmland/Open Space Committee
	Create a schedule of annual and seasonal maintenance tasks that can be done by volunteers and promote those opportunities to civic groups, schools, businesses and individuals.	Immediate	Township Staff/ Farmland/Open Space Committee
	Encourage volunteerism and partnerships to support facilities, programs, and maintenance to help off-set Township costs.	Ongoing	Township Staff/ Farmland/Open Space Committee

APPENDICES

Appendix A: Community Event Booth Display Question

Appendix B: Survey Flyer

Appendix C: Questionnaire Responses

Appendix D: Land Use Map

Appendix E: Zoning Map

Appendix F: Physiographic Provinces of Pennsylvania Map

Appendix G: Geologic Map of Pennsylvania

Appendix H: Natural Features Map

Appendix I: Preservation Map

Appendix J: Natural Heritage Areas

Appendix K: Methods and Procedures for Open Space Evaluation

Appendix L: Example Open Space Referendum

APPENDIX A



COMMUNITY EVENT BOOTH DISPLAY QUESTION

Q&A

WHAT SHOULD BE THE TOWNSHIP'S PRIORITY FOR OPEN SPACE PRESERVATION?



APPENDIX B



SURVEY FLYER

Q&A

NORTH WHITEHALL TOWNSHIP
FOUNDED 1810

Public Opinion Survey

Open Space Action Plan

Please take the survey to provide input:

https://www.surveymonkey.com/r/MG6YZ6S

Survey will be available from April 1, 2025 through April 22, 2025

North Whitehall Township is creating a Open Space Action Plan to supplement the 2022 Comprehensive Parks, Recreation and Open Space Plan. The plan is used as a guide for the preservation and acquisition of open space. A crucial component of the process is obtaining and integrating input from North Whitehall Township residents.

Your input helps us decide how to allocate our resources. We hope you will share your feedback with us, so that we may continue our efforts to make North Whitehall Township an even better place to live, work, and play!

GILMORE & ASSOCIATES, INC.
ENGINEERING & CONSULTING SERVICES

APPENDIX C

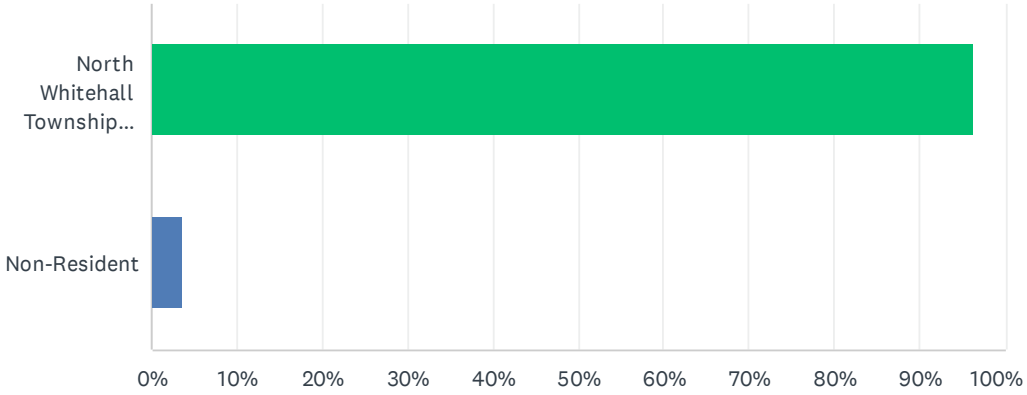


QUESTIONNAIRE RESPONSES

Q&A

Q1 Tell us about yourself:

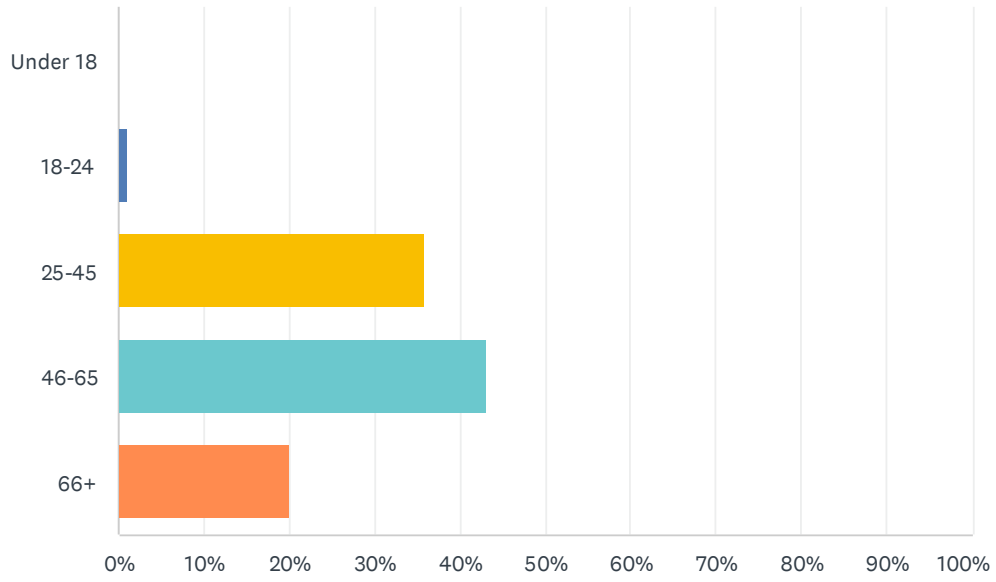
Answered: 363 Skipped: 0



ANSWER CHOICES	RESPONSES	
North Whitehall Township Resident	96.42%	350
Non-Resident	3.58%	13
TOTAL		363

Q2 In what age group do you fall:

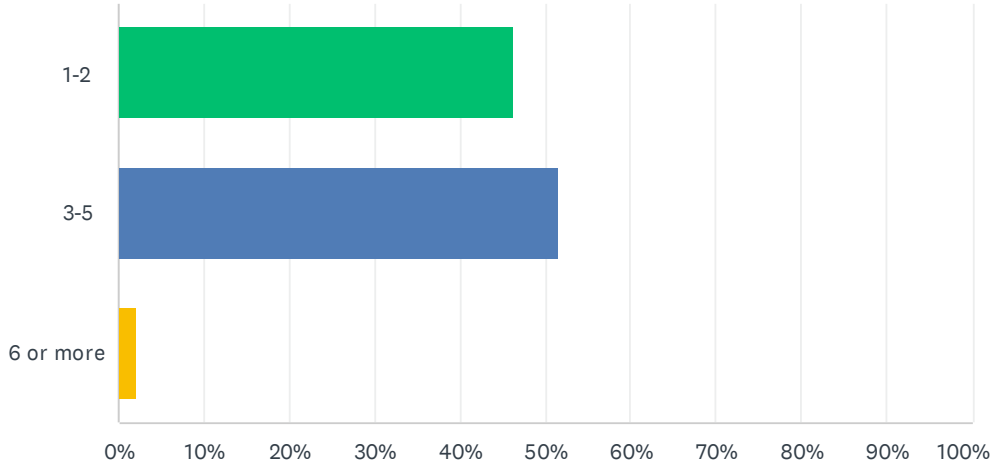
Answered: 363 Skipped: 0



ANSWER CHOICES	RESPONSES	
Under 18	0.00%	0
18-24	1.10%	4
25-45	35.81%	130
46-65	42.98%	156
66+	20.11%	73
TOTAL		363

Q3 How many people are in your household, including yourself?

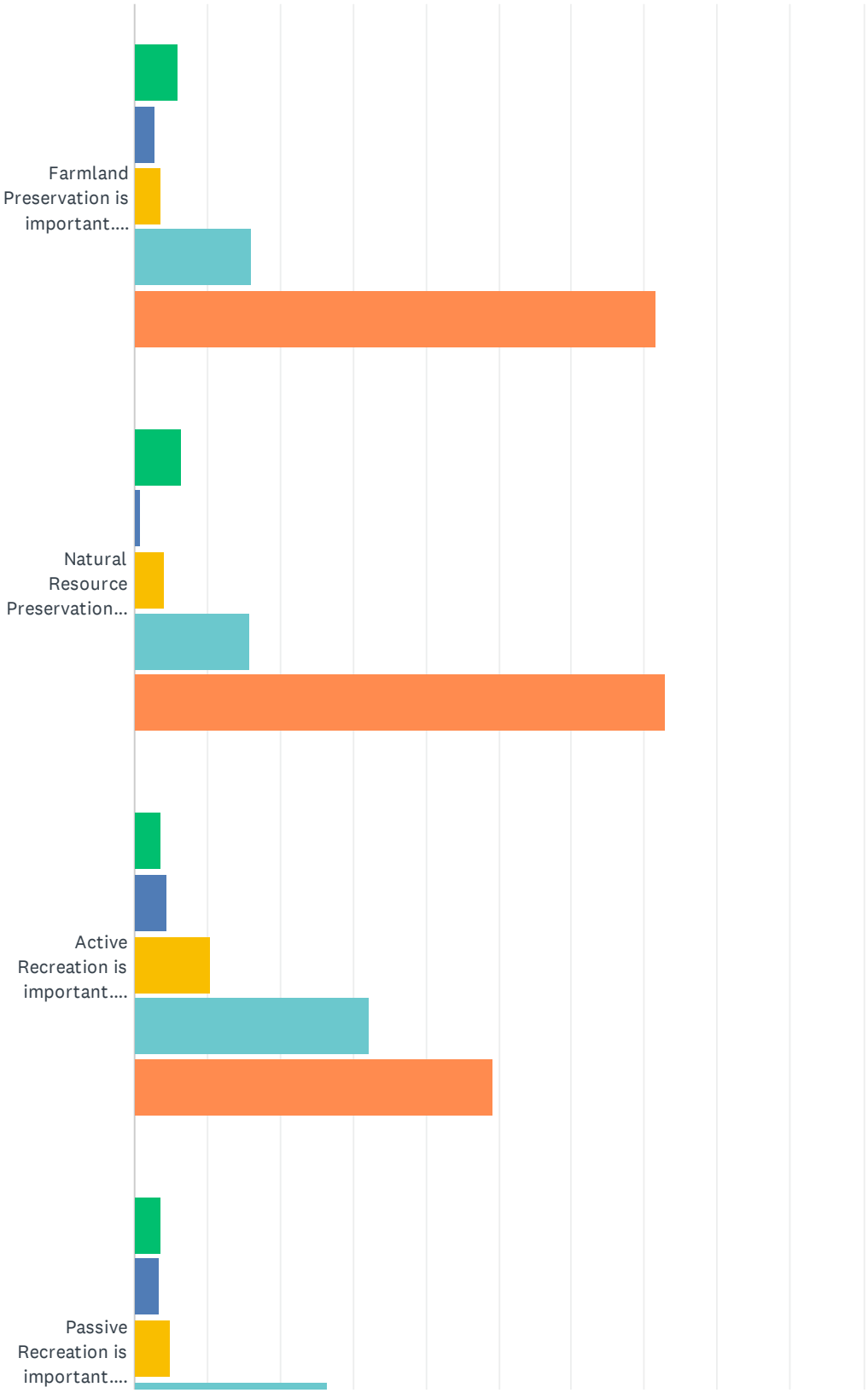
Answered: 363 Skipped: 0

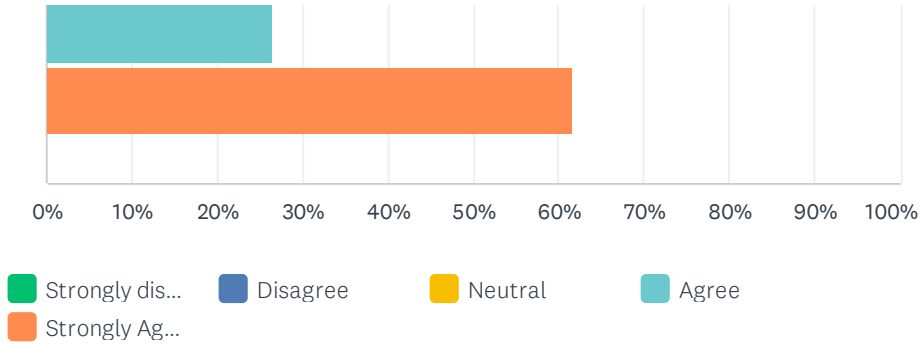


ANSWER CHOICES	RESPONSES	
1-2	46.28%	168
3-5	51.52%	187
6 or more	2.20%	8
TOTAL		363

Q4 To what extent do you agree with the following statements about North Whitehall Township?

Answered: 363 Skipped: 0

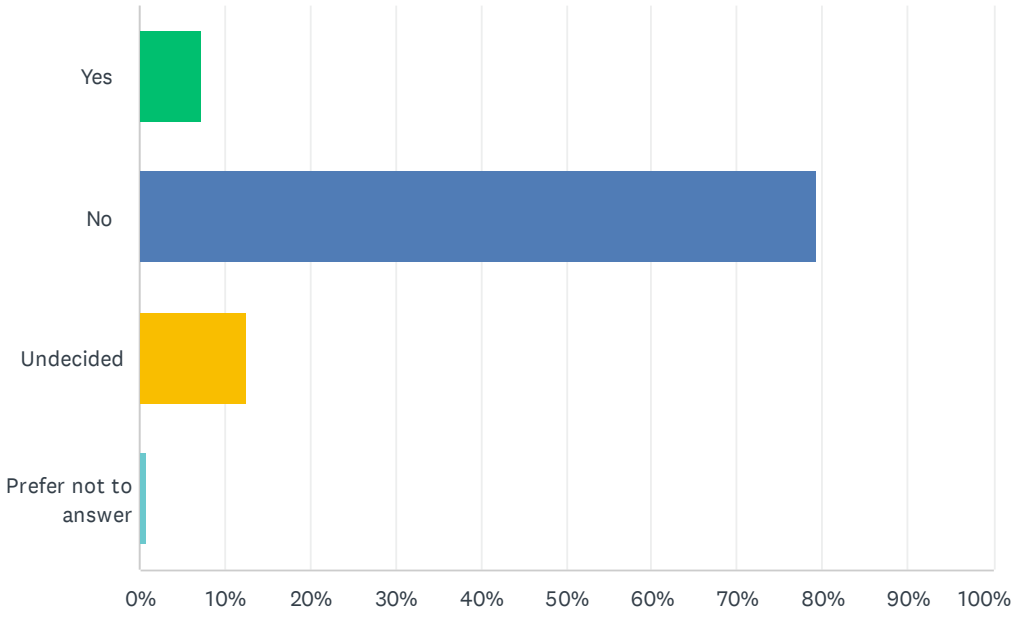




	STRONGLY DISAGREE	DISAGREE	NEUTRAL	AGREE	STRONGLY AGREE	TOTAL	WEIGHTED AVERAGE
Farmland Preservation is important. (Preservation of farmland, etc.)	6.06% 22	2.75% 10	3.58% 13	15.98% 58	71.63% 260	363	4.44
Natural Resource Preservation is important. (Preservation of woodlands, waterbodies, riparian corridors, etc.)	6.34% 23	0.83% 3	4.13% 15	15.70% 57	73.00% 265	363	4.48
Active Recreation is important. (Ballfields, playgrounds, exercise stations, etc.)	3.58% 13	4.41% 16	10.47% 38	32.23% 117	49.31% 179	363	4.19
Passive Recreation is important. (Walking, hiking, and biking trails, birdwatching, etc.)	3.58% 13	3.31% 12	4.96% 18	26.45% 96	61.71% 224	363	4.39

Q5 The Township, in conjunction with partnering agencies, has preserved approximately 653 acres of land (eleven properties) in North Whitehall to date. This is roughly 12% of land categorized as agricultural and/or vacant within the Township. Do you feel enough land within the Township has been preserved already?

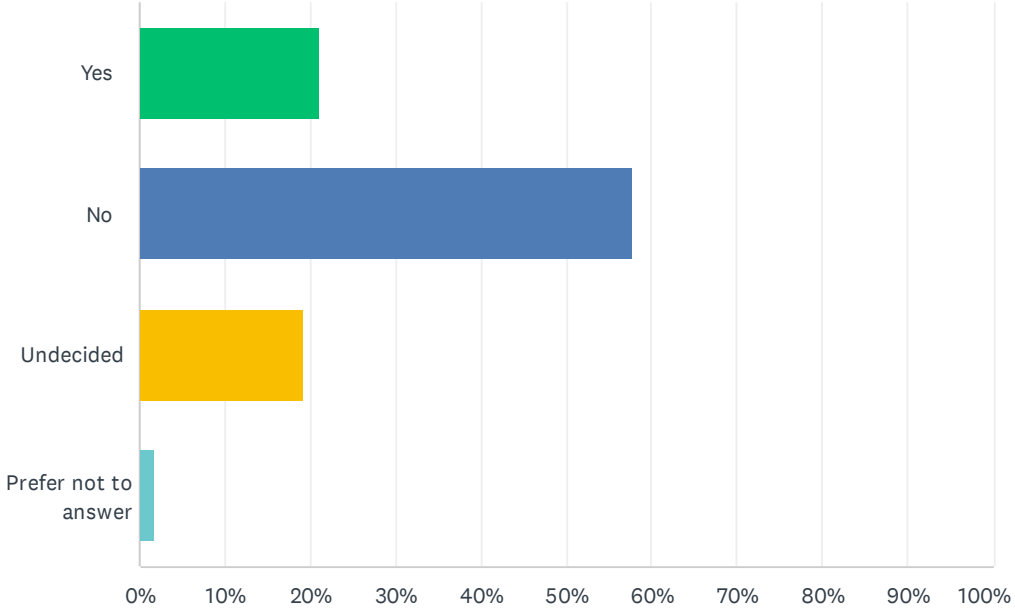
Answered: 363 Skipped: 0



ANSWER CHOICES	RESPONSES	
Yes	7.16%	26
No	79.34%	288
Undecided	12.67%	46
Prefer not to answer	0.83%	3
TOTAL		363

Q6 In 2019, the voters of the Township approved an assessment of 0.1 mill of property tax to be used for Farmland and Open Space Preservation. This assessment was estimated to generate about $140,000 dollars annually. Utilizing this funding, the Township has acquired easements on approximately 213 acres (four properties) since 2020. There are currently twelve additional property owners that have expressed interest in preserving their land. Continuing with this funding source, the Township can potentially preserve one property per year. However, there is no guarantee that these properties will be available for preservation indefinitely, i.e. development pressure, loss of interest, change in ownership, etc. Do you feel preserving one property per year is sufficient?

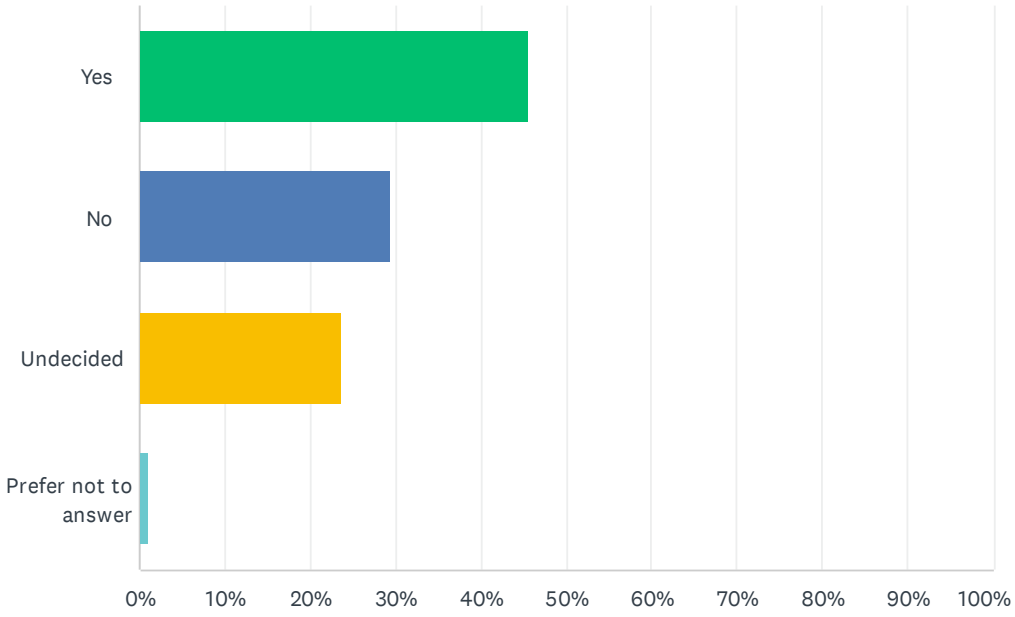
Answered: 363 Skipped: 0



ANSWER CHOICES	RESPONSES	
Yes	21.21%	77
No	57.85%	210
Undecided	19.28%	70
Prefer not to answer	1.65%	6
TOTAL		363

Q7 Knowing that the Township has a backlog of 12+ property owners seeking to preserve their land without sufficient funding available to preserve them in a timely manner, would you support an increase to the earned income tax to fund the preservation of open space at a faster rate in North Whitehall Township?

Answered: 363 Skipped: 0

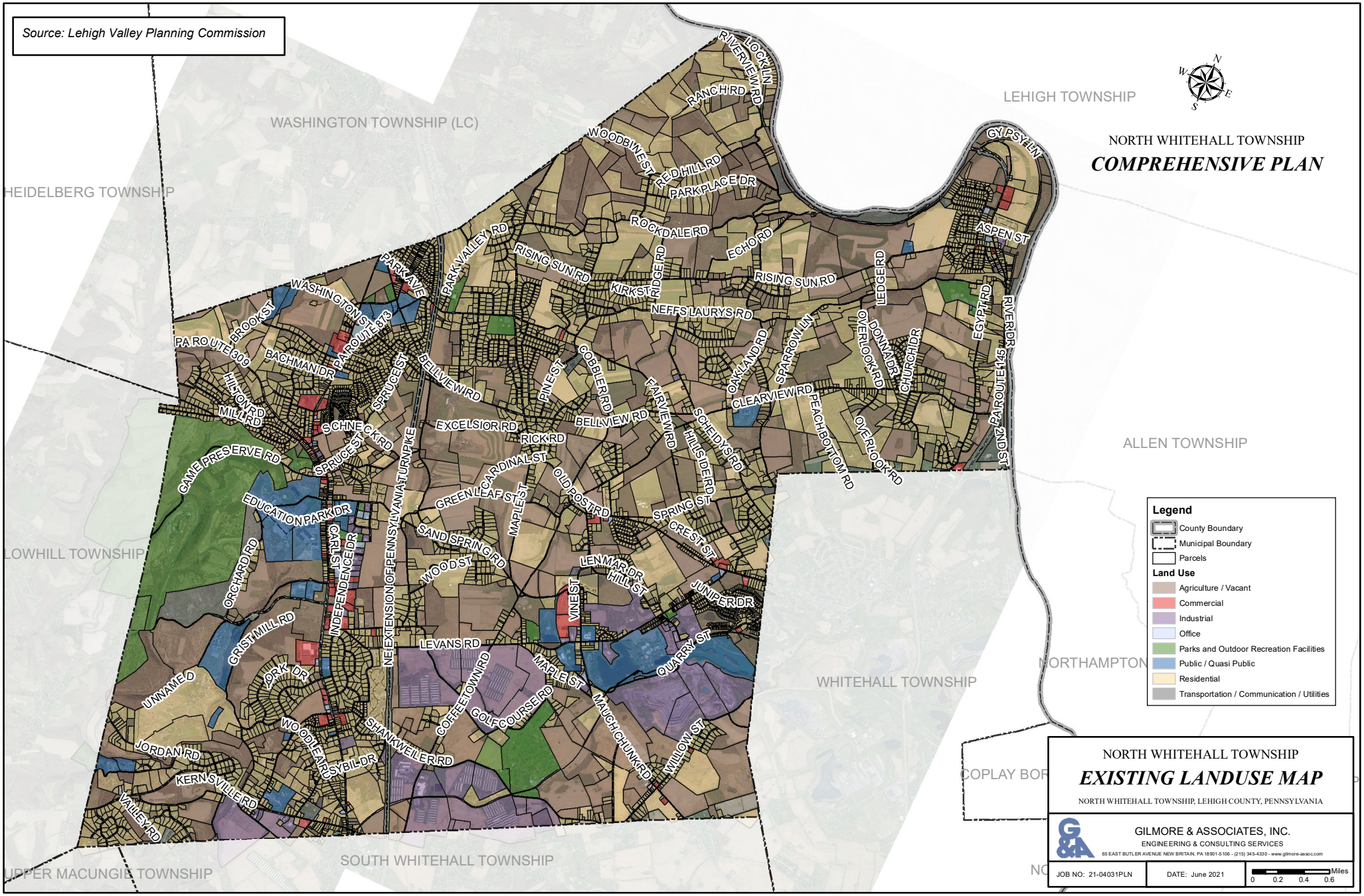


ANSWER CHOICES	RESPONSES	
Yes	45.73%	166
No	29.48%	107
Undecided	23.69%	86
Prefer not to answer	1.10%	4
TOTAL		363

APPENDIX D



LAND USE MAP

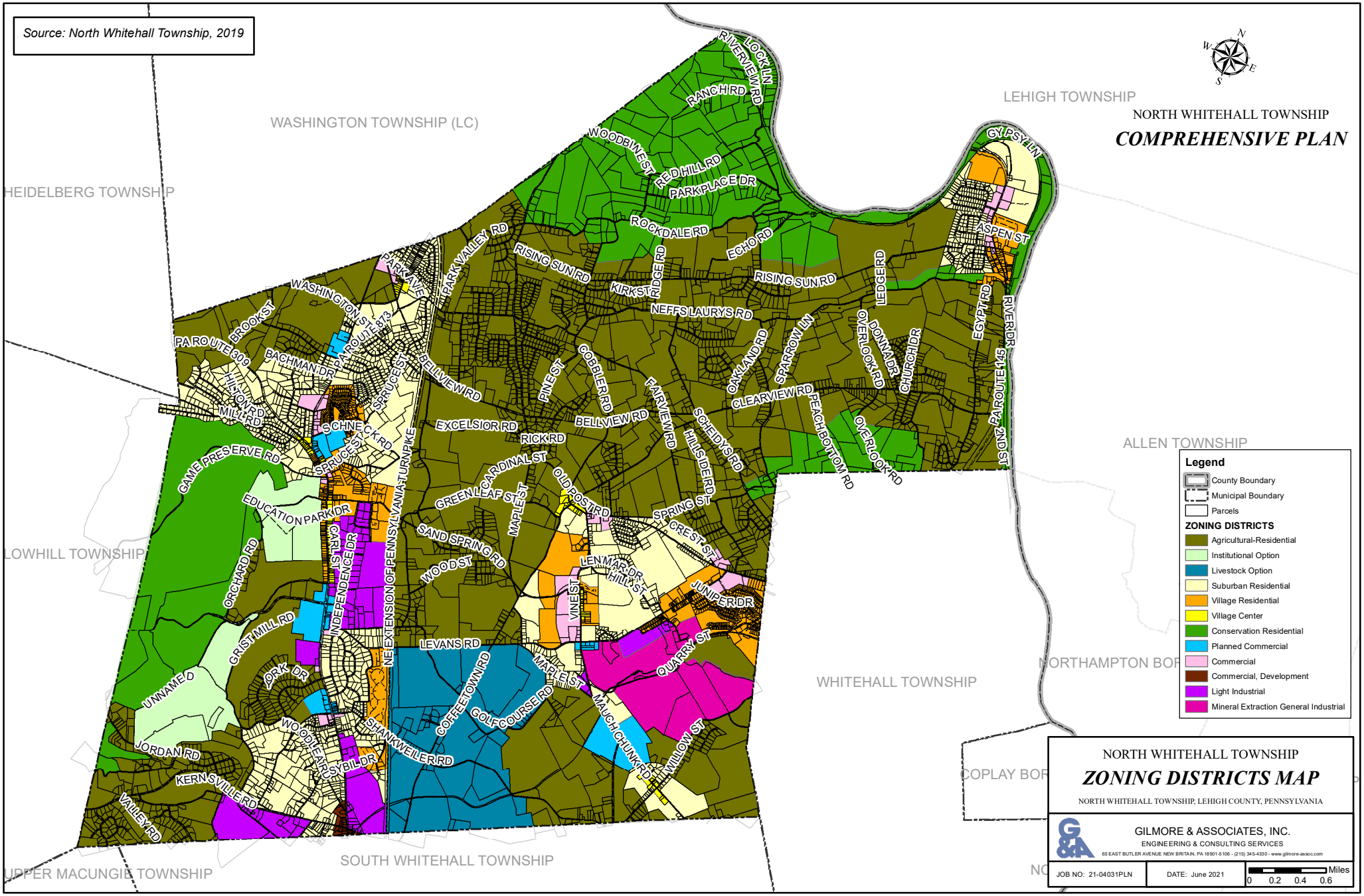

Source: Lehigh Valley Planning Commission
WASHINGTON TOWNSHIP (LC)
HEIDELBERG TOWNSHIP
LOWHILL TOWNSHIP
UPPER MACUNGIE TOWNSHIP
SOUTH WHITEHALL TOWNSHIP
WHITEHALL TOWNSHIP
NORTHAMPTON
COPLAY BOR
NC
ALLEN TOWNSHIP
LEHIGH TOWNSHIP
N
W
E
S
NORTH WHITEHALL TOWNSHIP
COMPREHENSIVE PLAN
RIVERVIEW RD
LOCK LN
RANCH RD
WOODBINE ST
RED HILL RD
PARK PLACE DR
GYPSY LN
ROCKDALE RD
ECHO RD
ASPEN ST
PARK AVE
PARK VALLEY RD
RISING SUN RD
RIDGE RD
KIRK ST
LEDGER RD
WASHINGTON ST
PA ROUTE 873
BROOK ST
NEFFS LAURYS RD
OVERLOOK RD
DONNA DR
CHURCH DR
EGYPT RD
RIVER DR
PA ROUTE 309
BACHMAN DR
SPRUCE ST
BELLVIEW RD
PINE ST
COBBLER RD
OAKLAND RD
SPARROW LN
HILTON RD
MILL RD
FAIRVIEW RD
CLEARVIEW RD
PEACH BOTTOM RD
PA ROUTE 145
SCHNECK RD
EXCELSIOR RD
RICK RD
BELLVIEW RD
SCHEIDYS RD
HILLSIDE RD
OVERLOOK RD
SPRUCE ST
CAME PRESERVE RD
CARDINAL ST
OLD POST RD
GREEN LEAF ST
MAPLE ST
SPRING ST
CREST ST
EDUCATION PARK DR
CARL ST
INDEPENDENCE DR
SAND SPRING RD
WOOD ST
LENMAR DR
HILL ST
JUNIPER DR
ORCHARD RD
VINE ST
GRIST MILL RD
NE EXTENSION OF PENNSYLVANIA TURNPIKE
LEVANS RD
QUARRY ST
CORK DR
MAPLE ST
COFFEETOWN RD
GOLF COURSE RD
MAUCH CHUNK RD
UNNAMED
WOODLEAF DR
SHANKWEILER RD
SYBIL DR
WILLOW ST
JORDAN RD
KERNSVILLE RD
VALLEY RD
Legend
County Boundary
Municipal Boundary
Parcels
Land Use
Agriculture / Vacant
Commercial
Industrial
Office
Parks and Outdoor Recreation Facilities
Public / Quasi Public
Residential
Transportation / Communication / Utilities
NORTH WHITEHALL TOWNSHIP
EXISTING LANDUSE MAP
NORTH WHITEHALL TOWNSHIP, LEHIGH COUNTY, PENNSYLVANIA
GILMORE & ASSOCIATES, INC.
ENGINEERING & CONSULTING SERVICES
65 EAST BUTLER AVENUE NEW BRITAIN, PA 18901-5106 - (215) 345-4330 - www.gilmore-assoc.com
JOB NO: 21-04031PLN
DATE: June 2021
Miles
0 0.2 0.4 0.6

APPENDIX E



ZONING MAP

Q&A


Source: North Whitehall Township, 2019
NORTH WHITEHALL TOWNSHIP
COMPREHENSIVE PLAN
WASHINGTON TOWNSHIP (LC)
LEHIGH TOWNSHIP
HEIDELBERG TOWNSHIP
ALLEN TOWNSHIP
LOWHILL TOWNSHIP
WHITEHALL TOWNSHIP
SOUTH WHITEHALL TOWNSHIP
UPPER MACUNGIE TOWNSHIP
Legend
County Boundary
Municipal Boundary
Parcels
ZONING DISTRICTS
Agricultural-Residential
Institutional Option
Livestock Option
Suburban Residential
Village Residential
Village Center
Conservation Residential
Planned Commercial
Commercial
Commercial, Development
Light Industrial
Mineral Extraction General Industrial
NORTH WHITEHALL TOWNSHIP
ZONING DISTRICTS MAP
NORTH WHITEHALL TOWNSHIP, LEHIGH COUNTY, PENNSYLVANIA
GILMORE & ASSOCIATES, INC.
ENGINEERING & CONSULTING SERVICES
JOB NO: 21-04031PLN
DATE: June 2021
Miles
0 0.2 0.4 0.6

APPENDIX F



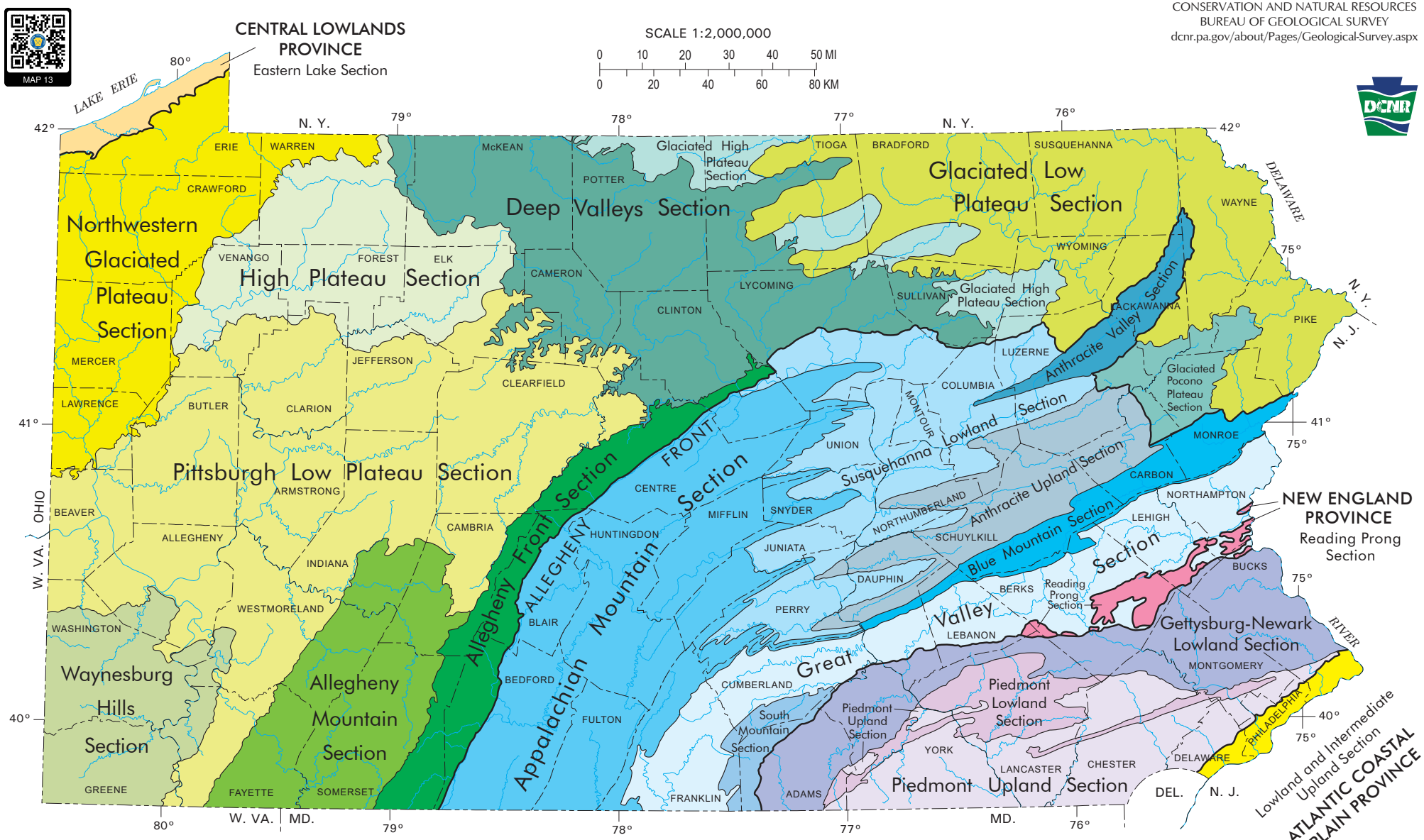
PHYSIOGRAPHIC PROVINCES OF PENNSYLVANIA MAP

Q&A

MAP 13

PHYSIOGRAPHIC PROVINCES OF PENNSYLVANIA

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF
CONSERVATION AND NATURAL RESOURCES
BUREAU OF GEOLOGICAL SURVEY
dcnr.pa.gov/about/Pages/Geological-Survey.aspx



EXPLANATION

CENTRAL LOWLANDS PROVINCE
- Eastern Lake Section

APPALACHIAN PLATEAUS PROVINCE
- Northwestern Glaciated Plateau Section
- High Plateau Section
- Pittsburgh Low Plateau Section
- Waynesburg Hills Section
- Allegheny Mountain Section
- Allegheny Front Section
- Deep Valleys Section
- Glaciated High Plateau Section
- Glaciated Low Plateau Section
- Glaciated Pocono Plateau Section

RIDGE AND VALLEY PROVINCE
- Appalachian Mountain Section
- Susquehanna Lowland Section
- Anthracite Valley Section
- Anthracite Upland Section
- Blue Mountain Section
- Great Valley Section
- South Mountain Section

NEW ENGLAND PROVINCE
- Reading Prong Section

PIEDMONT PROVINCE
- Gettysburg-Newark Lowland Section
- Piedmont Lowland Section
- Piedmont Upland Section

ATLANTIC COASTAL PLAIN PROVINCE
- Lowland and Intermediate Upland Section

SYMBOLS
- Approximate boundary between physiographic provinces
- Approximate boundary between physiographic sections

Compiled by W. D. Sevon. Fourth Edition, 2000; Third Printing, 2023.

PHYSIOGRAPHIC PROVINCES OF PENNSYLVANIA

PHYSIOGRAPHIC PROVINCE	PHYSIOGRAPHIC SECTION	DOMINANT TOPOGRAPHIC FORM	LOCAL RELIEF[1]	UNDERLYING ROCK TYPE	GEOLOGIC STRUCTURE	APPROXIMATE ELEVATION[2] Min.	Max.	DRAINAGE PATTERN	BOUNDARIES	ORIGIN
CENTRAL LOWLANDS	Eastern Lake	Northwest-sloping, lake-parallel, low-relief ridges.	Very low to low.	Shale and siltstone.	Beds either horizontal or having low south dip.	570	1,000	Parallel.	*Northwest:* Lake Erie. *Southeast:* Base of escarpment.	Glacial, lake, and fluvial deposition and erosion.
APPALACHIAN PLATEAUS	Northwestern Glaciated Plateau	Broad, rounded upland and deep, steep-sided, linear valleys partly filled with glacial deposits.	Very low to moderate.	Shale, siltstone, and sandstone.	Subhorizontal beds.	900	2,200	Dendritic.	*Northwest:* Base of escarpment. *Southeast:* Glacial border.	Fluvial and glacial erosion; glacial deposition.
	High Plateau	Broad, rounded to flat uplands having deep, angular valleys.	Moderate to high.	Sandstone, siltstone, shale, and conglomerate; some coal.	Low-amplitude, open folds.	980	2,360	Dendritic.	*Northwest:* Glacial border. *Northeast:* Margins of deep valleys. *South:* Arbitrary along drainage divides between coal and noncoal areas.	Fluvial erosion; periglacial mass wasting.
	Pittsburgh Low Plateau	Smooth to irregular, undulating surface; narrow, relatively shallow valleys; strip mines and reclaimed land.	Low to moderate.	Sandstone, siltstone, sandstone, limestone, and coal.	Moderate- to low-amplitude, open folds, decreasing in occurrence northwestward.	660	2,340	Dendritic.	*Northwest:* Glacial border. *Elsewhere:* Arbitrary at topographic changes with adjacent sections.	Fluvial erosion; periglacial mass wasting; strip mining.
	Waynesburg Hills	Very hilly with narrow hilltops and steep-sloped, narrow valleys.	Moderate.	Sandstone, shale, red beds, and limestone.	Horizontal beds.	848	1,638	Dendritic.	Arbitrary at change of topography.	Fluvial erosion and landslides.
	Allegheny Mountain	Wide ridges separated by broad valleys; ridge elevations decrease to north.	Moderate to high.	Sandstone, siltstone, shale, and conglomerate; some limestone and coal.	Large-amplitude, open folds.	775	3,210	Dendritic.	*East:* Arbitrary between coal and noncoal areas. *West:* Base of west flank of Chestnut Ridge. *North:* Approximates northeast terminus of large-amplitude, open folds.	Fluvial erosion; some periglacial mass wasting.
	Allegheny Front	*East:* Rounded to linear hills rising by steps to an escarpment; hills cut by narrow valleys. *West:* Undulating hills sloping away from escarpment.	Moderate to high.	Shale, siltstone, and sandstone.	*South:* Broad fold. *Elsewhere:* Beds having low northwest dip; some faults.	540	2,980	Parallel and trellis.	*East:* Stream at base of hills below escarpment. *West:* Arbitrary between coal and noncoal areas.	Fluvial erosion; periglacial mass wasting.
	Deep Valleys	Very deep, angular valleys; some broad to narrow uplands.	Moderate to very high.	Sandstone, siltstone, shale, and conglomerate.	Moderate-amplitude, open folds that control valley orientations.	560	2,560	Angulate and rectangular.	Arbitrary at margins of deep valleys, either at top of valley slope or along drainage divide.	Fluvial erosion; periglacial mass wasting.
	Glaciated High Plateau	Broad to narrow, rounded to flat, elongate uplands and shallow valleys.	Low to high.	Sandstone, siltstone, shale, and conglomerate; some coal.	Moderate-amplitude, open folds.	620	2,560	Angulate and dendritic.	*East:* Base of escarpment. *Elsewhere:* Arbitrary with margins of deep valleys.	Fluvial and glacial erosion; glacial deposition.
	Glaciated Low Plateau	Rounded hills and valleys.	Low to moderate.	Sandstone, siltstone, and shale.	Low-amplitude folds.	440	2,690	Dendritic.	Base of escarpments of adjacent uplands; base of Pocono escarpment. *Elsewhere:* Arbitrary.	Fluvial and glacial erosion; glacial deposition.
	Glaciated Pocono Plateau	Broad, undulatory upland surface having dissected margins.	Low to moderate.	Sandstone, siltstone, and shale; some conglomerate.	Beds having low north dip; some small folds.	1,200	2,320	Deranged.	*South and east:* Base of Pocono escarpment. *North:* Crest of drainage divide. *West:* Arbitrary.	Fluvial and glacial erosion; glacial deposition.
RIDGE AND VALLEY	Appalachian Mountain	Long, narrow ridges and broad to narrow valleys; some karst.	Moderate to very high.	Sandstone, siltstone, shale, conglomerate, limestone, and dolomite.	Open and closed plunging folds having narrow hinges and planar limbs; variety of faults.	440	2,775	Trellis, angulate, and some karst.	*Southeast:* Base of slope change on southeast side of Blue Mountain. *West and northwest:* Center of valley bottom west of westernmost linear ridge. *Elsewhere:* Base of slope change of eastern ridges; arbitrary between ridges.	Fluvial erosion; solution of carbonate rocks; periglacial mass wasting.
	Susquehanna Lowland	Low to moderately high, linear ridges; linear valleys; Susquehanna River valley.	Low to moderate.	Sandstone, siltstone, shale, conglomerate, limestone, and dolomite.	Open and closed plunging folds having narrow hinges and planar limbs.	260	1,715	Trellis and angulate.	Base of slope change to higher ridges of all surrounding areas; arbitrary in valley areas.	Fluvial erosion; some glacial erosion and deposition in northeast.
	Anthracite Valley	Narrow to wide, canoe-shaped valley having irregular to linear hills; valley enlosed by steep-sloped mountain rim.	Low to moderate.	Sandstone, siltstone, conglomerate, and anthracite.	Broad, doubly-plunging syncline; faults and smaller folds.	500	2,368	Trellis and parallel.	Outer base of surrounding mountain.	Fluvial and glacial erosion; some glacial deposition.
	Anthracite Upland	Upland surface having low, linear to rounded hills, strip mines, and waste piles; upland surrounded by an escarpment, a valley, and a mountain rim.	Low to high.	Sandstone, shale, conglomerate, and anthracite.	Many narrow folds having steep limbs; many faults.	320	2,094	Trellis.	*Northeast:* Arbitrary between coal and noncoal areas. *Elsewhere:* Outer base of surrounding mountain.	Fluvial erosion; some glacial erosion and periglacial mass wasting.
	Blue Mountain	Linear ridge to south and valley to north; valley widens eastward and includes low linear ridges and shallow valleys.	Moderate to high.	Sandstone, siltstone, and shale; some limestone and conglomerate.	*Southwest:* South limb of broad fold. *Northeast:* Small folds north of Blue Mountain.	300	1,680	Trellis.	*Southeast:* Base of slope change on southeast side of Blue Mountain. *Northwest:* Base of mountain; base of Pocono escarpment. *Northeast:* Arbitrary.	Fluvial erosion; some glacial erosion and deposition in northeast.
	Great Valley	Very broad valley. *Northwest half:* Dissected upland. *Southeast half:* Low karst terrain.	Low to moderate.	*Northwest:* Shale and sandstone, slate at east end. *Southeast:* Limestone and dolomite.	Thrust sheets, nappes, overturned folds, and steep faults; many third- and fourth-order folds.	140	1,100	Dendritic and karst.	*North:* Base of slope change on southeast side of Blue Mountain. *South:* Base of slope change to adjacent uplands.	Fluvial erosion; solution of carbonate rocks; some periglacial mass wasting.
	South Mountain	Linear ridges, deep valleys, and flat uplands.	Moderate to high.	Metavolcanic rocks, quartzite, and some dolomite.	Major anticlinorium having many second- and third-order folds.	450	2,080	Dendritic.	Base of slope change to adjacent lowlands.	Fluvial erosion of highly variable rocks; some periglacial mass wasting.
NEW ENGLAND	Reading Prong	Circular to linear, rounded hills and ridges.	Moderate.	Granitic gneiss, granodiorite, and quartzite.	Multiple nappes.	140	1,364	Dendritic.	Base of slope change to adjacent lowlands.	Fluvial erosion; some periglacial mass wasting.
PIEDMONT	Gettysburg-Newark Lowland	Rollings lowlands, shallow valleys, and isolated hills.	Low to moderate.	Mainly red shale, siltstone, and sandstone, some conglomerate and diabase.	Half-graben having low, monoclinal, northwest-dipping beds.	20	1,355	Dendritic and trellis.	Base of slope changes with adjacent uplands and lowlands. *Elsewhere:* Arbitrary.	Fluvial erosion of rocks of variable resistance.
	Piedmont Lowland	Broad, moderately dissected, karst valleys separated by broad, low hills.	Low.	Dominantly limestone and dolomite; some phyllitic shale and sandstone.	Complexly folded and faulted.	60	700	Dendritic and karst.	*South:* Base of slope change to adjacent upland. *North:* Mesozoic red rocks.	Fluvial erosion; some periglacial mass wasting.
	Piedmont Upland	Broad, rounded to flat-topped hills and shallow valleys.	Low to moderate.	Mainly schist, gneiss, and quartzite; some saprolite.	Extremely complexly folded and faulted.	100	1,220	Dendritic.	*East:* Base of low to vague Fall Line escarpment. *North:* Base of slope change to adjacent lowlands.	Fluvial erosion; some periglacial mass wasting.
ATLANTIC COASTAL PLAIN	Lowland and Intermediate Upland	Flat upper terrace surface cut by shallow valleys; Delaware River floodplain.	Very low.	Unconsolidated to poorly consolidated sand and gravel; underlain by schist, gneiss, and other metamorphic rocks.	Unconsolidated deposits underlain by complexly folded and faulted rocks.	0	200	Dendritic.	*Northwest:* Base of low to vague Fall Line escarpment. *East:* Arbitrary.	Fluvial erosion and deposition.

[1]Local relief: 0 to 100 feet, very low; 101 to 300 feet, low; 301 to 600 feet, moderate; 601 to 1,000 feet, high; >1,000 feet, very high.
(Relief categories listed here for Pennsylvania do not necessarily apply to other states or countries.)

[2]Elevations are in feet.

APPENDIX G



GEOLOGIC MAP OF PENNSYLVANIA

G&A

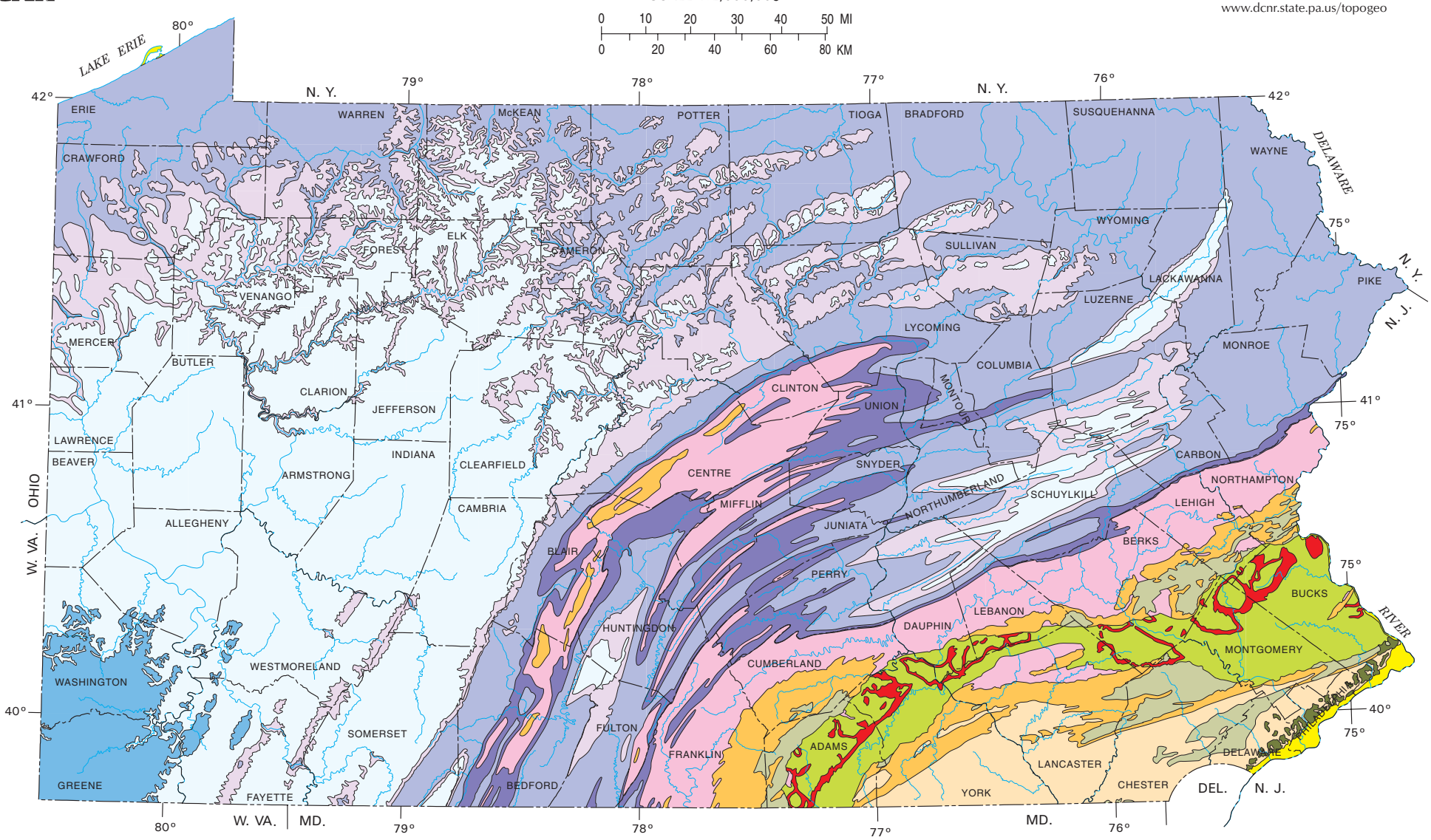
MAP 7

GEOLOGIC MAP OF PENNSYLVANIA

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF
CONSERVATION AND NATURAL RESOURCES
BUREAU OF TOPOGRAPHIC AND GEOLOGIC SURVEY
www.dcnr.state.pa.us/topogeo

SCALE 1:2,000,000

0 10 20 30 40 50 MI
0 20 40 60 80 KM



EXPLANATION

QUATERNARY (0–1.8 mil. yrs.) Sand, gravel, and silt. *Sand and gravel.*	TERTIARY (1.8–65 mil. yrs.) Sand, gravel, silt, and clay. *Sand and gravel.*	* JURASSIC AND TRIASSIC (144–248 mil. yrs.) Red sandstone, shale, and conglomerate (green), intruded by diabase (red). *Building stone, iron.*	PERMIAN (248–290 mil. yrs.) Cyclic sequences of shale, sandstone, limestone, and coal. *Lime, clay.*	PENNSYLVANIAN (290–323 mil. yrs.) Cyclic sequences of sandstone, red and gray shale, conglomerate, clay, coal, and limestone. *Coal, clay, lime, building stone.*	MISSISSIPPIAN (323–354 mil. yrs.) Red and gray sandstone, shale, and limestone. *Flagstone, limestone, clay.*	DEVONIAN (354–417 mil. yrs.) Red sandstone, gray shale, black shale, limestone, and chert. *Flagstone, silica sand, clay, lime.*	SILURIAN (417–443 mil. yrs.) Red and gray sandstone, conglomerate, shale, and limestone. *Lime, building stone.*	ORDOVICIAN (443–490 mil. yrs.) Shale, limestone, dolomite, and sandstone. *Slate, limestone, zinc, clay.*	CAMBRIAN (490–570 mil. yrs.) Limestone, dolomite, sandstone, shale, quartzite, and phyllite. *Lime, building stone.*	LOWER PALEOZOIC (443–570 mil. yrs.) Metamorphic rocks (metasedimentary and meta-igneous); schist, gneiss, quartzite, serpentine, slate, and marble. *Building stone, talc.*	PRECAMBRIAN (older than 570 mil. yrs.) Gneiss, granite, anorthosite, metadiabase, metabasalt, metarhyolite, and marble. *Building stone, graphite, sericite.*

*Cretaceous rocks, which are present in small areas of southern Montgomery County, cannot be shown at the scale of this map.

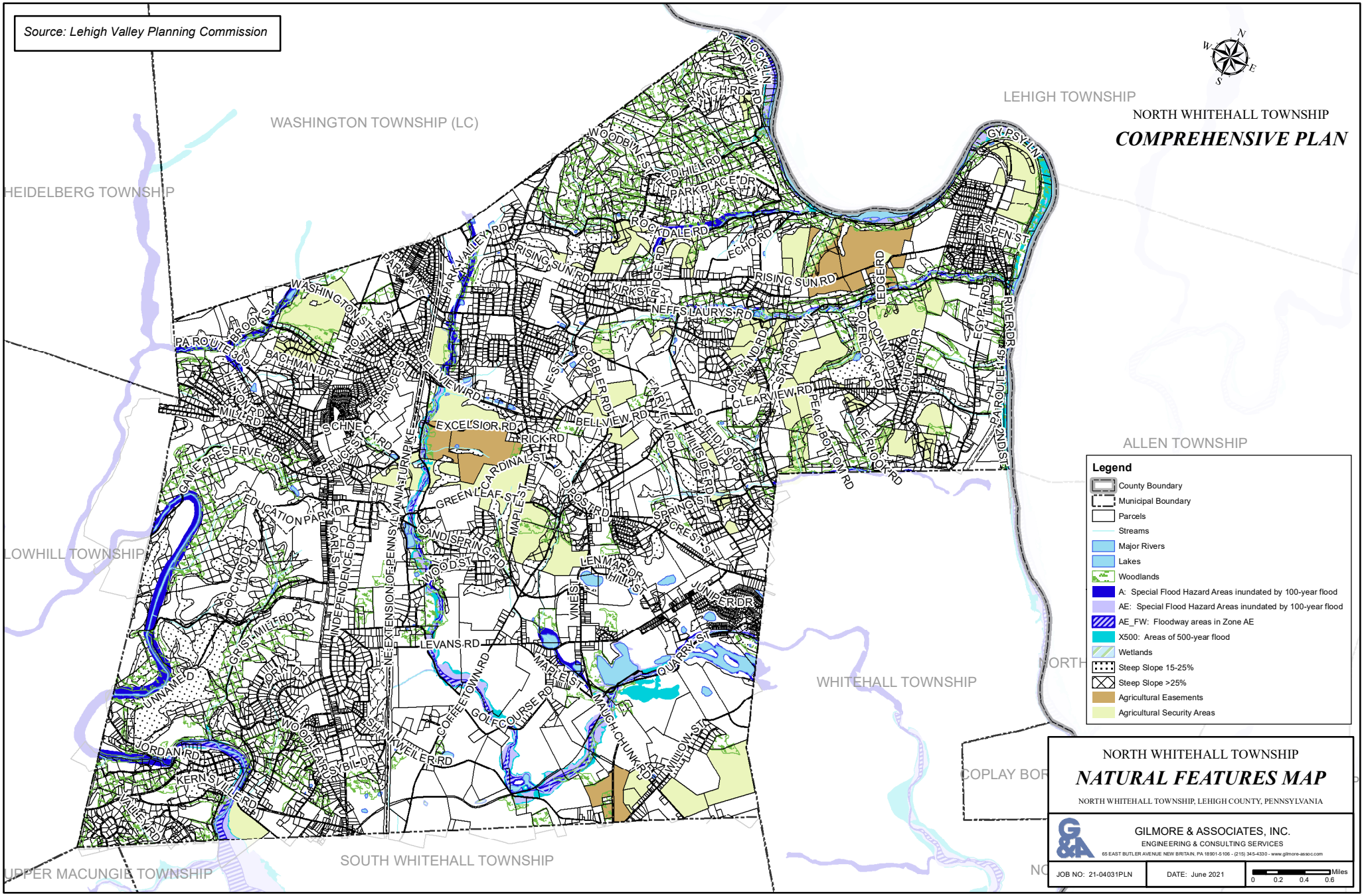
Prepared by Bureau of Topographic and Geologic Survey. Third Edition, 1990; Fourth Printing, Slightly Revised, 2007.

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Printed on Recycled Paper

APPENDIX H



NATURAL FEATURES MAP


Source: Lehigh Valley Planning Commission
WASHINGTON TOWNSHIP (LC)
HEIDELBERG TOWNSHIP
LOWHILL TOWNSHIP
LEHIGH TOWNSHIP
ALLEN TOWNSHIP
WHITEHALL TOWNSHIP
SOUTH WHITEHALL TOWNSHIP
UPPER MACUNGIE TOWNSHIP
COPLAY BOR
NORTH WHITEHALL TOWNSHIP
COMPREHENSIVE PLAN
Legend
County Boundary
Municipal Boundary
Parcels
Streams
Major Rivers
Lakes
Woodlands
A: Special Flood Hazard Areas inundated by 100-year flood
AE: Special Flood Hazard Areas inundated by 100-year flood
AE_FW: Floodway areas in Zone AE
X500: Areas of 500-year flood
Wetlands
Steep Slope 15-25%
Steep Slope >25%
Agricultural Easements
Agricultural Security Areas
NORTH WHITEHALL TOWNSHIP
NATURAL FEATURES MAP
NORTH WHITEHALL TOWNSHIP, LEHIGH COUNTY, PENNSYLVANIA
GILMORE & ASSOCIATES, INC.
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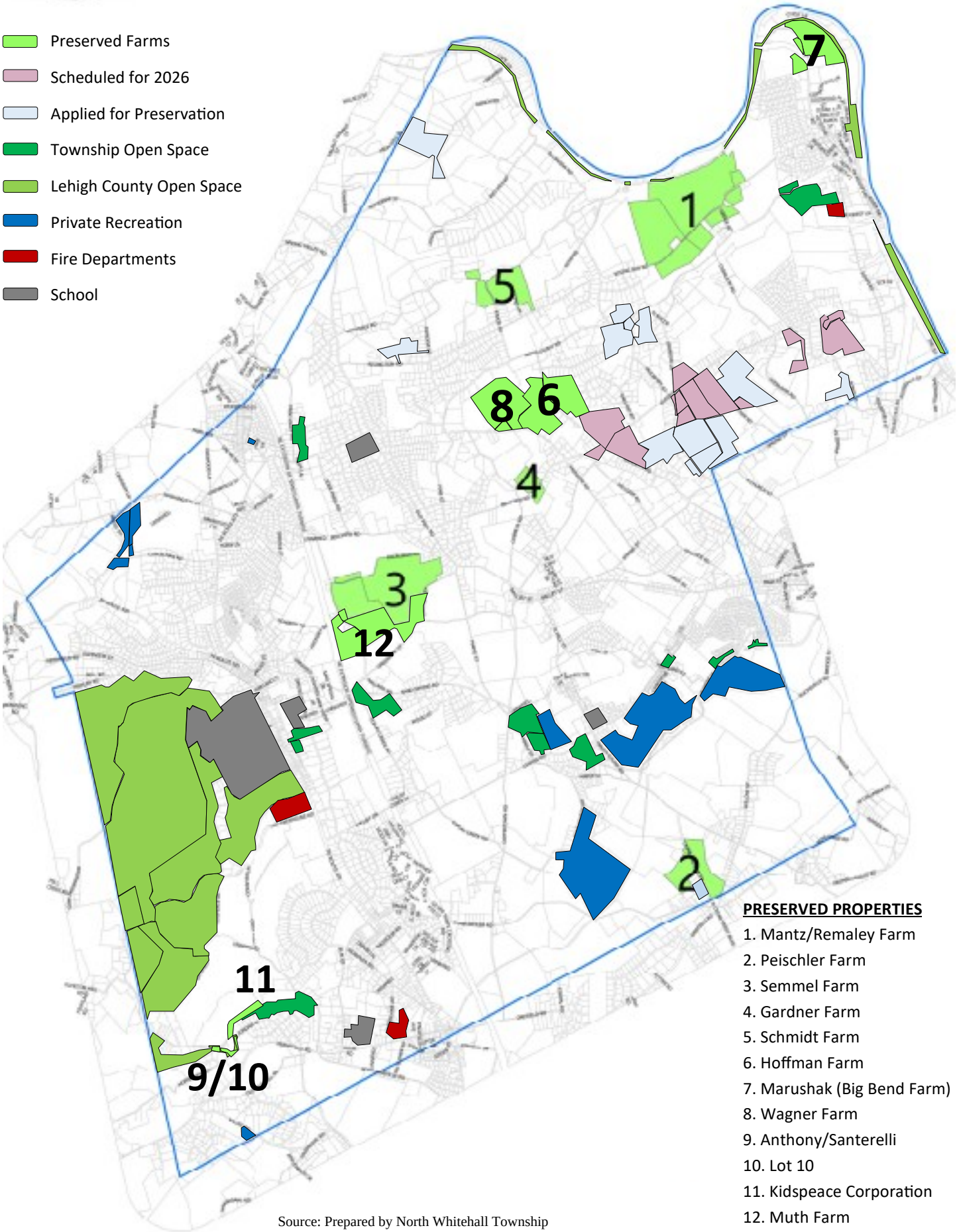
APPENDIX I



PRESERVATION MAP

Q&A

North Whitehall Township



PRESERVED PROPERTIES

1. Mantz/Remaley Farm
2. Peischler Farm
3. Semmel Farm
4. Gardner Farm
5. Schmidt Farm
6. Hoffman Farm
7. Marushak (Big Bend Farm)
8. Wagner Farm
9. Anthony/Santerelli
10. Lot 10
11. Kidspeace Corporation
12. Muth Farm

Source: Prepared by North Whitehall Township

APPENDIX J

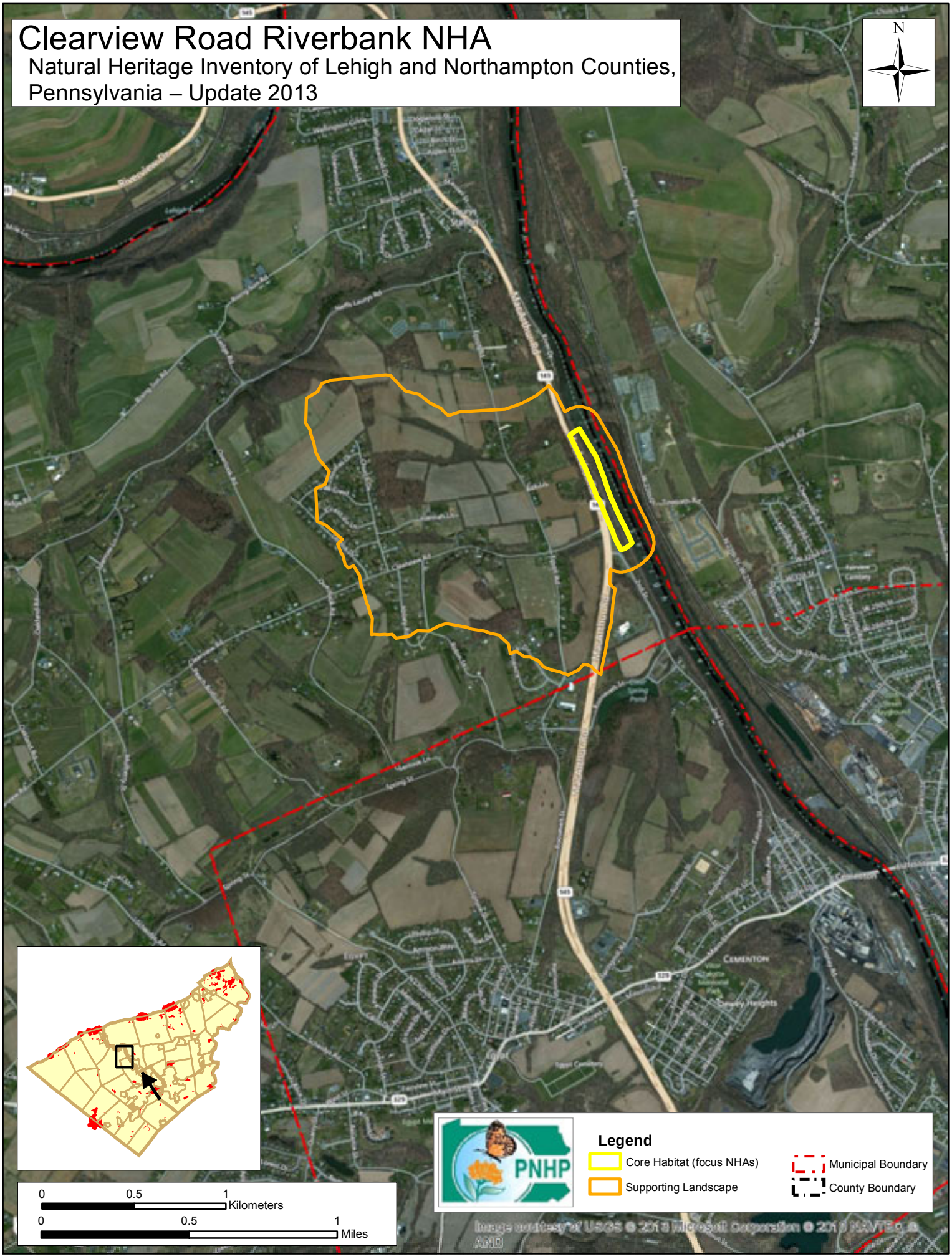


NATURAL HERITAGE AREAS

Q&A

Clearview Road Riverbank NHA

Natural Heritage Inventory of Lehigh and Northampton Counties, Pennsylvania – Update 2013



Clearview Road Riverbank NHA – *State Significance*

Species or natural communities of concern that can be found in this NHA include the following:

Species or Natural Community Name:	Taxa	PNHP Rank[1] Global	PNHP Rank[1] State	PA Legal Status[1] (Proposed)	Last Seen	Quality[2]
Baltic Rush (*Juncus arcticus* var. *littoralis*)		G5T5	S2	PT (PT)	1997	C
Veiny Pea (*Lathyrus venosus*)		G5	S2	N (PE)	1964	H
Virginia Rose (*Rosa virginiana*)		G5	S1	TU (TU)	1997	B

(Element type: Communities, Sensitive Species, Mammals, Birds, Fish, Amphibians, Mussels, Odonates, Lepidopterans, Plants)

[1]See the PNHP website (http://www.naturalheritage.state.pa.us/RankStatusDef.aspx) for an explanation of PNHP ranks and legal status. A legal status in parentheses is a status change recommended by the Pennsylvania Biological Survey.

[2]See NatureServe website (http://www.natureserve.org/explorer/eorankguide.htm) for an explanation of quality ranks.

Location: This Natural Heritage Area occurs along the Lehigh River south of Laurys Station.

- Municipalities:
  - Lehigh County: North Whitehall
- USGS Quadrangles: Cementon
- Watersheds (HUC 12): Lehigh River-Hokendauqua Creek
- 1999 Lehigh & Northampton Natural Areas Inventory reference: Includes part of "Clearview Road Riverbank Site"
- 2005 Lehigh & Northampton Natural Areas Inventory Update reference: Includes part of "Clearview Road Riverbank Site"

Description: The banks of the Lehigh River at this location are squeezed tightly between the river on one side, and a road and the former railroad bed, now used as a hiking and biking trail on the other. The narrow riparian zone has a few small floodplain scour areas where cobble and sand collect among the exposed bedrock of the riverbed.



Rocky Gleason, (PNHP)

Bedrock riverbed outcrops are seasonally scoured by flooding and ice flow to create pockets of habitat diversity along the floodplain of the Lehigh River.

Element of Concern Considerations:

- Baltic rush has a circumboreal distribution, occurring in both Eurasia and North America, where it occurs in most states except the south. In Pennsylvania, it occurs in a few scattered locations around the state in calcareous swamps and shores. This species has not been documented at this location since 1997 and additional surveys for this species at this location are recommended.
- Veiny pea ranges from southern Quebec and New York south to Georgia and west to North Dakota and Texas. In Pennsylvania, it occurs in scattered location around the state along sandy or rocky shores,

wooded slopes and railroad banks. This species has not been documented at this location since 1964 and additional surveys for this species at this location are recommended.

- Virginia rose ranges from Newfoundland to Virginia and irregularly to Missouri. In Pennsylvania, it occurs in scattered locations around the state in pastures, old fields, open roads and roadsides. This species has not been documented at this location since 1997 and additional surveys for this species at this location are recommended.

Habitat Disturbances:

- Historic –
  - The landscape surrounding the Lehigh River was cleared of its original vegetation and converted to agricultural uses many years ago.
  - A road and railroad were constructed along the Lehigh River prior to 1939.
- Current –
  - The banks of the Lehigh River at this location are mostly wooded, but with strong components of introduced and invasive species. Invasive species can out compete native species in many locations and convert a biologically diverse habitat into a monoculture of a few cosmopolitan species.
  - Over browsing by white-tailed deer is a serious threat to the overall understory plant diversity. An overabundance of deer can create the effect of park-like forests in which the understory and vertical stratification is greatly reduced. Removal of understory species eliminates habitat for some nesting songbirds as well as increases competition between deer and other wildlife due to reduced food sources.

Conservation Actions:

- Preserve the natural fluctuating river water levels. The seasonal ebb and flow of the river, with occasional flooding and scour events helps to maintain the disturbed, open habitats preferred by the plant species of concern.
- Control invasive species to prevent native species from being crowded out of the habitat. Invasive species are well established along roadways, field edges and utility corridors and have begun to colonize parts of the forest interior. Removal of invasive shrubs such as multiflora rose (*Rosa multiflora*), Japanese barberry (*Berberis thunbergii*), bush honeysuckles (*Lonicera maackii* and *L. morrowii*), alder buckthorn (*Rhamnus Frangula*), autumn olive (*Elaeagnus umbellata*), and the wetland invader, purple loosestrife (*Lythrum salicaria*), can be most effective as they can shade out the ground, prevent the growth of other species and prevent the formation of a diverse herbaceous layer. Target pioneer populations of invasive plants for immediate and continued removal. It is much easier and more effective to keep a place invasive-free than to try and repair a heavily infested habitat. Invasive species management should be coordinated by individuals familiar with the rare species as well as the invasive species present. Continual invasive species monitoring and control will be necessary.
- Reduce the deer density in the area. Uncommon species of native plants are particularly susceptible to deer herbivory.

References:

NatureServe. 2013. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.1. NatureServe, Arlington, Virginia. Available at http://www.natureserve.org/explorer.

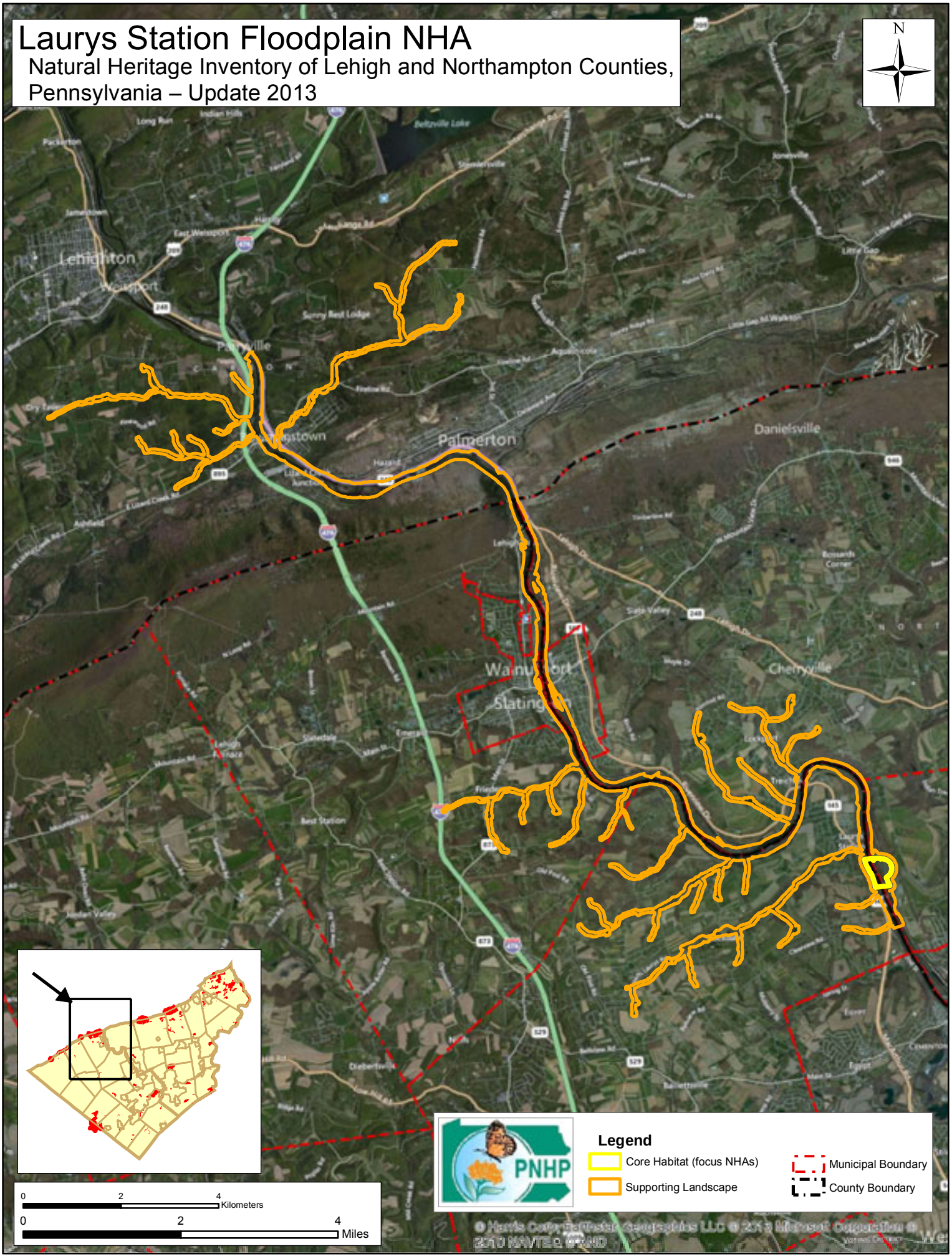
Pennsylvania Natural Heritage Program. 2013.

Rhoads, A. F. and W. M. Klein, Jr. 1993. The Vascular Flora of Pennsylvania: Annotated Checklist and Atlas. American Philosophical Society, Philadelphia.

Rhoads, A. F. and T. A. Block. 2007. The Plants of Pennsylvania: An Illustrated Manual, Second Edition. University of Pennsylvania Press, Philadelphia.

Laurys Station Floodplain NHA

Natural Heritage Inventory of Lehigh and Northampton Counties, Pennsylvania – Update 2013



Laurys Station Floodplain NHA – *State Significance*

Species or natural communities of concern that can be found in this NHA include the following:

Species or Natural Community Name:	Taxa	PNHP Rank[1] Global	PNHP Rank[1] State	PA Legal Status[1] (Proposed)	Last Seen	Quality[2]
Osprey (*Pandion haliaetus*)		G5	S3B	PT (PT)	2008	E



(Element type: Communities, Sensitive Species, Mammals, Birds, Fish, Amphibians, Mussels, Odonates, Lepidopterans, Plants)

[1]See the PNHP website (http://www.naturalheritage.state.pa.us/RankStatusDef.aspx) for an explanation of PNHP ranks and legal status. A legal status in parentheses is a status change recommended by the Pennsylvania Biological Survey.

[2]See NatureServe website (http://www.natureserve.org/explorer/eorankguide.htm) for an explanation of quality ranks.

Location: This Natural Heritage Area occurs along the Lehigh River just downstream from Laurys Station.

- Municipalities:
  - Lehigh County: North Whitehall Township
  - Northampton County: Allen Township
- USGS Quadrangles: Cementon
- Watersheds (HUC 12): Lehigh River-Hokendauqua Creek
- 1999 Lehigh & Northampton Natural Areas Inventory reference: None
- 2005 Lehigh & Northampton Natural Areas Inventory Update reference: None

Description: The narrow forested floodplain of this section of the Lehigh River provides suitable nesting habitat for Ospreys, a bird species of concern. The adjacent river and its tributaries provide the Ospreys with fishing opportunities.

Element of Concern Considerations:

- The Osprey is a distinctive bird of prey most often seen around open water. Ospreys inhabit every continent but Antarctica, nesting in trees, snags, and ever-increasing man-made structures located near high quality fresh- or saltwater fishing grounds. The Osprey suffered a significant population decline linked to the use of organochlorine pesticides. With the cessation of DDT use in the US Osprey populations have begun to recover. Nesting in both "wild" and highly urban environments, the habitat requirements for Osprey are quality fishing grounds near a suitable nesting platform. Measures to maintain and improve the water quality of the Lehigh River and its tributaries would help safeguard the aquatic food chain which supports the Osprey.

Habitat Disturbances:

- Historic –
  - The landscape surrounding the Lehigh River was cleared of its original vegetation and converted to agricultural uses many years ago.
  - A road and railroad were constructed along the Lehigh River.
- Current –
  - Decreases in surface water quality of the Lehigh River and its tributaries can have an adverse impact on the aquatic food chain that supports the fish-feeding Osprey.
  - Rural and suburban development and its associated infrastructure have expanded in recent years, replacing farmland, forests and natural habitat in the surrounding area, especially along primary roads. Agricultural activities present extreme modifications to the environment, but urban/suburbanization typically represents a more permanent habitat erasure. Increasing amounts of impervious surfaces can contribute significantly to the non-point source pollution of creeks,

streams and wetlands in the area. Improperly functioning septic systems can also impact the regional groundwater and surface water.

- The banks of the Lehigh River at this location are mostly wooded, but with strong components of introduced and invasive species. Invasive species can out compete native species in many locations and convert a biologically diverse habitat into a monoculture of a few cosmopolitan species.

Conservation Actions:

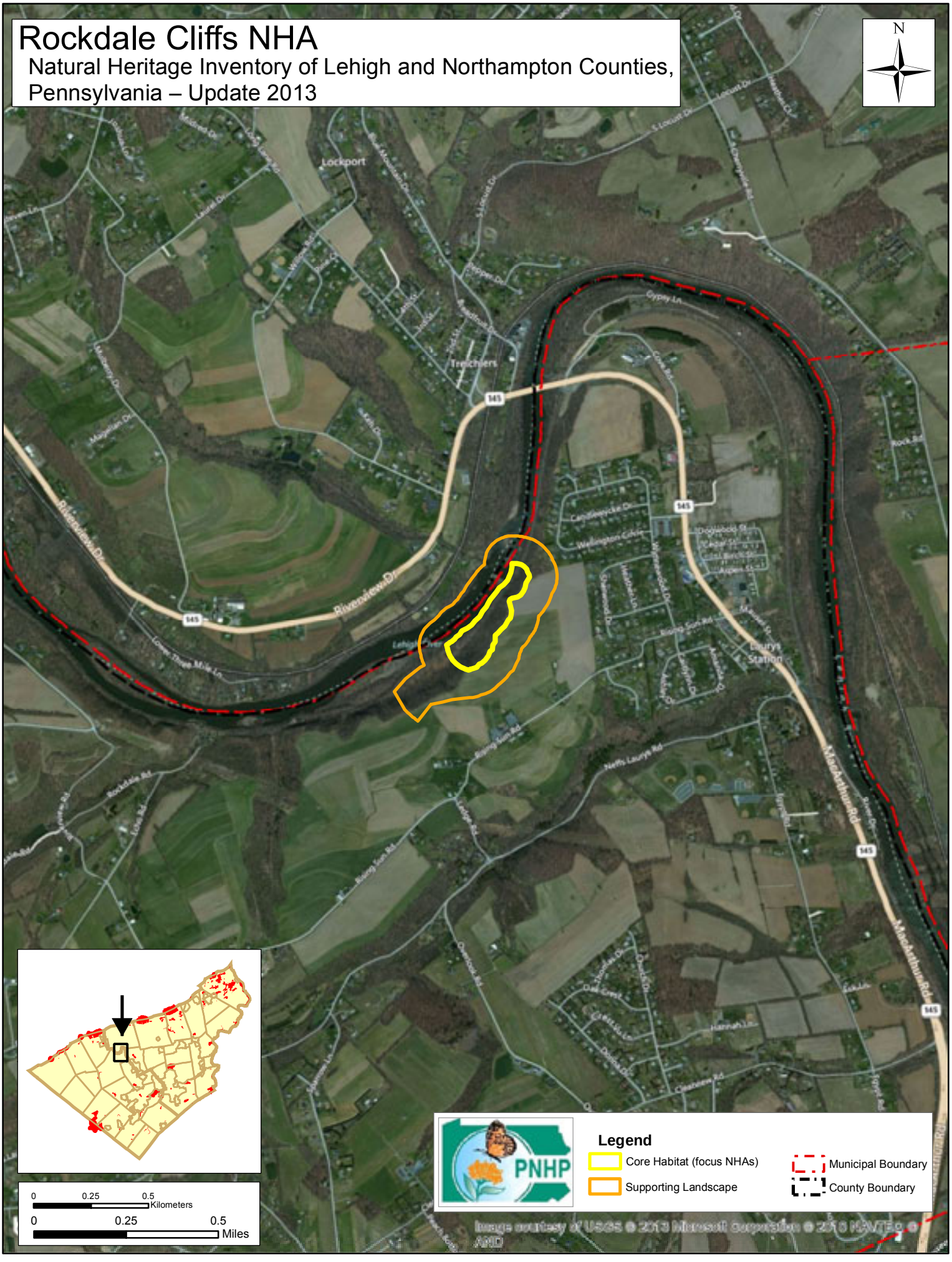
- Preserve and avoid disturbing suitable nesting habitat along the banks of the river. The forested floodplain at this location has numerous large trees that provide nesting opportunities. Osprey populations can also be supported by the construction of artificial nesting platforms.
- Preserve and improve the water quality of the watershed to help provide a continued and increased food chain. Restore and expand vegetated riparian buffers along all tributaries of the watershed. All tributaries within the watershed can help improve water quality by decreasing unfiltered runoff from non-point sources of pollution. The rainwater runoff from agricultural fields, pastures, roads and residences should be considered a potential source of significant contamination for the watershed. Runoff from these sources have significantly higher levels of sediment, nutrients, pesticides, herbicides and other pollutants than runoff filtered through a natural habitat. Restoration of vegetated stream buffers along the Lehigh River and its tributaries will help increase the quality of the habitat and food source for the species of concern while improving water conditions for the entire watershed and downstream users.
- Discourage shoreline development.
- Suppress the spread of invasive species of plants to prevent native species from being crowded out of the habitat. Invasive species are well established along the floodplain of the river. Continual invasive species monitoring and control will be necessary.

References:

NatureServe. 2013. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.1. NatureServe, Arlington, Virginia. Available at http://www.natureserve.org/explorer.

Rockdale Cliffs NHA

Natural Heritage Inventory of Lehigh and Northampton Counties, Pennsylvania – Update 2013



Rockdale Cliffs NHA – *State Significance*

Species or natural communities of concern that can be found in this NHA include the following:

Species or Natural Community Name:	Taxa	PNHP Rank[1] Global	PNHP Rank[1] State	PA Legal Status[1] (Proposed)	Last Seen	Quality[2]
Ebony Sedge (*Carex eburnea*)		G5	S1	PE (PE)	2011	B



(Element type: Communities, Sensitive Species, Mammals, Birds, Fish, Amphibians, Mussels, Odonates, Lepidopterans, Plants)

[1]See the PNHP website (http://www.naturalheritage.state.pa.us/RankStatusDef.aspx) for an explanation of PNHP ranks and legal status. A legal status in parentheses is a status change recommended by the Pennsylvania Biological Survey.

[2]See NatureServe website (http://www.natureserve.org/explorer/eorankguide.htm) for an explanation of quality ranks.

Location: This Natural Heritage Area is located in the middle of a two-mile stretch of forested slope on the south side of the Lehigh River just south of Treichlers.

- Municipalities:
  - Lehigh County: North Whitehall Township
- USGS Quadrangles: Cementon
- Watersheds (HUC 12): Lehigh River-Hokendauqua Creek
- 1999 Lehigh & Northampton Natural Areas Inventory reference: "Rockdale Cliffs"
- 2005 Lehigh & Northampton Natural Areas Inventory Update reference: Includes all or portions of "Rockdale Cliffs"

Description: The site consists of sparsely vegetated vertical cliffs of the Martinsburg formation. Groundwater seepage and a northern exposure help keep the cliffs moist for part of the growing season and the resultant microclimate provides habitat suitable for a plant species of concern. This forest is relatively mature and includes ravines and moist north facing slopes as well as many outcrops and cliffs with drier forest associations occurring above them. It is excellent habitat for a variety of nesting and migrating birds as well as for reptile and amphibian species. Maintaining large contiguous forested tracts such as this along the counties' waterways will be an important step in helping to minimize the loss of natural diversity from the county.

Element of Concern Considerations:

- Ebony sedge is widely distributed in the more northern and cooler portions of North America. It is known from several scattered locations in the northern or mountain counties in Pennsylvania. The species grows in a variety of habitats in its range, but in Pennsylvania it is typically found on cliffs, outcrops, steep slopes and banks, often on northerly exposures, that are composed of limestone or calcareous rock. Prevent destruction or modification of rock outcrops where this species occurs and suppress invasive species of plants to help ensure the viability of habitats and the continued survival of these populations.

Habitat Disturbances:

- Historic –
  - Most of the original forest cover of the area had been removed and converted to agricultural or other uses over the past several centuries, leaving little of the original vegetation in place. Aerial photographs from 1937 show that much of the currently forested area was forested then within a landscape dominated by active agriculture. Though the forest was likely selectively cut for fuel wood and timber several times since colonial times, much of the existing forest has been standing for over 100 years and individual trees could be much older.
  - A railroad was constructed along the Lehigh River at the base of the forested slope, making cuts into the bedrock as necessary for a suitable rail bed.
- Current –

- The forested slope remains relatively untouched, likely due to the very steep nature of the site.
- Regularly disturbed areas such as railroads, floodplains, riparian zones, and forest/field edges are particularly susceptible to colonization by invasive species of plants, which are well established in this area.
- Agricultural fields crowd the top of the slope, providing little buffer against the downward flow of runoff from the adjacent fields. Runoff from these sources have significantly higher levels of sediment, nutrients, pesticides, herbicides and other pollutants than runoff filtered through a natural habitat.

Conservation Actions:

- Safeguard the quality and expanse of the forested landscape along the river-facing steep slopes. Prevent fragmentation and incursions into the forested habitat. Encourage the regeneration of native trees, shrubs and herbaceous layers. The forest cover of the river slopes should be allowed to achieve and maintain older-growth characteristics.
- Create "no spray" zones along the most sensitive areas of the railroad rights-of-way to avoid unintentional destruction of the species of concern or their habitats.
- Suppress the establishment and spread of invasive species of plants. The railroad rights-of-way and forest/highway transition zones are likely the primary location of non-native trees and shrubs within this area. Care must be taken to distinguish between native and non-native species of plants. Coordinate invasive species control with those familiar with plant identification.

References:

NatureServe. 2013. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.1. NatureServe, Arlington, Virginia. Available at http://www.natureserve.org/explorer.

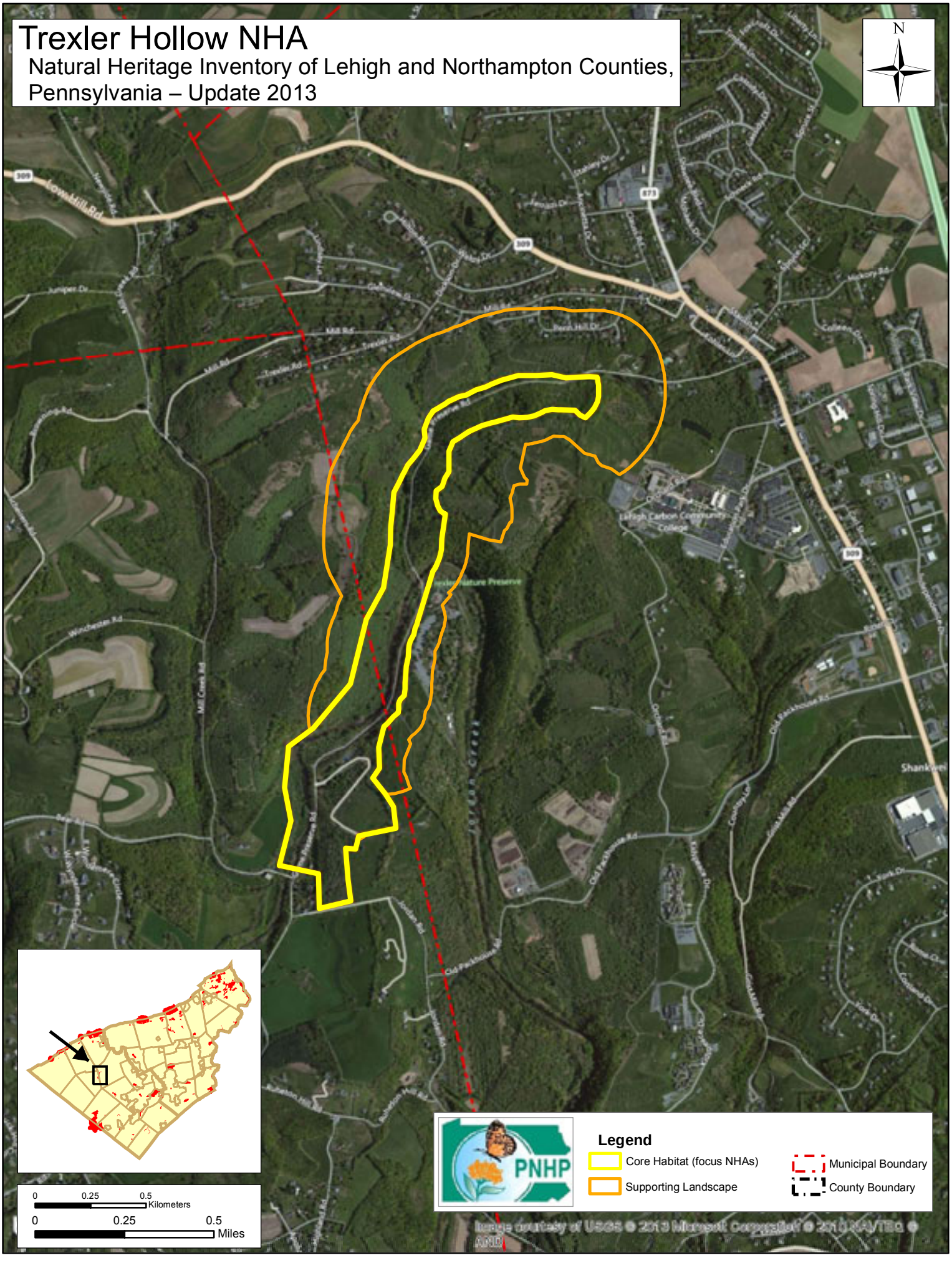
Pennsylvania Natural Heritage Program. 2013.

Rhoads, A. F. and W. M. Klein, Jr. 1993. The Vascular Flora of Pennsylvania: Annotated Checklist and Atlas. American Philosophical Society, Philadelphia.

Rhoads, A. F. and T. A. Block. 2007. The Plants of Pennsylvania: An Illustrated Manual, Second Edition. University of Pennsylvania Press, Philadelphia.

Trexler Hollow NHA

Natural Heritage Inventory of Lehigh and Northampton Counties, Pennsylvania – Update 2013



Trexler Hollow NHA – *State Significance*

Species or natural communities of concern that can be found in this NHA include the following:

Species or Natural Community Name:	Taxa	PNHP Rank[1] Global	PNHP Rank[1] State	PA Legal Status[1] (Proposed)	Last Seen	Quality[2]
Western Hairy Rock-cress (*Arabis hirsuta*)		G5	S1	TU (PE)	2011	CD
Round-head Gayfeather (*Liatris scariosa*)		G5?	S2	N (PT)	1998	C



(Element type: Communities, Sensitive Species, Mammals, Birds, Fish, Amphibians, Mussels, Odonates, Lepidopterans, Plants)

[1]See the PNHP website (http://www.naturalheritage.state.pa.us/RankStatusDef.aspx) for an explanation of PNHP ranks and legal status. A legal status in parentheses is a status change recommended by the Pennsylvania Biological Survey.

[2]See NatureServe website (http://www.natureserve.org/explorer/eorankguide.htm) for an explanation of quality ranks.

Location: This Natural Heritage Area occurs along the Jordan Creek in part of the Trexler Nature Preserve west of Schnecksville.

- Municipalities:
  - Lehigh County: Lowhill Township, North Whitehall Township
- USGS Quadrangles: Cementon, Slatedale
- Watersheds (HUC 12): Jordan Creek
- 1999 Lehigh & Northampton Natural Areas Inventory reference: Includes all or a portion of "Trexler Hollow"
- 2005 Lehigh & Northampton Natural Areas Inventory Update reference: Includes all or a portion of "Trexler Hollow"

Description: Steep, crumbly, exposed shale cliffs, slopes and road cuts along the Jordan Creek in this area support scattered populations of two plant species of concern.

Element of Concern Considerations:

- Western hairy rockcress in Pennsylvania typically occurs on dry cliffs, and rocky ledges, usually on limestone substrates. Control of invasive species of plants, maintenance of open habitats and protection of rocky outcrops can help conserve populations of this species.
- Round-head gayfeather in Pennsylvania typically occurs in dry woods, shaley slopes and barrens. Control of invasive species of plants, maintenance of open habitats and protection of rocky outcrops can help conserve populations of this species.

Habitat Disturbances:

- Historic –
  - Most of the original forest cover of the area had been removed and converted to agricultural or other uses over the past several centuries, leaving only small patches of the original vegetation in place. Aerial photographs from 1939 (http://www.pennpilot.psu.edu/) show scattered forested woodlots, primarily along the steep slopes of Jordan Creek, within a landscape dominated by active agriculture. Though the woodlots were likely cut for fuel wood and timber several times since colonial times, the existing forest has likely been standing for over 100 years and individual trees could be quite older.
  - A road follows Jordan Creek and its tributary. This disturbance has in at least one instance helped to provide the exposed, open canopy conditions preferred by the species of concern.
- Current –

- Some of the agricultural fields and pastures formerly dominating this area have since been left fallow. Unfortunately, as with many former agricultural fields that have been released from active management, these areas are prone to invasion by aggressive and introduced species of plants. Invasive species of plants are well established throughout much of the area, especially autumn olive (*Elaeagnus umbellata*), and Japanese stilt grass (*Microstegium vimineum*).
- Over browsing by white-tailed deer is a serious threat to the overall understory plant diversity. An overabundance of deer can create the effect of park-like forests in which the understory and vertical stratification is greatly reduced. Removal of understory species eliminates habitat for some nesting songbirds as well as increases competition between deer and other wildlife due to reduced food sources. Deer have strong, species-specific feeding preferences. The most highly preferred species are the first to decline or disappear when deer numbers are high. Furthermore, deer have been shown to be prolific seed dispersers for many of the most invasive non-native species. The result is greatly impoverished native species diversity, failure of native tree regeneration, and the rapid proliferation of invasive species. It is likely their selective feeding habits and effective seed dispersal make the spread of invasive plants much faster than would be the case without deer, even where herds are only moderately oversized.

Conservation Actions:

- The plant species of concern documented at this site occur along portions of Game Preserve Road and the adjacent area where exposed bedrock outcrops and steep, loose shale slopes have limited the establishment of trees and shrubs. Roadway, or utility line maintenance activities could have a very negative impact on the species of concern at this location. Create “no spray” zones along the most sensitive areas of the rights-of-way to avoid unintentional destruction of the species of concern or its habitat. Indiscriminate use of herbicides as rights-of-way defoliants is not appropriate. A smarter, more selective use of vegetation controls is required in these areas that contain both invasive species and species of concern.
- Control invasive species of plants to prevent native species from being crowded out by introduced species. High priority for invasive species control at this site should be targeted towards removing the invasive shrub autumn olive. Invasive species control efforts should try to maintain weed-free areas first, and then concentrate on removing invasive species in lightly infested areas, continually pushing back the line of invasion. Invasive species management should be coordinated by individuals familiar with the rare species as well as the invasive species present. Continual invasive species monitoring and control will be necessary.
- Reduce the deer density in the area. Uncommon species of native plants are particularly susceptible to deer herbivory.

References:

NatureServe. 2013. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.1. NatureServe, Arlington, Virginia. Available at http://www.natureserve.org/explorer.

Pennsylvania Natural Heritage Program. 2013.

Rhoads, A. F. and W. M. Klein, Jr. 1993. The Vascular Flora of Pennsylvania: Annotated Checklist and Atlas. American Philosophical Society, Philadelphia.

Rhoads, A. F. and T. A. Block. 2007. The Plants of Pennsylvania: An Illustrated Manual, Second Edition. University of Pennsylvania Press, Philadelphia.

APPENDIX K



METHODS & PROCEDURES FOR OPEN SPACE EVALUATION

Q&A

PROPERTY EVALUATION PROCEDURES

The Township will acquire the majority of its open space through dedication from development, donation of funds, or from purchase of land or easements using funds specified for open space preservation in concert with local, county, state and federal grants and/or funds. The Township and the Farmland Preservation/Open Space Committee will be responsible for overseeing the development of the open space network in accordance with this Plan. The Farmland Preservation/Open Space Committee will be responsible for researching individual parcels and making recommendations to the Township Board of Supervisors on which properties should be pursued for preservation. The Farmland Preservation/Open Space Committee should consider economic, environmental, cultural, and social factors when considering recommendations for preservation.

While management of any open space budget is the responsibility of the Township Board of Supervisors and Township Staff, the Farmland Preservation/Open Space Committee is expected to be knowledgeable of the budget. Open space funds must be carefully managed to best serve the Township. These funds should be primarily used for open space preservation through purchase of land or easements. However, the funds should also be used to fund activities, information sessions, or seminars which may further the cause of open space preservation in the Township, involving an open space public relations campaign. It is the responsibility of the Farmland Preservation/Open Space Committee to consider the importance of each and to make recommendations to the Township Board of Supervisors regarding allocation of funds for open space preservation itself and related activities.

When considering a property for preservation, the Farmland Preservation/Open Space Committee is not expected to rely solely on their personal knowledge of that property but should instead rely on available facts. Open space preservation for the purpose of recreation acquisition shall involve the North Whitehall Township Recreation Board. The content of this Plan could be used to implement the following evaluation system. The evaluation system could be used as a reference to help guide the Township in making decisions regarding preservation of specific properties and determine whether a parcel is suitable for preservation.

Generally, the application form serves as the initial stage of the process, indicating the owner has interest in the program while providing the Farmland Preservation/ Open Space Preservation Board with general background information.

SAMPLE EVALUATION SYSTEM

The following guidelines can be used by the Township and the Farmland Preservation/Open Space Committee as a screening system for all preservation projects. This screening would occur after the initial application form has been submitted.

A project is not expected to meet all the criteria within this document. Some projects may have a single purpose (such as farmland protection or stream protection). Other projects may provide multiple benefits – such as a farm property adjacent to a stream with a significant vista. Projects will be evaluated for their significance in a single category or categories as well as their cumulative benefit to the community. The evaluation system could be provided on the Farmland/Open Space Program website to provide the public with a transparent evaluation process.

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NORTH WHITEHALL TOWNSHIP

OPEN SPACE EVALUATION FORM FOR FARMLAND PROTECTION

Project/Applicant Name: _____

Site Location (Address): _____

Parcel Number(s): _____

Application Date: _____

General Site Points (max. 35 points)

1. Parcel Size (acres) Total Points _____

   10 to <25 = 2 points 25 to < 50 = 6 points 50 to < 100 = 8 points Over 100 = 10 points

2. Zoning District Total Points _____

   Agricultural Residential (AR) = 10 points
   Institutional Option (AR-I) = 10 points
   Livestock Option (AR-L) = 10 points
   Suburban Residential (SR) = 8 points
   Village (V) = 6 points
   Conservation Residential (CR) = 10 points
   Commercial (C) = 2 points
   Commercial Development (C-2) = 2 points
   Light Industrial (LI/B) = 0 points
   Mineral Extraction General Industrial (ME/I) = 0 points

3. Is the site *adjacent to permanently protected farmland, open space, park land, or recreation facilities*?

   Yes = 5 points No = 0 points Total Points _____

4. Development Potential Total Points _____

   Parcel is easily developable with no significant constraints to development = 10 points
   Parcel is developable with some constraints to development = 8 points
   Parcel has significant constraints to development, including poor soils, bedrock, steep slopes, wetlands, limited road frontage, or difficult access = 4 points
   Current use of the parcel makes development or further subdivision unlikely = 0 points

Farmland Preservation (max. 50 points)

5. What percentage of the site is *actively being farmed or used for agricultural purposes* (such as field cops, pasture, row crops, orchard, etc.)? Total Points _____

   Less than 25% = 2 points 25 to 49% = 4 points 50 to 74% = 8 points 75% or more = 10 points

6. How much of the site contains *prime farmland soils* (as designated by the USDA)?
   Total Points _____

   Less than 25% = 2 points 25 to 49% = 4 points 50 to 74% = 8 points 75% or more = 10 points

7. How much of the site contains *soils of statewide importance* (as designated by the USDA)?
   Total Points _____

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Less than 25% = 2 points 25 to 49% = 4 points 50 to 74% = 8 points 75% or more = 10 points

8. Does the site have *community ties and/or visibility* (CSA, farm stand, farmers market, agri-tourism opportunities or similar)?

   Yes = 5 points No = 0 points Total Points _____

9. Is the site a *primary source of income* for a farmer? Total Points _____

   Farm is owner-operated and serves as a principal source of income for the owner = 10 points
   Farm is leased to a farmer that generates a principal source of income from the farm = 8 points

10. Is the site a PA Department of Agriculture Bureau of Farmland Preservation designated *century or bicentennial farm?*

    Yes = 5 points No = 0 points Total Points _____

Summary Score	Points
General Site Points	**/35**
Farmland Preservation	**/50**
Grand Total	**/85**

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NORTH WHITEHALL TOWNSHIP

OPEN SPACE EVALUATION FORM FOR RESOURCE PROTECTION

Project/Applicant Name: _____

Site Location (Address): _____

Parcel Number(s): _____

Application Date: _____

General Site Points (max. 35 points)

1. Parcel Size (acres) Total Points _____

   10 to < 25 = 2 points 25 to < 50 = 6 points 50 to < 100 = 8 points Over 100 = 10 points

2. Zoning District Total Points _____

   Agricultural Residential (AR) = 10 points
   Institutional Option (AR-I) = 10 points
   Livestock Option (AR-L) = 10 points
   Conservation Residential (CR) = 10 points
   Suburban Residential (SR) = 8 points
   Village (V) = 6 points
   Commercial (C) = 2 points
   Commercial Development (C-2) = 2 points
   Light Industrial (LI/B) = 0 points
   Mineral Extraction General Industrial (ME/I) = 0 points

3. Is the site *adjacent to permanently protected farmland, open space, park land, or recreation facilities*?

   Yes = 5 points No = 0 points Total Points _____

4. Development Potential Total Points _____

   Parcel is easily developable with no significant constraints to development = 10 points
   Parcel is developable with some constraints to development = 8 points
   Parcel has significant constraints to development, including poor soils, bedrock, steep slopes, wetlands, limited road frontage, or difficult access = 4 points
   Current use of the parcel makes development or further subdivision unlikely = 0 points

Natural Areas Preservation (max. 45 points)

5. Would a significant area of the *100-year floodplain be preserved*? Total Points _____

   More than 40% of site within FEMA 100-year floodplain = 10 points
   More than 30% of site within FEMA 100-year floodplain = 8 points
   More than 20% of site within FEMA 100-year floodplain = 6 points
   More than 10% of site within FEMA 100-year floodplain = 4 points
   Less than 10% of site within FEMA 100-year floodplain = 2 points
   No portion of site within FEMA 100-year floodplain = 0 points

6. Would the project *preserve a water feature (i.e., lake, pond, creek, river) or wetland* mapped by the National Wetland Inventory?

   Yes = 5 points No = 0 points Total Points _____

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7. How much *woodland area would be preserved* on the site? Total Points _____

   Less than 25% = 2 points 25 to 49% = 4 points 50 to 74% = 8 points 75% or more = 10 points

8. Would the project *preserve a significant vista, landscape, or views* of a cultural feature?

   Yes = 10 points No = 0 points Total Points _____

9. Does the site contain *endangered, threatened, or rare animal or plant species* as listed on PNDI or similar generally accepted study?

   Yes = 5 points No = 0 points Total Points _____

10. Is the site located within an *area identified in the Natural Heritage Inventory of Lehigh and Northampton Counties, Pennsylvania*?

    Yes = 5 points No = 0 points Total Points _____

Summary Score	Points
General Site Points	**/35**
Natural Areas Preservation	**/45**
Grand Total	**/80**

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NORTH WHITEHALL TOWNSHIP
OPEN SPACE EVALUATION FORM FOR RECREATION ACQUISTION

Project/Applicant Name: _____

Site Location (Address): _____

Parcel Number(s): _____

Application Date: _____

General Site Points (max. 35 points)

1. Parcel Size (acres) Total Points _____

   10 to <25 = 2 points 25 to < 50 = 6 points 50 to < 100 = 8 points Over 100 = 10 points

2. Zoning District Total Points _____

   Agricultural Residential (AR) = 10 points
   Institutional Option (AR-I) = 10 points
   Livestock Option (AR-L) = 10 points
   Conservation Residential (CR) = 10 points
   Suburban Residential (SR) = 8 points
   Village (V) = 6 points
   Commercial (C) = 2 points
   Commercial Development (C-2) = 2 points
   Light Industrial (LI/B) = 0 points
   Mineral Extraction General Industrial (ME/I) = 0 points

3. Is the site *adjacent to permanently protected farmland, open space, park land, or recreation facilities*?

   Yes = 5 points No = 0 points Total Points _____

4. Development Potential Total Points _____

   Parcel is easily developable with no significant constraints to development = 10 points
   Parcel is developable with some constraints to development = 8 points
   Parcel has significant constraints to development, including poor soils, bedrock, steep slopes, wetlands, limited road frontage, or difficult access = 4 points
   Current use of the parcel makes development or further subdivision unlikely = 0 points

Recreational Opportunities (max. 25 points)

5. Is there potential for *active recreational use* of parcels?

   Yes = 5 points No = 0 points Total Points _____

6. Is there potential for *passive recreational use* of parcels?

   Yes = 5 points No = 0 points Total Points _____

7. Does the site contain existing *cultural or historical features*?

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Yes = 10 points No = 0 points Total Points _____

8. Does the site provide opportunities for *public waterfront access areas* (trails, boat launch areas, fishing access, etc.)?

   Yes = 5 points No = 0 points Total Points _____

Summary Score	Points
General Site Points	**/35**
Recreational Opportunities	**/25**
Grand Total	**/60**

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APPENDIX L



EXAMPLE OPEN SPACE REFERENDUM

Q&A

BOARD OF SUPERVISORS
NORTH WHITEHALL TOWNSHIP
LEHIGH COUNTY, PENNSYLVANIA

ORDINANCE NO. 20XX-XX

AN ORDINANCE OF THE TOWNSHIP OF NORTH WHITEHALL TOWNSHIP, LEHIGH COUNTY, PENNSYLVANIA, PROVIDING FOR A QUESTION TO BE PLACED BEFORE THE ELECTORS OF NORTH WHITEHALL TOWNSHIP BY A REFERENDUM AT THE PRIMARY ELECTION OF MONTH DAY, YEAR, ASKING WHETHER THE ELECTORS OF NORTH WHITEHALL TOWNSHIP FAVOR THE IMPOSITION OF AN ADDITIONAL EARNED INCOME TAX AT THE RATE OF (INSERT RATE) BY NORTH WHITEHALL TOWNSHIP TO BE USED FOR THE PURPOSES OF FINANCING THE ACQUISITION, PROTECTION, CONSERVATION, OR PRESERVATION OF: (1) OPEN SPACES OR UNDEVELOPED AREAS; (2) FARMLANDS OR AGRICULTURAL AREAS; (3) NATURAL AND SCENIC RESOURCES; AND (4) RECREATIONAL AND HISTORICAL LANDS; UTILIZING UP TO TEN PERCENT (10%) OF THE ANNUAL REVENUE COLLECTED TO MAINTAIN AND/OR IMPROVE OPEN SPACE LANDS; AND PAYMENT OF THE ATTENDANT COSTS ASSOCIATED WITH SUCH ACTIONS:

WHEREAS, North Whitehall Township (hereinafter ''Township") is a Township of the Second Class, located in Lehigh County, Commonwealth of Pennsylvania; and,

WHEREAS, Township is authorized to acquire interests in open space for the purpose of protecting and conserving, among other things: (1) open spaces or undeveloped areas; (2) farmlands or agricultural areas; (3) natural and scenic resources; and (4) recreational and historical lands pursuant to the provisions of the Open Space Lands Acquisition and Preservation Act ("The Open Space Act" - 32 P.S. Section 5001, et seq.); and,

WHEREAS, Township is authorized to place a ballot question before the electors of North Whitehall Township relative to the imposition of an additional Earned Income Tax to finance the acquisition of interests in real property for the purposes set forth herein pursuant to the Open Space Action Plan; and,

WHEREAS, the North Whitehall Township Board of Supervisors has determined that the acquisition, - preservation, and conservation of open space lands and benefits, as described and set forth in The Open Space Action Plan, is in the best interests of the residents of the Township of North Whitehall; and,

WHEREAS, the Board of Supervisors of North Whitehall Township now desires to place a ballot question before the electors of North Whitehall Township at the election of Month Date, Year, asking the voters if they favor imposition of an additional Earned Income Tax, in the amount of (Insert rate) for the purposes herein stated.

NOW, THEREFORE, BE IT ENACTED AND ORDAINED by the Board of Supervisors of the Township of North Whitehall, Lehigh County, Pennsylvania, as follows:

SECTION 1: TITLE

This Ordinance shall be known and may be cited as the "North Whitehall Township Open Space Referendum Ordinance."

SECTION 2: PROVISION AUTHORIZING REFERENDUM

The North Whitehall Township Board of Supervisors hereby directs and provides for a referendum on the question of the imposition of an additional earned income tax at the rate of (Insert Rate) for open space at the next general election. The referendum shall be governed by the provisions of the Act of June 3, 1937 (P.L. 1333, No. 320), known as the "Pennsylvania Election Code" and by those relevant provisions of 32 P.S. §5007.1, et seq. The Lehigh County Office of Elections and Voter Registration is hereby authorized and directed to cause the question hereinafter set forth to be submitted to the electors of North Whitehall Township at the next election following the filing of the within ordinance with the County Office of Elections and Voter Registration. The questions to be placed before the electors of North Whitehall Township shall read as follows:

> "Do you favor the imposition, by North Whitehall Township, of an additional Earned Income Tax at the rate of (Insert rate), commencing Month Date, Year, to be used for the purposes of financing the acquisition, protection, conservation, or preservation of: open spaces or undeveloped areas; farmlands or agricultural areas; natural and scenic resources; and recreational and historical lands; and for the purpose of paying the attendant costs associated with such actions? YES or NO"

The plain English version of the above-listed questions is as follows:

> "The ballot questions asks the voters of North Whitehall Township whether the Township should impose an additional Earned Income Tax at the rate of (Insert rate) starting Month Date, Year, to create a fund to be utilized to open spaces or undeveloped areas, farmlands or agricultural areas, natural and scenic resources, and recreational and historical lands in North Whitehall Township, and for the purpose of paying the attendant costs associated with such actions."
>
> The Township shall use the revenue raised by the additional Earned Income Tax to do one (1) or more of the following:
>
> (a) Finance the acquisition of open space. The Township could purchase interests in real estate property and/or conservation easements in undeveloped land in the Township in order to protect sensitive natural areas such as woodlands, streams valleys, or other unique natural resources or habitats, and preserve and protect existing open spaces.
>
> (b) Acquire agricultural, conservation, or preservation easements. The Township could purchase agricultural, conservation, or preservation easements, or participate in State or County land preservation programs that acquire agricultural conservation easements. These types of easements allow the landowner to retain his/ her land and continue to use it while conserving the agricultural use, scenic or natural resources, or other open space benefits.
>
> (c) Finance the protection of recreation or historic lands. The Township could purchase interests in real property in the Township for the purpose of protecting existing or planned recreational facilities for residents by controlling the use of nearby lands, or to preserve sites

of historic, geologic, or botanical interest.

(d) Improve or Maintain Property Acquired for Open Space Benefits. The Township could use up to ten percent (10%) of the annual revenue collected to improve and maintain property acquired under the Act in accordance with specific guidelines established by the Township Council.

(e) Pay the attendant costs associated with such actions. The Township could use the revenue generated to pay the costs associated with the acquisition, protection, conservation, and preservation of open space interests including, but not limited to, appraisals, engineering or field surveys, preparation of baseline reports, and closing costs associated with the transactions.

A vote of "YES" to the aforementioned ballot question approves the imposition of an additional Earned Income Tax at the rate of (Insert rate) on an annual basis, beginning Month Date, Year, upon Township residents for the foregoing purposes, which will result in the use the additional tax revenue collected for the sole purpose of acquiring open space interests in real property and paying the attendant costs associated with such actions.

SECTION 3: FILING OF ORDINANCE WITH COUNTY

Immediately upon enactment, a certified copy of this Ordinance shall be filed with the Lehigh County Office of Elections and Voter Registration, which is hereby authorized to cause the referendum question to be submitted to the voters of North Whitehall Township as in accordance with the Pennsylvania Election Code and those relevant provisions of 32 P.S. §5007.1, et seq.

SECTION 4: SEVERABILITY

The provisions of this Ordinance are severable and if any of its sections, clauses or sentences shall be held illegal, invalid, or unconstitutional, the invalidity of such provisions shall not affect or impair any of the remaining sections, clauses, or sentences.

SECTION 5: REPEALER

All ordinances or parts of ordinances or resolutions conflicting or inconsistent with any of the provisions of this Ordinance are hereby repealed but only in so far as same are in direct conflict or directly inconsistent with this Ordinance.

SECTION 6. EFFECTIVE DATE:

This Ordinance shall become effective five (5) days after its adoption.

DULY ENACTED and ORDAINED, this Month Date, Year, by the Board of Supervisors of North Whitehall Township, Lehigh County, Pennsylvania.

ATTEST:

BOARD OF SUPERVISORS
NORTH WHITEHALL TOWNSHIP

_____
Jess Koenig, Township Secretary

_____
Dennis Klusaritz, Chairman

_____
Al Geosits, Vice-Chairman

_____
Ronald J. Heintzelman, Supervisor