



Upper Milford Township Open Space Plan

“Natural Areas and Working Farms Action Plan”

LEHIGH COUNTY, PA



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**Upper Milford Township
Lehigh County, Pennsylvania**

Open Space Plan

“Natural Areas and Working Farms Action Plan”

The Open Space Committee would like to dedicate the creation of the Natural Areas and Working Farms Action Plan to the memory of Jeffrey A. Bartges, who was a member of the committee.

Open Space Committee Members:

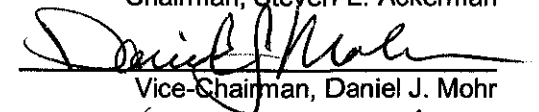
Francis Caputo	Chairman	Resident-at-Large
Philip Vanim	Vice-Chairman	Recreation Commission
Robert Sentner		Planning Commission
Robert Souders		Agricultural Security Board
Bruce Snyder		Environmental Advisory Council
Mary Hovik		Resident-at-Large
Linda Moyer		Resident-at-Large
Sarah Whitney		Resident-at-Large
Philip Hartranft, Jr.		Resident-at-Large

Adopted March 5th, 2009

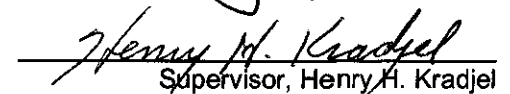
**Upper Milford Township
Board of Supervisors**



Chairman, Steven E. Ackerman



Vice-Chairman, Daniel J. Mohr



Supervisor, Henry H. Kradjel

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PREFACE

Why Open Space Matters?

New homes in Upper Milford Township reflect this community's attractiveness as a place to live. Selling land for development also provides revenue for people - often older people, whose main financial asset for retirement is their real estate. However, new development could change the character of Upper Milford by gradually, but steadily, displacing the open space for which the Township is noted.

People commonly misperceive that residential development pays for itself by expanding the tax base. In reality, all but the most expensive homes typically create a demand for schools and other public services that exceeds the tax revenues these new homes generate. Public school expenses are the main cause of this negative fiscal impact. Because they create positive fiscal impacts, farmland and open space help offset the budget shortfall that new homes create. In the words of the American Farmland Trust, open space saves money because "cows don't go to school".

In 1997, a Pennsylvania University analysis found that residential development in Bedminster Township, Bucks County costs an average of \$1.12 in services annually for every \$1.00 it produces in municipal and school tax revenues. The same study found new homes in Buckingham Township; Bucks County cost \$1.04 for every tax dollar returned. A similar negative impact occurred in all eight municipalities across the State that this study examined.

In 2001, the American Farmland Trust reported results from 83 separate studies in 18 different states. In all 83 cases, including 11 from Pennsylvania, residential development cost more than the taxes it generated-an average of \$1.15 in costs per \$1.00 of local and school tax revenues. Conversely, open space paid back more than it required in expenditures-an average of \$0.36 in service costs was needed for each \$1.00 in tax revenues generated.

Taxes Paid on \$100,000 Assessed Property Value

Township	Township 2008		School 2008		County 2008		Total 2008	
	Cost	Millage	Cost	Millage	Cost	Millage	Cost	Millage
Upper Milford	\$ 25.00	0.25	\$ 4,049.00	40.49	\$ 1,025.00	10.25	\$ 5,099.00	50.99
Lower Macungie	\$ 00.00	0.00	\$ 4,049.00	40.49	\$ 1,025.00	10.25	\$ 5,074.00	50.74
Lower Milford	\$ 200.00	2.00	\$ 4,260.00	42.60	\$ 1,025.00	10.25	\$ 5,485.00	54.85
Upper Saucon	\$ 420.00	4.20	\$ 4,260.00	42.60	\$ 1,025.00	10.25	\$ 5,705.00	57.05
Washington	\$ 70.00	0.70	\$ 6,028.90	60.289	\$ 1,025.00	10.25	\$ 7,123.90	71.239

Table 1 – 1 Upper Milford Township Millage Rate Comparison for 2008

Upper Milford will continue to add population and new businesses. Most residents recognize that some development is inevitable and is a sign of a prosperous area. In conjunction with zoning and comprehensive planning, implementing this Open Space Plan would give the Township a chance to direct the pace and direction of local growth. As a result, some valuable farmlands, woodlands, hillsides and creek valleys could be saved while still leaving enough land for new individuals and families who desire to become part of the Upper Milford Township community.

DEFINITIONS

DEFINITIONS

Act 319 & 515

Act 319 or 515 is a preferential tax assessment for working farm and forested land; land can be removed from this program, but is subject to a seven year rollback of property taxes. Owners of agricultural, forest, water supply or open space land agree to keep this land in its present use for ten years; for this, owners receive tax assessment based on the use of the land instead of its market value. ***Neither of these programs actually preserve the land; this is simply a tax incentive for owners to keep their land in its current state.***

Agricultural Security Area (ASA)

Inclusion of a property in an agricultural security area protects the owner from a municipality passing ordinances which *unreasonably* restrict farming structures or practices, and prevents normal farming practices from being declared nuisances in an ordinance that would restrict those activities. Properties are also protected from condemnation by requiring condemnation to be reviewed by a state board. ***Inclusion in an Agricultural Security Area does not preserve a property. Inclusion in an Agricultural Security Area is a requirement of application to the county's agricultural preservation program.*** Denial of inclusion into an Agricultural Security Area would effectively prevent the ability of an owner of farmland to obtain funding for preservation for their agricultural land.

Conservation Easement

This is a voluntary agreement between a landowner and either a government or land trust. The agreement voluntarily restricts the property for conservation purposes and applies to current and future owners of the land in perpetuity. The terms of the agreement are negotiated between the easement holder and the landowner. Conservation easements can be sold or donated, and are enforceable by a third party.

Deed Restriction

Conditions that the owner sets forth on the use of the property, such as number of buildings or uses allowed. These conditions will continue forward in time and be present on the deed of the property, unless removed. Deed restrictions may not be enforceable by a third party, and as such are less desirable and protective than a conservation easement.

Easement

A legal agreement usually between a landowner and a local government, state agency or nonprofit land trust which restricts certain rights associated with ownership of the land. In the case of open space preservation, this would customarily take the form of restrictions on future development of the land. The terms of the easement are negotiated between the landowner and the holder of the easement. There are tax benefits available for donation and sale of easements. ***A property owner retains use of the property when there is an easement placed on it.*** This enables a property owner to receive cash or tax benefits and at the same time continue to use and own their land. ***Placement of an easement does not require public access to the land.***

Fee Simple Acquisition

Outright purchase of land, as in the sale of a home.

Open Space

The purposes include the provision of recreation land, as well as the conservation of scenic resources, historic sources, natural resources, farmland, forest lands and areas for pure and adequate water supply.

Natural Area

The conservation of scenic resources, natural resources, forest lands and areas for pure and adequate water supply.

Restrictive Covenant

This is a private agreement regarding the restriction of uses on a piece of property. This agreement is placed on the owner and is generally difficult to enforce upon future owners.

Working Farms

“Normal Agricultural Operation” – The customary and generally accepted activities, practices and procedures that farmers adopt, use or engage in year after year in the production AND preparation for market or poultry, livestock and their products and in the production and harvesting of agricultural, agronomic, horticultural, silvicultural and agricultural crops and commodities and is:

1. not less than ten contiguous acres in area; or
2. less than ten contiguous acres in area but has an anticipated yearly gross of at least \$10,000.

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INTRODUCTION

Why Open Space Matters?

PLAN PURPOSE

Upper Milford Township's Park, Recreation, Open Space and Environmental Plan, Southwestern Comprehensive plan and its land regulatory ordinances feature open space conservation as important objectives. The Township recognizes that its undeveloped lands and sensitive natural features are community assets. Planning ahead to ensure an appropriate balance between growth and the natural environment is the motivation behind this Open Space Plan.

RELATIONSHIP TO OTHER TOWNSHIP PLANS AND ORDINANCES

This Open Space Plan is part of an ongoing effort to keep policies and regulations related to growth and conservation up to date. Upper Milford Township adopted the Southwestern Comprehensive Plan on April 7th, 2005 in conjunction with five other municipalities. The Upper Milford Township adopted the Park, Recreation, Open Space and Environmental Plan on February 5th, 2004. The Board of Supervisors enacted the Upper Milford Township Zoning Ordinance in 1985 and is in the process of amending the Zoning Ordinance. The Township's Subdivision and Land Development Ordinance was adopted in 1985 and is in the process of amending the Subdivision and Land Development Ordinance. The Township's Act 537 Wastewater Facilities Plans was approved by PA Department of Environmental Protection in January of 2006. Protection plan; Emmaus' Wellhead and Leibert's Creek Watershed Assessment Plan.

PLAN CONTENT

The Upper Milford Township Open Space Plan includes this Introduction and the following six major parts:

- (1) Community Background - an overview of how the Township's regional context and demographic trends continue to shape growth and conservation in Upper Milford.
- (2) Developed and Preserved Land - an inventory of existing land use, including developed areas, sites proposed for new development, and land already preserved.
- (3) Existing Natural Features - an overview of the Township's environmental characteristics, such as woodlands, steep slopes, floodprone lands and prime agricultural soils, along with an overview of how these resources are protected under existing federal, state and municipal regulations.
- (4) Goals and Recommendations - a description of the goals and specific actions proposed to help preserve more open space and better protect vulnerable natural features.
- (5) Implementation - a strategy for carrying out the Plan's recommendations according to specific phases, plus a description of most applicable open preservation techniques, including potential funding options.
- (6) The Next Steps - a list of the immediate policy questions that need to be answered about how to establish and fund a potential Open Space Preservation Program in Upper Milford Township.

The following important background information is collected and mapped to support the policies and recommendations in this Plan. While some of this background data is new, relevant information has also been imported from existing sources:

The location of current development, soon to be developed areas and remaining developable areas. Information on existing preserved open space and unique natural features including steep slopes, flood-prone areas and woodlands, among others. A description of key population and housing trends in Upper Milford Township. An inventory of existing preserved lands. An analysis of natural features protection under the Upper Milford Township Zoning Ordinance, and the Upper Milford Township Subdivision and Land Development Ordinance.

PUBLIC INPUT

This Open Space Plan was prepared under the direction of the Upper Milford Township Board of Supervisors by the Open Space Committee. Prior to the formation of the *official* Open Space Committee there was an Ad Hoc Committee formed of residents of the Township that have a concern for Open Space. The Ad Hoc Committee created and submitted a draft plan; the plan served as a basis to form an “official” Open Space Committee and continuation of the goal of creating an Open Space Plan for Upper Milford Township. The Open Space Committee is comprised of five residents-at-large and a member from the Planning Commission, Environmental Advisory Council, Agricultural Security Board and the Recreation Commission.

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IMPORTANCE OF NATURAL AREA CONSERVATION:

Importance of Natural Area Conservation:

The Open Space Committee had several discussions on the types of open space that should be preserved. The committee agreed that areas with important natural features and agricultural areas would be the focus of preservation.

The rate of development in the Lehigh Valley is increasing. With this increase have come problems from traffic, air and water pollution. We must plan to offset the growth of these negative impacts by preserving clean air, clean water, and natural areas. Included in our priorities for conservation are: water resources and watersheds, forests and working farms, wildlife habitat, floodplains and steep slopes, scenic areas visible from public right of way, historic, geologic, and botanic sites of interest and natural areas that connect communities.

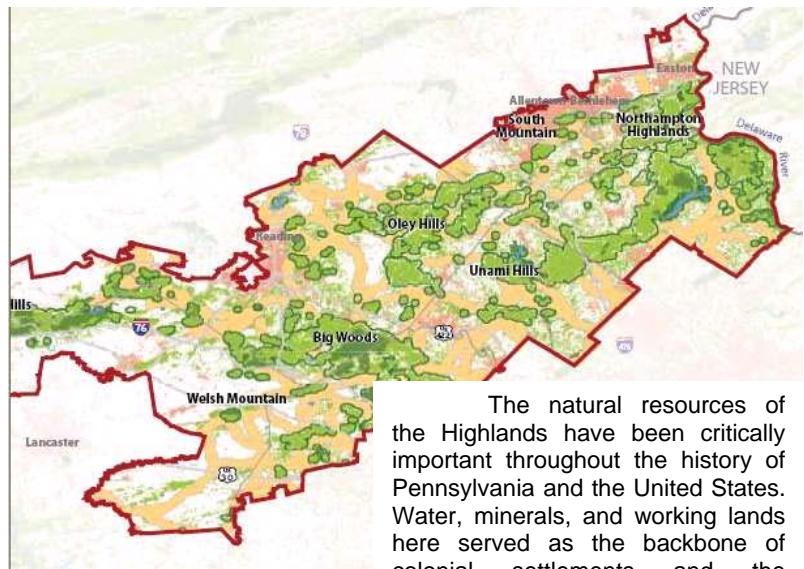
Preserved Open Space serves to:

(Pennsylvania Land Trust Association)

- Avoid some costs associated with poorly planned development, such as increased school taxes and crowded classrooms.
 - Protect drinking water quality.
 - Recharge groundwater and aquifers.
 - Protect our lakes, rivers, streams and fish populations.
 - Provide habitat for wildlife – game and non-game species alike.
 - Help lessen pollution by absorbing contaminants from our air and water.
 - Cool communities in the summer months.
 - Absorb storm water and reduce flooding caused by additional impervious land cover.
 - Provide the foundation for a healthy ecosystem on which we all depend.
 - Provide recreational, educational, aesthetic and other quality of life benefits to communities.
- *A 2003 survey of township residents showed that 72 % of residents wished the township would do more to protect open space, 76 % wanted more preservation of farmland and 71 % wanted more protection of sensitive areas. The survey is available at the Township should anyone have questions or would like to see the survey.*

The Pennsylvania Highlands encompasses all of Upper Milford Township. The Highlands is recognized as a critical natural area which is vital to the protection of drinking water for millions of people.

This vital natural area should be considered whenever development is planned or conservation is possible. The area encompasses all of Upper Milford Township and therefore indicates the regional and national importance of preserving natural resource areas in Upper Milford Township.



The natural resources of the Highlands have been critically important throughout the history of Pennsylvania and the United States. Water, minerals, and working lands here served as the backbone of colonial settlements and the American Revolution and fueled the Industrial Revolution. Today, the entire Highlands region has been designated nationally significant through an act of Congress, the Highlands Conservation Act.

More information can be found at <http://www.highlandscoalition.org>

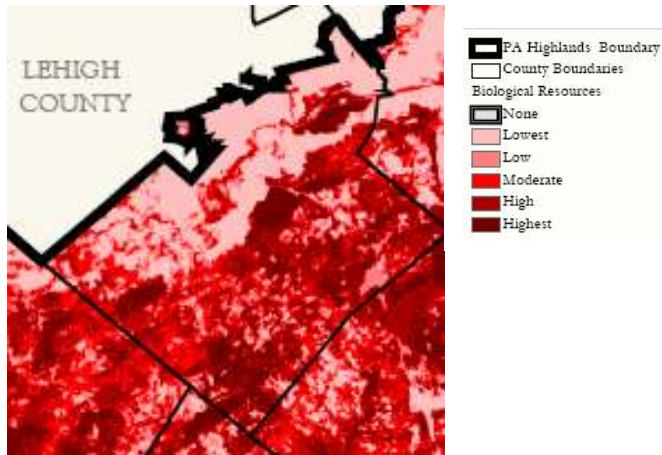


Figure 4 – 1 Biological Resources

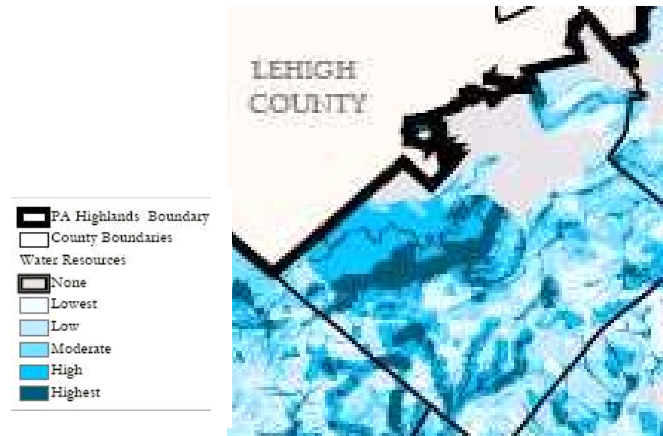


Figure 4 – 2 Water Resources

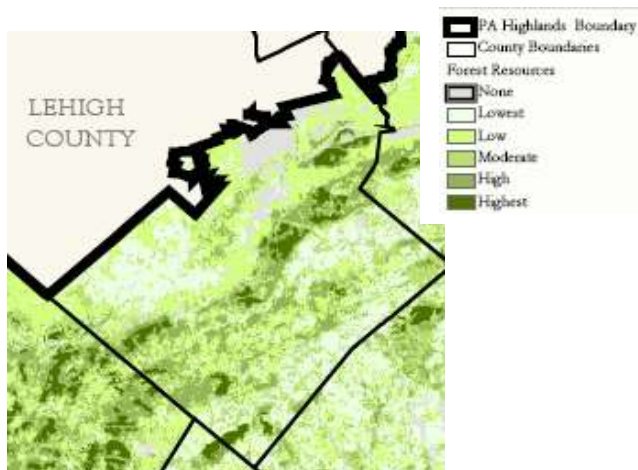


Figure 4 – 3 Forest Resources

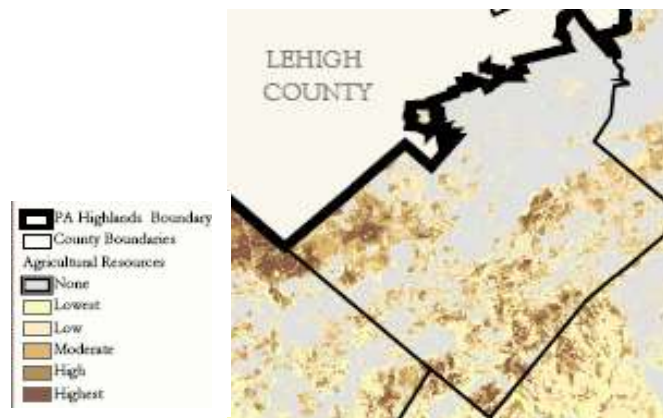


Figure 4 – 4 Agricultural Resources

Four-State Highlands Regions Facts

- 3.5 Million acres in Pennsylvania, New Jersey, New York and Connecticut
- Deemed nationally significant by the Highlands Conservation Act passed by Congress in November 2004
- Less than a two-hour drive from a number of cities, including New Haven, New York City and Philadelphia
- Hosts 14-plus million recreational visits annually, more than Yellowstone National Park
- Provides drinking water to over 15 million people
- Provides habitat to over 100 plants and almost 50 animals listed on Federal or State endangered or threatened species lists
- 1,860 miles of cold-water trout streams

The Pennsylvania Highlands Atlas Executive Summary

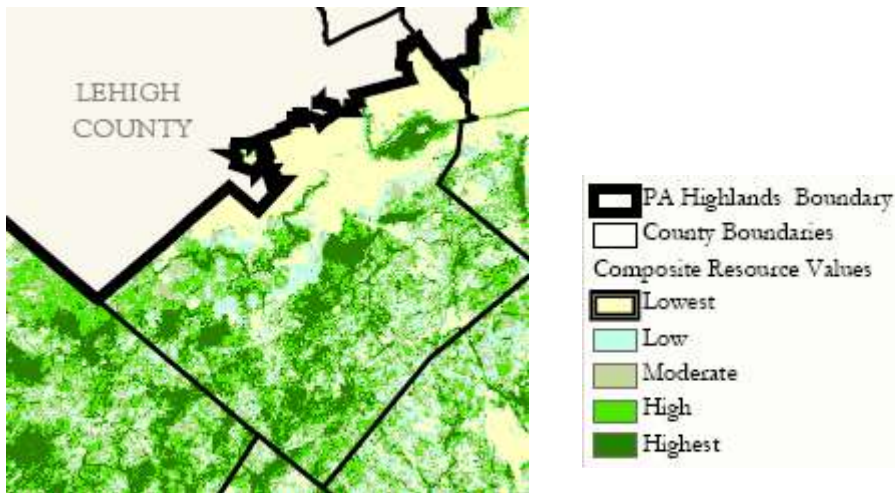


Figure 4 – 5 Composite Resource Values

Original maps with more details can be found at:
<http://clear.uconn.edu/clearims/PALayers/viewer.htm>

Schuylkill River Watershed

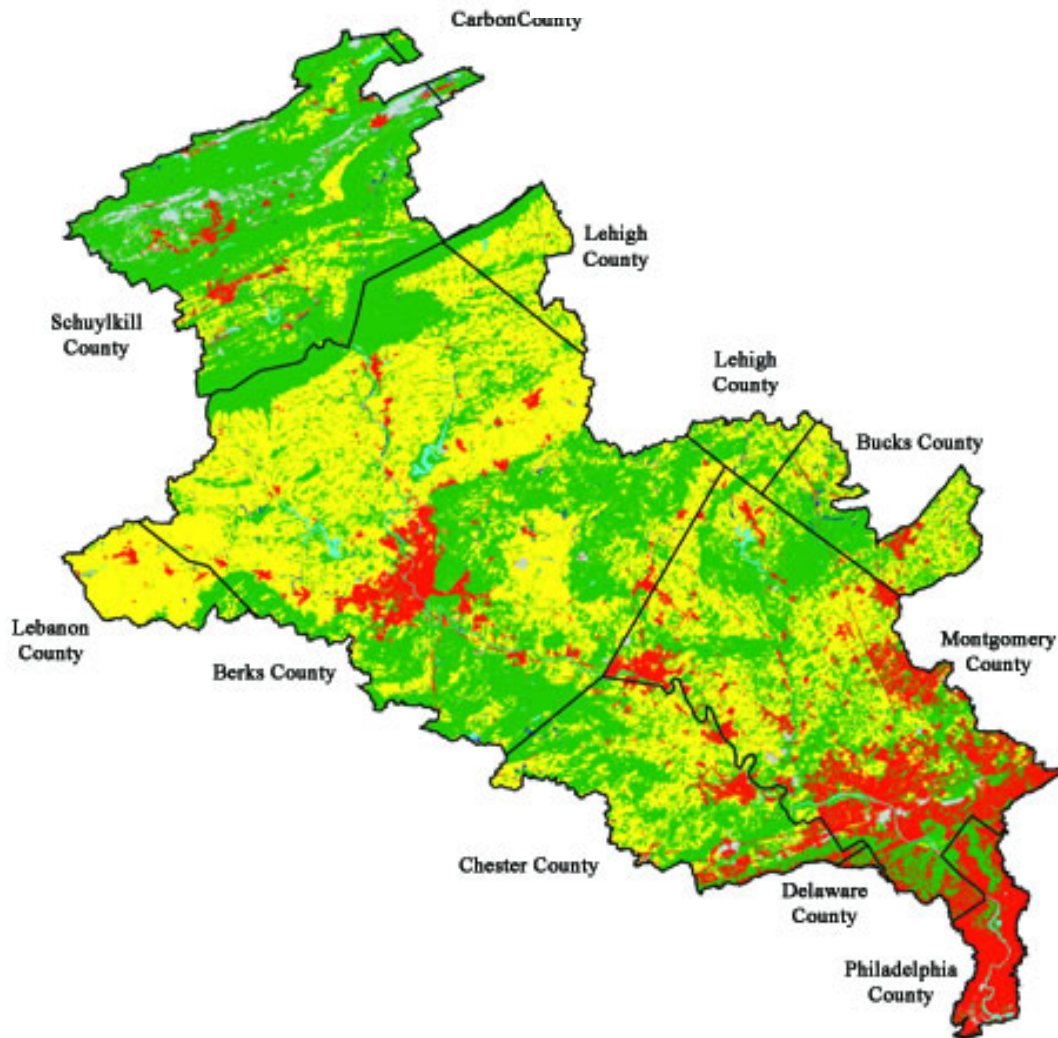


Figure 4 – 6 Schuylkill River Watershed



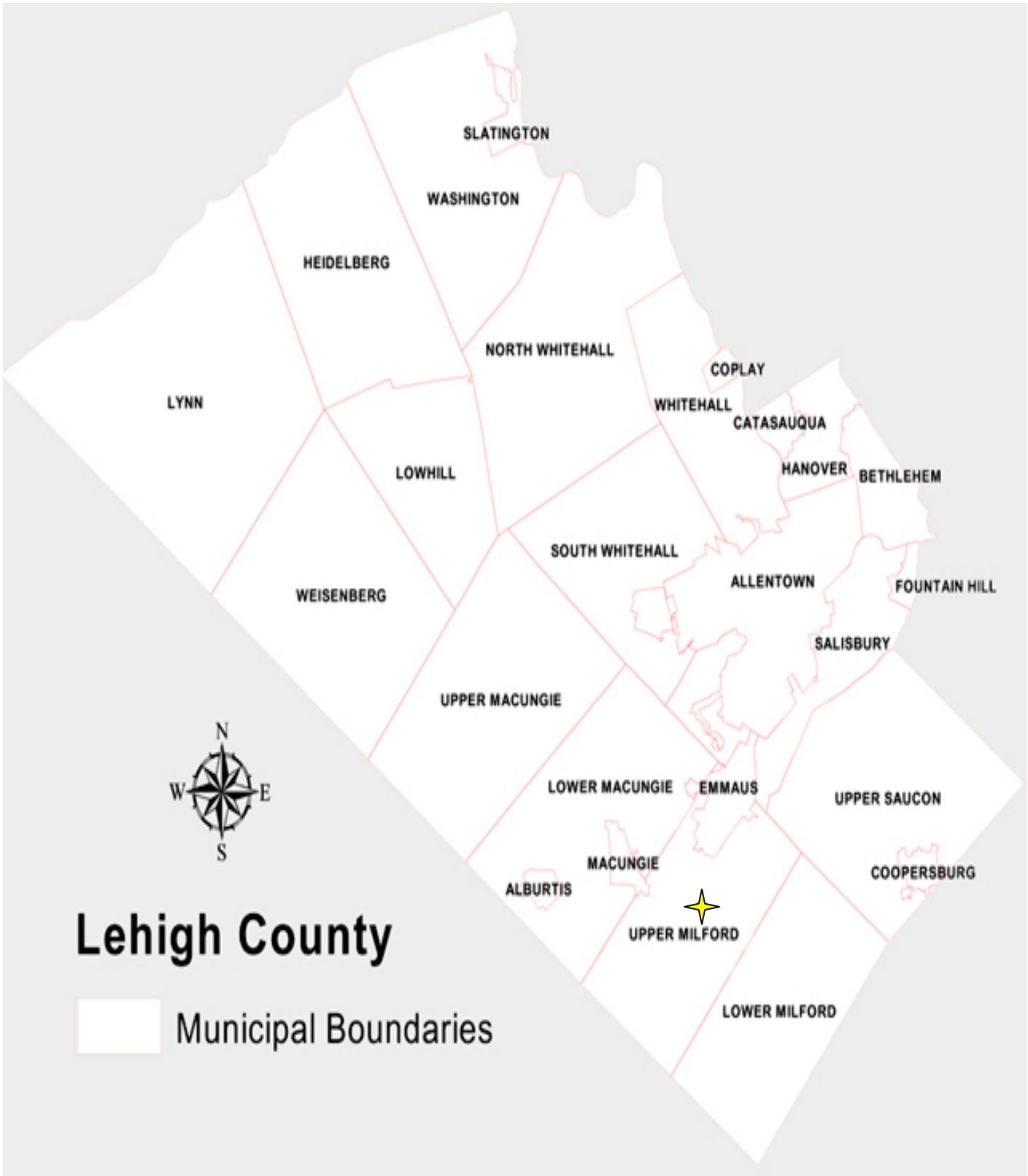
http://www.schuylkillreport.org/section1_landUse.html

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COMMUNITY BACKGROUND

Regional Influences

Upper Milford Township, founded in 1738, is located in the southwest corner of Lehigh County. The Township is bordered by Salisbury and Upper Saucon Townships to the northeast; Lower Milford Township to the southeast; Hereford Township, Berks County to the southwest; Lower Macungie Township and Macungie Borough to the northwest; and Emmaus Borough is carved out of the Township to the north. It is approximately 18.1 square miles, or 11,370 acres large, bisected by Routes 100 and 29 and the Northeast Extension (Rt. 476) of the Pennsylvania Turnpike. Most residents reside in single-family dwellings spread throughout the Township, separated by steep, wooded slopes or open agricultural farmland. Small concentrations of homes are in the villages of Zionsville, Shimerville, Vera Cruz, Old Zionsville and Powder Valley. Most business can be found along State Routes 29 and 100. The wooded south mountain ridge is a predominate natural feature in the rolling landscape of Upper Milford Township.



Map No. 5 – 1 Lehigh County Municipal Borders; UMT and Surround Municipalities

http://www.lehighcounty.org/Sitemap/site.cfm?doc=boroughs_townships.cfm

Population, Housing and Employment

According to the U.S. Census Bureau, the Upper Milford Township population growth slowed in the 1990s. In 1990, the U.S. Census tabulated 6,304 residents in the Township, which showed a 24% increase of 1,209 residents from the 1980 Census. In 1990, one-quarter of working age residents (16 years of age or older) traveled 30 minutes or more to work. Only 225 residents worked in the Township and only 120 residents worked at home. Eleven percent (11%) of the population was over the age of 65. Children and teens made up 29% (1,846) of Township residents.

In 2000, the Township population increased by 585 residents or only 9%. The male to female ratio has remained almost split, 50/50. In 2000, 2,514 households were counted with 90% being owner-occupied. The average household size is 2.81 persons. The Township continues to maintain a working age population with only 12% being 65 or older. Children and teens make up 26.7 % (1,843) of Township residents, a decline in the overall number of children in the Township.

It is anticipated the Township resident population in the first decade of the 21st century will show an increase in growth. Land development plans for residential subdivisions have increased in the past few years. Due to the current economic slump it is anticipated that residents would consider selling their development rights and preserving their properties.

On February 23, 2003, the Lehigh Valley Planning Commission (LVPC) released **Municipal Population Increase Forecasts for Lehigh and Lehigh Counties**. Bruce Newling's population forecast method estimates population growth based on an inverse relationship between population growth over a specific period of time and population density. In refining this forecast, the LVPC's calculations are based on zero urban population growth, subdivision activity, agricultural easements, and security areas and natural resources. The latter two (2) particularly impact Upper Milford Township, which contains several large farms under agricultural easements or county ownership (Seem Seed Farm) and limiting natural features.

Housing Stock Trends: 1990 – 2000			Change 1990 – 2000	
Area	2000	1990	Number	%
Upper Milford	2,576	2,222	354	15.9

The next survey to be completed will not be until 2010; as seen here from 1990 – 2000 there was a 15.9 % increase in housing and there has been even more since 2000.

Table 5 – 1 Housing Stock Trend - Lehigh Valley Planning Commission

Year	No. Major Developments Approved	Major Developments Total Lots Approved	No. of Minor Developments Approved	Minor Developments Total Lots Approved
2003	1	9	5	12
2004	1	45*	2	6
2005	1	114	3	6
2006	0	0	2	4
2007	1	18	3	6
2008 to date	0	0	1	2
Totals	4	186*	16	36

*7 Lots are in Hereford Township

Table 5 – 2 Number of Developments Approved by Upper Milford Township

POPULATION FORECAST 2000-2030

	2000 Census	2010 Forecast	2020 Forecast	2030 Forecast	2000-2030 Change	% Change
Upper Milford Twp.	6,889	7,161	7,370	7,531	642	9.3
Lower Milford Twp.	3,617	3,924	4,246	4,571	954	26.4
Lower Macungie Twp.	19,220	23,374	27,898	32,966	13,746	71.5
Emmaus Borough	11,313	11,313	11,313	11,313	0	0
Macungie Borough	3,039	3,039	3,039	3,039	0	0
Lehigh County	312,090	329,552	347,286	362,460	50,370	16.1

Table 5 – 3 * 2003 LVPC Population Forecasts

According to these estimates, Upper Milford Township may see a slow rate of population growth compared to neighboring Townships and even the County as a whole.

POPULATION GROWTH 1980-2000, UPPER MILFORD TOWNSHIP

Subject	1980	1990	2000	1980-2000 Change	% Change
Total Population	5,013	6,304	6,889	1,876	37.4
Age under 19	1,601	1,846	1,843	242	15.1
Age 20-64	3,004	3,906	4,201	1,197	39.9
Age 65+	417	552	845	428	102.6
Median Age	32.3	-	40.5	8.2	25.4
Total Households	1,644	2,196	2,514	870	52.9
Average Household Size	3.05	2.92	2.74	(0.13)	(4.2)
Total Housing Units	2,222		2,576	354	15.9

Table 5 – 4 * U.S. Census Bureau

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DEVELOPED AND PRESERVED LAND

Existing Land Use

A majority of the Township is zoned Rural Agricultural (R-A). South Mountain is zoned a South Mountain Conservation (SM-C) District. Small, concentrated, commercial districts dot the Route 100/29 corridor. Rural-Suburban Residential (RS-R), Suburban Residential (S-R), Commercial (C), and Industrial (I) Zones tightly congregate the northwestern corner of the Township, adjacent to Upper Macungie Township and Emmaus Borough municipal boundaries.

Land Use

Type	1988		2000		Change	
	Acres	%	Acres	%	Acres	%
Agriculture/Vacant	6,921.4	60.0	5,885.7	51.0	(1,035.7)	(15.0)
Residential	3,687.9	32.0	4,387.3	38.0	699.4	19.0
Transportation/Utilities/Communication	565.8	4.9	593.9	5.1	28.1	5.0
Wholesale/Warehousing	114.4	1.0	116.4	1.1	2	1.7
Public/Quasi-Public	87.2	0.8	90.7	0.8	3.5	4.0
Commercial	69.2	0.6	75.5	0.7	6.3	9.0
Parks and Recreation	66.1	0.6	361.8	3.1	295.6	446.5
Industrial	26.1	0.2	26.1	0.2	0	0
TOTAL	11,537.4	100	11,537.4	100		

Table 6 – 1 Lehigh Valley Planning Commission, Estimate Existing Land Use 2000

The following chart illustrates the specific properties used to determine the Parks and Recreation Land Use calculation:

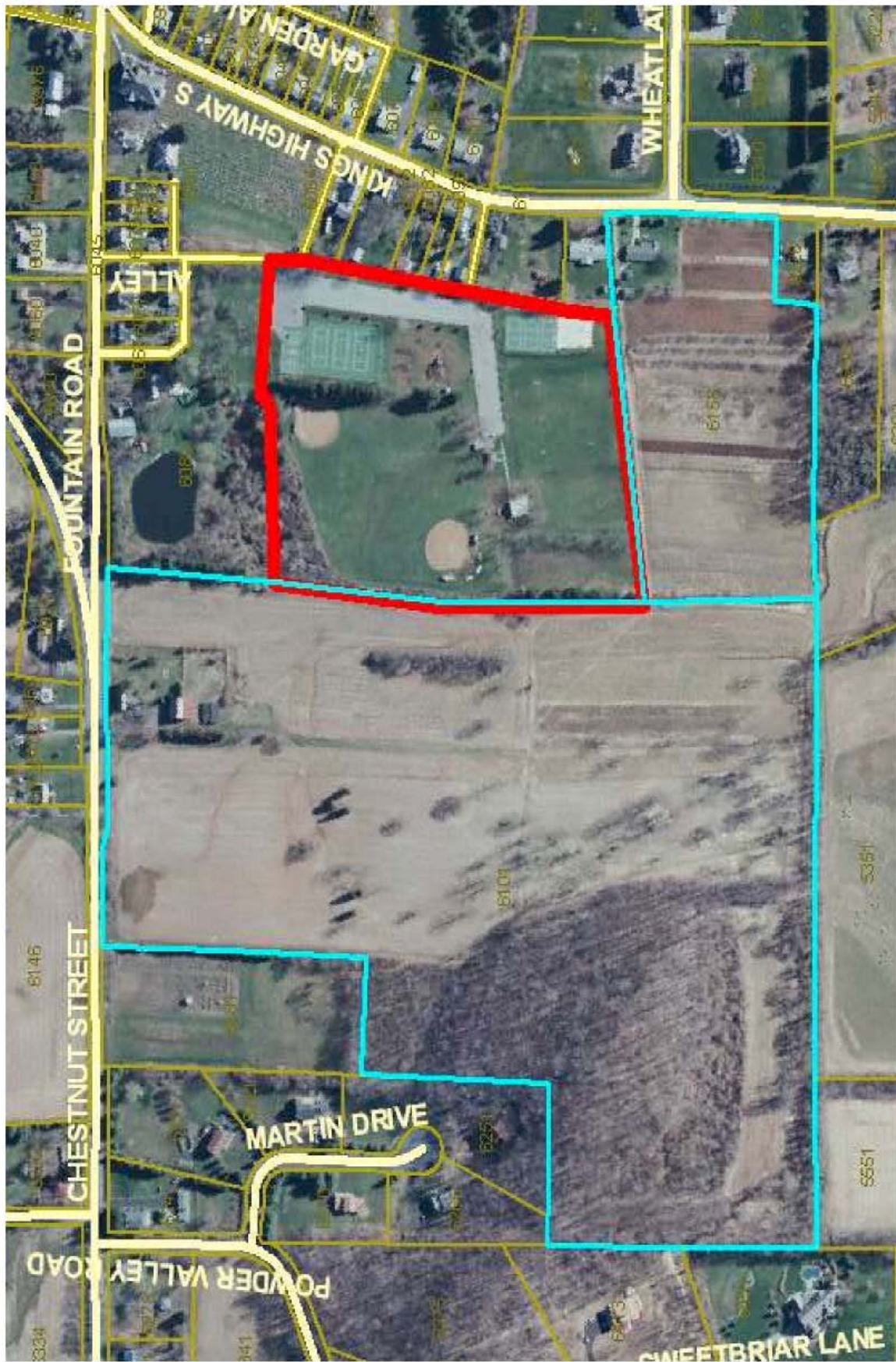
Parks and Recreation Land Use

Site Name	Acreage		Acreage		Type of Park	Ownership
	Total	Active Recreation	Public Use	Private Use		
Township Owned:						
Churchview Park	17.00	14.00	14.00	0.00	Community	County
Fulmer Tract	35.30	0.00	0.00	0.00	Open Space	Township
Jasper Park	26.70	10.00	10.00	0.00	Community	Township
Lenape Park	12.10	12.10	12.10	0.00	Neighborhood Park	Township
King's Highway School	5.00	2.00	2.00	0.00	Neighborhood Park	Township
Total Acreage	96.10	38.10	38.10	0.00		
Privately Owned:						
Burkhart Preserve	25.30	0.00	0.00	0.00	Land Preserve (conservancy owned)	Private non-profit
Indian Creek Golfcourse	75.00	0.00	0.00	0.00	Regular Course	Private for Profit
LCCD Project	61.00	0.00	0.00	0.00	County Natural Area	County
Milford Bible Camp	31.00	5.00	0.00	5.00	Church Camp	Private Non-Profit

Mystic Chain Park	3.40	0.00	0.00	0.00	Open Space	Private Non-Profit
Upper Milford Field and Stream	14.90	5.00	0.00	5.00	Sportsmen Club	Private Non-Profit
Upper Milford South Mountain Property	15.60	0.00	0.00	0.00	County Natural Area	County
Victory Valley Camp	40.30	10.00	0.00	10.00	Church Camp	Private Non-Profit
Total Acreage	266.50	20.00	0.00	20.00		

Table 6 – 2 LVPC, Inventory of Parks and Other Outdoor Recreation Sites; May 2002

Table modified to include the column for Public Use and Private Use also to separate Township and Private; Shimerville Recreation was removed from the original table because that use is no longer available. Also modified to separate Township owned.



Lenape Park

-  PROSEP Recommended Property Acquisition
-  Existing Park Property

Existing Park Lands

Lenape Park

Location:	Old Zionsville
Address:	6102 Kings Highway South, Zionsville, PA
Description:	Lenape Park is classified as a community park, which also provides neighborhood park amenities for the village Old Zionsville. The facility is well equipped, providing Township residents with a diversity of recreational facilities.
Access:	Kings Highway South
Watershed:	Hosensack Creek, Cold Water Fishery
Boundaries:	North – Residences fronting Kings Highway Northwest – Old Zionsville United Church of Christ Cemetery West – Residences fronting Fountain Road South – Open Farmland East – Open Farmland

A dense hedgerow planting borders the park to the west and south. A buffer planting of evergreen trees and flowering crab apple trees line the eastern border. Forsythia shrubs and split-rail fencing border a portion of the northern property line.

Land acquisition recommendations that are in this document are derived from the Park, Recreation and Open Space Plan (PROSEP) which was adopted by Upper Milford Township in 2004.


Recommendations for Land Acquisition:


Parcel One: This parcel is located east of the park. A single-family residence faces Kings Highway with the remaining land used for growing produce for a local market stand. Its frontage on Kings Highway could provide a much improved access into the park, although this would require major driveway improvements to connect to the existing parking areas. The land could be used to expand recreational fields in the future. In addition, by acquiring this parcel, the Township secures potential future use of the land for a community septic system absorption area. This could potentially save local residents huge expenses over the installation of a sewage system that would connect to Lehigh County Authority and the City of Allentown. The existing home could be subdivided from the parent tract and then rented, used by the township or sold.

Parcel Two: Schreiber Property. Preliminary testing reveals the possibility of soil contamination from historic pesticide uses that may render this property as unsuitable for public uses.



Jasper Park

 PROSEP Recommended Property Acquisition

 Existing Park Property

Jasper Park

Description:	Jasper Park is a community park, which also provides neighborhood park amenities for the village of Vera Cruz. The facility is well equipped, providing Township residents with a complete complement of recreational facilities. Large mature trees shade over half the site.
Location:	Vera Cruz
Address:	4960 Vera Cruz Rd North, Emmaus, PA 18049
Access:	Vera Cruz Road
Watershed:	Leibert Creek, High Quality Cold Water Fishery
Boundaries:	North – Residences fronting Vera Cruz Road West – PA Turnpike Northeast Extension South – Residences fronting Vera Cruz Road and Main Road West East – Residences fronting Vera Cruz Road and park access drive

A mature woodland dominates much of the site. An open hedgerow and cleared woodlands provide spaces for pavilions, restroom facilities, and concession building. A baseball field and play area are located in a clearing northeast of the woods. The northern and eastern boundaries are defined primarily by fragments of private property structures and plantings. A stone and mature vegetated hedgerow delineates the soccer fields from the adjacent park land and residences fronting Main Road West. A pine tree buffer screens the southern edge of the soccer field to adjacent parcels fronting Vera Cruz and Main Roads.

Recommendations for Land Acquisition:

Parcel One: This parcel is located at the southern end of the existing soccer fields. Purchase a portion of this parcel to increase necessary green space. A maintenance/service access easement from Vera Cruz Road to this parcel would be recommended; however, paved access to this area would not be suggested. Purchase of the entire parcel includes the former Township Recreation Hall would require major road improvements offsetting any benefit to a second vehicular entrance.

Parcel Two: The rear portion of this parcel is informally used by the park, as it currently divides the parking area from the soccer fields. Recommend purchase of the rear section of this parcel to secure contiguous land ownership.

Parcel Three: This parcel is directly north of the existing park entrance and drive. The parcel provides necessary space to widen the entrance drive and provide a greater park presence from Vera Cruz Road. A widening of the park entrance would accommodate space for pedestrians and future connections to the Fulmer Tract across the Road. A larger sign could be placed on Vera Cruz Road with the additional road frontage. The area behind the building could provide an area for tennis and basketball courts.

Parcel Four: The Pennsylvania Turnpike blasted through the center of the Jasper Quarries years ago, leaving a portion of this archaeological site on the west side of the now sunken highway. Two

(2) parcels, not physically connected to the park, do have a strong historical connection to the park, and should be acquired to protect this valuable resource from further irrevocable damage. The site would be an ideal archaeological site, with limited access to study by permit only. Recommend the purchase of archaeological area only.

Parcel Five: The Township should contact the Upper Milford Field and Stream Association pertaining to future preservation of this tract. This parcel is adjacent to Parcel Four and includes additional woodland. Either a conservation easement or direct land purchase should be considered in keeping this property from further development or subdivision.



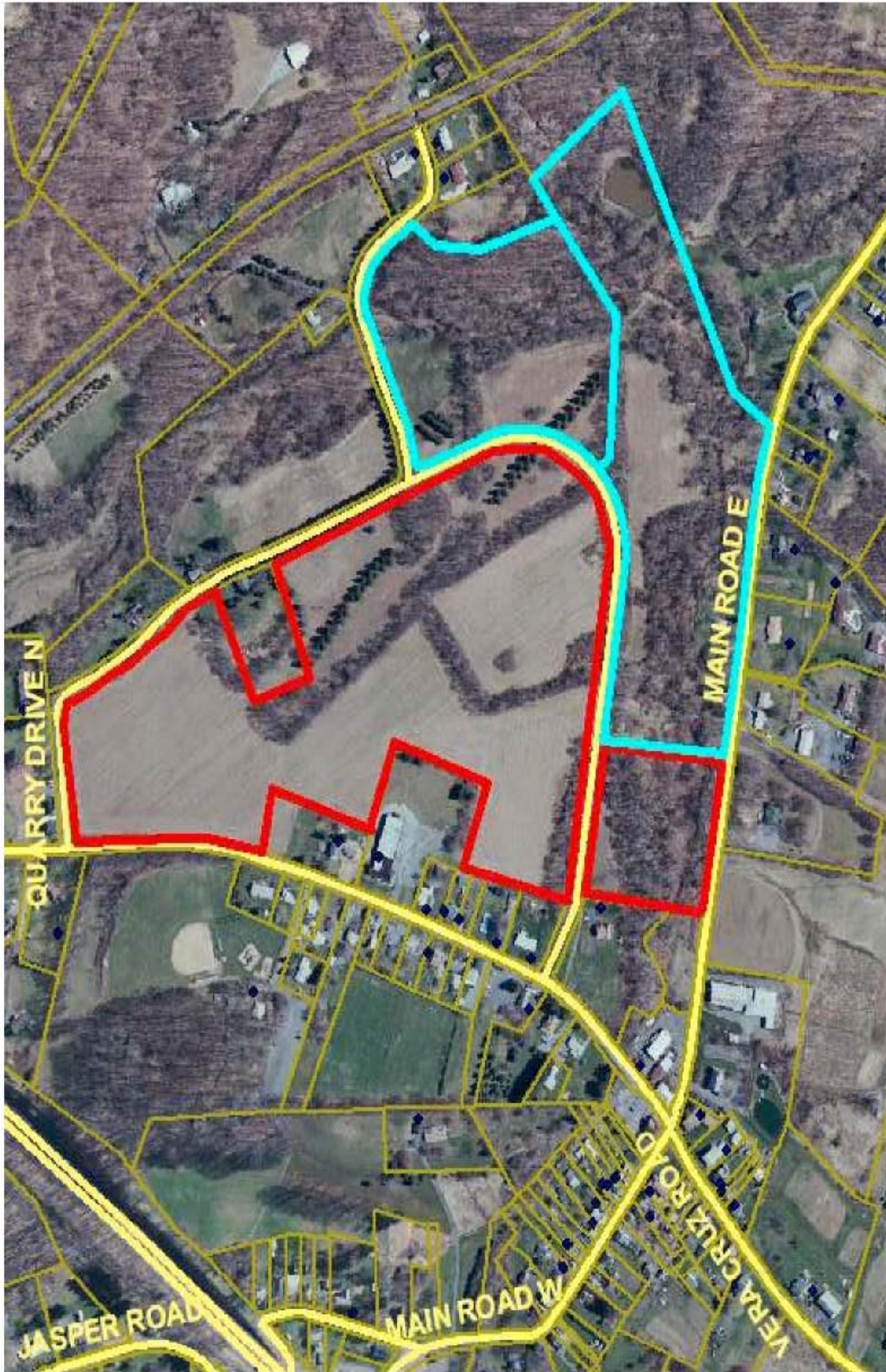
Churchview Park

— Existing Leased Park Property

Churchview Park

Description:	Churchview Park is a specialty park, providing an asphalt paved loop trail for cyclists and walkers.
Location:	Intersection of Kohler Road and Churchview Road
Address:	4602 Kohler Road, Zionsville PA
Ownership:	Lehigh County, under lease by Upper Milford Township for 99 years (lease originated June 1994)
Access:	Kohler Road
Watershed:	Hosensack Creek, High Quality, Cold Water Fishery
Boundaries:	North – Churchview road, across from open farmland (Seem Seed Farm) West – Kohler Road, across from open farmland and woodland South – Large Track Residential East – Railroad Line

No recommendations for purchasing additional land.



Fulmer Tract

— PROSEP Recommended Property Acquisition

— Existing Park Property

Fulmer Tract Park

Description:	Undeveloped Park, located at the northern edge of Vera Cruz. In 1997, Harold G. Fulmer donated almost 35 acres to the Township for preservation.
Location:	Intersection of Vera Cruz Road and Quarry Road
Address:	3620 Quarry Road North, Emmaus, PA 18049
Access:	Vera Cruz Road and Quarry Road
Watershed:	Leibert Creek, High Quality Cold Water Fishery
Boundaries:	North - Quarry Road with residences and woodland across West – Vera Cruz Road and residences fronting Vera Cruz Road South – Main Road East, pond and residence East – woodland, stream

Recommendations for Land Acquisition:

Parcel One: This parcel is located along Main Road East and includes a significant portion of Leibert Creek and the original dam. The property contains a home, trailer, and outbuildings. Interpretation of the ice industry in Vera Cruz can be told through the remnants of the dam. The house could be leased to a park caretaker or museum or nature center or others. The Fulmer Tract is very critical in defining the village edge.

Parcel Two: This parcel joins Parcel One and includes Leibert Creek. This parcel is currently undeveloped.



Township Wetland

— Existing Township owned undeveloped Parcel

Township Wetland

Description:	Undeveloped open space. A land-locked parcel, covered in woodland and dense vegetation with a small stream passing through the center.
Location:	Eastern Township boundary, south of Conservation District Demonstration project on the Seem Seed Farm lands
Address:	4191 Dillingersville Road, Zionsville, PA
Access:	None
Watershed:	Hosensack Creek, Cold Water Fishery
Boundaries:	Surrounding woodland and active farmland

Recommendations for Land Acquisition:

1. Considering the Township's current liability and future maintenance costs, selling this parcel to an adjacent land owner, with the understanding it will never be developed, is an option to be explored. As part of the negotiation, the buyers may enter into a conservation easement for their entire parcel with Lehigh County. The monies from the sale of this parcel can be used to purchase other lands more critical to its park, recreation, and open space programs in Upper Milford.
2. In order to maintain the property, the Township should explore acquisition of land and/or access easements from the Conservation District Demonstration Park to the Township site. Much of this area is wetland and requires careful planning to not damage sensitive wetland habitats. In addition, access and parking to the Demonstration Project is currently deteriorated and would require improvements to facilitate expanded use.

EXISTING NATURAL FEATURES

Existing Natural Features

Watersheds

Upper Milford Township is divided by two (2) major watersheds, the Lehigh (approximately 60%) and the Schuylkill River (40%). These watersheds are subdivided into eight (8) major stream watersheds, many of which are headwaters to the contributing stream.

Major Watershed - Lehigh

Sub area – Little Lehigh Creek – The Little Lehigh Creek provides the City of Allentown with the majority of its daily water supply.

1. Leibert Creek – The headwaters start east of Shimerville and traverses around Vera Cruz, through Leibert's Gap to the Little Lehigh. Leibert Creek flows through portions of Jasper Park and the Fulmer Tract.
2. Swabia Creek – A branch of Swabia Creek begins in Upper Milford Township west of Route 100, near Macungie Borough.
3. Mountain Creek – The headwaters of Mountain Creek, which filters through Lower Macungie Township and Macungie Borough, starts in the western edge of Upper Milford, near Sweetwood Drive. This watershed provides drinking water for Macungie Borough residents. A large parcel of woodland is currently owned by the Borough to protect this resource. Mountain Creek spills into Swabia Creek which then connects to the Little Lehigh Creek. Mountain Creek is not specifically state designated; however, it is a tributary to Swabia Creek.
4. Miller Creek – The headwaters of Miller Creek begin near the Route 100/29 split on the north side of South Mountain and proceed north.

Sub area – Saucon Creek

1. Saucon Creek – The headwaters to two (2) branches of the Saucon Creek start on either side of Brunner Road, near Mountain Drive. The Saucon Creek continues into Upper and then Lower Saucon Townships before spilling into the Lehigh River.

Major Watershed – Schuylkill River

Sub area – Perkiomen Creek

1. Perkiomen Creek – The headwaters of the Perkiomen Creek flow from and back to Hereford Township after making a u-turn in the southwest corner of Upper Milford. The creek follows Sigmund Road, Yeakel's Mill Road, and Route 100/29 Chestnut Street. The Perkiomen Creek proceeds through Hereford Township, Berks County to Montgomery County where it eventually flows into the Schuylkill River, near Valley Forge Park.
2. Hosensack Creek – The headwaters of Hosensack Creek branch south of Zionsville and Dillinger Station, traversing south along the Township border and into Lower Milford Township near Scout Road. Lenape and Churchview Parks contribute to this watershed.
3. Indian Creek – The headwaters of Indian Creek begin near Indian Creek and Schantz Roads, just west of Shimerville. The watershed encompasses a large portion of the Township. The Indian Creek eventually flows into the Perkiomen in Upper Hanover Township, Montgomery County.

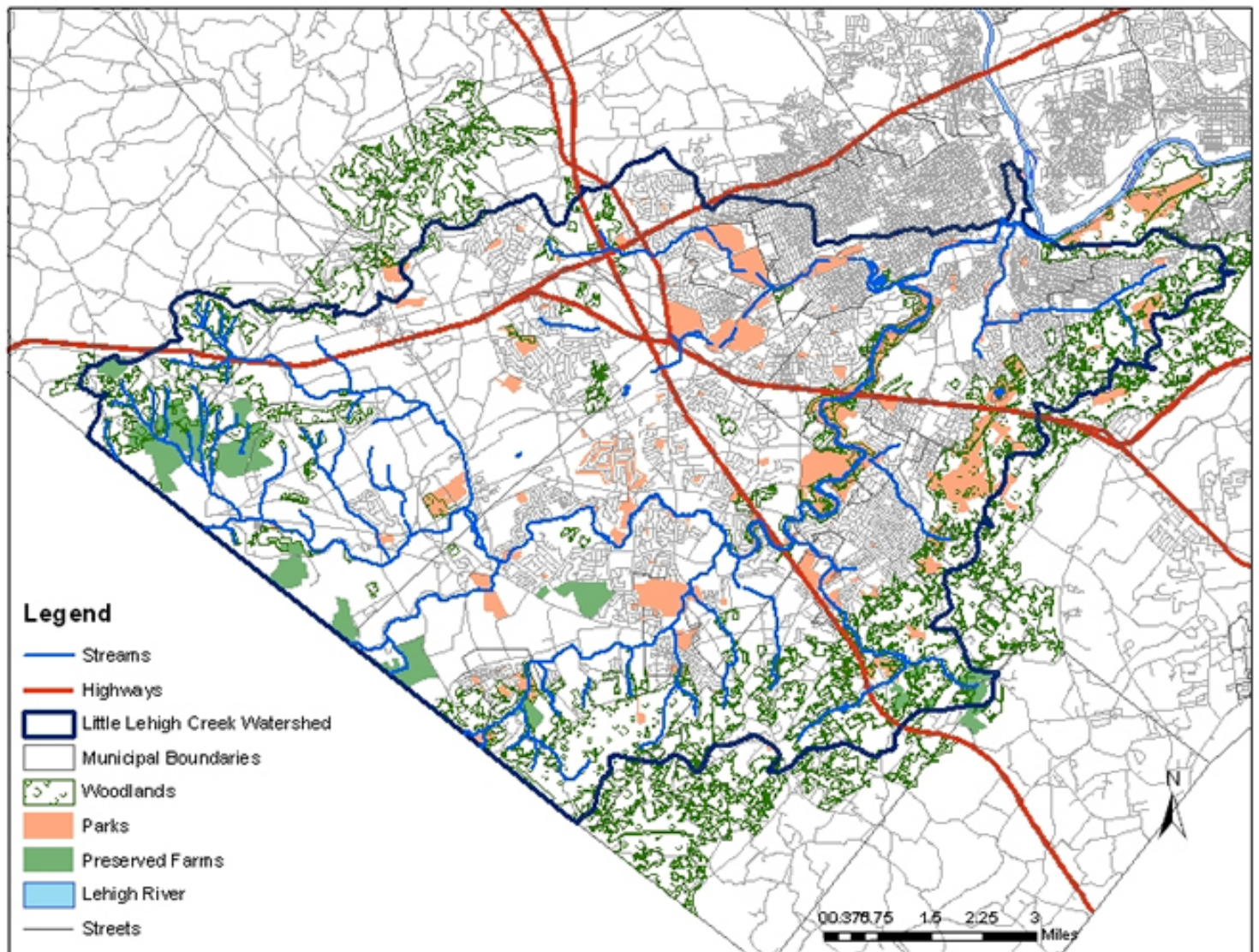


Figure 7 – 1 Little Lehigh Creek Watershed; Map <http://www.lehighconservation.org/>

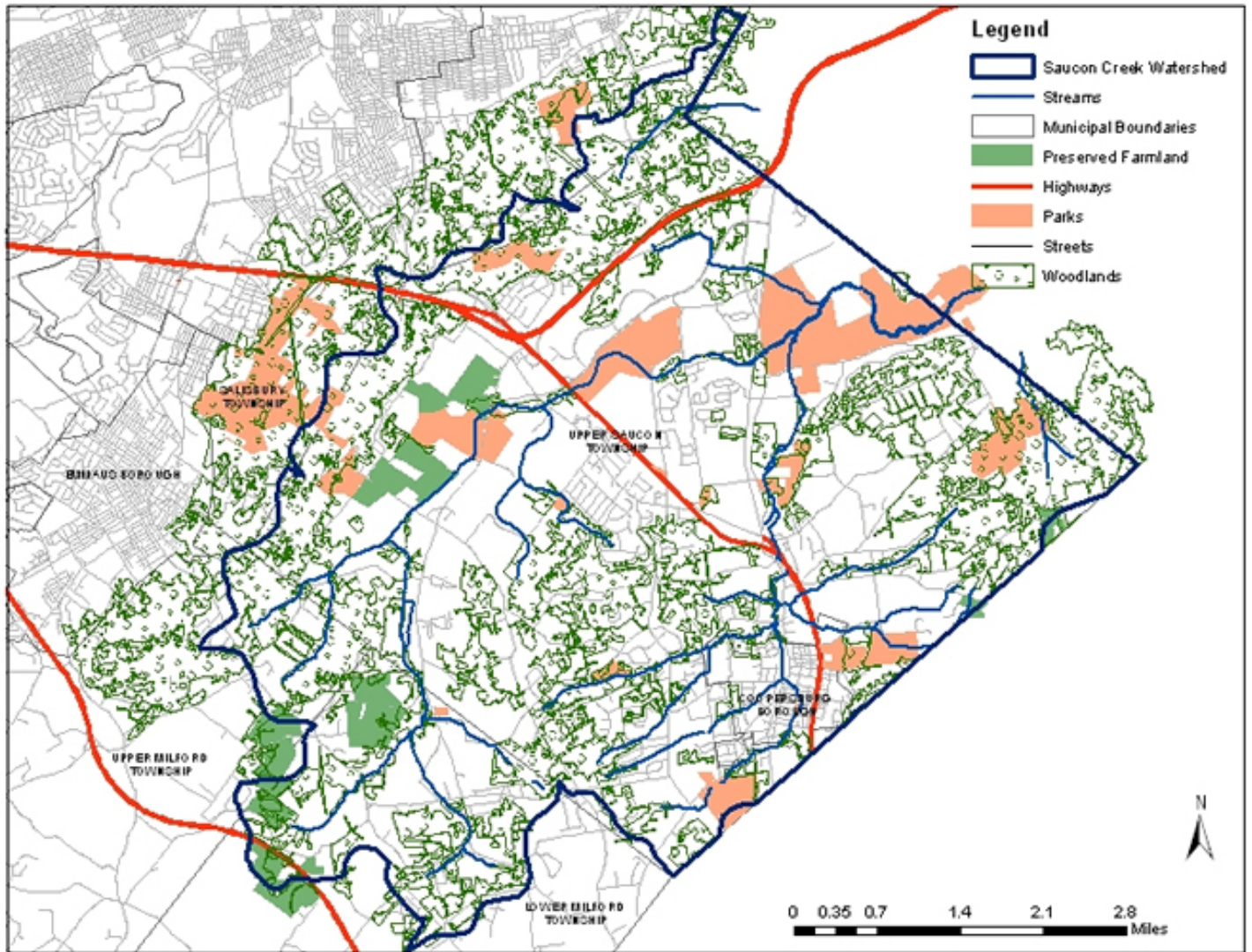


Figure 7 – 2 Saucon Creek Watershed; Map <http://www.lehighconservation.org/>

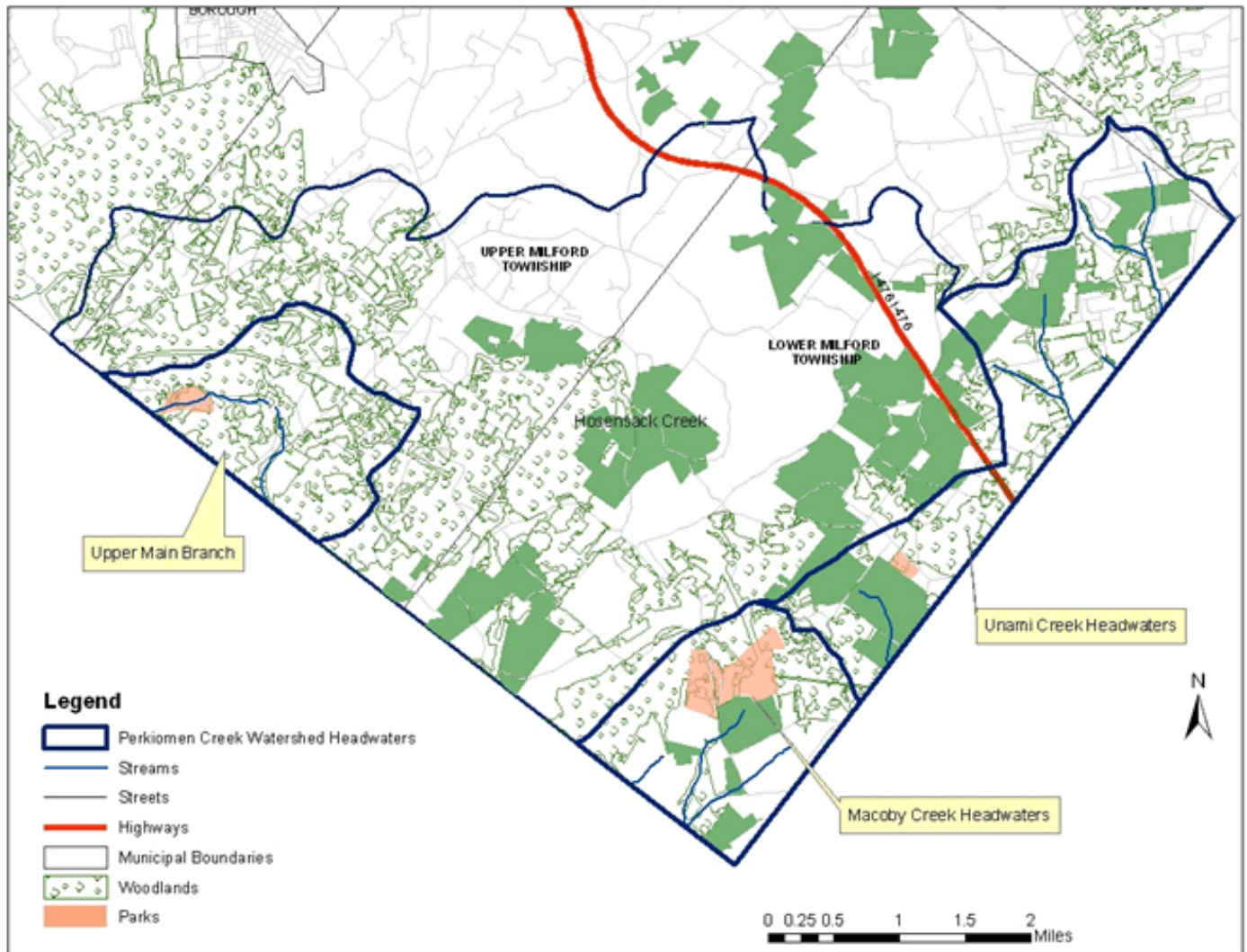


Figure 7 – 3 Perkiomen Creek Watershed; Map <http://www.lehighconservation.org/>

Water Quality

Upper Milford Township includes the headwaters (the start of a stream) for several streams and rivers. Most of these have been state classified as high-quality, cold-water fishery streams. The high quality status is significant in realizing the importance the surrounding local land has on regional water quality.

1. Leibert Creek – high quality cold water fishery (HQ-CWF).
2. Hosensack Creek – cold water fishery (CWF).
3. Saucon Creek – cold water fishery (CWF).
4. Swabia Creek – high quality cold water fishery (HQ-CWF).
5. Mountain Creek – high quality cold water fishery (HQ-CWF).
6. Perkiomen Creek – high quality cold water fishery (HQ-CWF)
7. Indian Creek – cold water fishery (CWF). (Currently under review for HQ-CWF designation.)
8. Miller Creek - high quality cold water fishery (HQ-CWF)

Flood Plain Areas

Understanding how floodplains enhance water quality and foster healthy habitats, justifies preservation and proper management of these areas. Floodplain areas within the Township have been identified on the primary conservation areas map. The Upper Milford Township Zoning Ordinance currently restricts development within 50 feet of any waterbody. A floodplain includes the stream channel, the floodway, and the adjacent fringe. The floodplain is based on watershed area, stream size, and surrounding topography. A functioning flood plain stores and conveys flood waters, recharges groundwater, and provides natural wildlife habitat. Floodplain vegetation filters debris, slows water flow rates, absorbs water, and reduces erosion, which is critical to surface runoff water quality. The existing Township ordinances strictly limit development in these areas. The Federal Emergency Management Agency (FEMA) has mapped the 100 year flood plain along stream corridors.

Wetlands

National Wetlands Inventory (NWI) developed by the U.S. Department of Interior is a starting point for wetland determination. NWI mapping uses stereo-photography to delineate these areas which are incomplete. Locating wetland limits or boundaries is critical in preventing development from damaging these sensitive habitats. The primary conservation areas include the NWI delineated wetlands.

Wetland determination finds areas that are wet lands. Wetlands are typically found in low areas or adjacent to streams or ponds. Areas of high water table, slopes where groundwater springs emerge, perimeters of streams or ponds, flat areas, or abandoned ditches or stream channels are all potential wetland habitats. The wetlands shown on the primary conservation areas plan are large scale and do not include all the wetland areas in the Township nor do they clearly define their limits. Each applicant must provide field determined delineated wetlands on their plans to prevent disturbance. Wetland delineation only provides the basic outline of a wetland area and does not include the upland watershed to this wetland area.

The upland watershed often provides the water resource creating the wetland. Changes in upland topography, stormwater runoff, and vegetation can significantly impact a wetland without directly disturbing the delineated wetland. Buffers surrounding wetlands should be maintained to transition development to the natural wetland area. Post-development conditions should recreate overland flows and discharge quantities into the wetland buffer zone to minimize development impacts.

Ideally, a buffer is a vegetative buffer, filtering the surface runoff before entering the wetland. Vegetative buffers should not be mowed lawn or manicured landscapes, but rather large meadows or young woodlands managed to eradicate invasive plants and foster native plant propagation. The buffer also filters out invasive plants, protecting the wetland habitat from non-native invasive plants.

Greenways

In 1998, the Commonwealth of Pennsylvania ordered a PA Greenways Study under Executive Order 1998-3. A February 2003 update identified spine greenways or linear trails which covered 50 miles in length and included two (2) or more counties. These spines provide state-wide linkages, which municipalities can implement local system connections. In 1999, Lehigh County completed a Natural Areas Inventory. The Department of Conservation and Natural Resources (DCNR) plans to develop a county-wide greenway plan in 2004 for Lehigh County. The website www.pagreenways.org is a clearing house of information for local communities concerning greenway networks across the state.

Upper Milford Township is partly in the Schuylkill River Watershed and Greenway, 1 of 21 state designated greenways/trails. The Delaware and Lehigh Canal corridor is a second greenway. The Township's watershed contributes to this historic transportation route. Upper Milford Township should identify Township greenway corridors and their long-term potential connections to statewide greenways.

Scenic Areas

Several scenic areas were identified in the 1990 Upper Milford Township Comprehensive Plan. Many of these areas remain areas of landscape beauty. A recent windshield survey of the Township revealed the following scenic areas:

1. Powder Valley and the southern portion of Indian Creek along Powder Valley Road
2. Corning Road, from the Lower Milford Township boundary to the intersection of Pine Tree Road.
3. Old Zionsville village area
4. Zionsville village area and Rock Road
5. Geissinger Road from Kings Highway to Carl's Hill Road
6. Vera Cruz Village Area
7. Indian Creek Road from Chestnut Street to Schantz Road
8. Kohler Road
9. Seem Seed Farm area – German Road, Churchview Road, Vera Cruz Road
10. Dillinger Station – Geho and Churchview Roads
11. Acorn Drive from Bleiler Road to the Lower Milford Township line
12. Brunner Road from the Upper Saucon Township line to South 5th Street
13. South 5th Street, from Main Road East to South Mountain Drive.
14. Kings Highway North from Macungie Borough line to Chestnut Street Intersection
15. Beck Road between Kings Highway and Chestnut Street
16. Scout Road

These areas depict typical landscape characters in Upper Milford Township. From wooded stream valleys to expansive views of rolling farm fields to small village centers, the landscape of Upper Milford is unique. These areas can be impacted by uncontrolled development. Care should be taken to preserve these areas by locating any proposed development out of view or within character to its surroundings.

Scenic Drive

Several areas have been noted on the Scenic Areas and Views plan as areas of particular scenic value. Combined with scenic views and identified cultural resources, a “scenic driving tour” would connect many points of interest, educating residents about their community. An increased awareness of areas with scenic and cultural value will encourage support for preservation efforts.

Natural Areas Inventory

The Lehigh Valley Planning Commission prepared a Natural Areas Inventory in April 1999, identifying significant natural resources in Lehigh and Lehigh Counties. Two sites of statewide significance were identified in Upper Milford Township and a third in neighboring Lower Milford Township.

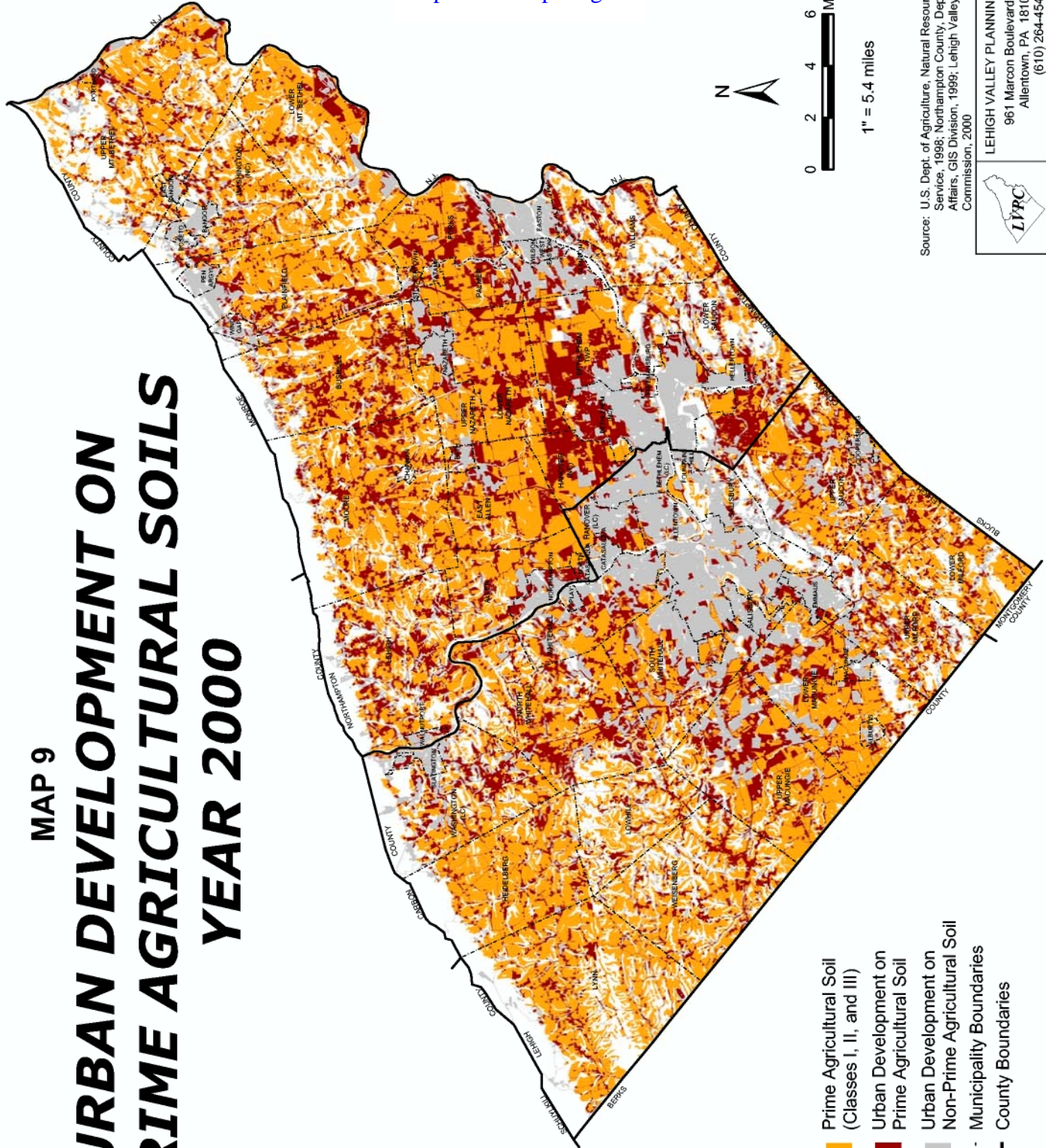
1. Indian Creek Floodplain (County Ranked No. 3) includes both Upper Milford and Lower Macungie Township. Evidence of PA-Endangered animal species was observed in 1996. The plan recommends surveys are completed to define the extent of habitation.
2. Macungie Watershed (County Ranked No. 4) includes both Upper Milford and Lower Macungie Township. Fair to good quality Northern Appalachian Circumneutral Seeps Natural Community, supporting several species of state concern.
3. Hosensack Marsh (County Ranked No. 1) is in Lower Milford Township. Marsh and shrub swamp support fair to good quality population of PA-Endangered animal species. This is of importance to Upper Milford Township, as Hosensack Creek is supplied from Upper Milford Township.

All sites ranked 1 or 2 were recommended for immediate protection and or management of the site and the surrounding lands. Conservation easements and/or land acquisition of privately-owned lands are suggested.

MAP 9

**URBAN DEVELOPMENT ON
PRIME AGRICULTURAL SOILS
YEAR 2000**

<http://www.lvpc.org/>



- Prime Agricultural Soil (Classes I, II, and III)
- Urban Development on Prime Agricultural Soil
- Urban Development on Non-Prime Agricultural Soil
- Municipality Boundaries
- County Boundaries



1" = 5.4 miles

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

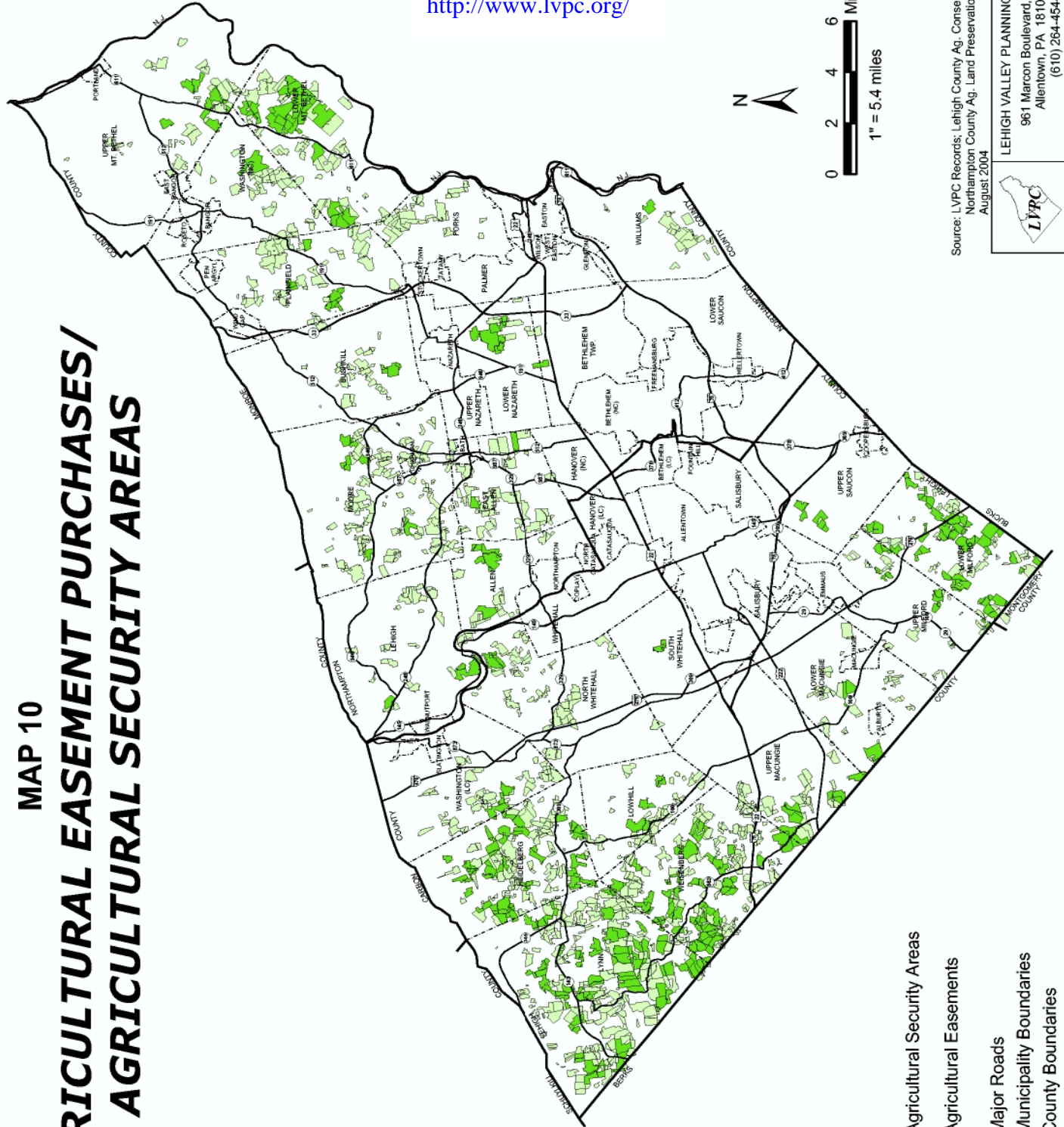


LEHIGH VALLEY PLANNING COMMISSION
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MAP 10

**AGRICULTURAL EASEMENT PURCHASES/
AGRICULTURAL SECURITY AREAS**

<http://www.lvpc.org/>



- Agricultural Security Areas
- Agricultural Easements
- Major Roads
- Municipality Boundaries
- County Boundaries

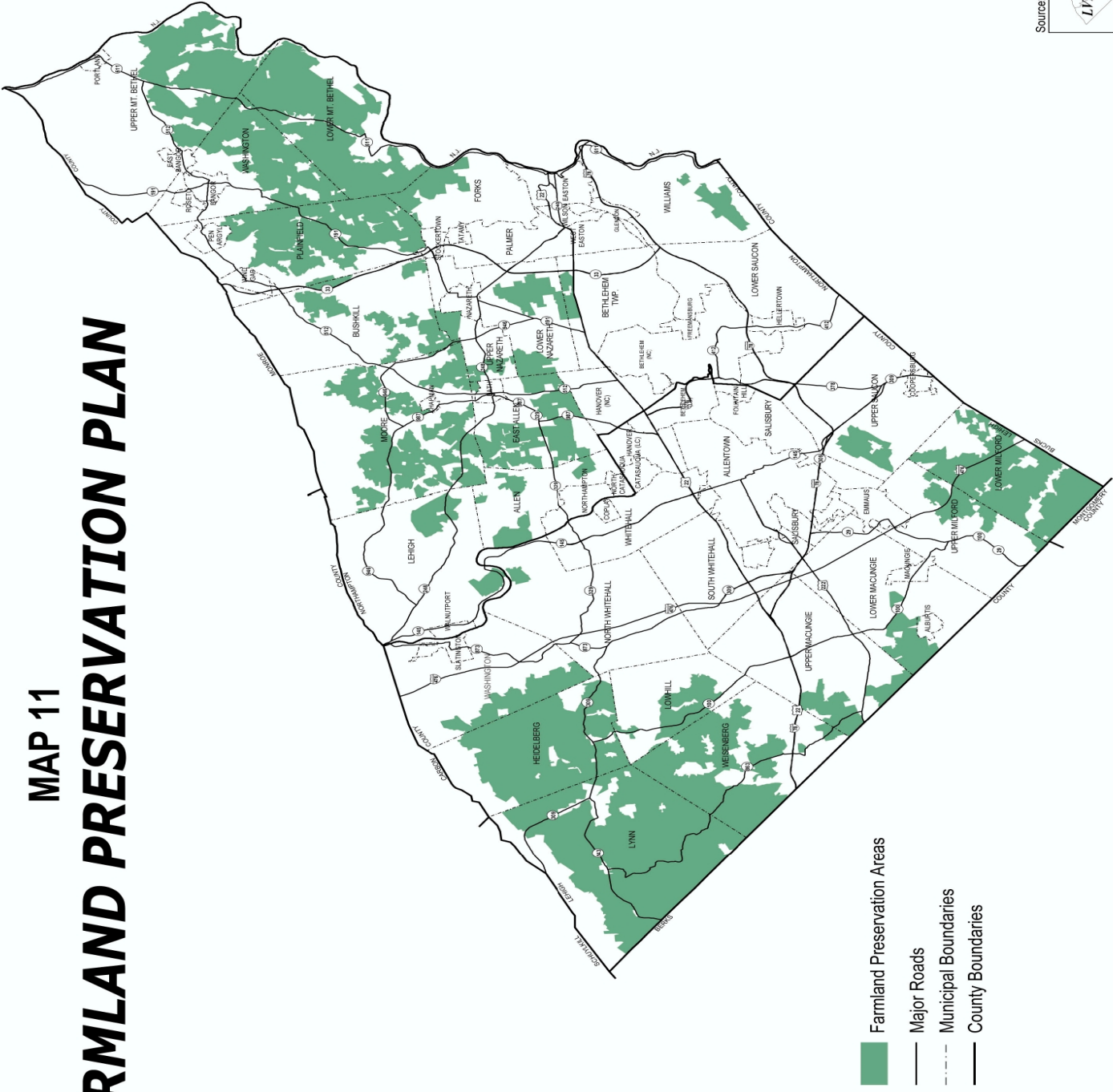
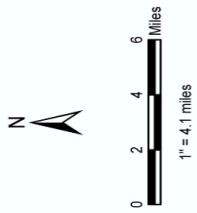
Source: LVPC Records; Lehigh County Ag. Conservation District & Northampton County Ag. Land Preservation Board through August, 2004



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MAP 11 FARMLAND PRESERVATION PLAN

<http://www.lvpc.org/>



- Farmland Preservation Areas
- Major Roads
- Municipal Boundaries
- County Boundaries

Source: Lehigh Valley Planning Commission
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GOALS AND RECOMMENDATIONS

GOALS

The goals of this plan, as listed below, describe the Township's ambitions:

- Protect agricultural lands.
- Improving protection of natural features, including the quality of surface water, groundwater and wildlife habitat.
- Exploring the possibilities of requiring conservation-oriented design in the Upper Milford Township Subdivision and Land Development Ordinance.

The goals result from:

- Upper Milford Township Open Space Committee meetings;
- Park, Recreation, Open Space, Environmental Plan for Upper Milford Township;
- Goals and recommendations in the Southwestern Comprehensive Plan;
- Results of the public survey the Township conducted in 2003;
- Interviews with municipal officials, business persons, farmers and other Township residents;
- The mapping and analysis of existing conditions summarized in the previous chapters;
- Fieldwork conducted in the Township; and
- Research on how other counties and municipalities have approached open space preservation.

Goal for Preserving Open Space

Add to the amount of land in Upper Milford Township now preserved by:

- a) Implementing a land preservation program wherein municipal funds are prudently spent within clear guidelines.*
- b) Maximizing the use of available federal, state, county and private funds.
- c) Encouraging voluntary land preservation through local and national land conservancies and/or land conservation programs.

*The primary method used would be purchase of development rights but would not exclude direct purchase of the land (i.e. fee simple acquisition) if the situation warrants it.

Goal for Improving the Protection of Natural Features:

- a) Strengthening applicable zoning regulations, and subdivision and land development regulations where needed.
- b) Working with local conservancies and the Joint Borough of Emmaus and Upper Milford Township Environmental Advisory Council to enhance environmental education and raise public awareness about the need for conservation.

Goal for Implementing Conservation-Oriented Subdivision Design

- a) Facilitate open space preservation in areas being developed by considering zoning ordinance and subdivision and land development ordinance amendments that would mandate the use of conservation-oriented subdivision design techniques (i.e. mandatory open space dedication, open space development zoning, dedication of land for trails, etc.).

RECOMMENDATIONS

The recommendations described in this chapter are the heart of this Open Space Plan. They are the actions proposed to address the needs and fulfill the goals identified above. Like the goals, the recommendations are grouped into the following categories:

- Preserving more open space
- Improving protection of natural features
- Implementing conservation-oriented subdivision design

The main ideas and assumptions behind the recommendations are as follows:

- a) To help maintain its unique character and rural heritage, Upper Milford Township should be proactive in identifying and acting upon preservation opportunities.
- b) Public parks and open spaces must be augmented with permanently preserved private land if the Township hopes to protect farmland, waterways, woodlands and other environmental amenities, in any significant way.
- c) Conservation easements, mandatory dedication, donations and other means of preserving land should be emphasized over fee simple acquisition.
- d) Federal, state, county and private funds to supplement municipal funding will be essential to fully implement this plan.
- e) Municipal regulations and strict development criteria will be needed to conserve natural features on properties slated for development.
- f) The Township must determine its preservation priorities based on fair and objective criteria.
- g) The Township's preservation criteria should place primary emphasis on environmentally sensitive areas and existing agricultural uses.
- h) *Use of condemnation may be reserved to preserve the public's interest.*
- i) Appraisals should be used to establish fair market value before any funds are expended for preservation.
- j) A standardized systematic approach is required to administer and implement an open space preservation program equitably and effectively.

Recommendations for Preserving More Open Space

The following recommendations suggest how Upper Milford Township could set up and administer an open space preservation program. A numerical ranking system is proposed for evaluating potential applications under the program. Target areas are identified showing where initial preservation efforts could be focused.

1. Establish and administer Upper Milford Township Open Space Preservation Program in accordance with the following procedures.

Relying on Conservation Easements

Upper Milford Township should remain open to receiving donated land or perhaps buying land in fee simple if appropriate opportunities arise. However, the Township should expect to rely mainly on buying conservation easements to preserve land under this program. Conservation easements are legally enforceable contracts, under which landowners sell or donate the right to develop their land. Conservation easements can be donated, but more often the landowner granting the easement expects to be compensated financially. A conservation easement "runs with the land" and must be observed by any new owner of the affected property.

Setting Up the Program

The Upper Milford Township Supervisors would authorize the Open Space Committee to announce, advertise and otherwise publicize that the Open Space Committee is accepting applications for the program from people who own land in the Township.

Accepting and Evaluating Applications

Interested landowners would submit an application for the program that includes the following information:

- name and phone number of the land owner
- address of subject property
- total acreage of property and total acreage of proposed easement deed reference (book and page)
- County/Township tax parcel numbers
- name of any lien or mortgage holder, and amount of lien or mortgage
- a United States Geological Survey (USGS) topographic map showing the location of the property
- a tax map showing the location of the property
- a list of structures on the property
- information on any applicable agreements to sell and/or applications to subdivide the property

The Open Space Committee would then schedule a visit to view the property and subsequently evaluate the property according to the numeric ranking system such as one of those presented below. Numerical scores for specific properties would be determined by consensus of the members

at Open Space Committee meetings. All results would be reported to the Upper Milford Township Board of Supervisors.

Determining Value

Based on the total funds the Township has available for this program, the Open Space Committee would order appraisals on a certain number of properties. The order of the appraisals would follow the order of numeric rankings given to the various applications. The highest scoring property gets appraised first, and so on.

Appraisals would be conducted by a State Certified General Real Estate Appraiser, who would be selected and paid by the Township. The appraisal report would estimate the market value of the property both with and without the proposed easement. The value of the easement would be the difference between these two estimated values. All results would be reported to the Upper Milford Township Board of Supervisors.

Making Offers

Upon authorization from the Upper Milford Township Board of Supervisors, the Open Space Committee, on behalf of the Township, could elect to make offers to purchase conservation easements from one or more landowners who applied for the program. The order of offers would follow the order of the numeric rankings. The total number of offers made would be based on the amount of available funding. The offer price for a specific easement could be less than the appraised value of the easement but could not exceed the appraised value.

Accepting Offers

Within a prescribed period, landowners who receive an offer must either:

- a) accept the offer;
- b) reject the offer (and drop out of the program); or
- c) announce they intend to submit an independent appraisal they pay for themselves.

As authorized by the Board of Supervisors, the Open Space Committee would have the option to revise its offer based on the independent appraisal. If an offer is accepted, a legal agreement would be executed between Upper Milford Township and the landowner.

Settlement

At a real estate settlement, the landowner would sign an easement that is legally recordable and Upper Milford Township would pay the agreed purchase price to the landowner. The agreed purchase price could be paid as a lump sum or by installments, whichever is mutually acceptable to the Township and the landowner.

Enforcing the Easement

The Township could convey the easement to a land trust, a conservancy or a related entity. Otherwise, the Township would retain the easement itself and be responsible for enforcing the terms of the easement. At least once a year, the Township Official would determine if the landowner is complying with the terms of the easement. If the Township Official determines the landowner is not complying, the Board of Supervisors would be notified. At that point, the Township would take appropriate action.

The terms of the easement should not prohibit the following activities provided these activities comply with Township zoning regulations, and Township subdivision and land development regulations:

- Sale of agricultural products produced on the property.
- Construction of ancillary structures limited in coverage to a certain percentage of the property.
- Use of the property for allowable home occupations.
- Subdivision of less than two acres (or the minimum acreage required by the Township's zoning or subdivision regulations) for the construction and use of the landowner's principal residence or a family member's principal residence (one time only).

Cooperating with the Lehigh County Farmland Preservation Program and the Area's Non-Profit Conservancies

Under this program, Upper Milford Township could also consider using municipal funds to assist Lehigh County purchase conservation easements on farmland in Upper Milford Township. The Township should work with Lehigh County and the non-profit conservancies to preserve lands that none of these entities would be able to preserve alone.

Legal interest in an easement can be shared by two or more entities. However, subject to advice from the Township solicitor, it may be simplest for the Township to convey the easement (and enforcement responsibilities) to the Lehigh County Agricultural Preservation Board if a farmland easement is ever jointly purchased in this manner. The same procedures and provisos could also apply to an easement the Township may consider purchasing jointly with a land trust, conservancy or related entity.

Use a numerical ranking system similar to the following to evaluate the suitability of properties for potential preservation.

2. To ensure any open space preservation program is administered fairly, the Township could use a numerical ranking system similar to one of the following.

Table 8 – 1 Farm Preservation Land Ranking System

CRITERIA	POINTS
FARMLAND (Maximum of 12 Points)	
At least 75 % of the property is now used for harvested crop land or animal husbandry	12
At least 50 % of the property is now used for harvested crop land or animal husbandry	10
IMMINENT DEVELOPMENT (Maximum of 10 points)	
Property is part of a subdivision or land development proposal with preliminary or final approval	10
Property is part of a subdivision or land development proposal submitted within the past five years	8
PARCEL SIZE (Maximum of 10 Points)	
Property is at least 25 acres in area	10
Property is at least 15 acres in area	8
ZONING (Maximum of 10 Points)	
Property is in the A; Agricultural Zoning District	10
Property is in the RS-R; Rural-Suburban Residential	8
Property is in the R-A; Rural Agricultural District	8
Property is in the S-R; Suburban Residential	5
WOODLAND VALUE (Maximum of 10 Points)	
At least 65 % of the property is wooded	10
At least 50 % of the property is wooded	8
OPEN SPACE CONNECTION POTENTIAL (Maximum of 10 Points)	
Property is adjacent to another existing or proposed preserved property	10
Property is within ¼ mile of another existing or proposed preserved property	8
FARMLAND CONNECTION POTENTIAL (Maximum of 10 Points)	
Property is adjacent to two more properties that are at least 50 % used for crop land or animal husbandry	10
Property is adjacent to one property that is at least 50 % used for crop land or animal husbandry	8
DEVELOPMENT POTENTIAL - STEEP SLOPES (Maximum of 10 Points)	
At least 65 % of the property is free of slopes 15 % or greater	10
At least 50 % of the property is free of slopes 15 % or greater	8
DEVELOPMENT POTENTIAL – WETLANDS OR FLOODPLAINS (Maximum of 10 Points)	
At least 70 % of the property is free of hydric soils or 100-year floodplains	10
At least 55 % of the property is free of hydric soils or 100-year floodplains	8
SCENIC VALUE (Maximum of 10 Points)	
Property provides a view of a broad scenic vista	5
Property provides a view of a particular scenic location	3
HISTORIC VALUE (Maximum of 10 Points)	
Property is listed on the National Register of Historic Places or a local historic survey	3
Property contains a pre-1940 house or barn	2
TOTAL POSSIBLE POINTS	100

Table 8 – 2 Natural Resources Land Ranking System

CRITERIA	POINTS
WATERSHED PROTECTION (MAXIMUM 40 POINTS)	
Wetlands	5
Stream (s)	5
Flood plain	5
Property is within 300 feet of wetlands or stream (buffer)	4
Riparian Woodlands	4
Property contains groundwater recharge area or surface watershed area for public water supply.	5
Steep slopes (>15% slope)	4
Moderate slopes (>5%, <15% slope)	4
Severe limitation for septic system (unless sewer is available to property)	4
HABITAT AND LINKAGES (MAXIMUM 25 POINTS)	
Habitat for breeding, feeding or wintering area for species of concern present on property.	5
Above criteria not present on property but on an adjacent property.	2
Property is at least 25 acres in area.	5
Property is ranked on the Lehigh Valley Comprehensive Plan as:	
• Very High Conservation Priority	6
• High Conservation Priority	5
• Medium Conservation Priority	4
Adjacent to existing public or conserved open space, or could have an active linkage (i.e. conservation easement or trail)	5
Within 300 feet of public or conserved open space but not adjacent.	2
Woodlands – 5 acres or more	4
VIEWSHED AND HISTORIC SIGNIFICANCE (MAXIMUM OF 15 POINTS)	
Has public access to and provides a significant view from property.	5
Property is part of a significant view shed.	5
Property includes structures of historical significance.	5
Property located adjacent to above criterion but does not have criterion on site.	5
TOTAL POSSIBLE POINTS	80
OTHER FACTORS CONSIDER (1 POINT EACH)	
Economic: acquisition of conservation easement or restriction on future development below or at market value. (Yes / No)	
Accessibility by roadway. (Yes / No)	
Barrier potential. (Yes / No)	
Suitability for recreation (active / passive) (Yes / No)	
Availability of additional state and county funds. (Yes / No)	
Road Frontage (Yes / No)	
Development Pressure (Yes / No)	
Cold water fisheries or exceptional value streams. (Yes / No)	

3. The Open Space Committee will also request from the applicant the availability of a walk through of the property. The walk through will enable the Open Space Committee the ability to evaluate the properties with one of the above ranking systems.

4. Use public information to increase future participation in the Upper Milford Township Open Space Preservation Program.

People will only consider participating in a land preservation program if they understand their options and what these options mean to them. Municipal officials and other residents can make informed judgments about whether to spend municipal revenues on open space preservation only if they are clear about what it is likely to mean for both landowners and the municipality. The Township should use the following information to help ensure residents understand the basic facts about open space preservation and conservation easements.

Property rights are often compared to a bundle of sticks with each stick representing a different right, such as the right to develop your land. Selling or donating development rights means giving up one of these sticks. The landowner retains all the other sticks and still owns the land after giving up development rights.

Landowners transfer their development rights to someone else by granting a legally enforceable conservation easement. The easement can pertain to all, or to just a portion, of a person's property. These easements typically stipulate that the affected land shall remain undeveloped forever. The easement is attached to the property deed and its restrictions are transferred to the new owner if a property that is under a conservation easement is ever sold.

The IRS Code allows people who donate conservation easements to deduct the value of the easement in calculating their federal income tax, subject to certain limits. The value of the easement is the difference between the appraised values of the property before the easement and after the easement.

Whether the landowner donates a conservation easement or sells it for a fee, the reduced value of a property for which development rights were given up can be used to justify a reduced property assessment. The landowner can thereby save each year on real estate taxes.

The entity that receives the donated or sold conservation easement is said to "hold" the easement. That entity is responsible for enforcing it. Enforcement of a conservation easement is usually done by periodic monitoring of the affected property.

Subject to any special terms that may be part of the easement, the landowner is allowed to continue all regular activities on the eased property (such as farming, mowing, etc) even though a conservation easement is now in place. There is no restriction on selling land with a conservation easement on it to someone else.

Recommendations to Improve Protection of Natural Features

An open space preservation program should be augmented with effective development regulations. The following recommendations identify how Upper Milford Township can further protect natural features on properties being developed. There are development practices that can provide landowners with needed income while still conserving unique natural areas, sensitive environment resources and the Township's overall low-density character.

1. Make greater use of zoning and subdivision regulations to enhance environmental

protection.

Land varies greatly in the amount of development it can physically support. Floodprone areas and very steep slopes should remain undeveloped. Other lands are suited for moderate or intense development. Upper Milford Township regulates development of steep slopes, woodlands and other natural features as described earlier. Still, the Township will benefit from using the following guidelines in reviewing development proposals.

Table 8 – 3 Guidelines For Protecting Important Natural Features

NATURAL FEATURES (Type & Description)	POTENTIAL PROBLEMS IF NOT PROTECTED	STRATEGIES FOR PROTECTION
<p>Steep Slopes - Steep slopes of 15% have 15 feet of vertical change for every 100 feet of horizontal distance. Very steep slopes of 25% rise vertically 25 feet for every 100 feet. Steep slopes are sometimes wooded and found along Creeks.</p>	<p>Difficulty of maintaining and snow-plowing steep roads. Higher costs of buildings. High rate of septic system failures. Increased erosion and runoff. Winter driving hazards from steep roads and driveways.</p> <ol style="list-style-type: none"> 1. Disturbance of scenic areas. 2. Increased costs to extend public water and sewer lines. 	<p>Site houses on the most suitable land, while keeping steep slopes in open space. Keep natural vegetation intact. Enforce all municipal regulations that protect steep slopes.</p>
<p>Groundwater - Groundwater is stored underground after entering through the soil or seeping from creeks. Maintaining the quality of this water is important because both private wells and public water systems depend on groundwater.</p>	<p>Polluted groundwater. Dry wells.</p>	<p>Continue to control the percentage of lots covered by buildings and paving. Ensure septic systems are designed and operated properly.</p> <ul style="list-style-type: none"> • Monitor underground storage tanks for leaks. Avoid polluted storm water runoff. • Avoid high volume withdrawals of groundwater. • Explore the feasibility of having a groundwater/hydrological study completed.
<p>Floodplains - Areas that are prone to flooding include both legally designated floodplains and land along drainage channels.</p>	<p>Increased flooding in other areas. Loss of potential public recreation area. Threats to important wildlife and bird habitats.</p>	<p>Prohibit construction of new structures within the 100-year floodway (which is the actual main flood channel) and along the adjacent 100-year flood-fringe. Prohibit construction within 100 feet of the centerline of a stream (depending on stream size).</p> <ul style="list-style-type: none"> • Seek to preserve buffers of natural vegetation immediately adjacent to creeks and drainageways. • Seek to preserve more land along local streams and drainageways.
<p>Wooded Areas - Concentrated areas of mature tree growth are found throughout the region's steeply sloped lands and in other scattered locations.</p>	<p>Increased surface temperatures. Loss of important bird and wildlife habitats. Loss of hunting areas.</p> <ul style="list-style-type: none"> • Loss of air purification. • Increased erosion and runoff. • Loss of scenic resources. • Noise and incompatible development may become more noticeable. 	<p>Restrict cutting of trees during building to the building envelope and immediately adjacent areas. Seek to preserve tree stands in public or private open space. Seek replanting of trees that must be cut down.</p>
<p>Shallow Depth to Bedrock - Areas with shallow soils and bedrock close to the surface are frequently found in steeply sloped locations.</p>	<p>Higher construction costs.</p>	<p>Minimize building in these areas.</p>

<p>Waterways - Protecting waterways from involve controlling direct discharges and maintaining vegetative stream buffers.</p>	<p>Loss of potential public recreation areas. Threats to important bird, fish and wildlife habitats.</p> <ul style="list-style-type: none"> • Increased erosion and flooding. 	<p>Prevent soil erosion to avoid sedimentation of creeks and drainageways. Work with soil conservation authorities and farmers to keep animals out of streams. Consider areas along creeks and drainageways for public greenways.</p> <ul style="list-style-type: none"> • Minimize runoff of pesticides, grease and industrial wastes. • Minimize direct runoff from parking lots. • Require buildings and paving to be setback from creek banks and significant drainageways by at least 50 feet. In Upper Milford, the stream setback is 25 feet except for the Delaware River and Lehigh River. • Control the peak rates of storm water runoff from development to avoid increased flooding.
<p>Natural Drainage Channels - Smaller natural channels that carry storm water to local creeks during heavy storms exist throughout the regions.</p>	<p>Increased flooding. Erosion of soil.</p>	<p>Preserve adequate width along channels in open space. Prevent erosion.</p>
<p>Hydric Soils - Hydric soils, often located in wetland areas, have a shallow depth to the seasonally high water table.</p>	<p>Flooded basements. Disturbance of natural drainage and groundwater recharge.</p> <ul style="list-style-type: none"> • Poor foundation stability. • Failed on-lot septic systems. 	<p>Continue to enforce local, state and federal wetland regulations. Place on-lot septic systems and buildings outside hydric soil areas. Retain a professional to prepare site-specific wetlands maps.</p>

Source: URDC

NOTE: In addition to the protection strategies noted above, Upper Milford Township should consult the Lehigh County Natural Areas Inventory to be aware of locations in the Township identified as unique natural habitat. This document is available from the Lehigh Valley Planning Commission in Allentown, PA.

2. Enhance wellhead protection efforts through regulation and other techniques.

Water available for wells is located in underground rock or soil layers called aquifers. The surface areas from which water seeps into aquifers are known as recharge areas. The quantity of water that seeps into aquifers depends on what soils and what impervious surfaces exist in the recharge areas. The quality of the water depends on the presence or absence of contamination above the aquifers. In eastern Pennsylvania, the primary sources of groundwater pollution (wellhead contamination) are:

- Underground or above ground storage tanks
- Industrial waste sites and other landfills
- Agricultural fertilizers and pesticides
- On-lot sewage systems

It can be difficult to determine the path that groundwater takes between the surface and the aquifer. A professional geologist is best qualified to define the extent of the surface area from which a specific public water supply is recharged.

Once the groundwater protection (wellhead protection) area is defined, protective strategies can be put in place. Since the quality of groundwater depends on nearby uses of land, groundwater can be protected by regulating development through zoning and subdivision ordinances. Regulations that govern impervious surfaces, industrial uses and on-site septic systems are particularly important. Zoning techniques that reduce density and maintain open space are also beneficial, including agricultural zoning, open space subdivisions (clustering) and transfer of development rights.

Wellhead protection districts are specially created overlay districts around wells or well fields that afford extra protection for groundwater sources. Within wellhead protection districts, certain land uses may be prohibited entirely. Other uses may be permitted under special conditions, and only with the approval of the zoning hearing board or governing body. The extent of a wellhead protection district can be determined from hydrogeologic analysis, or be based on a specific, predetermined radius around the applicable well(s). Wellhead protection districts are now being considered in many municipalities. The Emmaus Water System has identified the Leibert Creek Basin as a groundwater source for its municipal water supply.

In addition to regulation, ways to protect groundwater resources include public education about farming practices, recycling, regular septic system maintenance and the proper disposal of toxic or hazardous household waste.

Recommendations to Implement Conservation-Oriented Subdivision Design

The following recommendations address ways to ensure that approved residential subdivisions are designed and built with respect for the natural environment and rural heritage of Upper Milford Township.

1. Consider amending the A –Agricultural, R-A and RS-R; Rural-Suburban Residential Zoning to require developers to use more open space oriented subdivision design.

"Clustering", "Open Space Subdivisions", "Lot Averaging" and "Conservation Zoning" are various names for related design techniques that conserve open space within residential subdivisions. Many Pennsylvania municipalities have adopted variations of these subdivision regulations to help conserve common open space and protect sensitive natural features like steep slopes, woodlands, wetlands and stream corridors. In comparison, conventional subdivision design usually results in little or no preserved open space because the entire tract is subdivided into building lots and roads. Often most of the building lots in a conventional subdivision are virtually the same size and shape-hence the nickname "Cookie Cutter Subdivisions".

The goal of open space subdivisions design is to place homes on the most suitable portions of a tract, with the important natural areas being preserved, such as lands along creeks. This option allows developers flexibility in site layout. For example, developers can make better use of site topography and avoid soils that are not suitable for septic systems. Open space related subdivision design also permits the developer to group building lots together, thereby reducing road lengths, grading and utility extensions-each of which saves on construction costs. Sometimes, developers are allowed to build a few additional homes in exchange for preserving land in its natural state.

Several alternatives exist concerning the long term maintenance of the preserved open space, including ownership by a homeowners association, the Township, the State or a land conservancy. Alternatively, the open space can be distributed among private lots so that the open space portion of each of these lots is deed restricted for permanent conservation.

2. Encourage developers to use voluntary design guidelines in addition to any conservation oriented design techniques mandated in new zoning and/or subdivision ordinance amendments.

Upper Milford Township could encourage developers to use the following guidelines on how best to design and locate residential structures, adjacent open space and complementary landscaping. The guidelines are divided into four topics: site planning, architecture, landscape architecture and signage. All four sections should be used as a guide for planning commission members and other Township officials when reviewing new development proposals.

Site Planning

- Orient uses to minimize objectionable views, such as service areas and the backs of buildings, from roadways and from scenic overlooks,
- Match scale and character of buildings and other uses to the scale and character of the site and the surrounding environs,
- Maximize joint use driveways,
- Minimize impervious cover,
- Provide scenic overlooks whenever possible,
- Provide landscaping along the perimeter of parking areas,
- Place utilities underground,
- Minimize the grading by the use of retaining walls, building orientation and running with contours,
- Avoid placing buildings on cleared ridgelines to protect views, and
- Use curved driveways when developing in wooded areas to obscure the view of the house from the road.

Architecture

- Minimize the height of the proposed structure, especially on ridgelines and in very visible locations,
- Reduce the building mass by breaking up the building into smaller components,
- Use indigenous building materials, such as stone,
- Use compatible, earth tone colors that blend with the existing environment,
- Design structures to fit the topography rather than excessively grading the site, and
- Use pitched roof design features.

Landscape Architecture

- Minimize removal of existing trees, especially on ridgelines,
- Establish vegetative buffers adjacent to roadways,
- Screen objectionable views,
- Maximize parking lot landscaping, and
- Use indigenous plant materials.

Signage

- Use materials that are compatible with the proposed or existing buildings and landscape elements,
- Locate signs on the building in consistent sign bands,
- Group signs on one sign structure,
- Avoid bright colors and internally illuminated signs,

3. Consider requiring developers to identify conservation areas before delineating development areas.

Although steep slopes, floodplains and wetlands are usually noted on the site plans, little consideration is sometimes given to other elements like a grand oak tree, a wildflower meadow or an orchard; features that can be preserved to help maintain rural character. By conducting a more intensive analysis of the site, developers should be able to achieve adequate densities without sacrificing these environmental amenities. The following four steps are a sequential approach

towards more conservation-oriented design based on the recommendations of noted conservationist Mr. Randall Arendt, formerly of The Natural Lands Trust.

- a) Identify Primary and Secondary Conservation Areas -First, identify primary conservation areas such as sensitive natural areas: steep slopes over 25%, 100-year floodplains, streams and their buffers, and habitats of rare, threatened and endangered species.
- b) Other conservation areas may include scenic views, locally important vegetation, unique geologic features and wet soils, among other areas.
- c) Identify Locations for Development - Next; locate potential development areas which include the remaining land left over after the primary and secondary conservation areas are identified. Carefully consider siting new homes with views of the open space areas. Reduce the lot sizes to accommodate for the number of homes that would have been originally provided under conventional development.
- d) Layout Roads and Trails -Show a road alignment that would most efficiently access all new homes. Also consider developing trails that could link residents with each other and with the open space areas.
- e) Delineate Lot Lines -The final step involves delineating the boundaries of each lot, a step often done first in traditional design.

4. Investigate the feasibility of using transfer of development rights in Upper Milford Township

Transfer of development rights (TDR) shifts development away from sensitive environmental lands to areas more suitable for higher density. Under a TDR program, property owners in the areas where conservation is to be encouraged (sending areas) sell their development rights to landowners who use them in areas where development is to be concentrated (receiving areas). In this way, a municipality conserves natural areas or other open space in exchange for allowing higher density than otherwise permitted on a tract already zoned for development.

The buyer and seller of the development rights negotiate a mutually agreeable price on their own. Under one popular variation, the applicant then submits a "yield plan" to the municipality to show how many homes would be possible under conventional zoning on the tract to be preserved. The number of homes possible under the "yield plan" is the number of extra homes the municipality permits the developer to construct in the receiving area.

Chapter No. 9

IMPLEMENTATION

SUMMARY OF RECOMMENDATIONS

The following table summarizes each recommendation described in detail elsewhere in this plan. Suggested phasing and who should be primarily responsible for overseeing the implementation of each recommendation are suggested. Potential partners and funding sources are listed as appropriate.

Table 9 – 1 Summary of Recommendations

Summary of Recommendations	Short Range (1 st through 3 rd Year)	Longer Range (4 th Year & Beyond)	On-Going	Primary Responsibility	Potential Partners
Summary of Recommendations on Preserving Open Space:					
1. Establish and administer Upper Milford Township Open Space Program.	X		X	Open Space Committee w/approval from Board of Supervisors	Lehigh County area land conservancies
2. Conduct Public Education to create support of open space and natural land preservation.	X	X	X	Open Space Committee w/approval from Board of Supervisors	Lehigh County area land conservancies, EAC, Farmer's Market
3. Use a numerical ranking system to evaluate potential preservation properties.	X	X	X	Open Space Committee w/approval from Board of Supervisors	Lehigh County Agricultural Advisory Board
4. Use public information to increase future participation in the Upper Milford Township Open Space Program.	X	X	X	Open Space Committee w/approval from Board of Supervisors	Lehigh County area land conservancies, EAC, Farmer's Market
Summary of Recommendations on Improving Protection of Natural Features					
1. Make greater use of zoning and subdivision regulations to enhance environmental protection.	X	X	X	Planning Commission w/approval from Board of Supervisors	Lehigh Valley Planning Commission, UMT PC
2. Enhance wellhead and source water protection efforts through regulation and other techniques.	X	X	X	Planning Commission w/approval from Board of Supervisors	Lehigh Valley Planning Commission, EAC, Emmaus Borough
Summary of Recommendations on Implementing Conservation-Oriented Subdivision Design					
1. Consider amending the A-Agricultural and RS-R; Rural-Suburban Residential to require developers to use more open space-oriented subdivision design.	X	X		Planning Commission w/approval from Board of Supervisors	Lehigh Valley Planning Commission, UMT PC, EAC
2. Consider requiring developers to identify conservation areas before delineating development areas.			X	Planning Commission w/approval from Board of Supervisors	Lehigh Valley Planning Commission, UMT PC

Implementation Techniques

There are a variety of effective techniques for preserving open space. The below list of funding options is not all inclusive, this section will be reviewed by the Open Space Committee on an ongoing basis and will make recommendations accordingly. These suggestions can be grouped into three main categories, as follows:

- Ways to Preserve Open Space
- Local Funding Sources
- Lehigh County and PA State Grants

Ways to Preserve Open Space:

1. **Donations** - Land frequently is acquired through donations from private owners, organizations and corporations. Local governments should encourage land donations by pointing out benefits of such actions, such as public relations values and federal income and estate tax benefits. Prior to accepting a donation, a municipality should consider two things: first, it should analyze the location of the parcel and the anticipated development and maintenance costs. If the location is poor and/or projected costs will be excessive, the municipality should strongly consider accepting a fee rather than the land. Second, if the land is found to be suitable, the municipality should encourage the donor to provide an endowment fund along with the land to assist with development and/or maintenance costs. In addition to land, corporations and other private parties can also be solicited for cash donations.
2. **Conservation Easements** - Conservation easements are used to preserve land at a relatively low cost without acquiring it. With a conservation easement, the land remains privately owned. The easement involves the property owner voluntarily agreeing to donate or sell the right to develop his or her land. The property owner agrees to place a restriction in the deed of the property, which then becomes binding on all future owners of the land. Most conservation easements prohibit the construction of new buildings and cutting down woods. Often, the granting of a conservation easement can provide property owners with several tax benefits.
3. **Pedestrian Easements** - A conservation easement can also be combined with a "pedestrian easement" to allow the public the right to walk, hike and ride bicycles along a specific area, provided users follow pre-established rules. These easements can be particularly useful in connecting two or more greenway segments.
4. **Purchase and Lease-Back or Resale** - In certain cases, it is appropriate for a municipality to purchase land in fee simple, place restrictions on the deed prohibiting certain uses (e.g., residential development) and lease it back to interested parties. One advantage of this method is that the municipality can purchase land for future use (before the price increases, perhaps prohibitively so) and, through leasing, recoup some or the entire purchase price. In this way, land is maintained in open space and can be developed as a park when future demand warrants. Resale of some or all of the land (after placement of deed restrictions) would maintain open space while also relieving the municipality of maintenance obligations and returning the land to the tax rolls.

5. **Mandatory Dedication** - The Pennsylvania Municipalities Planning Code (Act 247, as amended) enables municipalities to require that residential developers dedicate land, or fees in lieu of land, for public recreation. Municipalities must have an adopted recreation plan and an adopted ordinance relating to mandatory dedication before land or fees can be accepted. The amount of land required must be related to the demand for recreation land typically created by new development. The required fee should reflect the fair market value of the amount of land for which the fee is being substituted. Upper Milford Township has mandatory dedication regulations, under which land or fees can be dedicated based on a mutual determination by the developer and the Township. The Township Board of Supervisors set the Open Space Fee by Resolution.
6. **Fee Simple Acquisition** - The most direct means of obtaining open space is through fee simple purchase. The main advantage of this procedure is that an entire parcel of land belongs to the organization purchasing the land. In many situations, fee simple acquisition is the most appropriate manner by which to preserve land. However, the expense of fee simple purchase can sometimes exceed available funding sources.
7. **Condemnation** – *Use of condemnation may be reserved to preserve the public's interest. Condemnation is a tool provided by the state which gives the Township the right to acquire land deemed of particular importance. This method is not recommended as it often creates an adverse relationship between owner and Township. The Township is the community of residents and should not be treated as a them verses us. Every effort must be made to work directly with property owners to reach an amiable solution.*

Local Municipal Funding Potential Options

1. **General Revenue Funds** - Upper Milford Township could use general revenue funds for open space purposes. Specific portions of each year's overall tax revenue could be earmarked for open space and preservation.
2. **Bond Issues** - Bond funds are monies borrowed to fund a specific purpose project. Bonds can either be general obligation bonds, which are paid back from a municipality's general revenues, or they can be revenue bonds, which are retired from revenues generated by specific improvements. A bond issue can be appropriate to fund projects with a long life expectancy. Payments are spread over the many years during which project benefits will be enjoyed. The total cost of a project funded through a bond is higher, however, because of interest charges and bond placement costs. The key is to time a bond issue when interest rates are lowest.
3. **Bank Loans** - Bank loans are like bond funding except they are typically used where smaller amounts of money and quicker repayment schedules are involved. As with bond funding, the key is to time the loan when rates are lowest. The other difference is that bank loans are simpler because they are paid off directly by the municipality. In the case of municipal bonds, the debt is resold to private investors (via underwriters) as tax-free securities.
4. **Installment Purchase** - Many communities have found that they can significantly extend their acquisition dollars through a unique approach that involves installment payment programs. In this approach, communities acquire the land or easement now in exchange for a contract which pays the seller tax-free, annual interest payments with a balloon payment at the end of 10, 20 or 30 years. At the same time, the community purchases zero-coupon bonds, often .for 15 or 20 cents on the dollar that provides the balloon payment at the end of the contract. The seller thereby receives an annual, tax-free income stream, defers capital gains taxes and owns a contract that can be resold on the bond market if they ever need to 'cash-out' sooner. The community gains by stretching its dollars farther, protecting significantly more acreage than it otherwise could and offering landowners a financially attractive alternative to the "all-cash at closing" approach.
5. **Rollback Taxes** - The allocation of a percentage of rollback taxes obtained via the sale of lands enrolled in Acts 319 and 515 for the purpose of open space and farmland preservation in Upper Milford Township.
6. **Increase in the Mandatory Dedication Fee** - Upper Milford Township Subdivision and Land Development Ordinance requires developers to dedicate land or fees for recreation and open space. The amount of land or fees required is based on the number of dwelling units proposed.

Other Funding Source Options to Assist in Local Programs

1. Lehigh County Farmland Preservation Program – The Bureau of Agricultural Land Preservation works with the nine member Lehigh County Agricultural Land Preservation Board to preserve farmland within Lehigh County. The preservation of farmland is accomplished through the purchase of agricultural conservation easements (also known as the purchase of development rights) on eligible Lehigh County farm properties.

AGRICULTURAL LAND PRESERVATION – LEHIGH COUNTY		
Preserved Farmland by Township		
Township	Number of Farms*	Acreage Preserved**
Lynn	69	5,755.20
Weisenberg	44	3,879.20
Lower Milford	36	2,779.20
Heidelberg	30	2,449.60
Upper Macungie	8	744.90
Lowhill	5	516.90
Lower Macungie	6	448.00
Washington	3	416.90
Upper Milford	9	355.80
Upper Saucon	7	311.70
North Whitehall	2	238.90
South Whitehall	1	70.2
Albany Twp., Berks County (land assessed in Lehigh County)	0	19.04
Alburtis Borough***	0	18.00
Springfield Twp., Bucks Co. (land assessed in Lehigh County)	0	6.35
Total	220	18,009.89
*This indicates the total number of farms where the majority of the farm lies within the township boundaries.		
**The Acreage Preserved column shows the total preserved acreage in the township. Some preserved farms straddle township boundaries.		
***This acreage is part of a farm preserved in Lower Macungie Township.		

Table 9 – 2 Agricultural Land Preservation - Lehigh County

Price Paid for Easements

Lehigh County landowners have received **\$1,000-\$6,000** per acre for the sale of their development rights. This price is determined by appraisal.

Unfortunately, because of funding limitations, only a limited number of farms can be preserved each year. The Township could assist the County in this type of

preservation by offering to subsidize the payments per acre offered by the County which may enable more farms to be preserved. Once a year, the Lehigh County Agricultural Land Preservation Board establishes a price/acre easement purchase cap based on the availability of funds and the amount of interest in the program. Currently, June 2008, the Lehigh County easement purchase cap is **\$6,000/acre**.

During the year 2007, the overall price paid per acre was \$5,591. This information is from the Lehigh County Conservation District.

2. Lehigh Valley Green Future Fund – *Lehigh County voters approved a referendum question asking the voters if they support the County issuing a \$30 million bond to help fund farmland preservation, protection of environmentally sensitive areas, county parks and municipal parks.*

- a. Amount set aside for Upper Milford Township \$377,000; this amount is based on population of the Township.
- b. This is a 50 / 50 match; it can be ¼ Township and ¼ Partner; ½ County or straight ½ Township and ½ County
- c. Ten year time period to use the money; the end of the ten years will expire in 2014.

3. Pennsylvania DCNR Community Conservation Partnership (Keystone) Grant Program - This program is the primary source of State aid for parks, recreation and open space initiatives in Pennsylvania. Applications are accepted each fall for 50/50 matching grants through the Pennsylvania Department of Conservation and Natural Resources (DCNR). It is a highly competitive program where typically the value of total funds requested significantly exceeds grant funding available. Major funding categories are as follows:

Planning and Technical Assistance

Planning Projects

- Comprehensive Recreation, Park and Open Space Plans
- Conservation Plans
- County Natural Area Inventories
- Feasibility Studies
- Greenways and Trails Plans
- Rails-to-Trails Plans
- Master Site Plans
- Rivers Conservation Plans

Technical Assistance Projects

- Education and Training
- Circuit Rider
- Peer-to-Peer

Acquisition Projects

- Park and Recreation Areas
- Greenways, Trails and Rivers Conservation
- Rails-to-Trails
- Natural and Critical Habitat Areas

Development Projects

- Park and Recreation Areas
- Greenways and Trails
- Rails-to-Trails
- Rivers Conservation

Federally Funded Projects

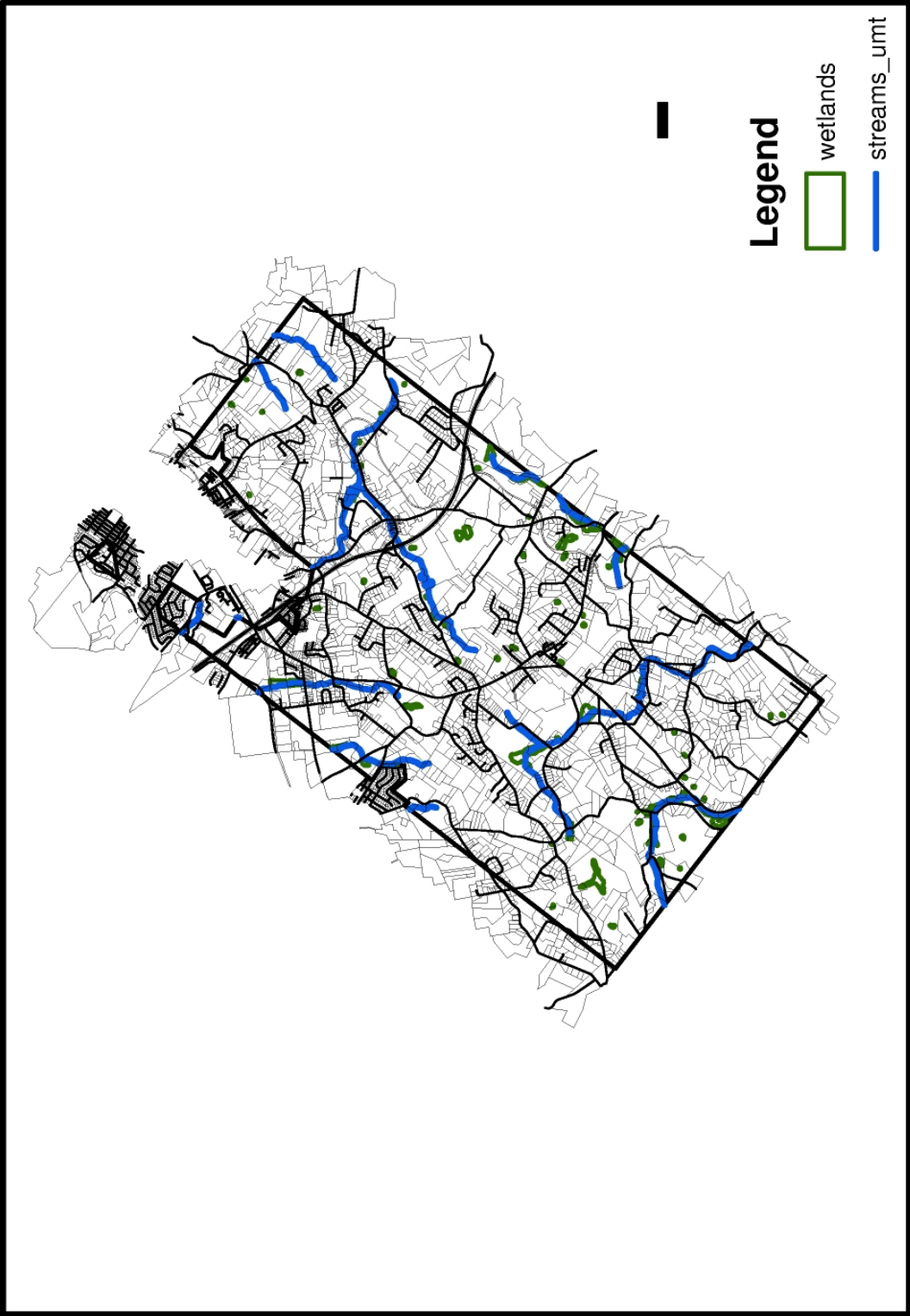
- Land and Water Conservation Fund (LWCF) Projects
- Pennsylvania Recreational Trails

5. *Pennsylvania Community Revitalization Program* - This program provides wide discretion to many State legislators to award limited amounts of State funds for worthy projects in their home district. However, because the money can be used for such a wide variety of community-oriented uses, it cannot be counted upon as a regular source for park, recreation and open space funds. There are no specific guidelines regarding what types of projects can be funded, who may apply or the maximum amount that can be provided. The application process varies from district to district. State legislators can seek the grants annually. Traditionally, the best time to submit a request has been between January and June when the annual Pennsylvania State budget is being formulated.

6. *Pennsylvania Source Water Assessment and Protection (SWAP) Program* - Under this PA Department of Environmental Protection (DEP) Program, municipalities, groups of municipalities and community water systems are eligible for grants for wellhead protection (up to \$50,000) and watershed protection (up to \$200,000). Qualifying activities include contaminant source inventories, development of protection ordinances, public education, and emergency response enhancement planning and related initiatives. Grants are available through the DEP Grants Center. State grant amounts must be matched with a 20% local contribution. This is the program that Emmaus and Upper Milford Township used to establish the Leibert Creek Assessment and the Emmaus Wellhead Protection Program which is currently one of the administrative tasks of the Joint Environmental Advisory Council (EAC).

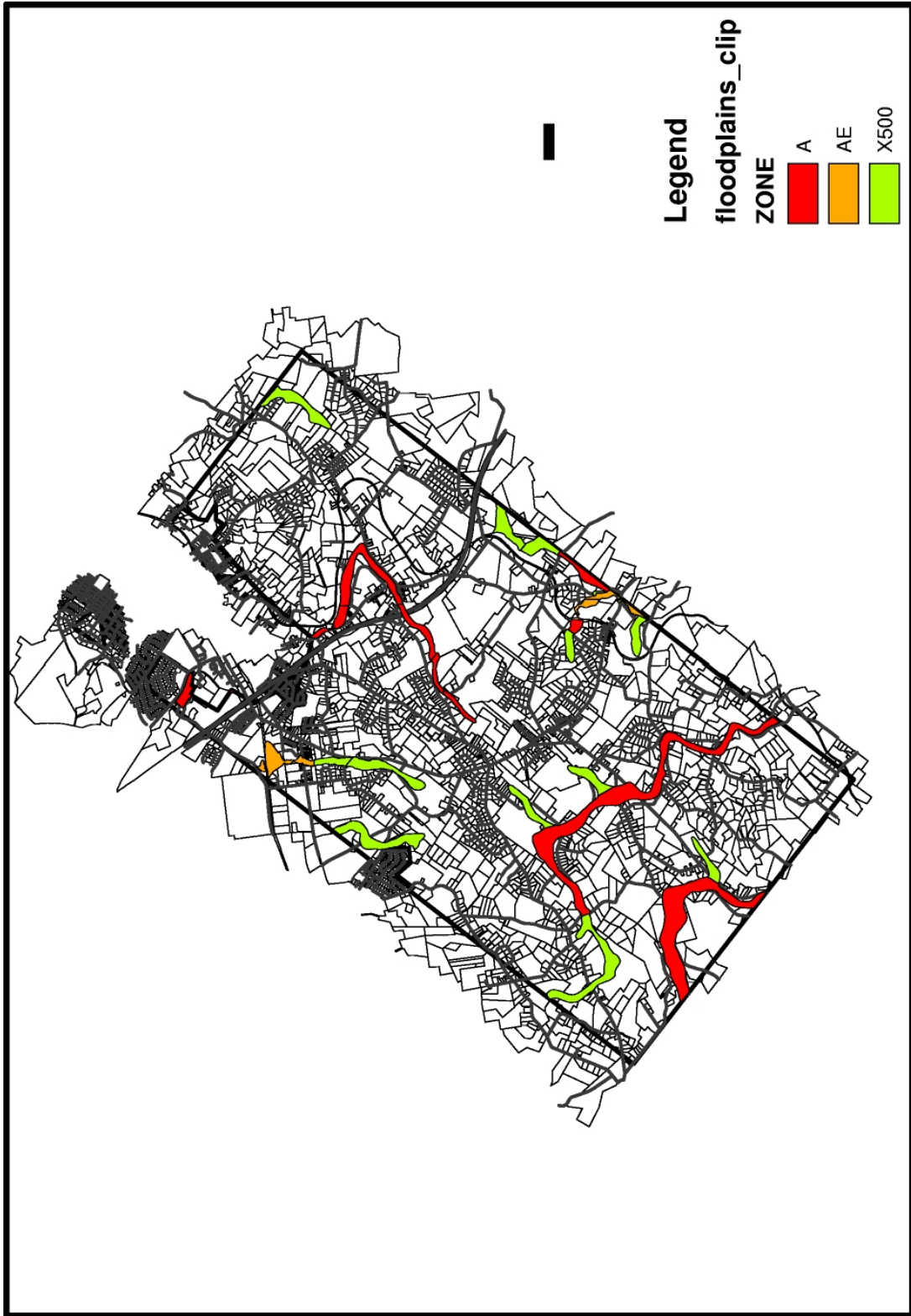
Chapter No. 10

MAPS

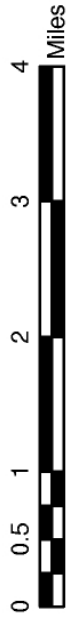


Map No. 10- 1 Upper Milford Township Wetlands and Streams

Upper Milford Township Wetlands and Streams



Upper Milford Township Floodplains

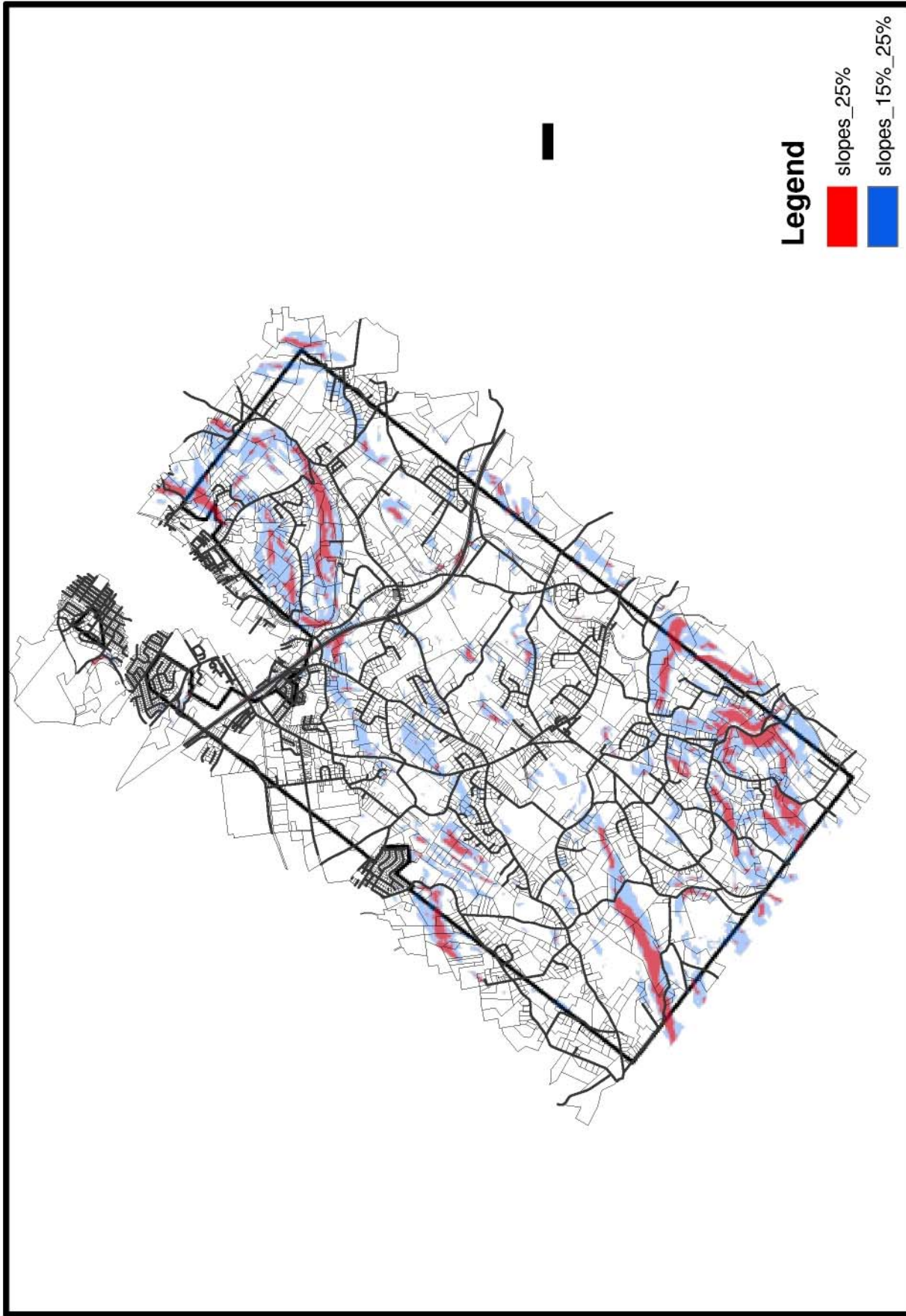


Map No. 10 – 2 Upper Milford Township Floodplains



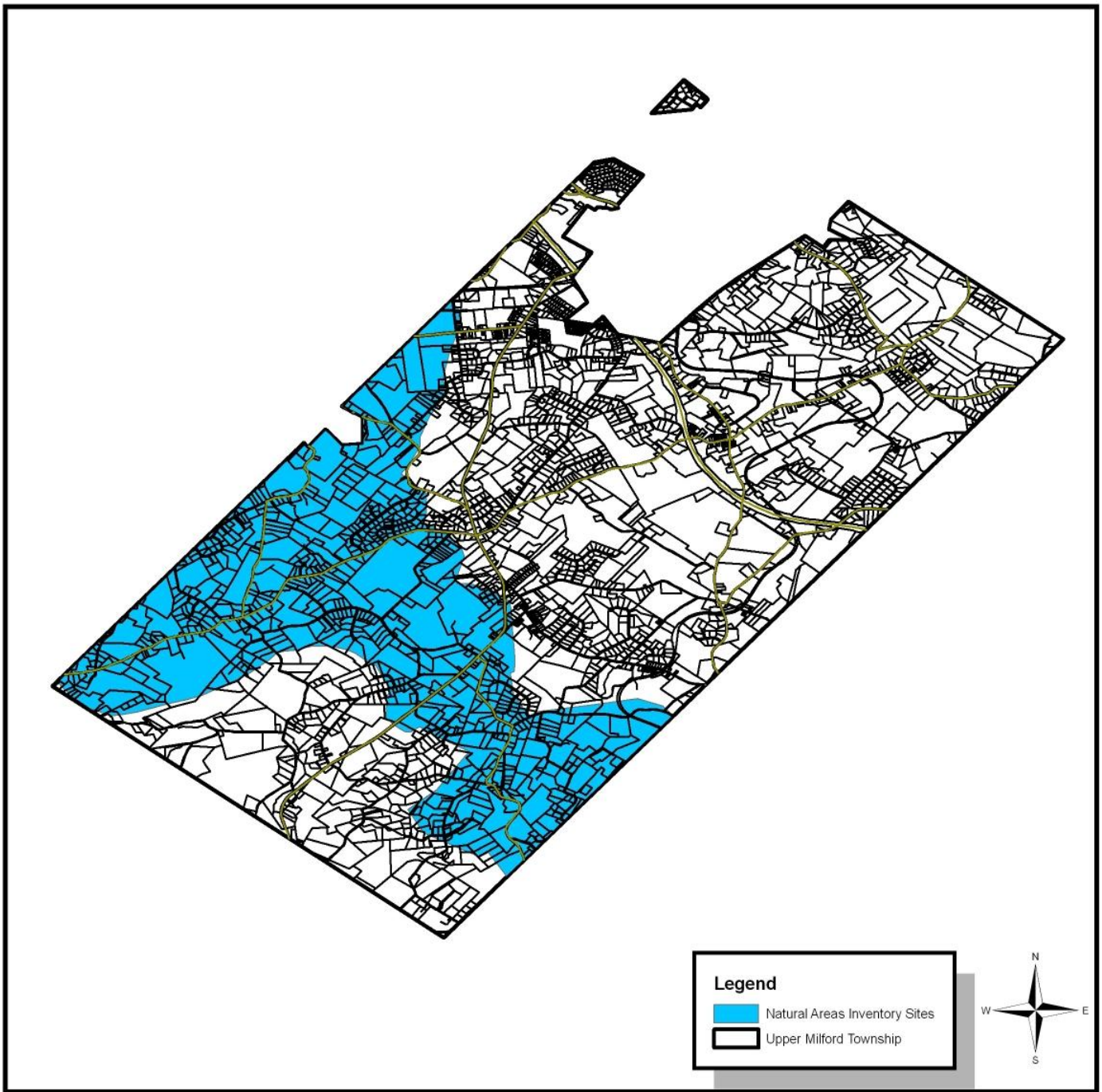
Upper Milford Township Woodlands

Map No. 10 – 3 Upper Milford Township Woodlands



Upper Milford Township Steep Slopes

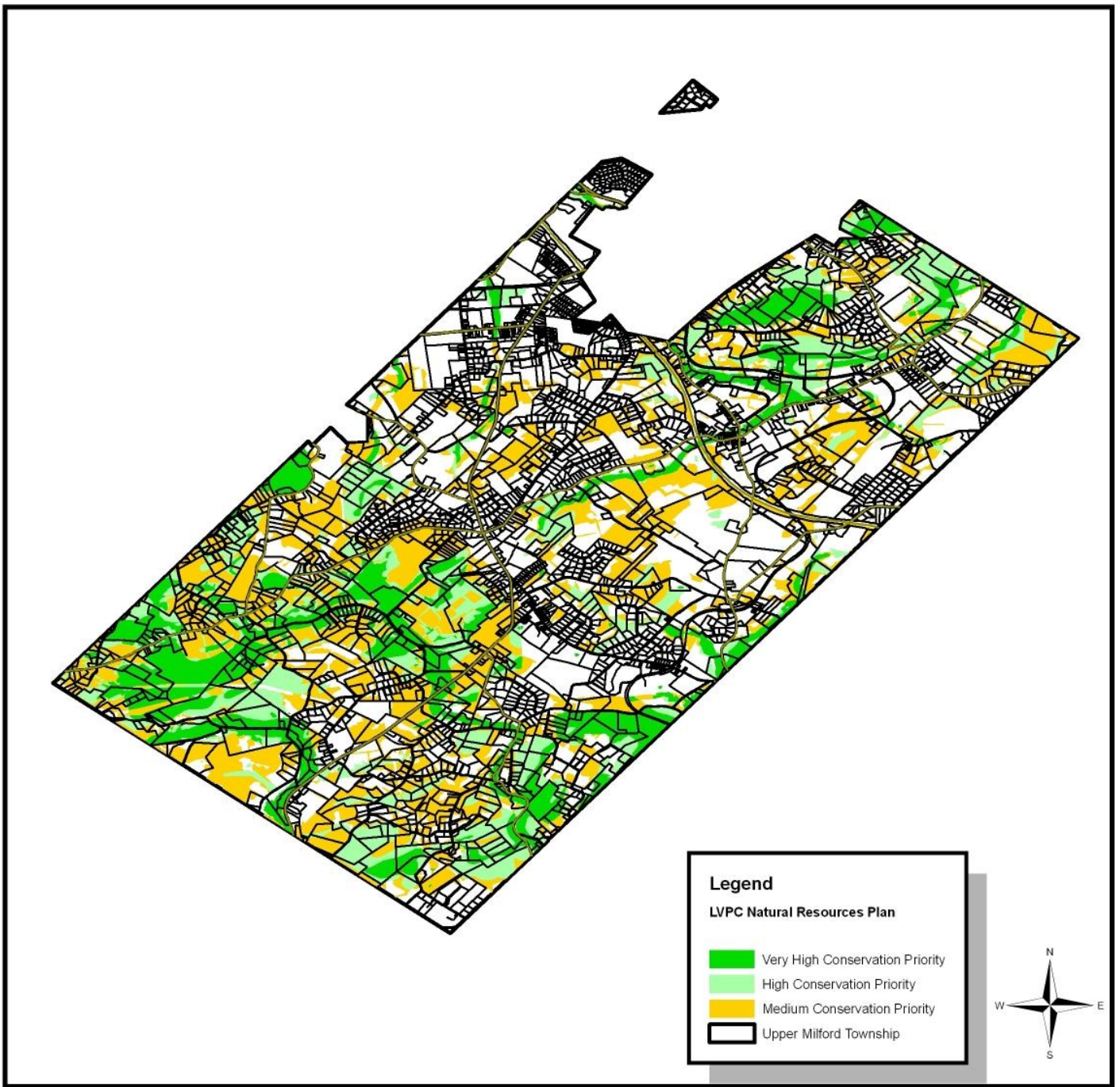
Map No. 10 – 4 Upper Milford Township Steep Slopes



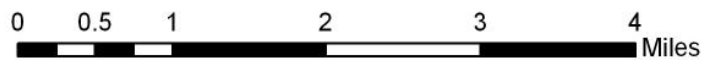
Upper Milford Township Natural Areas Inventory Sites



Map No. 10 – 5 Upper Milford Township Natural Areas Inventory Sites



Lehigh Valley Planning Commission Natural Resources Plan



Map No. 12 – 6 Upper Milford Township Natural Resources Plan

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Chapter No. 11

RESOURCES

The following is a list of resources that were used in creating this Natural Areas and Working Farms Action Plan:

Williams Township Open Space Plan
Upper Milford Township – Park, Recreation, Open Space, Environmental Plan
Southwestern Lehigh County Comprehensive Plan
Lehigh County Comprehensive Plan
Lehigh County Conservation District
Lehigh Valley Greenways Plan
Schuylkill Watershed Conservation Plan
Upper Milford Township – Zoning Ordinance
Upper Milford Township – Subdivision and Land Development Ordinance
Emmaus Borough Wellhead Protection Plan
Leibert Creek Watershed Assessment Plan
The Highlands Coalition Strategic Plan 2008-2011

Overview of Funding Programs for Open Space in Nearby Counties and Municipalities –

The following is a survey of public funding techniques being used to preserve open space in Monroe County and the Delaware Valley as of November 2001. Local governments in these regions are relying on bond funds and dedicated tax increases to fund their open space preservation programs. Earned income taxes, real estate taxes and, in one case, realty transfer taxes are each being used as revenue sources.

Monroe County:

A \$25 million bond for open space acquisition was approved by the voters in 1998. In 1999, the County adopted the following distribution for spending the funds:

Municipal Grants	\$10.6 million
County Initiatives	\$ 9.8 million
Agricultural Easements	\$ 3.9 million
Planning and Education	\$ 0.8 million

Bucks County:

A \$3.5 million bond for open space acquisition was approved in 1994. Subsequently, a \$59 million bond was authorized in 1997 for open space initiatives over 10 years as follows:

Municipal Grants	\$20.0 million
County Parkland	\$16.5 million
Agricultural Preservation	\$13.5 million
Natural Areas	\$ 9.0 million

Bucks County Municipalities:

Plumstead	\$ 6.0 million bond
Upper Makefield	\$15.0 million bond
Hilltown	¼ % increase in earned income tax
Springfield	¼ % increase in earned income tax
New Britain	¼ % increase in earned income tax
West Rockhill	¼ % increase in earned income tax
Solebury	\$10.0 million bond
Buckingham	\$ 9.5 million bond
East Rockhill	1/8 % increase in earned income tax
Lower Makefield	\$ 7.5 million bond
Milford	2 mills of real estate tax revenues
Bedminster	\$ 2.5 million bond

Chester County:

A \$50 million bond was issued in 1989. Then a \$75 million bond program started in 1999 for municipal grants, agricultural preservation, county parks and planning.

Chester County Municipalities

East Bradford	¼ % increase in earned income tax
London Britain	2 mills of real estate tax revenue
Willistown	1/8 % of real estate tax revenue
East Marlborough	2 mills of real estate tax revenue
Tredyffrin	\$10.0 million bond

Montgomery County:

A \$100 million bond issues for open space in 1993 over 10 years. In the future, funding will be from designated real estate tax revenues.

Montgomery County Municipalities:

Franconia	¼ % earned income tax
Skippack	¼ % earned income tax
Whitpain	\$10.0 million bond

Delaware County Municipalities:

Radnor Township	¼ % increase in realty transfer tax
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**UPPER MILFORD TOWNSHIP
BOARD OF SUPERVISORS
VISION AND NEXT STEPS
STATEMENT**

The Upper Milford Township Board of Supervisors thanks those who participated in the development of this open space plan concept and who continue to strive to maintain and improve the quality of living in Upper Milford Township.

This Open Space Plan provides the background rationale for establishing an open space preservation program and describes how it could work in Upper Milford Township and provides specific criteria for selecting preservation priorities.

The Board of Supervisors firmly believes that support for this movement must be community driven in order to be successful. It is fair to say that the majority of Township residents enjoy and want to preserve and maintain the current open space within the township. It is also fair to say that the residents will not support a program that is a financial burden on themselves or their families.

The Board of Supervisors supports the preservation of open space while recognizing that well planned development must and will continue to take place.

The Board, at the current time, does not support the incursion of Township debt in order to preserve open space. However, one rationale for incurring debt is that some of the land most worthy of preserving may not be available to preserve in the future if action is not taken. The other rationale is dollars and cents. As described in the Preface of this plan, Pennsylvania State University and American Farmlands Trust studies have shown that farms and open spaces save the public money because they do not require, schools, roads or utilities to the extent that new homes do. In Opportunity Knocks – Open Space as a Community Investment. Michael Frank of the Heritage Conservancy goes even further and argues that, amortized over a small number of years, the cost of purchasing development rights to preserve open land can be actually be less than the annual school cost deficit that would be created by allowing 85 new homes to be built on a hypothetical 100 acre tract in the Central Bucks School District.

The Township currently budgets an amount of \$20,000 per year to an open space reserve fund, which, at the date of this writing, contains a balance of \$60,000 which is available to be used to begin a program.

In so much as an owner's participation in the open space program would be voluntary, the Board of Supervisors endorses the public education and low cost aspects and options of the open space program. The board would like to wait to see if the community and residents will accept and participate in such a program and the Board may, in the future, modify or accelerate the program based on positive results and public acceptance.

The Board of Supervisors do not, at this time, support a referendum question for a dedicated tax increase to fund a program. The Board of Supervisors is of the opinion that if the community and residents want to pursue a referendum question it would indicate firmer community support to place a referendum question on the ballot if the electorate were to pose the referendum question through the petition procedure.

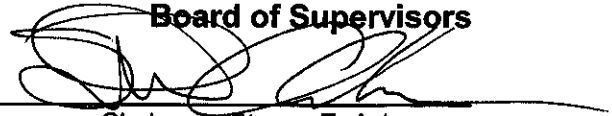
The Board of Supervisors will continue to maintain the new development "fee in lieu of open space dedication" funding concept at the recommendation from the Planning Commission. The Board of Supervisors also support the Planning Commission's current efforts to update the Township's Zoning Ordinance to include open space development and environmental preservation.

The supervisors anticipate that the current Open Space Committee, with support as necessary from the Planning Commission and Joint EAC, will assume the primary responsibility for moving the open space program forward by:

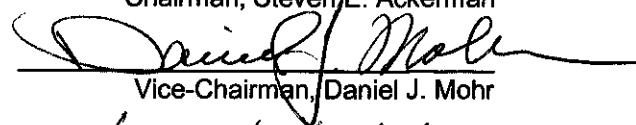
- publicizing the benefits of an open space program;
- suggesting changes to the program as may be driven by community involvement
- providing public outreach and education
- providing information to owners of potentially important undeveloped properties
- making recommendations to Board of Supervisors on properties that should be considered

Adopted March 5th, 2009

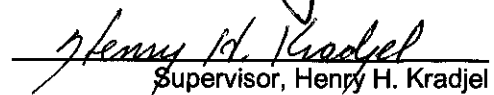
**Upper Milford Township
Board of Supervisors**



Chairman, Steven E. Ackerman



Vice-Chairman, Daniel J. Mohr



Supervisor, Henry H. Kradjel