

# Moore Township - Open Space Plan



*View from Delps Road of a Preserved Farm in Moore Township*

September 8, 2010

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# Moore Township Open Space Plan

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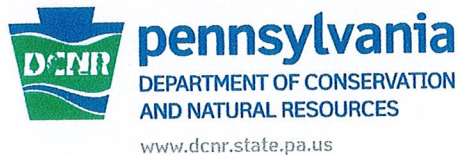
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## Acknowledgement

Heritage Conservancy wants to acknowledge the Moore Township Board of Supervisors for their support.

Heritage Conservancy has a longstanding philosophy that views the completion of an open space plan not as the end of a project, but as a beginning. The plan is designed to help the township and its residents begin the process of preserving the township's outstanding natural features by focusing its efforts on the properties that contain the features that the community feels provides Moore Township with its special sense of place.

This planning effort is part of the Lehigh Valley Greenways Conservation Landscape Initiative—a





*Preserved Farm in Moore Township*

## MOORE TOWNSHIP OPEN SPACE PLAN

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# Executive Summary

“Open Space” is defined as land that is permanently set aside for public or private use that will not be developed beyond a de minimus amount beyond what is necessary to enhance the conservation values of the land. The key purpose of preserving the land is to protect biodiversity and habitat. In addition, open space may be preserved to protect, buffer or connect natural areas. Another key purpose is to provide a critical mass of protected farmland. In addition, the land may be used for passive or active recreation

Moore Township supervisors wanted to determine whether the citizens of the township desired an increase in the earned income tax for the preservation of open space. By Ordinance No. 2005-5 dated March 1, 2005, a question was placed on the ballot for the May 17, 2005 election asking whether **“the electors of Moore Township favor the imposition of an additional earned income tax at the rate of 0.25% by Moore Township to be used for financing the acquisition of open space: for the purpose of acquiring forest and agricultural conservation easements; and for the purpose of acquiring property development<sup>1</sup> rights; the ballot questions is authorized by Act 153 of 1996, Title 92 P. S. Section 5007.1”**

As a result of voter support in the 2005 primary election, Moore Township has instituted and Earned Income Tax (“EIT”) of 0.25% to provide funds for the preservation of open space. The fund generates and estimated \$250,000 per year and has accumulated over \$1,800,000<sup>2</sup> by 2010.

Moore Township’s referendum includes a “Plain English Version” which outlines three uses for its funds:

1. Acquire agricultural conservation easements. The Township could purchase agricultural conservation easements, or participate in State or County land preservation programs that acquire agricultural conservation easements.
2. Finance the acquisition of open space. The Township could purchase undeveloped land from landowners in the Township in order to protect sensitive natural areas such as woodlands, stream valleys or other unique natural resources or habitats.<sup>3</sup>
3. Acquire property development rights. Under this option, a landowner would sell the development rights of a property to the Township.

In order to spend these funds, the township has undertaken the creation of this Open Space Plan. As part of this open space planning process, existing goals were re-examined and public participation was sought in coming up with current goals.

Moore Township residents indicate they want to preserve areas that are:

- ecologically important as habitat for plants and animals;

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<sup>1</sup> Section II of the Ordinance apparently accidentally replaced the word “development” used in the title with the word “settlement”. The legal notice prepared for the referendum uses the correct term “development”.

<sup>2</sup> As reported by the Northampton Open Space Administrator June, 2010.

<sup>3</sup> The referendum specifically notes that fee simple acquisition was limited to “sensitive natural areas” while conservation easements (development rights) could be acquired on any land. The rationale and significance of this distinction is unknown.



- protect the quality, quantity or public use of water resources including watersheds, aquifer recharge zones, lakes and streams,
- have distinctive character, such as sites or areas of scenic value.

Moore Township residents have an appreciation for historic resources and areas that have recreational value, such as parklands or potential parklands, playgrounds, waterway access sites and, trails. These features contribute to quality of life issues such as a sense of pride, spirit, and uniqueness of a community, but are currently not the primary focus of residents' desires for protection through the open space program.

Rather, the focus is in preserving areas that are important as working landscapes that sustain the industries of farming and forestry while, at the same time, enhance scenic landscapes, wildlife habitat or a rural way of life.

In designing an open space plan, it is useful to think about each category of open space separately, even though many areas may be important for several reasons. A working farm, for example, may be important for scenic and historical values, as well as a working landscape and habitat for plants and animals. When trying to identify those places within a community that are most important to conserve as open space for the future, these places of multiple value may deserve special attention.

The first step in the process is to take an inventory of the resources in a community. Some resources, such as cultural, historic, scenic and recreational, are not generally considered agricultural or sensitive natural area but a community's desire to preserve these character-defining elements are often accomplished through open space funding programs. They need to be identified by each community itself through community meetings, surveys, or questionnaires.

Each community prioritizes which open space resources are the most important and, due to the limited amount of public funding, which resources shall be considered for protection through public funding.

## Community Background

### A. Character, Setting and Geographic Location

#### Regional Location

Moore Township is located in the north central part of Northampton County. Moore Township was formed in 1765 and named after John Moore, a representative of the Provincial Assembly from 1761-1762. Moore Township is a large, predominantly rural community located in north central Northampton County, PA.

It is bounded on the north by Monroe County and the ridge of the Blue Mountain, on the east by Bushkill Township, on the south by Upper Nazareth Township, East Allen Township and Allen Township, and on the west by Allen Township and Lehigh Township. Moore Township surrounds the Borough of Chapman. Another borough, Bath, is located within East Allen Township near Moore's southern boundary. The ridge of the Blue Mountain is the division line of Northampton County and Monroe County, and along which runs the Appalachian Trail.



## Moore Township Physical Features

The Township has an area of containing approximately 38 square miles (approximately 24,480 acres). The majority of land in Moore Township can be classified as rural and agricultural with sizeable areas of woodland primarily lining stream valleys and along the slope of the Blue Mountain. As such, the Township has retained the atmosphere of a rural agricultural community. The U. S. Census reported the population of Moore Township as being 8,673 in 2000 with a projection of 9,935 in 2010 and 11,077 in 2020.

The northern section of Moore Township is drained almost entirely by two large creeks. The Hokendauqua Creek drains to the southwest and the Bushkill Creek drains to the southeast, with the Hokendauqua being the larger of the two watersheds. The southern portion of the Township is in the Monocacy Creek watershed. According to the Monocacy Creek Watershed Association, The Monocacy's well preserved riparian corridor keeps the creek shaded and cool during the summer months and provides fantastic habitat for migrating and nesting birds. Area birders have documented over 80 species of birds annually along the banks of the Monocacy. The headwaters of the Catasauqua Creek drain the southwest corner of the Township.

The Township is generally rural in character. This is undoubtedly due to the fact that the two boroughs, Chapman and Bath are surrounded or in close proximity to the Township. These boroughs were traditionally the centers of urbanization amongst an otherwise agricultural landscape. As of 2002, the existing land-use was as follows:

Table 1. Existing Land Use as of 2002		
Land-use Category	Acres	% Coverage
Residential	4,614.8	28.0
Commercial	84.9	0.5
Industrial	79.4	0.5
Wholesale & Warehousing	72.9	0.5
Transportation, Comm. & Utilities	560.5	3.5
Public & Quasi-Public	68.2	0.4
Parks and Recreation	2,597.2	15.8
Agricultural & Vacant	8,369.8	50.9
<b>TOTAL</b>	<b>16,447.7</b>	<b>100</b>
<i>Source: LVPC - Nazareth Area Multi-municipal Comprehensive Plan, 2006</i>		

According to the Lehigh Valley Planning Commission, the information from the June 2004 Existing Land-use Map tabulates as follows:

Table 2. Existing Land Use as of 2004		
Land-use Category	Acres	% Coverage
Residential	3,896	24.6
Retail and Commercial	92	0.6
Office	12	0.1
Manufacturing & Industrial	44	0.3
Transportation & Commercial	83	0.5
Public & Quasi-Public	80	0.5
Parks and Recreation	2,530	16.0
Agricultural & Vacant	9,106	57.5
<b>TOTAL</b>	<b>15,843*</b>	<b>100</b>
* This is 604.7 acres less than the 2002 total. Streets were not calculated by LVPC in any		

category or in total acreage in the 2004 GIS data layer. (Source: LVPC– Nazareth Area Multi-municipal Comprehensive Plan, 2006)

The primary linkage between Moore Township and the Lehigh Valley is via State Routes 248 and 512. State Route 512, located along the eastern side of Moore Township, connects with U.S. Route 22 and the cities of Easton, Bethlehem and Allentown to the southeast and the resort area of the Poconos to the north. With a direct interchange to Interstate Route 78. State Route 22 has become a major artery in regional and interstate transportation, making the entire region a “bedroom community” for the Northern New Jersey and New York City metropolitan areas according to the Comprehensive Plan.

State Route 512 traverses the Township in a northeast-southwest direction and connects the Township with U.S. Route 22 and the City of Bethlehem to the southwest and the resort area of the Poconos to the north. Via State Routes 33 and 512 the residents of Moore Township are approximately 20 minutes from the centers of the Cities of Bethlehem and Easton with easy access to the New York City metropolitan area.

Moore Township is located in what was traditionally referred to as the "Slate Belt." This region is a geographic, geological, and to some extent an economic band that traverses the Lehigh Valley at the toe of the Blue Mountain from the Delaware River to the western reaches of Lehigh County. It was within this "Belt" that slate was once extensively quarried.

(Source: Comprehensive Plan, Moore Township, Northampton County, PA, July 1979)

## B. History and the Unique Aspects of the Community

Early settlement of Moore Township began around 1742. The majority of the early settlers were German farmers. The original farmsteads consisted of log houses and crude livestock shelters. As the years passed, the settlers replaced their log houses with ones built of lumber or, as in most cases, of local limestone and sandstone. The original, small, livestock buildings were replaced with large Pennsylvania “bank barns.”

The development pattern of Moore Township in about 1800 consisted primarily of small farms scattered throughout the Township. In the early nineteenth century, the region was mostly agrarian. After the Civil War; railroads, mining and manufacturing interests became stronger. The 1874 map of Moore Township shows several crossroads villages including Youngsville, Beersville, Klecknersville, Dannersville, Point Phillips and Moorestown which developed into agricultural service centers for surrounding farms. The village of Chapmans Quarries became a borough completely surrounded by the township in 1865. While there is no standard definition of a village, today three villages, Klecknersville, Moorestown and Point Phillips have “Village Commercial” zoning.

## C. Governmental Background, Moore Township

Moore Township is classified as a Township of the Second Class by the Commonwealth of Pennsylvania. The local governing body consists of three elected members comprising the Board of Supervisors. Moore Township has an appointed Secretary-Treasurer/Township Manager to oversee administrative activities. The Township provides road service, police service, building and zoning inspections, park and recreation services, and administrative services to the community. The Township adopted a Comprehensive Plan in 1979, and approved the Nazareth Area Multi-municipal



Comprehensive Plan, which is a joint comprehensive planning effort involving seven (7) surrounding municipalities in Northampton County.

## D. History of Municipal Park and Recreation Activities

The Moore Township Park began with the purchase of 29.2 acres in October of 1984. From this original tract, 12 acres have been developed into nine ball fields, a youth playground area, an acre and half parking lot, and a pavilion which is available to the residents of the Township for picnics and outings. The seven-member Recreation Board meets on a monthly basis and is responsible for making recommendations to the Board of Supervisors on budgeting, maintenance, program development, recreational facilities, employment candidates, and employee supervision. Historically, Moore Township's baseball and softball programs are administered by the Moore Township Athletic Association. The success of this park in meeting the active recreational goals of the residents is undoubtedly why the majority of residents that responded to the open space questionnaire, put expansion of parks as a low priority.

Moore Township also has Moore Township Appalachian Park, a 168 acre passive recreational park that appears to meet residents' desire for passive recreational parkland.

## E. Demographics

The population increase in the period between 1970 and 2000 was 106.1%; meaning the population doubled in 30 years.

The estimated population as of July 1, 2003 was 7,464. The population was 5,982 according to the 2000 Census. The Township grew 26.7% between 1990 and 2000. Similarly, the number of housing units increased 27.8% from 1,883 houses in 1990 to 2,406 in 2000. (Nazareth Area Multi-municipal Comprehensive Plan, 2006). In 2000, 96% of the houses were single-family detached structures.

As a whole, Northampton County was the sixth fastest growing county in Pennsylvania, according to the 2000 census.

## F. Land-use Patterns

The Blue Mountain area provides scenic vistas suitable for low density residential use. A large farming community still exists in the Township, and it is this group that is under the most pressure from land developers. Low density residential land-use makes up the balance of the Township's land mass.

The historical pattern of land-use dating back to the eighteenth century was rural, agricultural-based development. As with most farming communities, natural resources, especially soil quality, had a dramatic influence on land-use although the presence of other significant minerals also affected land-use. The other influences that impacted land-use include commercial and transportation activities.

The establishment of Chapman Borough and the nearby borough of Bath in the mid nineteenth century served to relieve the Township of population pressure until relatively recently.

The advent of railroad and trolley lines opened the countryside to many new inhabitants. Since this time, the Township has been part of the post-World War II suburbanization of the Lehigh Valley.

According to the 2006 Nazareth Area Multi-municipal Comprehensive Plan, the biggest historical event in the Nazareth Area during the second half of the 20th century was the growth in rural, non-farm development. This development came in the form of residential subdivisions and scattered single family homes.

As recently as 1940, the number of persons living in the five boroughs in the Nazareth area exceeded the number of persons living in the five townships. Although the 1940s experienced an increase in population growth, the development of the townships did not really explode until the 1950s. Between 1950 and 1960 the population of the five townships increased 22.1 percent. The rate of growth increased for the next two decades.

## G. Open Space and Park Land

The Nazareth Area Multi-municipal Comprehensive Plan indicates that as of 2004 Moore Township has following parks and outdoor recreation sites:

State Game Lands No. 168	1,600.1 acres	State Ownership
Appalachian Trail Lands	194.7 acres	Federal Ownership
Moore Township Appalachian Park	168.2 acres	Municipal Ownership – passive park
Moore Township Recreation Center	<u>101.8 acres</u>	Municipal Ownership – active park
	2,064.8 acres	

In addition there are several special use properties with significant open space (over 10 acres):

Petersville Rod & Gun Club	37.5 acres	Private Ownership
Point Phillip Rod & Gun Club	45.0 acres	Private Ownership
Southmoore Golf Course	151.8 acres	Private Ownership
Whitetail Golf Club	122.3 acres	Private Ownership
Blue Ridge Ranch	11.6 acres	Private Ownership
Evergreen Lake Campground	152.1 acres	Private Ownership
Jolly Joe Timmer's Grove	<u>14.4 acres</u>	Private Ownership
	534.7 acres	

The most significant area of open space is the Pennsylvania State Game Lands along the Blue Mountain. Blue Mountain is an important regional, environmental component and is part of a larger greenway corridor protecting the approximately 2,150 mile Appalachian Trail from Georgia to Maine.

The gamelands not only provide an extensive area for hunting and hiking amid forested lands, but protect the sensitive mountain ecosystem from direct and indirect impacts of development. SGL 168 is rugged Blue Mountain terrain, with elevation changes of 1,000 feet in some places. It is mostly mature timber, although the trees are not large, including considerable chestnut oak, sassafras and other drier, upland species. The lower elevation lands located immediately to the south of the gamelands are largely farmlands and residential areas.

The same plan contained a table for Recommended Open Space Areas. It indicated the following:

Table 3. Recommended Open Space Areas			
Total Acres	Natural Resource Areas	Remaining Natural Areas and Woodlands	Areas Recommended for Additional Agricultural Preservation
24,480	4,026 (16.4%)	1,248 (5.1%)	6,362 (26.0%)

## H. Other Open Space Lands

### Agricultural Conservation Easements

In 1993, Northampton County preserved its first farm under a statewide program to purchase agricultural conservation easements (also commonly referred to as “development rights”). Farmers whose lands are included in an Agricultural Security Area are eligible to sell conservation easements on a voluntary basis to a county agricultural land preservation board. To date, seventeen farms in Moore Township, totaling 1,394.33 acres, have been preserved through this program. An additional farm of 61.4332 acres in East Allen and Moore Township has been preserved.

Table 4. Agricultural Conservation Easements					
	Name (original owner)	Township	Easement Date	Tax Parcel	# of Acres
	Schlegel, Daniel W & Diane	Moore	9/23/1994	G6-15-2, H6-1-1	93.9066
	*Schlegel, Evelyn (Schlegel, P)	Moore	10/22/2001	H6-6-5, H6-6-2	76.3270
	Wright, Louise	Moore	10/25/2001	G6-16-26, H6-3-1, H6-2-4, H6-1-3,	261.4649
	Hefflefinger, Ethel	Moore	12/17/2002	J5-3-10, J5-7-1	107.5000
	Kolb, David & Marilyn	Moore	1/22/2004	H4-16-2, H4-16-5, H4-16-6, H4-16-5A	77.8177
	Faust, Kenneth J. & Judith J.	Moore	11/15/2005	H6-11-17, H6-11-19C	118.2185
	Remaly, Samuel Et Al	East Allen/Moore	1/10/2006	K5-7-9, K5-6-1	61.4332
	*Henderson, Diane (Reeser Trust)	Moore	5/30/2006	H6-9-5, H6-18-10A, H6-10-6	90.1618
	Bieber, Robert P.	Moore	5/7/2007	J6-18-1, J6-12-9	50.4437
	Graver, Charles A.	Moore	6/11/2007	H5-12-13	122.8079
	Flory Estate, William E.	Moore	8/16/2006	J5-18-6, J5-14-4	76.2378
	Milander, George E.	Moore	11/29/2011	H5-3-3	40.3040
	Schmoyer, Paul E.	Moore	12/22/2011	J5-8-4	16.74
	Csencits, Joseph J.	Moore	2/3/2012	H5-2-13, H5-1-1	66.63
	Faust Kenneth & Judith	Moore	2/8/2012	H6-2-10G	13.77
	Uleka, Mariann G.	Moore	6/13/2012	H6-18-10	19.19
	Kemmerer, Larry & Elizabeth	Moore	7/17/2012	J4-9-10, J4-9-9	98.44
Source: Northampton County Farmland Preservation Office					
*Transferred farms					
** Sold farms					

### Lands with Preferential Assessment

In addition to permanent protection of agricultural lands, there are several other methods used to encourage voluntary preservation of agricultural and wooded resources. Numerous residents within the Township have registered their properties with the County under preferential assessment programs.

A township’s green, undeveloped land not only contributes significantly to residents’ quality of life, but also to its economy through agriculture, forestry and recreation. Unfortunately, much of a



township's open space that is ideal for agricultural production, forestry and recreation is also well-suited for development purposes.

These are voluntary covenants with owners who have valuable open space resources (e.g., farmland, forested areas, water resources) and wish to preserve open space. Consequently, enrolled properties are assessed by the County at the fair market value (or at less than highest yield use, based on zoning and development potential). As a result, the property owners are afforded significant savings through preferential property tax assessment as an incentive to maintain the land as open space.

As development pressures rise, the market value of land rises, the taxes also increase, creating a hardship for land owners. Increased tax assessments can have a significant impact on a farmer's bottom line. If profit continues to decline, farmers may be tempted to sell their land to take advantage of its increased value at the same time taxes rise. There are two acts available to land owners for preferential assessments: Act 515 (Pennsylvania Open Space Covenant Act of 1966) and Act 319 (Pennsylvania Farmland & Forest Land Assessment Act of 1974). Of the two, Act 319 has more stringent requirements. Act 319, also known as the "Clean and Green Act," is available to landowners for the following uses: agricultural use, agricultural preserve, and forest preserve. Under this program, soil classification and yield per acre determine a property's individual assessment. Enrollment in this program is continuous unless dissolved by the landowner or eligibility requirements are not maintained.

Lands covenanted under Acts 319 and 515 are considered only temporarily protected since the enrolled property owners have the right to terminate the agreements at any time. Although imperfect, enrollment shows desire by landowners to maintain their properties as open space.

	<b>Act 319:</b>	<b>Act 515:</b>	<b>Total:</b>
Moore Township	9,612 Acres	3,332 Acres	12,944

## **Agricultural Security Areas**

Similar to lands covenanted under the preferential assessment programs, enrollment into an Agricultural Security Area (ASA) suggests a significant commitment by property owners for ongoing farmland preservation. The ASA program was created by the Agricultural Security Area Law (Act 43 of 1981) to protect the agricultural industry from increasing development pressure. ASAs are intended to promote more permanent and viable farming operations by strengthening the farmers' sense of security in their right to farm by protecting against potential conflicts with impinging land development (e.g., noise, odor, dust, etc. associated with farming activities). The Moore Township ASA was created on June 3, 1991 and as of 2008 was the second largest ASA in Northampton County with over 4,000 acres enrolled.

Additional information about the Farmland Preservation Program in Northampton County can be obtained through:

Northampton County Farmland Preservation Office  
Gracedale Complex, Greystone Building  
Nazareth, PA 18064-9211  
Phone: (610) 746-1993 or Fax: (610) 746-5262

## **Pennsylvania Law on Open Space Financing**

## Act 153 of 1996

Pennsylvania's Act 153 of 1996 (which amended the Open Space Lands Act, Act 442 of 1967) gives local governments the power to acquire open space interests for the following purposes:

- Protection of water resources and watersheds
- Protection of forest for timber production
- Conservation of farmland
- Parks and recreation
- Conservation of natural and scenic resources
- Preservation of sites of historic, geologic, or botanic interest
- Promotion of sound planning through the creation of buffers between communities

Under the Act, local governments may levy a tax on real estate or earned income above existing limits in order to purchase development rights or open space lands, but only if they first receive referendum approval from the voters.

The Act also lays out the rules for acquisition of open space by local governments. Properties may be acquired in fee and must be resold within two years after restrictive easements or covenants have been placed on the land. Property interests may be purchased on an installment or deferred basis.

Land or development rights to be purchased must have been identified in a natural areas, open space, recreation, or land use plan recommended by the planning commission of the municipality in which the property is located, and that plan must first be adopted by the governing body. If the community does not have a planning commission, the process relies on a similar plan prepared by the county planning commission and adopted by the municipal governing body.

In the event that the governing body decides to dispose of acquired land or development rights, it must first obtain voter approval. These interests must then be offered to the original property owner at the original price paid by the local government. If the offer to the original property owner is not accepted within 90 days, the property interests may be sold in the manner provided by law.

Act 153 specifically prohibits municipal governments from using their power of eminent domain, which is the power to condemn land for acquisition, in carrying out the provisions of the act.

## Act 4 of 2006

Act 4 of 2006 amended Act 153 and authorizes the three local taxing authorities (municipality, school district and county) to freeze the millage on lands whose development potential has been removed. All three must agree to participate. This is a significant incentive for property owners to preserve land and has been done in school districts in Bucks and Northampton counties.

## Act 138 of 1998

Pennsylvania Act 138 of 1998 (an amendment to the Agricultural Area Security Law, Act 43 of 1981) authorizes local governments to purchase agricultural conservation easements to preserve farmland in established agricultural security areas. Local governments may undertake this activity on their own or in cooperation with a county or the Commonwealth as joint owners. The Act permits local governments to incur debt to purchase these easements.

Source: *Public Finance for Open Space: A Guide for Pennsylvania's Municipalities* Copyright©2008  
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# Natural Resource Inventory

Wetlands, scenic views, historic sites, parks, trails, lakes, streams, forests and farms are among the many open space resources that make a community a great place to live.

This planning process reviewed the many types of natural resources that are found in the township with a brief description of the specific benefits that conservation of each type of open space brings to the people of the township;

## A. Geology

The highest elevation in the Township is Blue Mountain (1,560 feet above mean annual sea level). Blue Mountain is composed of Shawangunk conglomerate, a resistant rock that is less susceptible to erosional forces than the Martinsburg shale that underlies most of Moore Township.

The Martinsburg shale is divided into three members, Upper, Middle and Lower, that are exposed in that order from north to south. The Upper Martinsburg shale erodes most readily of the three members, and it forms a belt of relatively flat land just south of Blue Mountain. The Upper Martinsburg shale belt is also the most economically important because it is within this belt that most of the slate quarrying in the County has taken place.

Proceeding south from Route 512, the terrain becomes hillier and is bisected by a number of streams. This is a result of the stronger metamorphism (intense heat and pressure) of the Middle and Lower Martinsburg shale. The metamorphic bedrock is resistant to erosion. Water erosion along the least resistant path produced the hills and stream valleys south of the Blue Mountain. During glacial times, the area was overridden by a series of ice sheets, at least one of which left a deposit of till (poorly sorted material) over the shale and slate bedrock. The till varies in thickness and distribution; soil has developed in this till blanket, which contains shale and slate fragments. The freezing-thawing action of the ice has also broken up the upper part of the bedrock (shale) developing a soil-bedrock mixture extending into the upper bedrock.

## B. Soils

Soil features and properties that affect land-use in Moore Township include:

### Flood Plains.

Agricultural use of areas adjacent to streams or seasonal waterways subject to flooding is limited mainly to pasture because of excessive wetness and flooding which can destroy cultivated crops. Commonly, farmers attempted to alleviate these impediments to farming with the construction of artificial drainage systems, such as tile drains, to permit farming in most of these areas.

As recent experience has shown, development or construction in these areas should be avoided due to the potential for extensive property damage or injuries, as well as interference with the natural waterways and water recharge. In addition, floodplains have a shallow water table causing difficulties with on lot sewage treatment.

Floodplain areas are best preserved for open space, woodlands, recreational areas, or other uses that do not require substantial structures or uninterrupted activities.

### High Water Table.

By definition, these are soils that are saturated during most of the year to within eight inches of the surface. Agricultural use in these areas, like the floodplains, is primarily limited to pasture land unless tile drains or diversion ditches are used to artificially drain the area for planting cultivated crops.

Foundations, septic tanks and lawns all face potential problems if these areas are developed for residential or commercial use. Pennsylvania Department of Environmental Protection (DEP) regulations permit use of alternate on-lot sewage systems of these areas if certain criteria are found. Otherwise, areas would have to be serviced by public or community sewers if developed. Therefore, woodland, recreational land and open space uses are generally recommended for these areas to eliminate potential problems.

### Seasonal High Water Table.

Seasonal high water in the form of ponding on an impermeable "pan" soil layer results in a perched water table. Soil mottling may indicate a fluctuating high water table.

These areas are suitable for cultivated crops. Excess water in the spring may delay planting because wet soils "warm-up" more slowly and impede the use of heavy farm equipment. Artificial drainage and erosion control practices can be used to alleviate these intermittent high water problems.

Commercial and residential development of these areas should include precautionary measures, such as, raised or waterproofed basements, or restricted in-ground development of any type. As mentioned, DEP regulations permit use of alternate on-lot sewage systems under certain conditions. Woodland, low-impact recreational and open space uses again are suitable for these areas.

### Slope

Slope is defined by the Soil Conservation Service (SCS) as the vertical change in feet per 100 feet of horizontal length and is expressed as a percentage. There are two classes of slopes, moderate (between 8-15 percent) and severe (greater than 15 percent); that affect certain agricultural and other land-uses. Lesser slopes, if not too wet, are generally suitable for most land-uses and activities.

Moderate slopes can be used for cultivated crops with basic erosion control practices (contour strips, diversion terraces, cover crops or surface residues). Severe slopes, up to 25 percent can be used for cultivated crops only with very strict erosion controls. Slopes exceeding 25 percent should be left in their natural state.

There are numerous reasons for protecting steep slopes. First, steep slopes next to watercourses are very important to protect because of their potential, immediate harm to water quality and aquatic habitats if erosion occurs. Second, protection of steep slopes prevents flooding, landslides, and other problems due to slope instability. Finally, steep slopes provide “aesthetically pleasing open spaces” and foster local biodiversity for flora and fauna. For these reasons, many municipalities have steep slope protection ordinances.

Development of moderate and severe slope areas for residential use requires special adaptation for foundation construction, erosion control during construction and special lawn care practices. DEP regulations permit use of alternate on-lot sewage systems on slopes up to 25 percent. Areas with slopes greater than 25 percent would have to be served by public or community sewers. In areas where large lot development is permitted, a portion of the site will usually fall within reasonable slope guidelines for on-lot sewage systems.

Woodland, low-impact recreation, open space and limited controlled development are the best uses for slopes greater than 25 percent. Ground cover, especially native grasses, herbs, shrubs, and trees, should be established in open or recreational areas to prevent erosion.

### **Shallow Depth to Bedrock.**

These areas may limit agricultural uses by limiting root depth of some crops or by interfering with farm, equipment and tilling. Few soils in the Township are naturally shallow: most of the shallow areas resulted from erosion of the top soil. Therefore, erosion control is important to proper use and planning of these areas. In areas of shallow depth to bedrock, alternatives to traditional on-lot septic systems may be required.

### **Soil Permeability.**

This property reflects the ability of water to move through the soil. Soil permeability affects agricultural uses if it is excessively rapid (too dry, or droughty), or excessively slow (too wet) to maintain the proper moisture levels. Traditionally, tile drains have been used to alleviate excess wetness. Deep-rooted crops, such as alfalfa, are best suited for droughty soils.

Soil permeability also influences septic tank absorption-field capabilities. A slowly permeable clay soil may cause ponding of water or surface sewage discharges. A rapidly permeable, sandy soil may permit passage of waste water through the surface soils before it is fully treated. Alternate on-lot sewage systems may be required to overcome these constraints.

## **C. Woodlands**

Much of the area along the southern edge of the Blue Mountain and State Game Lands is woodlands. Significant woodlands in the remaining portions of the Township are found along Hokendauqua Creek, Bushkill Creek and their tributaries (including floodplains and associated wetlands), and on steep slopes.

Woodlands are vital, renewable natural resources that play an important role in watershed protection, aquatic habitat (streams, vernal ponds, etc.), air quality improvement, and erosion control. They also add to the aesthetic quality of the Township, provide an excellent wildlife



habitat (riparian and terrestrial), and increase the recreational potential of the area. The potential for commercial lumbering, if desired, may also exist in some areas.

Woodlands in environmentally sensitive areas (i.e., floodplains, steep slopes, vernal ponds, spring seeps, and wetlands) should be preserved to protect the natural functions and values of those areas. In those areas that are suitable for development, special consideration should be given to protecting as much of the woodlands as possible through use restrictions or design and construction limitations. Not only will this result in the benefits noted above, but will generally add to the attractiveness of the development, and therefore increase its value.

## D. Hydrology

### Surface Waters.

There are four watersheds that drain Moore Township. Beginning in the western side of the township they are the Hokendauqua, Catasauqua, Monocacy and Bushkill Creeks designated as follows:

Catasauqua Creek	CWF, MF
Hokendauqua Creek	CWF, MF
Monocacy Creek	HQ-CWF *, MF
Bushkill Creek	HQ-CWF *, MF
Indian Creek	

EV: Exceptional Value Waters

HQ: High Quality Waters

CWF: Cold Water Fishes

WWF: Warm Water Fishes

The Hokendauqua Creek and its tributaries constitute the largest watershed, draining approximately one half of the township.

These streams are well known locally for their excellent water quality, natural fish, and diversity of aquatic plants and insects that inhabit them. These attributes are all very susceptible to change since they are part of a fragile “high quality” and “exceptional value” stream ecosystem. From a resource protection standpoint, careful scrutiny should be given to any change that could, directly or indirectly, adversely affect stream quality.

One of the best methods of preventing most of the potentially adverse affects on stream quality is to protect the streams’ headwater wetlands and spring seep areas, floodplains, and adjacent steep slopes. In addition to the direct impacts of development, the resulting runoff increases flood-flow and decreases baseflow, greatly damaging critical stream characteristics.

Consistent with the Nazareth Area Multi-municipal Comprehensive Plan (2006) and Moore Township Ordinances development or other environmental damage should not be encouraged in or around floodplains. Moore Township is currently in the process of revising many of its ordinances to provide additional resource protection standards.

Protection can best be achieved by restricting use of these areas to low-impact recreation, open space and certain agricultural practices. Protection of natural drainage swales and headwater

wetlands and spring seeps reduces potential stream flooding, erosion and sedimentation, and, at the same time, contributes to recharge of groundwater supplies. The Lehigh Valley Planning Commission has produced a series of municipal ordinances that address these issues that can be readily adopted by municipalities.

## Vernal Pools

Vernal pools are depressions in the forest that fill with water from precipitation, runoff or snowmelt, and/or groundwater during wet periods and are dry during the summer months. They are often the only wet areas found in otherwise dry upland forest habitats. Since they are generally devoid of fish that would otherwise prey on the eggs and young of salamanders and frogs, they serve as critical nurseries for many amphibian species whose populations are in decline globally. Vernal pools also support a wide variety of wildlife. Game animals such as deer, turkey, and bear visit pools to find food and water. Bats and a variety of waterfowl and songbirds feed on the insects emerging from vernal pools. Unfortunately, vernal pools in Pennsylvania are threatened by development and a lack of understanding of their significance. The protection of the habitat that these species need to survive is a priority for the Nature Conservancy and their conservation partners in the Lehigh Valley.

## Sub-Surface Water.

Bedrock is the major factor in locating adequately producing wells. Both shale and slate have a low primary permeability allowing water to flow only through joint and fracture openings. Existing well data show that wells in the slate area usually have high yields if the well taps a joint or fracture where the water is concentrated, but a much lower yield and possibly at a greater depth if not. Well yield decreases from the north to the south in the Township but, is generally ample to supply a residential dwelling, traditional style farm, or limited use non-water dependent commercial/industrial use.

## E. Species and Habitats

Biodiversity, or biological diversity, is the variety of life from genes to species and ecosystems. It encompasses several of the other resources described in this plan; forests, water resources, and even farms contribute to diversity. To protect biodiversity, the land that is needed for species and ecological communities to thrive must be protected. This entails knowing where the key habitat is (mapping) and what is needed to allow the habitat to persist (ecology).

Of the three levels of biodiversity (genetic, species, and ecosystem), ecosystem diversity is the most complex and least understood. It includes ecological communities, which are groups of plant and animal populations that share a common environment. Diversity of ecological communities can be considered from a local as well as regional point of view.

Healthy forests, wetlands, and fields provide many benefits to human communities and are a result of species interacting with the non-living environment. The production of oxygen, control of erosion, protection of aquifers, filtration of water supply, formation of soil, and the cycling of organic matter are a few examples. These are things society values, yet nature provides for free.

Once the biodiversity resources in protected areas are identified and prioritized by the community, the most sensitive areas can be protected from disturbance. Open space is only one part of protecting biodiversity in a community, though it may be the most important. Other

considerations that should be part of biodiversity in an open space conservation plan are comprehensive or master planning that considers natural resources, compatible zoning and subdivision regulations, best management practices (BMPs) for stormwater and wastewater, natural landscaping, and managing land for natural habitats. A discussion on these topics is beyond the scope of this guide.

Biological diversity is of fundamental importance to the functioning of all natural and human-engineered ecosystems, and by extension to the ecosystem services that nature provides free of charge to human society. Living organisms play central roles in the cycles of major elements (carbon, nitrogen, and so on) and water in the environment, and diversity specifically is important in that these cycles require numerous interacting species.

General interest in biodiversity has grown rapidly in recent decades, in parallel with the growing concern about nature conservation generally, largely as a consequence of accelerating rates of natural habitat loss, habitat fragmentation and degradation, and resulting extinctions of species.

**Endangered:** Applies to a species whose prospects for survival within the state are in immediate danger due to one or several factors, such as loss or degradation of habitat, over-exploitation, predation, competition, disease or environmental pollution, etc. An endangered species likely requires immediate action to avoid extinction.

**Threatened:** Applies to species that may become Endangered if conditions surrounding it begin to or continue to deteriorate. Thus, a Threatened species is one that is already vulnerable as a result of, for example, small population size, restricted range, narrow habitat affinities, significant population decline, etc.

**Species of Special Concern:** Applies to species that warrant special attention because of some evidence of decline, inherent vulnerability to environmental deterioration, or habitat modification that would result in their becoming a Threatened species. This category would also be applied to species that meet the foregoing criteria and for which there is little understanding of their current population status in the state.

**Undetermined:** A species about which there is not enough information available to determine the status.

Habitat destruction, also sometimes referred to as habitat loss, occurs when a natural habitat becomes functionally unable to support its species. Many biologists consider habitat loss, habitat degradation, and habitat fragmentation the primary threats to species survival and the principal threat to the world's biodiversity. When habitats are destroyed the conditions that are necessary for animals and plants to survive become altered or eliminated.



**Urbanization:** This can result in changes in seed-dispersal and pollination patterns, breeding ground size reduction, isolated fragments of ecosystems, and wildlife migration route disruption.

**Agricultural Practices:** Due to agricultural practices 75 percent of North America's fruit and vegetable varieties are currently endangered.

**Forest Destruction:** This can cause sensitive plant species to be lost, as well as major problems with erosion.

**Grazing:** This cause of habitat destruction can lead to certain species being killed if they are preying on the livestock. It can also change a native ecological community's species composition.

**Mining:** When mining is not managed well the surface of an ecosystem can be destroyed, underground material can be introduced into a habitat, and when these materials are rained on a runoff containing high concentrations of metal ore or highly runoff that is highly acidic can be created and these are incredibly toxic to aquatic species.

The following are general types of habitat and important areas local governments should consider in creating open space plans. These habitat types can be identified by readily available maps, photos and soil surveys. Species and habitat information will supplement open space work, and provide more specific guidance on protection and management.

## Wetlands

A wetland is a transitional area between aquatic and upland ecological communities that often has qualities of both. Wetlands also occur where the groundwater is near or at the surface, saturating the soil and the root zone of the plants that grow there. Plant species that live in or near wetlands are adapted to the wet conditions. Wetlands are nature's sponges. They filter and recycle nutrients from the water that moves through them, which helps to ensure cleaner water reaches our water supply. Wetlands absorb and release groundwater which helps maintain constant supplies of surface water and therefore ensures a more predictable water supply. Wetlands also absorb and release surface flood waters, protecting landowners against flooding.

Although protecting the wet area of a wetland provides numerous benefits to the ecosystem, it is also important to protect the adjacent wetland buffer from alteration. Buffers protect water quality and hydrology, and in doing so help ensure that a wetland will continue to provide its ecological services. Adjacent upland habitats are also important to many species of wildlife that use wetlands. Wetlands larger than 12.4 acres plus 100-foot buffers and smaller wetlands of unusual local importance are protected by the state Freshwater Wetlands Act. While new ordinances will provide additional protection, the open space program will also seek to preserve these buffers to enhance the sustainability of wetlands.

Wetlands are defined by their hydrology, landscape setting and resident species. Some are wet for a short time of the year and most of the time are not recognizable as wetlands, yet they are often very important wildlife habitat. The great variety of wetlands that exist support a wide range of species. Some wetlands, including forested wetlands, fens and bogs are so unique they cannot be replicated by wetland creation. The value of these wetlands is especially high because of the specialized wildlife that may be limited to these areas. Wetlands perform numerous functions, such as removing and recycling nutrients from the water that flows through them.

These functions, in turn, provide benefits to the environment and the community. For example, the benefit derived from nutrient removal is improved water quality. This water purifying function is valuable for a number of reasons, such as clean drinking water, safe recreation and secure fish and wildlife habitats.

## Woodlands

In addition to the many species that use forests as habitat, there are numerous economic benefits: such as recreation, tourism and the forest products industry. Trees and forests also enhance a community's quality of life. They have aesthetic value, provide shade and cooling, reduce soil erosion, aid groundwater absorption, filter pollutants, and produce oxygen. Some species specialize in large forests, barred owls and bobcat, for example, and can disappear as forest lots become smaller and smaller. Large, intact forests are becoming less common as habitats are becoming more fragmented. Unplanned development leaves small parcels of land between developments that cannot sustain their original habitats, leading to a significant loss of species from the area.

To best protect forests, one should consider their size, condition, and type. Forest size is important, but how large is an unfragmented forest? It depends on the municipality. In Moore Township, which is still predominantly rural, a 20-acre tract with relatively mature trees is extremely significant. Lands connected to already protected forested areas are also extremely important as linkages or greenways.

## Open Uplands: Shrublands, Grasslands, Barrens, and Farms

Open upland areas depend on disturbance of some kind to maintain their condition. Without disturbance these areas will naturally become forests over time. The soil will become enriched with dead plant material, trees will invade and the distinct plant assemblage of the open area will be lost. Many of these open areas support rare or declining species. Grassland birds are in decline statewide as farms are developed or abandoned and revert to woodlands.

## Riparian Areas (Stream Corridors)

Riparian areas are located along rivers and streams and are comprised of many other habitats, such as wetlands, grasslands and forests. Riparian areas are also known as stream corridors or floodplains. Flooding naturally occurs along streams and is important to the wildlife that use riparian areas. The trees and other vegetation that grow along streams are adapted to frequent flooding. Green frogs, wood turtles, pileated woodpeckers, and redstarts are well known riparian residents.

Many other species of wildlife use riparian areas during a portion of their lives. Riparian areas are used for nesting, foraging, hibernating, migrating and access to water. In addition to wildlife benefits, healthy riparian habitats, particularly natural forested communities, provide a number of water quality and stream stability functions. The roots of riparian vegetation help to strengthen stream banks and provide resistance to erosion. Streamside vegetation creates habitat such as undercut banks where fish find refuge and overhanging tree limbs that cool the water and shelter macro invertebrates. Forested vegetation provides the primary source of energy (carbon from trees that drop their leaves in the fall) for life in small to medium sized streams.

Riparian areas can be identified by looking for streams and rivers on maps or locating 100-year floodplains on maps from the Federal Emergency Management Agency (FEMA). In many communities such riparian areas are protected by ordinance. Moore Township has updated its ordinances in 2011. However, the benefits of riparian protection often extend well beyond federally designated standards such as protecting stream banks from erosion, and filtering excess nutrients and pollutants in runoff before they reach the stream.. For example, wildlife may use riparian buffers with natural vegetation up to 1000 feet.

## F. Water Resources

The water quality of streams, rivers, lakes and groundwater aquifers can easily be degraded by changes in land use and development in watersheds and recharge areas. To protect water resources it is important to take a watershed-approach to appropriately direct changes in land use and development patterns, and explore opportunities to preserve open space. Preserving open space, such as forested land cover, is one of the most important steps we can take to proactively and effectively protect water quality.

### Flood Plains and Stream Buffers

Inappropriate development along stream corridors can impact the water quality of streams, mar scenic views and lead to costly flooding problems. Livestock grazing on stream banks can contribute to the destruction of fish habitat as a result of erosion, sedimentation and nutrient loading from manure.

Vegetated buffers, also known as riparian areas, along stream corridors can help protect the ecological values of streams as well as provide recreational opportunities for walking and biking. Protecting stream corridors has multiple benefits, which include the following:

- Reducing velocity and volume of runoff into streams, which helps to stabilize streambanks and beds,
- Providing habitat for plants and animals that require the narrow band of land along rivers to survive, and
- Improving water quality through shading/ cooling the water, filtering excess nutrients, sediment and other harmful pollutants, and adding important woody debris to the aquatic environment.

**Wetlands – see previous**

### Groundwater Aquifers

Groundwater aquifers absorb and release water which helps keep surface water levels constant. Aquifer protection involves protecting the land in recharge areas where water enters the soil and replenishes an aquifer. This can be accomplished, in part, by limiting or restricting development on key parcels of land in aquifer recharge areas and in the watersheds of water supply reservoirs where groundwater may play a major part in replenishing a reservoir. These purposes also may be achieved by purchasing land in fee title or by conservation easement. When considering which parcels of land to conserve, the township should give special attention to those parcels in the recharge area of an aquifer or in the watershed of a water supply reservoir.

### Headwaters

A river begins at its headwaters, a network of small upstream tributaries. When most people think of headwaters, they think of mountain creeks. But they also include small streams that join a larger river

in its lower reaches, wet meadows, and even channels originating in low-lying terrain. In addition, headwater streams can be intermittent or perennial. Intermittent streams are those that contain flowing water only during wet periods, while perennial streams contain water year-round.

Science supports protection of headwaters of wild and little-disturbed rivers in as natural a state as possible, including the riparian zone of both perennial and intermittent streams. Human activities, including urbanization, dams and diversions, water withdrawals, point and non-point source pollution, deforestation, mining, and grazing, harm the structure and flow of headwater streams, eliminate riparian and wetland habitats, and degrade water quality. And when headwater streams are damaged, the lower rivers suffer as well.

Source: The Importance of Headwaters, The Riverkeepers, 2005,  
[http://riverkeepers.org/images/uploads/healthy\\_headwaters\\_fact\\_sheet.pdf](http://riverkeepers.org/images/uploads/healthy_headwaters_fact_sheet.pdf)

## Potentially Vulnerable Resources

### A. Historic and Cultural Resources

#### Properties listed on the National Register of Historic Places

##### *National Register and/or Eligible Sites*

The Pennsylvania Historic and Museum Commission's Bureau of Historic Preservation database (CRGIS) has reviewed twenty sites/resources to determine their eligibility for listing in the National Register of Historic Places. Fourteen bridges were determined not eligible for listing. The status of the remaining six resources is as follows:

Historic Name	Address	National Register Status
Edelman School	Longley Road.	Eligible
Lehigh & New England Railroad (Bethlehem to Chapman Boro)		Eligible
Conrail (Bethlehem to Chapman Boro)		Eligible
Ebert/Knecht Store & House	2064 Bushkill Center Rd.	Eligible
Klecknersville Historic District		Undetermined
Kenig, Mathew House & Cabin	Point Phillips Road	Undetermined

There may be other historic resources that have not been reviewed by the PHMC but are still important to the township, such as Emmanuelsville School.

### B. Scenic Resources

#### Blue Mountain

Blue Mountain is the most extensive relatively contiguous area of natural habitat in Northampton and Lehigh counties. It is also one of the major corridors for the movement of biota in eastern Pennsylvania. With its extensive forests, streams, seeps, vernal pools, rock outcrops, and boulder fields, Blue Mountain is probably the wildest area remaining in southeastern Pennsylvania. It has long been recognized as one of the major east coast fall flyways for migrating raptors. [LEHIGH AND NORTHAMPTON COUNTIES NATURAL AREAS INVENTORY SUMMARY, April 1999, Lehigh Valley Planning Commission]

### C. Natural Features

#### Blue Mountain

According to 2007 *Lehigh Valley Greenways Plan* (page 69) the Nature Conservancy identified the Blue Mountain as one of two exceptional natural features in the Lehigh Valley (the other is the Delaware River). With its extensive forests, streams, seeps, vernal pools, rock outcrops and boulder fields, Blue Mountain is probably the wildest area remaining in southeastern Pennsylvania. Many other natural areas of statewide or local significance are found on Blue Mountain or at its base.

The *Nazareth Area Multi-municipal Comprehensive Plan* (page 159) stated that Blue Mountain is recognized as the most extensive relatively contiguous area of natural habitat in Northampton



County. Protection of the wooded, lower slopes of the Blue Mountain is important to several birds of continental concern that nest in this area. The lower slopes of the Blue Mountain also contain wetlands and soils with hydric components that are not suitable for home construction.

# Goals and Objectives

## A. Methodology to Determine Goals

### The Public Participation Process

#### Questionnaire

A questionnaire asking residents for their input on open space issues was prepared. Approximately 320 residents (or families) responded to the survey. The following table is a compilation of the returned surveys. Residents were asked to rank their preferences on a scale of one to five with "1" for low importance and "5" for high importance. The results of the survey were evaluated at a public meeting.

<b>How would you rate the importance for preserving the following features?</b>	<b>Lowest 1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>Highest 5</b>	<b>Total Responses</b>	<b>Total % who rated this highest</b>
water quality	3	4	13	36	255	311	82%
farmland	5	5	11	45	252	318	79%
wooded areas	6	3	15	50	242	316	77%
wetlands	5	7	31	45	227	315	72%
scenic views	13	13	54	64	173	317	55%
existing parks	21	13	67	63	151	315	48%
historic resources	12	24	79	81	112	308	36%
new parks	63	49	77	54	70	313	22%
<b>How at risk do you feel the following to be?</b>							
farmland	7	7	27	61	213	315	68%
well water quantity	10	13	43	63	184	313	59%
woodlands	8	13	40	73	181	315	57%
water quality	7	10	55	68	175	315	56%
wildlife	8	18	46	77	164	313	52%
historic resources	18	37	100	60	90	305	30%
<b>How would you rate the following features in defining the character of Moore T.</b>							
Blue Mountain	1	7	24	71	204	307	66%
farms	1	6	35	104	174	320	54%
woodlands	4	6	47	113	139	309	45%
streams	4	13	76	100	128	321	40%
corridors	7	11	82	100	108	308	35%

wetlands	14	38	101	72	84	309	27%
town areas	51	76	98	41	37	303	12%

**How important do you feel it is for the Township to change the following?**

less development	14	6	20	54	220	314	70%
protect natural features	13	17	49	72	158	309	51%
more passive recreation	43	35	88	85	59	310	19%
flooding	35	60	116	54	43	308	14%
more active recreation	66	57	103	49	38	313	12%
more development	236	35	22	5	10	308	3%

### *Public Meeting*

A public meeting was held for Moore Township residents on July 13, 2010. Thirty residents attended the meeting. The draft plan was discussed, the public participation questionnaire was reviewed and residents' feedback was obtained. The agenda was:

- Introduction
- Definitions/general review of open space programs
- Distinction between farmland preservation and environmentally sensitive lands "open space"
- Review of Public Input Questionnaire
- Review of Open Space Plan
- Discussion of Schedule
- Questions/Comments

### *General Overview of Responses*

Among the themes discussed at the meeting were residents' goals to preserve open space. Residents were interesting in creating a program so property owners had a viable option so they "did not have to sell to developers."

The goal of the plan and program should be to "preserve as much land as possible", particularly developable land. Understanding that the township could not preserve all the land that they wanted to preserve, the township should focus on getting its "biggest bang for their buck" and that contiguous open space was a priority.

The questionnaire and the public indicated that protection of water was a top priority, but the emphasis of the responses was that farmland preservation was the most critical to the township. The township should emphasize regulations, zoning restrictions and similar non-acquisition methods to protect water resources. However, since there is always the possibility that

regulations can be changed or property owners can seek variances from zoning restrictions, the township will still consider properties where easements might protect these resources.

The view of Blue Mountain was noted as being a critical element in defining the character of the township. Because of the fact that much of the top of the mountain is publicly owned and that existing and proposed zoning will protect the mountain, it was felt that funding would probably be more appropriately dedicated to protecting farmland.

Farmland preservation was a strong theme of the public meeting. When asked “Why preserve farmland?” township residents responded with many responses, including the following:

- Food
- Farmland was an important (perhaps underappreciated) natural resource
- Nostalgia
- Scenic beauty/prominent location within township
- Prevention of over-population issues
- Taxes
- Impact on wells
- Protection of rural feeling of the township

## B. Open Space Goals

### Goal 1. Farmland Preservation

The Northampton County Farmland Preservation program preserves farms by purchasing conservation easements from farmers who desire to continue farming their lands. Moore Township can use its own funds to parallel or supplement the County program, or to preserve farmland on its own. Moore Township may use its funds on properties which do not qualify for County funding because they are not high on the County’s priority list. Without funding, the pressure from development will cause the beauty and the productivity of these farms to be lost, the groundwater to be negatively impacted with respect to lack of recharge and increased stormwater runoff, and the nature and character of the Township to be irrevocably altered. The relatively low cost of municipal services associated with farmland or agricultural land-uses versus other land-uses also makes preserving farmland a key issue in future planning.

**Objective:** Work with property owners to promote participation in the county agricultural preservation program. The Township should promote its own conservation easement program with farmers who have properties that do not rate highly on the county list or cannot wait until the County program gets to their farm. Farms that may not have the highest quality soils but which contain components important to township residents should be considered for Township easements.

At the public meeting there was a strong sentiment that the township should capitalize on the state/county farmland preservation program. Currently there are seven Moore Township farms on the county’s waiting list for preservation. Merging township goals with county criteria would result in a win/win situation. The township will work on a list of criteria to use in determine which of the properties on the county list would advance both partners’ goals. Factors that will be considered include:

- Size of parcel

- Linkage to other preserved lands (not just farmland)
- Relative rank of property
  - properties down the list might never be preserved by the county
  - properties high on the list may be preserved by the state/county without need of township funds
- Scenic values
- Presence of water sources/ability to enhance protection of water quality
- Presence of woodlands
- Cost

There are other properties in the township that do not rank highly on the county list but could still be preserved. The township could preserve the portions of these farms that are not under cultivation. This may result in the property rising higher on the county list, making it more likely that county/state funds could be used to preserve those properties.

## Goal 2. Watershed Protection

Since Moore Township does not have public water and sewer throughout the vast majority of the Township, it is very important to insure that there will be sufficient groundwater recharge to satisfy the community's needs. This was recognized in the revised Nazareth Area Multi-municipal Comprehensive Plan and is an important consideration for open space planning in Moore Township. Lands where water supplies are advantageous for commercial extraction are particularly at risk with regard to impacts on surrounding, or down-gradient, groundwater supply wells, and should be protected as open space.

The best way to protect drinking water supplies and surface water quality is to protect the lands that surround our reservoirs, streams, aquifer recharge areas and headwaters. At present, there are no State or Federal laws or regulations which will permanently protect watershed or recharge lands from development. The direct and indirect pollution from buildings, parking lots, storm sewers, lawn chemicals, etc., can degrade ground and surface water quality. The destruction of wetlands and impingement on floodplains, which provide natural filtration of stormwater run-off, further degrades our natural resources and water quality. Unless the lands that provide groundwater recharge or that surround water supplies are permanently protected, the natural resources and water quality will be degraded by development.

**Objective:** The Township regulations, which may be changed by future resolution, should be made permanent through conservation easements and to the extent possible through voluntary participation in the Township's open space program. Focusing on the purchase of conservation easements, in addition to protection through regulation, resonated very strongly at the public meeting

Just as the township should maximize funding through partnership with the county/state farmland preservation program, it should leverage county and state funds for natural area protection. The state Department of Natural Resources ("DCNR") has several programs that provide matching funds for land protection. In addition, DCNR has identified the Lehigh Valley as a "Critical Landscape" which should give a priority to Lehigh Valley conservation projects. (Through a partnership with the Delaware and Lehigh Heritage Corridor, this designation includes support for many projects including providing



matching funds for this open space plan and funds for land trusts to work with property owners.)

### Goal 3. Greenway Corridors

A greenway is a corridor of open space. Greenways vary greatly in scale, from narrow ribbons of green that run through urban, suburban, and rural areas to wider corridors that incorporate diverse natural, cultural and scenic features. They can incorporate both public and private property, and can be land- or water-based. They may follow old railways, canals, or ridge tops, or they may follow stream corridors, shorelines, or wetlands, and include water trails for non-motorized craft. Some greenways are recreational corridors or scenic byways that may accommodate motorized and non-motorized vehicles. Others function almost exclusively for environmental protection and are not designed for human passage. Greenways differ in their location and function, but overall, a greenway will protect natural, cultural, and scenic resources, provide recreational benefits, enhance natural beauty and quality of life in neighborhoods and communities, and stimulate economic development opportunities. (Source: DCNR's *Pennsylvania Greenways: An Action Plan for Creating Connections*)

Greenways give the opportunity for people to travel longer distances among changing landscapes and habitat types. Greenways make it possible for more people to enjoy the popular activities of hiking, biking, walking, boating, and similar recreation activities. Parks can be linked together by trails which eventually wander far into the most rural areas of Moore Township. Wildlife species also need corridors so that they can migrate between nesting and foraging areas, as well as maintain healthy genetics and local populations. Plant species also need a variety of environmental conditions to survive and regenerate. It is not enough to preserve isolated parcels of unconnected open spaces. Integrating Moore Township's system of open spaces would aid in preserving the natural links, or greenways, upon which both plant and animal species rely. Moore Township is fortunate to have the State Game Lands along the Blue Mountain Ridge as well as numerous creeks, serving as a "hub and spokes" for a potential, extensive Greenway corridor system.

**Objective:** The establishment of greenways, particularly as methods to preserve high quality waterways, was seen as a high priority. Since many of the riparian corridors can function as greenway corridors and since Moore Township's streams rate highly on the County's open space and natural features mapping, coordination with the County open space preservation program is a sound objective. The Township should coordinate activities along the Blue Mountain with County, State agencies and local land trusts.

According to the *Lehigh Valley Greenways Plan*, significant recreation areas along the Blue Mountain include over 10,000 acres of State Game Lands and the Delaware Water Gap National Recreation Area (1,200 acres) in Northampton County. The United States Government holds over 700 acres along the AT which provide hiking, nature study and sightseeing opportunities. The Blue Mountain/Kittatinny Ridge Greenway connects with ten other greenways in Lehigh and Northampton counties making it a significant cultural, recreational and scenic resource worthy of further study and preservation. Other greenways noted in the plan that are at least partially within Moore Township are the Bushkill Creek and the Hokendauqua Creek Greenway

#### Goal 4. Viewsheds

The value of open space to the community at large is often visual. There are many wonderful viewsheds in the Township. From the scenic beauty of Blue Mountain to the beautiful clean waters of the township's creeks. Habitat protection and agricultural preservation are very important; on a day-to-day basis, the appearance of open space has a significant effect on the community's perceived quality-of-life. Maintaining the wide open vistas and scenic viewsheds is an important part of preserving Moore Township's rural character and desirability.

**Objective:** Preservation of scenic views is an important issue for the public who may not be able to have access to preserved land. The conservation of highly visible lands, such as along Blue Mountain and well traveled public roads, will result in a greater appreciation of the beauty of the community. Therefore, this social aspect of conservation should be considered in the acquisition program.

#### Goal 5. Habitat Protection

Natural areas that provide habitat for the many animals that share the community with humans. Destruction and even fragmentation of habitat such as vernal pools, riparian zones and woodlands will have long term negative impact on Moore Township residents

**Objective:** Preservation of critical habitats is a goal of this plan. The township will focus on preserving identified key parcels for protection as natural areas. The township will also consider protecting natural features as part of its agricultural preservation efforts since many traditional agricultural practices can have an adverse impact on these sites.

### C. Recreational Open Space

Community members recognize the importance of recreational open space but feel that the goals outlined above shall be the focus of the plan

# Preservation Recommendations

Generally speaking, open space strategies fall into two categories which are acquisition and non-acquisition.

## A. Acquisition Strategies

Perhaps the main focus of the open space plan is to create the action steps necessary to begin the acquisition of open space through conservation easements or fee simple acquisitions. The Moore Township Board of Supervisors ("Board") had charged the EAC with creating an open space plan.

In order to conduct this review process, the Land Preservation Board has developed criteria to assist it in properly reviewing parcels which may have desirable features that will allow the property to be recommended for open space preservation by the Board. To develop the criteria, they focused on items determined important in protecting and preserving the natural character and environmental quality of Moore Township by those attending the public meetings for development of this plan.

### **Promotion for Use of Conservation Easements**

Private property owners place conservation easements on their properties restricting all or a portion of the property from development through State, County, Municipal or private agencies. In addition to its own open space initiative, Moore Township can benefit by participating with several Northampton County open space initiatives. On November 5, 2002 65% of 57,000 Northampton County voters cast ballots to authorize the borrowing of \$37,000,000 for this program. The program is organized by the following categories:

Open Space and Natural Areas	\$14,000,000
Municipal Park Acquisition and Development	\$11,000,000
Farmland Preservation	<u>\$12,000,000</u>
	\$37,000,000

There are several private land trusts that assist with land preservation and hold conservation easements in the Lehigh Valley. A land trust is a private, legally incorporated, nonprofit organization that works with property owners to protect open land through direct, voluntary land transactions. While many of the transactions are donations of conservation easements by property owners, land trusts work cooperatively with public entities in the purchase of development rights. Land trusts are often able to be more flexible than public entities in meeting property owners' needs. There are also national trusts such as the Conservation Fund, The Nature Conservancy, the American Farmland Trust, and the Trust for Public Land, which may provide similar functions.

### **Acquisition by Moore Township**

Moore Township may purchase properties where ownership is more desirable and/or practical than placement of a conservation easement in order to preserve the significant conservation values of those properties. The Township will acquire full interest in such properties only when ownership by other qualified entities is not possible. Land already subject to a conservation

easement (“eased land”) will not be targeted for purchase under the Township program. Any land protected through any laws, regulations or ordinances (“protected lands”) will be considered for acquisition as a method to ensure their protection in case the pertinent law, regulation or ordinance should be repealed or amended. Eased land may be considered for donation to the township as a method to improve the property’s protection.

#### Acquisition by State and County Governments

Where seemingly advantageous, the Township should encourage agencies that currently own areas within the Township to consider other parcels which are suitable or desirable for their ownership.

### Action Steps to Achieve Acquisition Objectives

- Identify farmland and key parcels of land that are at risk for development or which buffer expansion of development into critical areas. (see attached Farmland Preservation in Northampton County Municipal Participation Review)
- Identify those parcels of land that can be protected with non-acquisition-based methods or interests acquired at below market value. The public participation process revealed the difficulty in striking the delicate balance between regulation and protection of private property rights.
- Protect critical habitats along creeks, especially along Bushkill, Catasauqua, Hokendauqua and Monocacy, and their headwater areas, including the wooded slopes of the Blue Mountain.
- Protect wetlands and floodplains and promote effective, environmentally appropriate management strategies.
- Develop strategies to link open space, recreational and historic properties and provide access to those resources. Such linkages include:
  - Waterways, streams, creeks and the Appalachian Trail (beyond Moore Township);
  - Utility corridors; and
  - Highway buffers and rights-of-way.
  - Establish a system to evaluate properties.

### B. Non Acquisition Strategies

Open space implementation strategies include preservation tools currently utilized by the Township as well as new and innovative techniques that can be added to municipal ordinances.

#### Ordinance Requirements for Open Space

Moore Township may make use of its discretionary authority as part of the approval in the land development and subdivision process to require developers to dedicate open space. The Township may establish a fee in lieu of dedication where it is impractical to set aside recreation land as required. The amount of payment for a fee in lieu of such land is determined by

multiplying the number of dwelling units by the fees adopted by resolution by the Board of Supervisors.

## Transfer of Development Rights Ordinance

The Township may establish a method of exchanging development rights among property developers to increase development density and protect open space.

The Nazareth Area Multi-municipal Comprehensive Plan (“NAMCP”) identified critical elements to future land-use. Several of the specific elements can be accomplished through a comprehensive plan for the preservation of open space by the Township. These include:

- To protect important and vulnerable natural areas and features from inappropriate development;
- To preserve prime farmland and to promote agricultural operations;
- To coordinate the location and density of development with the availability of appropriate infrastructure including roads, sewage disposal and water supply;
- To provide sufficient areas for development to meet expected needs for housing and other development;
- To preserve the viability and attractiveness of currently developed areas; and
- To promote the vitality of the area’s boroughs and villages.

The importance of environmental and agricultural preservation was stressed in the NAMCP. The plan states that because environmental degradation would result from development or that desirable values would be lost, no development should take place in Environmental Protection areas. These areas include:

- Floodplains;
- Wetlands, including a 50 ft buffer;
- Slopes of greater than 25 percent;
- 1st, 2nd and 3rd order streams and waterbodies, including a 50 ft buffer;
- 4th order and higher streams, including a 100 ft buffer; and
- All very high or high conservation value areas defined with overlapping natural features such as:
  - Woodlands and potential hydric soils;
  - All riparian woodlands (woodlands within 100 ft of streams); and
  - All woodlands that are within other significant natural areas, as defined and identified in the plan.

In addition to the general types of environmental resources noted in the plan, the “Future Land-use Plan” depicts two Moore Township resources were specifically noted for preservation. These were the:

- The Hokendaugua Creek
- Blue Mountain Natural Area.

The recommendation of the LVPC Lehigh Valley Greenways Plan for the Blue Mountain/Kittatinny Ridge Greenway is to, “preserve, through acquisition or easement, the remaining high priority parcels not currently in public ownership or deed restricted along the Blue Mountain/Kittatinny Ridge Greenway.

Similarly, the greenways plan discusses the goal of preserving the most agriculturally productive soils, keeping the land in agricultural use and protecting agricultural operations from



incompatible uses. Many Agricultural Preservation areas noted on the “Future Land-use Plan” are in Moore Township.

*(Source: [http://www.lvpc.org/NazArea2030/NazarethArea2030\\_09.pdf](http://www.lvpc.org/NazArea2030/NazarethArea2030_09.pdf))*

## Official Map

The Official Map is an ordinance, and the current version which includes riparian woodlands derived from woodlands mapping by LVPC (2005) was adopted on September 8, 2010.

Article IV of the Pennsylvania Municipalities Planning Code (Act 247 of 1968, as amended by Act 170 of 1988), empowers the Township to enact an Official Map and to provide for its administration, enforcement and amendment under the general purpose of promoting the health, safety and general welfare of the Township. Under the statute the Official Map may include, but is not limited to, proposed public parks and open space reservations, and pedestrian ways and easements, and that which has been identified for public needs, and are consistent with the Comprehensive Plan of the Township.

## Implementation

The implementation of the open space plan will have to be flexible. The Township has to be proactive in identifying key property types and reactive to property owners that want to participate. This is necessary because the sale or purchase of any interest in a property is at the discretion of a willing buyer. While it is a goal to be transparent and open in the discussion of property and that evaluations will be quantitative where possible, open space is often a qualitative issue. Since the acquisition of real estate is often sensitive in nature, with many property owners not wanting to have their properties, land values or asking price made public, the Township cannot be completely open in its discussions with the public. This sensitive nature of real estate acquisitions is recognized by the state Municipalities Planning Code and is why such deliberations are exempt from “sunshine” provisions. To maintain the integrity and objectivity of the Plan, and forestall premature disclosure, specific parcel identification should not occur until after property owners are contacted and their interest is ascertained. After any acquisition, the Township shall be able to demonstrate how its decisions were made.

### A. Time Line

The adoption and subsequent implementation of this Plan will play a significant role in helping to preserve the nature and character of the Township by including work previously completed by the EAC.

The open space implementation plan includes:

- 1 Identification of key parcels;
  - a. The Township will create a master list of properties that have high priority conservation values based on presence of significant natural features. The open space plan is predicated on voluntary decisions by property owners to preserve their property. The list shall only be used as a method to compare the conservation value of individual properties to assure that the township is spending its open space funds on appropriate properties.
  - b. Property owners that request that their properties be considered for preservation will have their properties rated against an “Open Space Criteria Evaluation Sheet.” The Land Preservation Board will keep the information on how properties score in relation to the plan criteria on file. Since the Township may use the relative importance of a property in its offer to purchase a conservation easement, this information shall not be made public until such time as the property is under agreement of sale.

The Township should plan to acquire specific properties or conservation easements, based upon the criteria established by the Land Preservation Board. Potential criteria to be assessed by the Land Preservation Board may include:

- Potential risk of development is high;
- Location is a critical linkage;
- Overall environmental integrity, sensitivity and/or value is high;
- Availability of additional funding sources exists;
- Willingness of owner to sell at or below fair market price exists; and
- Property satisfies multiple objectives of the Plan.

The Northampton County Natural Resources Plan sets goals, policies and implementation recommendations for the following natural features:

- Surface terrain and steep slopes;
- Stream (including: stream quality designations, headwaters streams, and riparian buffers);
- Floodplains;
- Wetlands (including potential hydric soils);
- Carbonate bedrock;
- Woodlands (including interior and riparian woodlands);
- Prime agricultural land;
- Significant natural areas;
- Mineral resources; and
- Groundwater.

- 2 Encouragement of owners to bring their properties to the Land Preservation Board for review; and
- 3 Upon adoption of the plan, the Township will work with its consultant and LPB to coordinate efforts with County and State partners for maximizing township funding.
- 4 Education and Outreach;
  - c. Heritage Conservancy, in conjunction with the Land Preservation Board, will hold a workshop to explain to interested landowners the various methods of preserving land.
  - d. The Township Land Preservation Board and consultant will hold public and individual meetings with property owners to review priorities and solicit interest from appropriate property owners on an ongoing basis.
- 5 Negotiations for key parcels;
  - e. The Township Land Preservation Board will identify a qualified individual, group, or entity (e.g., land trust, conservancy, etc.) to conduct negotiations with property owners who have requested preservation of their properties and property owners that have land with high priority conservation values. The Township may consider a property owner's willingness to accept a bargain sale (accepting less than the appraisal value) for a conservation easement or fee simple purchase as part of its decision-making process.
  - f. All acquisitions in fee or partial interest will be subject to the township obtaining a qualified appraisal justifying the acquisition price. The township, prior to making an offer, will commission an appraisal. In situations where a second appraisal is required by funders, the township will negotiate with the property owner to determine who pays for

the second appraisal. (The Pennsylvania Department of Conservation and Natural Resources Community Conservation Partnership Program typically reimburses applicants up to 50% of the transactional costs of land or easement acquisition.) In instances where property owners want to obtain their own appraisal, the township will consider qualified appraisals prepared for the property owner as part of the process in making an offer to purchase.

#### 6 Review of Open Space Criteria

After a reasonable amount of time and after a number of properties have been preserved, the Township reserves the right to re-examine its criteria in light of conditions at that time and to address potential new priorities. Public input for all reviews will be sought and considered.

### B. Additional Methods of Implementation

The focus of the Plan's implementation includes a voluntary program of conservation easements. As a follow-up to a property owner workshop on preservation methods, the Township should meet with interested property owners to seek conservation easements or outright donations of significant properties. The Township will work with the Northampton County Agricultural Preservation Program to preserve farm land with significant agricultural soils and the Northampton County Open Space Program to preserve land with significant natural features. Creating partnerships with these County entities, as well as State and Federal agencies; neighboring municipalities; and private and non-profit groups is an important element in implementing the goals outlined in this Plan.

As an outgrowth of the Plan, Moore Township should expand or refine restrictions placed on "open space" dedicated as part of its subdivision process to assure that the land is, in fact, permanently protected. The Township should assess an upfront fee to be paid by the developer for long-term monitoring of the lands placed under conservation easement to ensure that the easement is being properly protected. Monitoring may be accomplished by Township staff or a qualified individual, group, or entity (e.g. land trust, conservancy, etc.).

Moore Township should prioritize the protection of lands identified by the Nazareth Area Multi-municipal Comprehensive Plan and the Two Rivers Area Greenway Plan, particularly along waterways of high quality or exceptional value. It is felt that these riparian buffer properties play an important role in maintaining the ecosystem.

The Township should also consider viewshed protection along the more highly traveled corridors in the township to preserve a rural sense of place for its citizens.

Moore Township, along with seven (7) other municipalities, has the Nazareth Area Council of Government's (COG) Nazareth Area Multi-municipal Comprehensive Plan which provides a vision of the future that "places special importance on the preservation of natural feature, farmland, open space and historic resources." When completed, the Township should share the Open Space Plan with the partners in the COG.

Much of Moore Township's most significant natural resources are either associated with Blue Mountain, the Bushkill Creek and the Monocacy River. The protection of natural resources through zoning is a major component of the Township's non-acquisition method of protection. According to public meeting participants in the public meeting as part of the Two Rivers Area Greenway Plan, amending zoning regulations to require the dedication of open space along

greenway corridors, streams, steep slopes and environmentally sensitive features received the highest priority. Based on this input, the Township should amend existing ordinances or adopt new supplemental ordinances to best accomplish environmental and open space protection and preservation.

This Plan is intended to serve as a planning tool for Moore Township's Supervisors and should be reviewed every two years, or as needed, to insure that it remains current. The establishment and maintenance of the data obtained in the development of this Plan and supplemented by information provided to the Township as part of future land development proposals is an ongoing process and should receive high priority from the Township's officials.



## Appendix A Farmland Preservation in Northampton County





# Farmland Preservation in Northampton County

## Municipal Participation Review

### Introduction

Open space conservation as viewed by many municipalities (and land trusts) involves the preservation of diverse conservation values, and while most agricultural easements focus on preserving the agriculture and farmland. The Pennsylvania Agricultural Conservation Easement Purchase Program was developed to strengthen Pennsylvania's agricultural economy and protect prime farmland. This program enables state and county governments to purchase conservation easements from farmers. An agricultural conservation easement is defined under Pennsylvania law as "an interest in land...which represents the right to prevent the development or improvement of the land for any purpose other than agricultural production." (3 Pa. Cons. Stat. Ann. §903 as cited in *Researching and Recording Pennsylvania's Agricultural Conservation Easements* by Carolyn J. Pugh, Legal Research Assistant, Agricultural Law Research and Education Center Pennsylvania State University, Dickinson School of Law).

### Program Background

In Northampton County, Farmland Preservation has traditionally been accomplished through a state and county partnership. The county has allocated funds on an annual basis to preserve farmland and then receives a match from the state to supplement these funds. Northampton County reached the 10,000 acres preserved mark in August 2008. For many years, this system did not work with municipal open space programs in a formal way. In recent years, after the proliferation of many municipal open space programs the law was changed to allow the direct participation of municipalities. Recognizing the increasing importance of non-profit entities, such as land trusts, in the acquisition of preserved farmland, Act 46 of 2006 amended Act 43 to allow eligible non-profit entities to participate with the state, counties and local government units in easement purchases. This has opened up opportunities for Bushkill, Lower Mt. Bethel, Moore, Plainfield, Upper Mt. Bethel, and Williams Township and townships that will establish their own open space funding programs.

This system has formulaic guidelines that are adopted at the county level. Properties are evaluated on standard criteria and given points in a number of categories. Until recently, the county has had a strict policy of preserving the highest rank properties. Townships could not be assured that even if they contributed funding to preserve farmland, properties in their individual municipalities would be chosen by the county for its funding program.

### Policy Revision

On December 10, 2009, the Commonwealth approved the county adopting new guidelines that would allow deviation from the strict "preserve the highest ranking properties" policy. This shift has allowed for local municipalities to supplement county and state funds with their own funding in order to help preserve farmland in their specific communities.

### Municipal "Donation"

As of February, 2010, the county is still in the process of considering how to best leverage municipal funding into its program. One alternative is to have the municipalities contribute a portion of their municipal funds to the county. The main advantage of townships working with the county in this fashion is the opportunity of leveraging municipal funding with county funding. By pooling municipal money with the county's annual allocation, the county is eligible for additional matching funds from the state Department of Agriculture. This would work best for municipalities that do not have the highest ranking farms in the county that would be preserved through the existing format.

The county is still determining the best way to begin matching municipal programs. One option is that there will be a "set aside" of a certain percentage of funds that they have each year dedicated to this program. Another option is to provide a fixed amount per property. The county is creating a Municipal Application Form which will be approved by the Preservation Board in the near future. Once approved, Maria Bentzoni, Farmland Preservation Administrator will then meet with township Boards of Supervisors, Land Preservation Boards, or Township Manager to help explain the process.

Not only would this provide matching funds to the townships for acquisition, but it would also provide an additional benefit in that the county would cover the incidental and administrative costs associated with the conservation easements which typically exceed \$15,000 per property preserved. It also would save the municipalities money in the future in that monitoring and enforcement responsibilities would be borne by the county.

### Municipal Prioritization

The municipalities would not be required to strictly follow the county's prioritization ranking system to participate in the program in this fashion. The township open space plan can, and should, identify what types of properties the township would prioritize. A township could target properties that form critical masses of open spaces, that buffer other protected resources, or that contain other significant natural features such as water resources.

Given the range of properties in the township that might be suitable for conservation even under the category of "farmland" which strongly resonates with the community, a township must decide which features are the most critical. For instance, one agricultural parcel of land may offer dramatic views from well-traveled roads. Or, a parcel may have vernal pools or water resources. How should these factors be evaluated against another property that might rank highly for agricultural value?

Some features to be considered to ranking properties can be:

1. Size
2. Wooded areas
3. Wetlands/Water recharge areas
4. Wildlife habitat
5. Public scenic views
6. Providing linkages to enhance rural quality of life
7. Hilltops, ridge tops, steep slopes
8. Streambanks/water features
9. Geologically unique areas;
10. Historic resources

Financial issues, including the cost of acquiring land and subsequent stewardship expenses, also need to be factored into the evaluation. These factors can include:

1. Acquisition of conservation easement or restriction on future development below market value
2. Availability of additional state and county funds
3. Does preservation of this property leverage future preservation?
4. Will the property have public access for hiking, hunting, fishing, or similar transitory low-impact, recreational and educational purposes?

#### Benefits of Cooperation

Working with the county, township can theoretically protect woodlands, stream banks, scenic vistas and other vulnerable conservation values that are not protected through the county agricultural preservation program. The protection of these resources must be designed in a way that does not harm the economic viability of farming on a property.

#### Municipal “Companion Easements”

There may be instances where the municipality and county do not work on a joint easement, but work cooperatively on the same property. For example, properties that have a high ratio of woodland or natural areas compared to cropland may be subject to an easement by the municipality on the non-crop land. This would help the property owner’s ranking in the county program in ensuring it meets the county’s 50/50 guidelines for cropland. It will also raise a property’s ranking because the county program gives additional points for properties that are contiguous to preserved lands. Maria Bentzoni will also provide municipalities that have open space programs copies of all applications and ranking profiles for farms that were not funded by the county. This will include the ranking “score sheets” so that municipalities can determine the best way to meet their municipal preservation goals and take advantage of the county program.

While having two easements on the same property may seem an administrative problem, properties that have a variety of conservation values may not be served by one easement. Properties with many natural resources beyond significant soils may fit into county agricultural preservation program. A companion easement would allow the agricultural easement to focus on agricultural preservation while the second easement would ensure that a property’s other natural resources that are not preserved as part of the county agricultural preservation program will be preserved. As noted above, agricultural easements do not protect woodlands, streambanks, scenic vistas or other “open space” values that a municipal program prioritizes. In certain cases, an argument can be made that unless a soil conservation plan or similar best management practices are not adopted as part of the agricultural conservation easement, many of these resources can be adversely impacted as farmers attempt to maximize the short term economic return on their property.

The companion easement option may add costs in terms of additional survey requirements and closing costs, as well as complexity in attempting to bring many partners to the table at the same time; but may be a cost effective way for municipalities to get more of their properties preserved by the county if they put municipal easements on the natural resource portion of their property and let the county preserve the farmland.

### **Protecting non-Agricultural Conservation Values**

The Agricultural Conservation Easement ("ACE") does not address other conservation values that might also be on the "preserved farmland". The more traditional uses have been for preserving land with natural resource or recreational values, such as riparian areas, wetlands, habitat and trails. Certainly, most farmers view protecting agricultural land and its associated natural resources as a lifelong commitment, the two programs do not completely coincide. Townships, often are interested in preserving "Rural" or "Natural" landscapes as much as working farms. How can the public investment in open space conservation which includes widespread conservation values be protected while partnering with the state/county ACE program?

For the sake of this discussion, municipalities in Northampton County, like many land trusts, can be roughly divided into three categories depending on their open space focus:

1. Exclusively or primarily agricultural emphasis
2. Equal emphasis on agricultural and other natural resources
3. Primarily natural resource emphasis with significant agricultural interest

Because they frequently protect farm operations that involve intense cultivation, cropland ACE's tend to be seen as incompatible with natural resource purposes such as riparian areas, habitat, wetlands and recreational trails. While sustainable agriculture offers considerable promise for minimizing the impacts of farming on natural resources, intensive crop production still generally involves chemical applications, the use of heavy machinery and other industrial-like activities.

The top conservation values typically protected in non agricultural easements are:

- (1) watersheds/water quality,
- (2) rare species habitat,
- (3) scenic views,
- (4) wetlands,
- (5) river/stream corridors,
- (6) trails and
- (7) forests/timberlands.

Other more general conservation values include:

- (1) rural atmosphere,
- (2) scenic beauty and
- (3) quality of life.

In recent years, some municipalities have begun to emphasize farmland protection, perhaps motivated by funding opportunities for farmland easements created by state government and other agencies. Some have also reassessed their conservation objectives to reflect community concern about farmland loss and increased landowner interest in easements.

### **Agriculture-Natural resources compatibility**

On the positive side, there is a strong connection between protecting agricultural activity and preserving natural resources such as habitat, wetlands and scenic views. The same easements as drafted by municipalities, counties and land trusts often try to accommodate both purposes. These easements are compromises. There can be serious conflicts between cultivation and other aspects of commercial agricultural production, and the preservation of natural resources. Often one has predominance at the expense of the other.

Many townships (and township residents) view farmland as additional open space, a landscape free from human congestion and an antidote to urbanization. The open space values of agricultural land appeals to many residents and helps build communitywide support and funding.

The key is to focus on the compatibility of agricultural activity with specific plant and animal resources and landscape features. How to address the economic viability of agriculture and to conserve the natural balance of the ecosystem? Can the ACE program provide balance between a farmer's economic needs with the environmental and ecological needs of their land? Farmers have to see that they've got assets (public benefits) on their land that are not necessarily related to the commodity that they produce, whether that's open space, or recreational opportunities or watershed protection values.



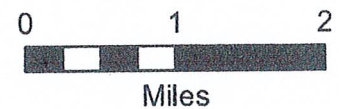
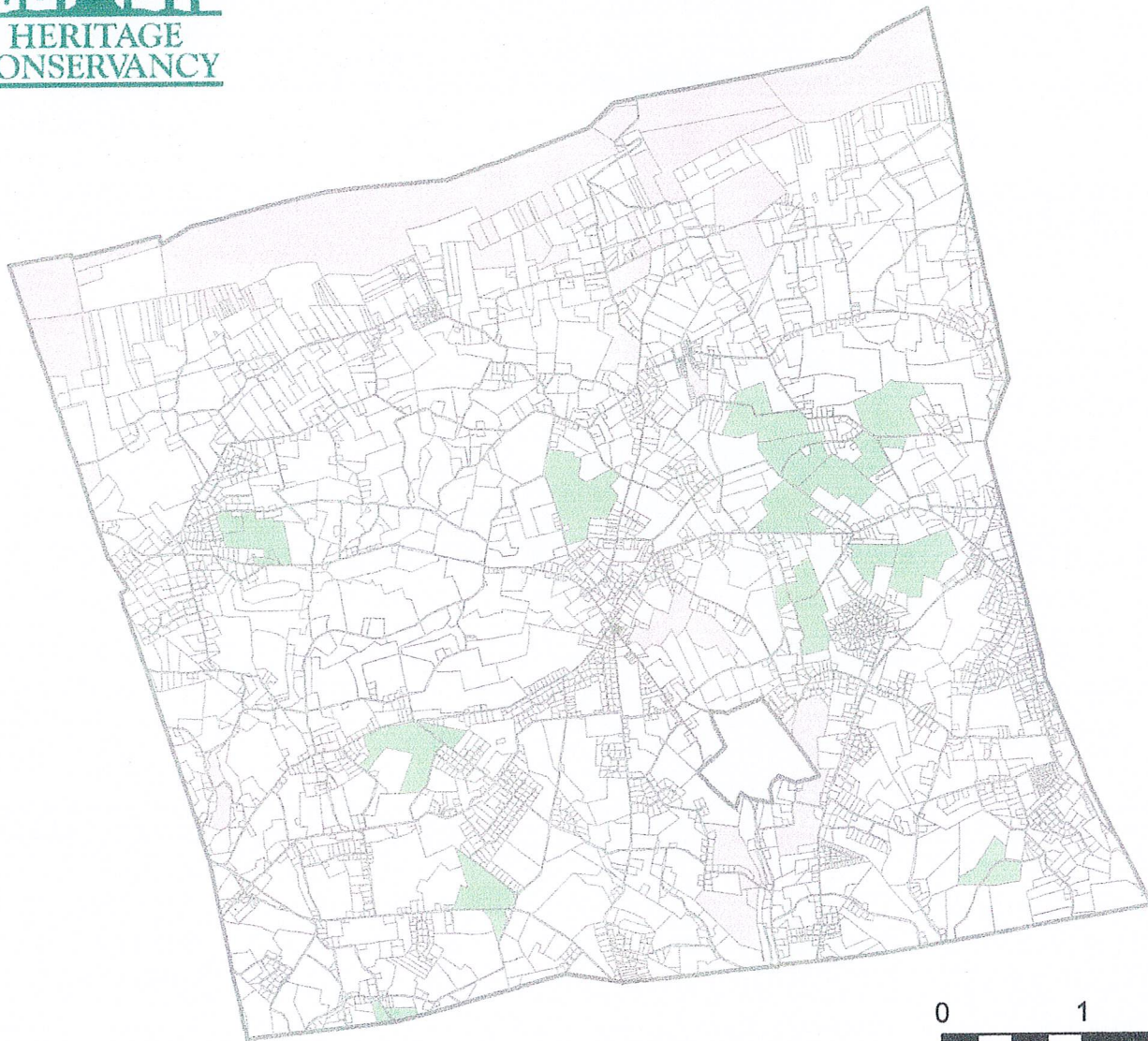


## Appendix B      MAPS






Open Space  
Land Use  
Flood Area  
Township Zoning  
Soils  
Elevation  
Natural Features  
Geology



# Moore Township Open Space

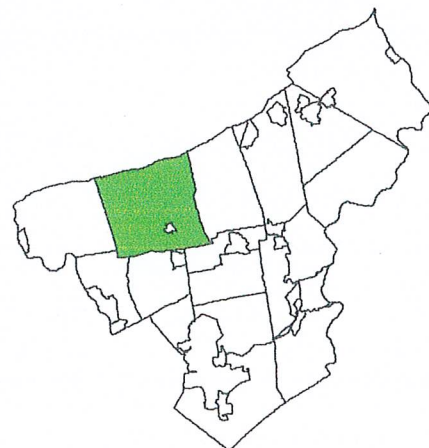


## Legend

-  Moore Township
-  Parcel
-  Hydrology
-  Park
-  Agricultural Easement

"The data displayed on this map are regional in nature and are not suited for use in site-specific studies. Parcel lines, property boundaries, floodplains, roads, and other data were obtained from third party sources. These data are only approximate and are shown for illustrative purposes only. Heritage Conservancy makes no representation about the accuracy or currency of these data. The user shall hold Heritage Conservancy harmless from any suits, claims or actions arising out of the use of this map or accompanying documentation."

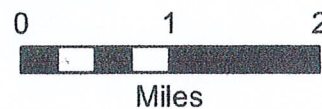
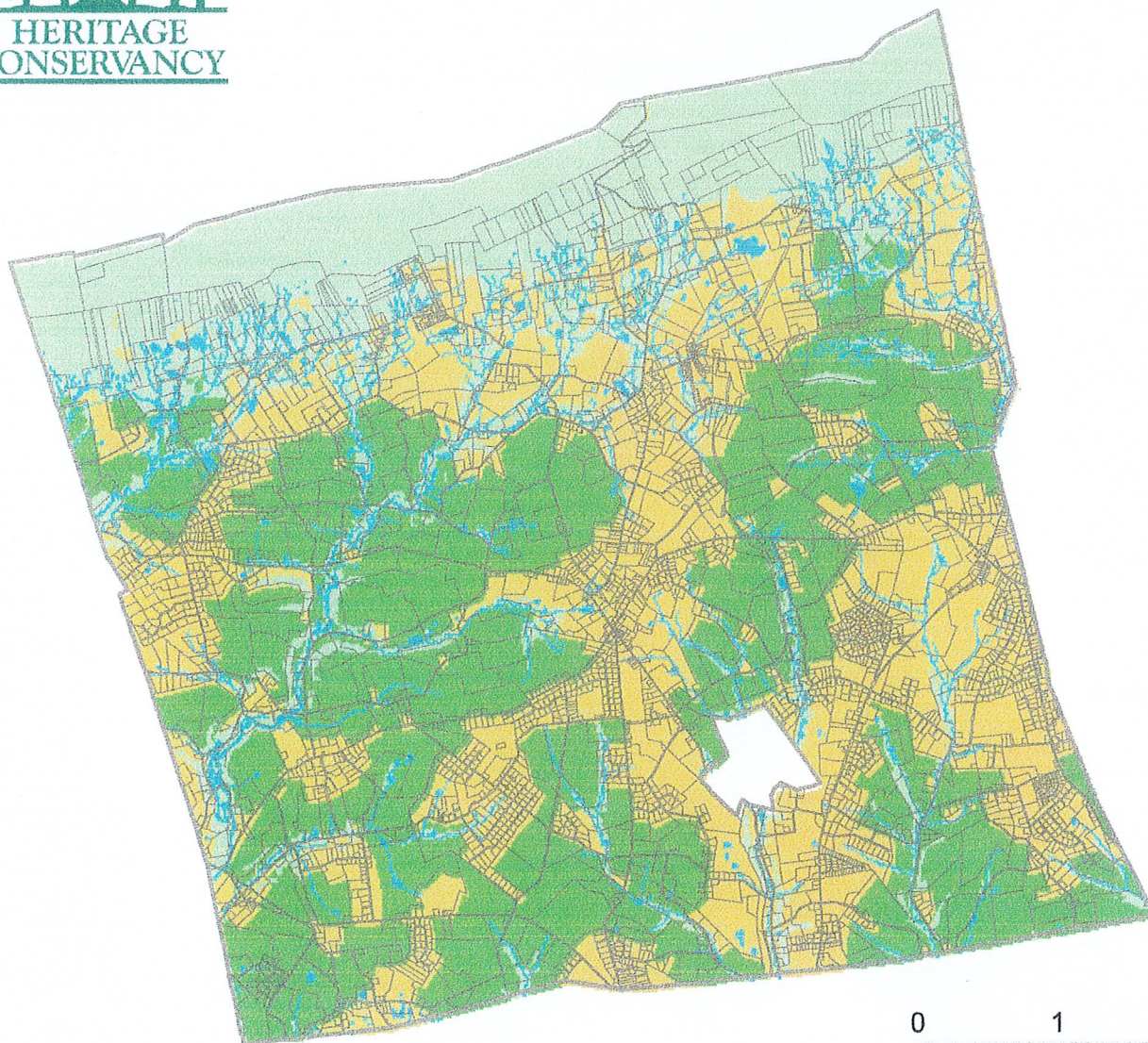
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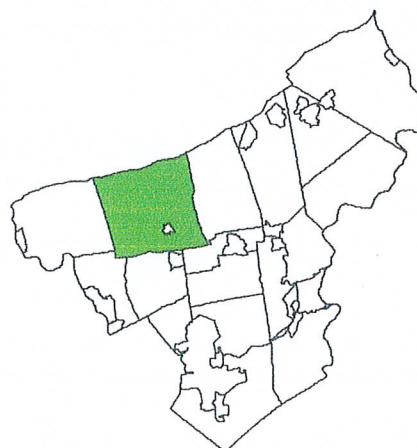
# Moore Township Land Use



## Legend

-  Moore Township
-  Parcel
-  Hydrology
-  Farmland Preservation
-  Natural Features
-  Rural Development
-  Urban Development

"The data displayed on this map are regional in nature and are not suited for use in site-specific studies. Parcel lines, property boundaries, floodplains, roads, and other data were obtained from third party sources. These data are only approximate and are shown for illustrative purposes only. Heritage Conservancy makes no representation about the accuracy or currency of these data. The user shall hold Heritage Conservancy harmless from any suits, claims or actions arising out of the use of this map or accompanying documentation."

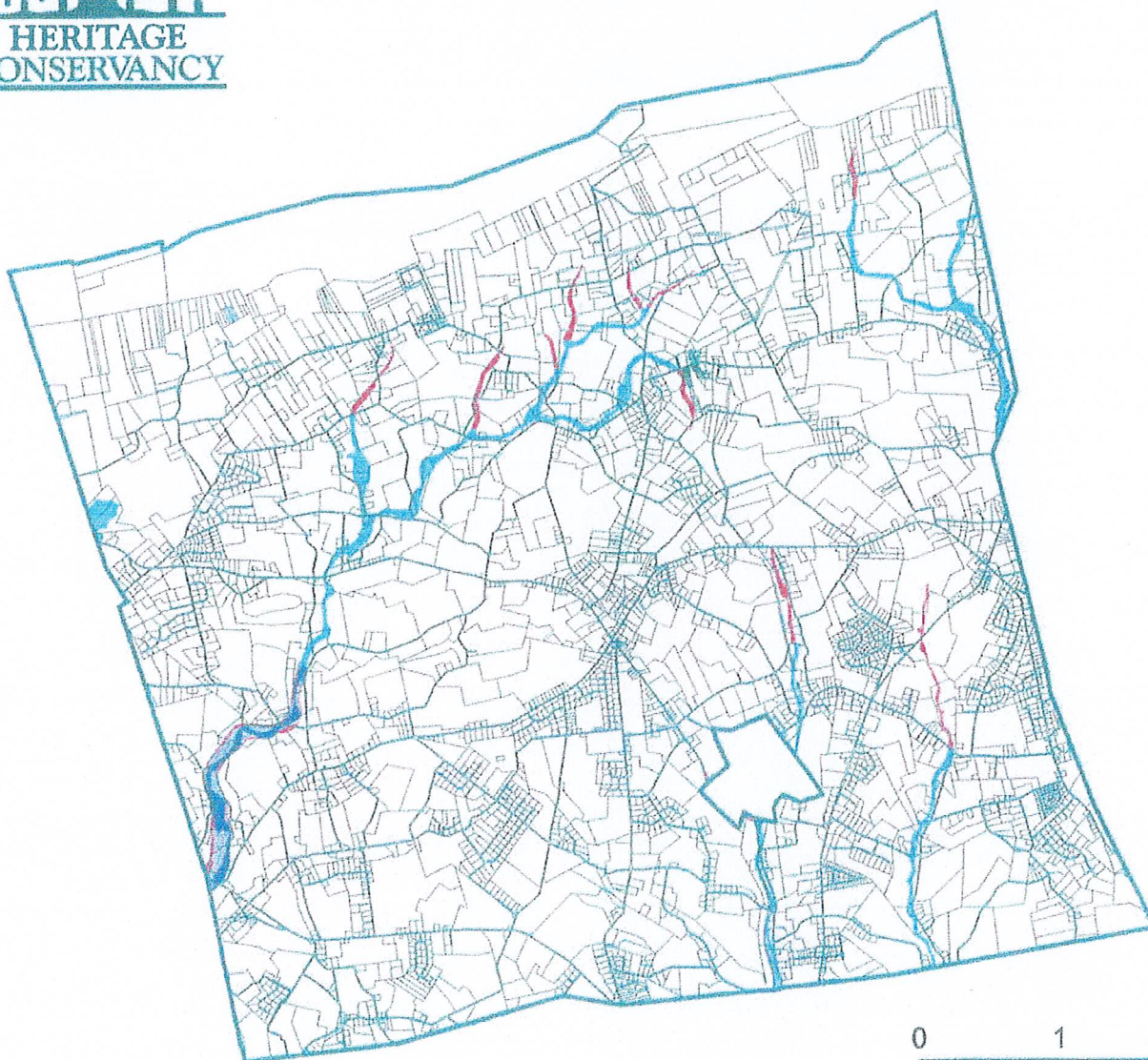


Only Data Source: LVPC - 2009





# Moore Township Flood Areas



0 1 2  
Miles

## Legend

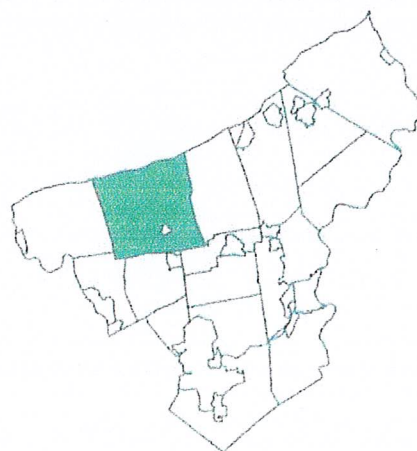
- Moore Township
- Parcel

## Flood Zone

- A
- AE
- AE FW
- X500

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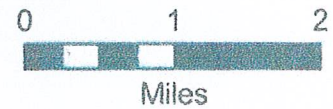
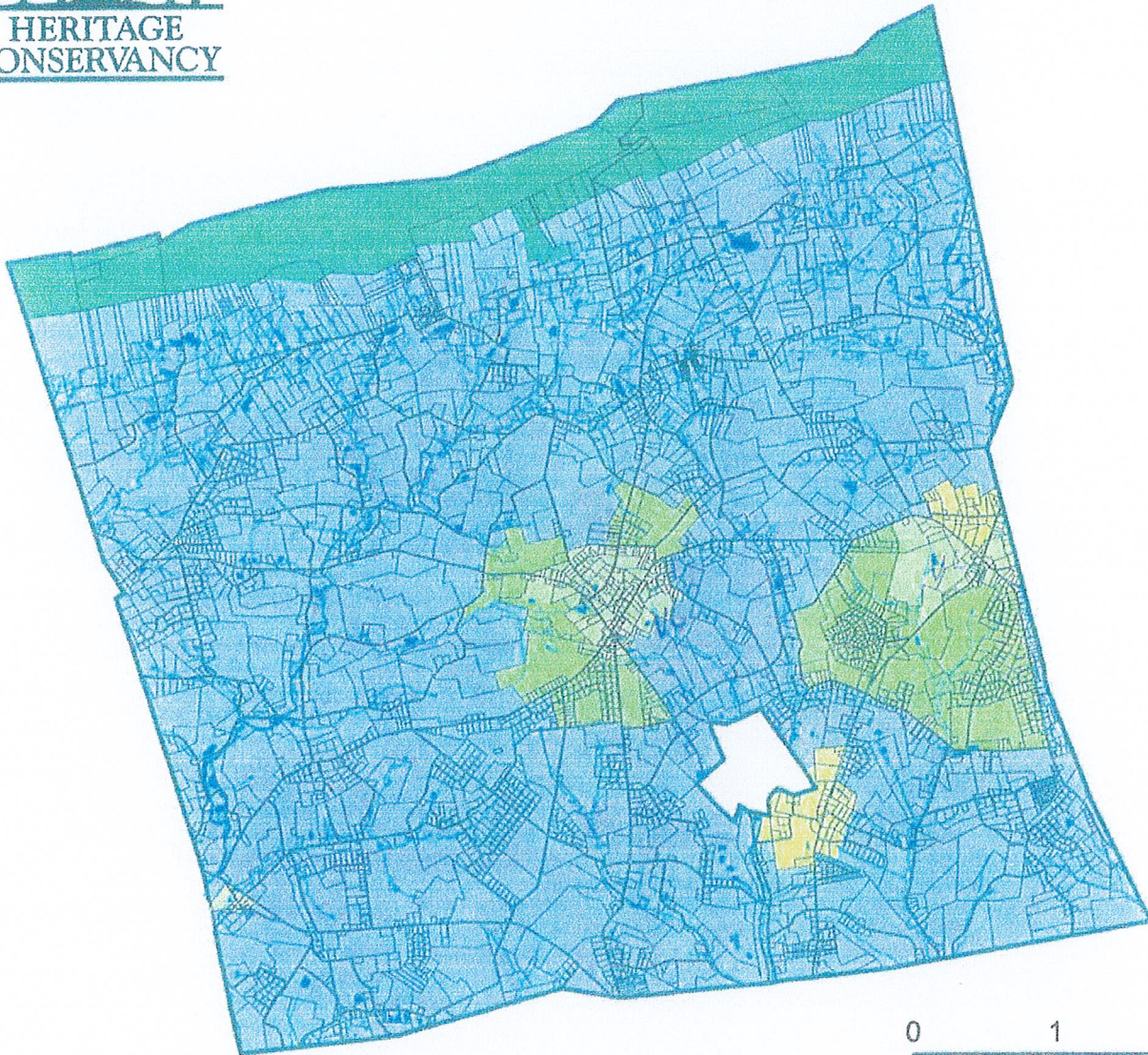
Only Data Source: LVPC - 2009







# Moore Township Zoning



## Legend

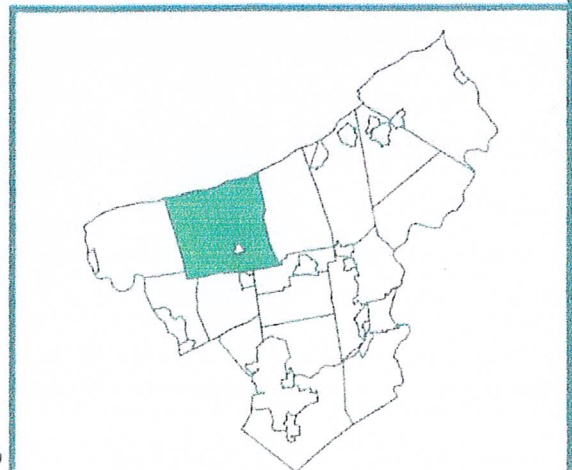
- Moore Township
- Parcel
- Hydrology

## Zoning

- Environmental Protection
- Light Industrial
- Mixed Uses
- No Zoning
- Rural
- Suburban Residential

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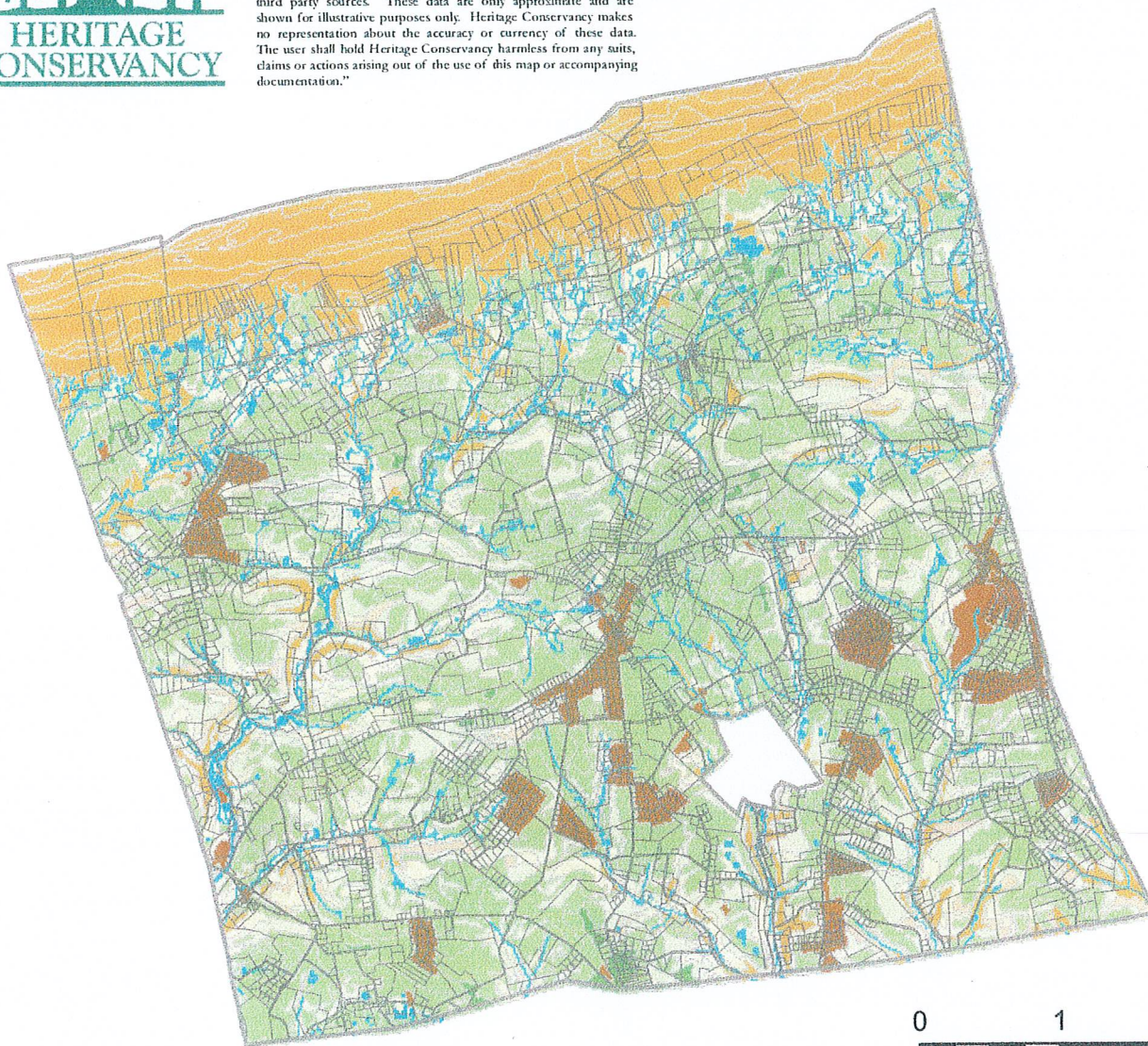






# Moore Township Soils

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## Legend

- Moore Township
- Parcel
- Hydrology
- Class 1
- Class 2
- Class 3
- Class 4
- Class 6
- Class 7
- Class 8

### Notes:

Land capability classification shows, in a general way, the suitability of soils for most kinds of field crops. Capability classes, the broadest groups, are designated by numerals 1 through 8. The numerals indicated progressively greater limitations and narrower choices for practical use. The classes are defined as follows:

Class 1 soils have few limitations that restrict their use. All soils in Alaska are restricted from Class 1 due to soil temperature.

Class 2 soils have moderate limitations that reduce the choice of plants or that require moderate conservation practices.

Class 3 soils have severe limitations that reduce the choice of plants or that require special conservation practices, or both.

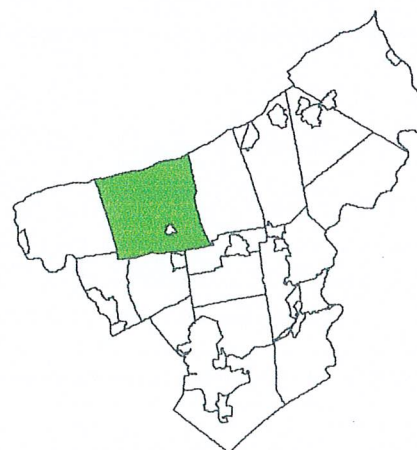
Class 4 soils have very severe limitations that reduce the choice of plants or that require very careful management, or both.

Class 5 soils are not likely to erode but to have other limitations, impractical to remove, that limit their use. Class 5 is not a class of soil displayed in Moore Township soils.

Class 6 soils have severe limitations that make them generally unsuitable for cultivation.

Class 7 soils have very severe limitations that make them unsuitable for cultivation.

Class 8 soils and miscellaneous areas have limitations that rarely preclude their use for commercial crop production.



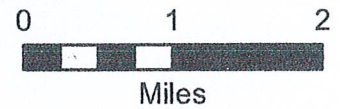
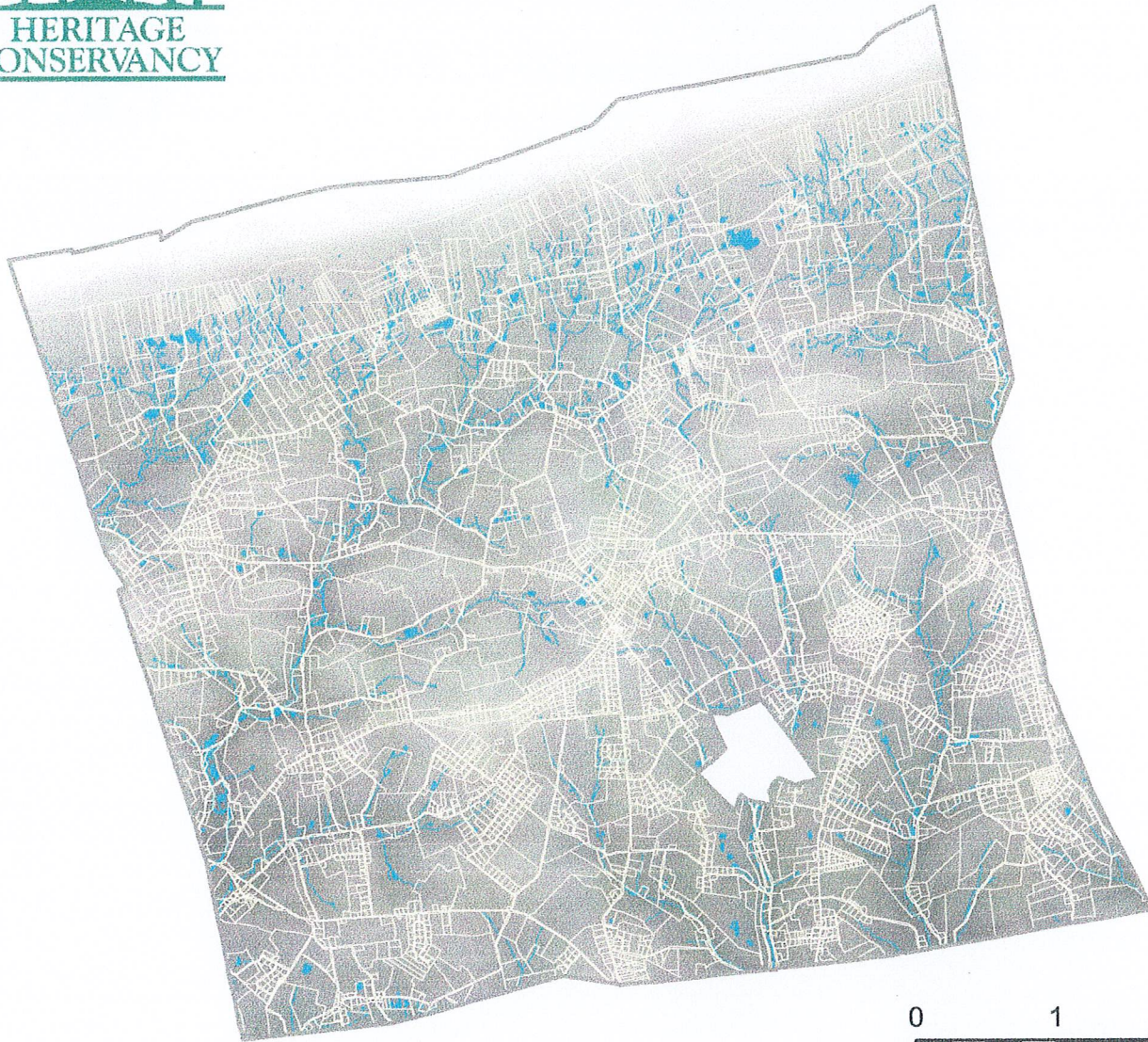
Only Data Source: LVPC - 2009

DATE: 2/12/2010









# Moore Township Elevation

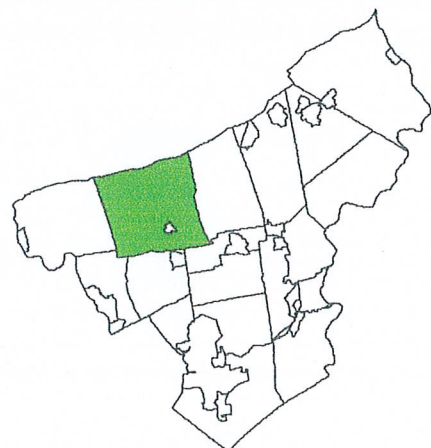


## Legend

-  Moore Township
-  Parcel
-  Hydrology
-  High  
Low

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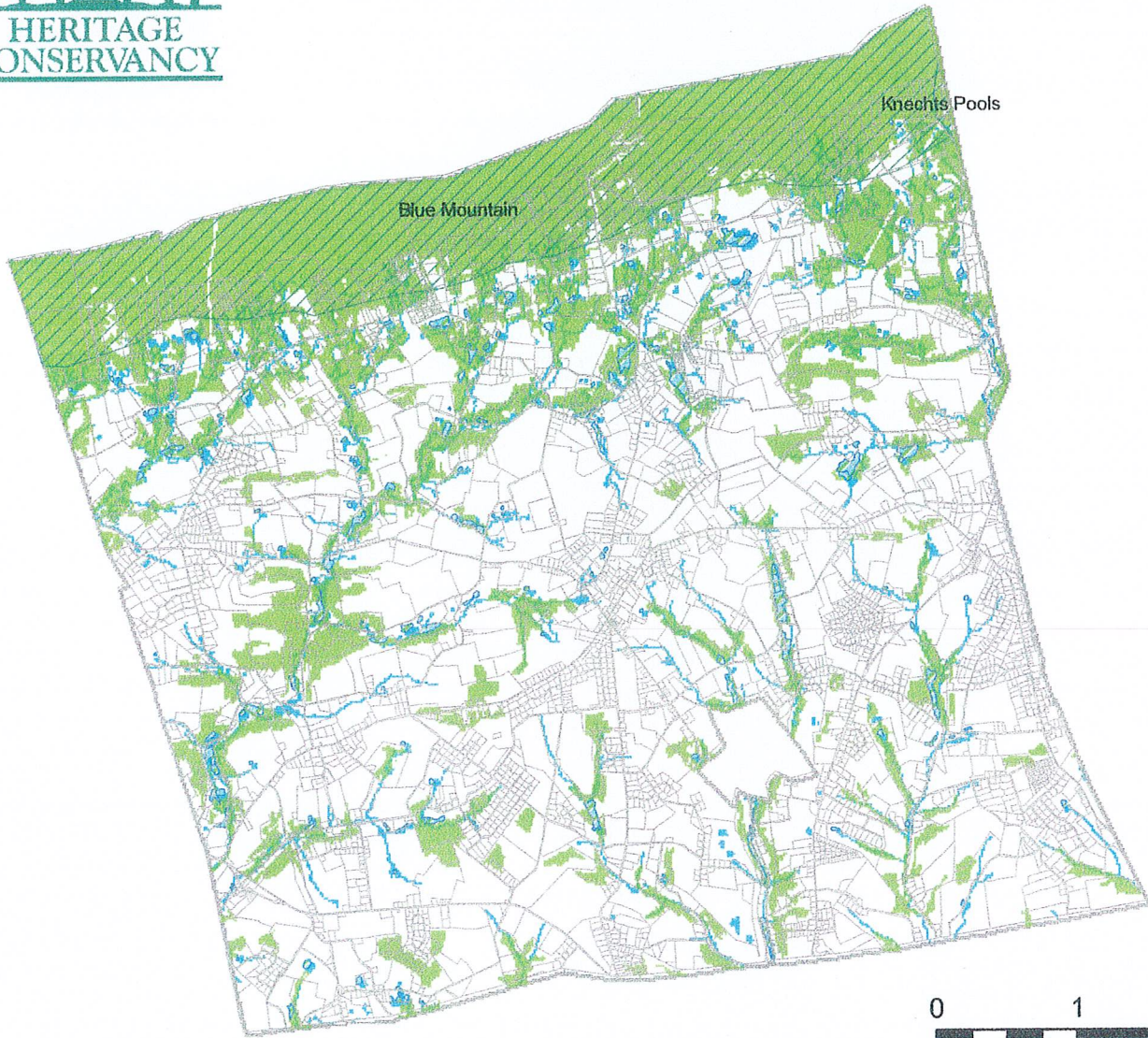


DATE: 2/12/2010











# Moore Township Natural Features

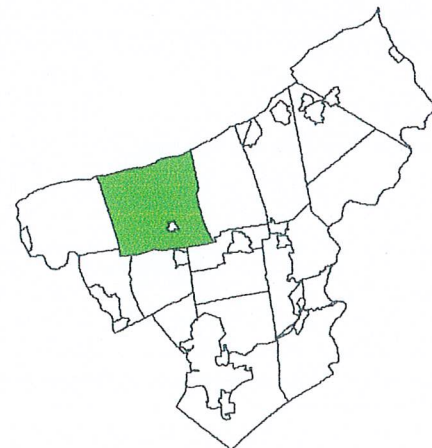


## Legend

-  Parcel
-  Natural Area
-  Wetland
-  Woodland
-  Moore Township
-  Hydrology

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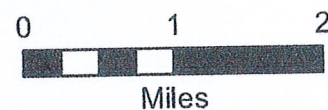
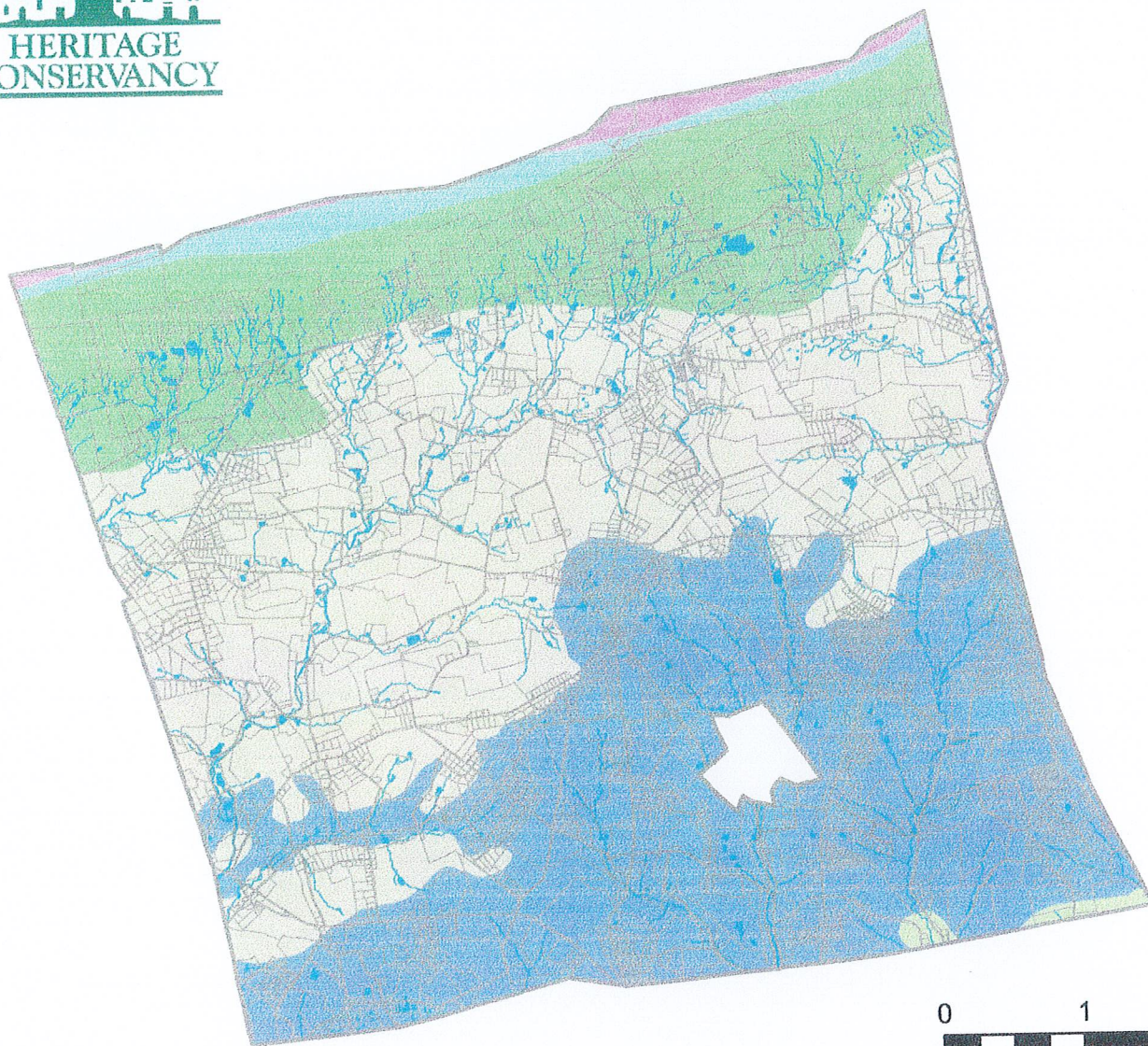
Only Data Source: LVPC - 2009







# Moore Township Geology



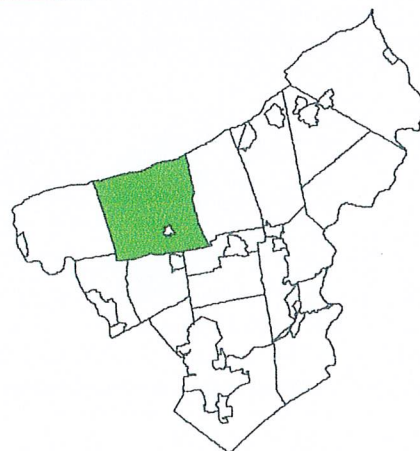
## Legend

- Parcel
- Moore Township
- Hydrology

## Geology Description

- Bushkill Member
- Jacksonburg Limestone
- Lizard Creek Member
- Minsi Member
- Pen Argyl Member
- Ramseyburg Member

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