

Milford Township Open Space Plan



1999

Milford Township Open Space Plan

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Introduction

For over 10,000 years, the Lena'pe ("Original Humans") lived peacefully in small bands divided only by hunting boundaries. According to Lena'pe belief, it was along the Unami Creek that the Wolf Clan emerged from Inner Earth to the sacred heart of Lunapaho'king ("Lena'pe Country"). These "Original Humans" believed that no one can own the land or its spirits just as no one owns the winds or the sky. So the Lena'pe band chiefs were enticed into land treaties with Dutch and Swedish fur traders of the late 1600's believing the treaties to be for the right to use the land, not own it. But the traders took over the land and banished the native people. Over-hunting and mercenaries from distant tribes drove off the remaining Lena'pes bringing about the end of a great culture in less than 100 years.

By the early 1700s, Milford's arable lands and free flowing streams had attracted an ever increasing number of European settlers. A century later, cigar factories, taverns, general stores and hotels had been added in the villages that sprouted at the crossroads of stagecoach and later trolley lines passing through the township. Since that time, development has continued and those once narrow dirt roads have become two-lane and four-lane highways to accomodate the growth.

In the early 1960s, township planners took action against this unchecked development by taking the lead in open space preservation. Their efforts put Milford at the forefront of Bucks County's innovative approach to control and direct development through performance zoning and development districts. With these methods of evaluating sensitive resources and excluding them from development, and directing growth into areas served by major roads and sewers, a solid foundation for preservation was laid.

With that in mind, this open space plan is simply another step in preserving and restoring Milford's natural resources. This plan also builds upon the Quakertown Area Linked Open Space Plan, adopted in 1981. That plan envisions a series of linear greenways and trails linking usable parcels — natural preserves, recreational areas and environmental education areas — with commercial districts, residential areas and schools, allowing the free movement of residents between them.

Those linkages are also the basis of this open space plan. The stream corridors, most importantly the Unami Creek and its tributaries, define and affect the quality of life in Milford. Protection along these stream corridors is paramount and installation and maintenance of riparian buffers is given great weight in this plan. Portions of those corridors can also be used for a township-wide trail system — a system that will complement and supplement the linked open space plan.

Other priorities of this plan include recommendations for strengthening resource protection ordinances, preservation of Milford's rural atmosphere and expansion of the township's park system. That expansion will include parcels for recreation, education, non-accessible areas of sensitive habitat and passive open space. Those parcels can be linked by the trail system.

Finally, this plan offers recommendations for preserving the township's historic resources — be they culturally important sites or, perhaps Milford's most important legacy, her many farms.

Implementing this plan won't be easy. It will take dedication, education and cooperation between residents and township officials, but it will only be through cooperative efforts that the rural face of Milford Township will continue to be preserved instead of irrevocably altered.

CHAPTER ONE
COMMUNITY BACKGROUND

LOCATION AND CHARACTER

Milford Township is located in the northwestern corner of Bucks County, surrounding Trumbauersville Borough. The township's 28 square miles consist of areas of natural resources, active farms, small villages and contemporary suburban development. Milford contains the headwaters of the Unami Creek watershed, a watershed that includes portions of West Rockhill Township, and Marlborough and Salford townships in Montgomery County.

From the crossroads of Route 663 and the Northeast Extension of the Pennsylvania Turnpike, center city Philadelphia is more than twice the distance than to the center of Allentown. Consequently, there is a strong orientation toward Allentown and the Lehigh Valley. Yet Philadelphia and its suburbs remain a major metropolitan influence with convenient access via Route 309 or Interstate 476 (the "Blue Route") in combination with the Turnpike. Interstate 78 to the north in the Lehigh Valley has also made for convenient access to northern New Jersey and New York City. The central location of Milford Township and its proximity to major highways provides easy access throughout the region. So, while Milford has retained a desirable open and rural quality, there is considerable demand to convert open space into more intensive land use.

POPULATION AND HOUSING

Information on population and housing characteristics provides important background on the residents of the municipality. For the purposes of this Open Space Plan, data from the 1990 Federal Census and estimates prepared by the Bucks County Planning Commission were used. Data for the other five municipal members of the Quakertown Area Planning Committee are included for comparison purposes.

	<u>1970</u>	<u>1980</u>	<u>1990</u>	<u>1997</u>
<u>MILFORD TOWNSHIP</u>	4,812	6,053	7,360	8,837
Haycock Township	1,260	1,750	2,165	2,252
Quakertown Borough	7,276	8,867	8,982	9,175
Richland Township	4,089	6,286	8,560	9,638
Richlandtown Borough	856	1,180	1,195	1,334
Trumbauersville Borough	831	781	894	966

Source: Bucks County Planning Commission 90:MP-1 and 97:MP-5B

The data on the population of Milford Township indicates that the number of residents increased by 1,477 or 20.1 percent between 1990 and 1997. During that same period the

population of the Quakertown Area increased by 10.4 per cent and the overall population of Bucks County by 9.2 percent.

Population density, household size and age characteristics provide an indication of the character of the municipality. Included in the definition of household are families (people living together by marriage, blood or adoption), single person living units and unrelated people living together.

Table 2: Population Density -1997

	<u>Population</u>	<u>Area (sq. mi.)</u>	<u>Density</u>
<u>MILFORD TOWNSHIP</u>	8,837	28.06	314.9
Haycock Township	2,252	20.05	112.3
Quakertown Borough	9,175	2.02	4,542.1
Richland Township	9,638	20.49	470.4
Richlandtown Borough	1,334	0.26	5,130.7
Trumbauersville Borough	966	0.43	2,246.5

Table 3: Household Size - 1990

Persons per Household

<u>MILFORD TOWNSHIP</u>	2.98
Haycock Township	2.89
Quakertown Borough	2.48
Richland Township	2.65
Richlandtown Borough	2.91
Trumbauersville Borough	3.17

Source: Bucks County Planning Commission 90:MP-11

Table 4: Age Characteristics - 1990

	<u>Median Age</u>	<u>Percent under 18</u>	<u>Percent 65 +</u>
<u>MILFORD TOWNSHIP</u>	35.5	26.4	11.1
Haycock Township	35.6	24.6	9.6
Quakertown Borough	33.7	24.5	18.5
Richland Township	33.4	24.9	13.4
Richlandtown Borough	31.9	29.0	19.2
Trumbauersville Borough	32.0	31.5	9.3

Source: Bucks County Planning Commission 90:MP-11

The number of housing units in a municipality provides an indication of the growth for the years since the census was taken.

Table 5: Housing Units 1980 - 1997

	<u>1980</u>	<u>1990</u>	<u>1997</u>
<u>MILFORD TOWNSHIP</u>	2,105	2,525	3,055
Haycock Township	599	791	829
Quakertown Borough	3,596	3,625	3,731
Richland Township	2,531	3,344	3,794
Richlandtown Borough	381	379	426
Trumbauersville Borough	261	292	318

Source: Bucks County Planning Commission 90:MH-8 and 97:MH-3B

POPULATION AND HOUSING PROJECTIONS

The tables presented above provide important data on the population and housing characteristics from the recent past to the present for Milford Township and the municipalities in the Quakertown Area. For the purpose of preparing an open space plan, it is important to have information on what the increase in the population and number of housing units is likely to be in the next ten years. It should be noted that the projections presented in tables 6 and 7 are not the same as those in the township's comprehensive plan. The projections in tables 6 and 7 are used because they were prepared since the adoption of the comprehensive plan. The projections prepared by the Bucks County Planning Commission will be used because they use an acceptable method (the Cohort Survival Method) and were prepared on a countywide basis. The projections were allocated among the sub-county planning regions and to the municipalities based on land available for development, services, trends and current zoning patterns. Thus, the projections for Milford Township are in a regional context, which provides a reasonable estimate of the township's population growth during the next ten years.

Table 6: Population Projections - 2000 and 2010

	<u>2000</u>			<u>2010</u>		
	<u>Low</u>	<u>Middle</u>	<u>High</u>	<u>Low</u>	<u>Middle</u>	<u>High</u>
<u>MILFORD TOWNSHIP</u>	8,690	8,970	9,120	10,570	11,090	11,640
Haycock Township	2,165	2,360	2,440	2,560	2,680	2,820
Quakertown Borough	8,810	9,090	9,240	8,760	9,190	9,650
Richland Township	10,630	10,970	11,160	13,630	14,280	15,010
Richlandtown Borough	1,210	1,250	1,270	1,250	1,310	1,380
Trumbauersville Borough	970	1,000	1,020	1,050	1,110	1,160

Source: Bucks County Planning Commission 90:MP-8B

Based on the population estimates, the annual rate of growth for Milford Township between 1990 and 1997 was 211 persons per year. The annual rate of growth projected for the township for the decade was 133 persons per year for the low range and 176 per year for the

high range projection. Even though the estimated rate of past growth is higher than the projected, the population projection for 2010 should still be considered reasonable for planning purposes. After the 2000 Federal Census data are available, it would be advisable to review the comprehensive plan and this plan to determine if adjustments are warranted.

Table 7: Housing Projections - 2000 and 2010

	<u>2000</u>			<u>2010</u>		
	<u>Low</u>	<u>Middle</u>	<u>High</u>	<u>Low</u>	<u>Middle</u>	<u>High</u>
<u>MILFORD TOWNSHIP</u>	3,120	3,200	3,230	3,850	3,990	4,130
Haycock Township	960	980	990	1,080	1,120	1,160
Quakertown Borough	3,610	3,700	3,740	3,670	3,810	3,930
Richland Township	4,230	4,320	4,370	5,490	5,710	5,900
Richlandtown Borough	380	390	400	430	450	460
Trumbauersville Borough	350	360	360	410	420	440

Source: Bucks County Planning Commission 90:MH-8B

The estimated increase in housing from 1990 to 1997 was 530 dwelling units, or 75.5 units per year. That rate of increase is slightly higher than the rate of the high projection for the year 2000, which is 70.5 units per year. Therefore, if the trend established for the first seven years of the decade continues, the actual number of dwelling units in the year 2000 will be greater than projected. Because of the many factors that influence the rate of housing growth, the projections for 2010 should be considered reasonable for the purposes of this plan.

This analysis reveals a rate of growth that exceeds the rate of growth for the decade between 1980 and 1990. Because of the strong economy, the location of the township, the availability of land with higher density zoning, and available infrastructure it is reasonable to assume that the trend will continue for the next ten years which warrants the immediate implementation of a comprehensive and broad range plan for preserving open space in its many forms.

LAND USE PATTERNS

The pattern of land use is a key factor in establishing the character of a municipality and is important in determining where certain types of open space are needed and appropriate. Although nearly ten years old, the best source of land use information is a survey compiled by the Bucks County Planning Commission in 1990 which identifies ten categories of land use and provides an approximate acreage for each category.

The following is a brief definition of the ten land use categories included in Table 8.

1) *Single-Family Residential* consists of properties with either a single-family detached or attached dwelling, and one or two dwellings on a lot of under five acres;

2) *Rural Residential* includes the same types of dwellings on lots of five acres or larger, but not lots considered to be agriculture;

3) *Agricultural* is defined as land of twenty acres or more where at least one-third exhibits farm related characteristics, including residential dwellings and farm structures;

- 4) *Multi-Family Residential* includes properties with three or more attached units;
- 5) *Government and Institutional* uses include all federal, state, county and municipal buildings and facilities, except those which are park and recreation related;
- 6) *Park and Recreation* land includes municipal, county and state parks, state game lands, golf courses, and deed-restricted open space associated with residential developments;
- 7) *Vacant* parcels are those without dwellings and nonresidential uses, but may have secondary or minor structures such as barns, sheds, etc.;
- 8) *Mining and Manufacturing* includes quarries and industrial uses;
- 9) *Commercial* land uses include all commercial businesses; and
- 10) *Transportation and Utilities* consists of uses such as railroads and major utilities.

Table 8: Land Use - 1990

Agricultural	5,144 acres	28.6 percent
Rural Residential	4,953 acres	27.6 percent
Vacant	3,880 acres	21.6 percent
Single-family Residential	2,111 acres	11.8 percent
Transportation & Utilities	705 acres	3.9 percent
Commercial	406 acres	2.3 percent
Government & Institutional	362 acres	2.0 percent
Park & Recreation	201 acres	1.1 percent
Mining & Manufacturing	148 acres	0.8 percent
Multi-Family Residential	<u>49 acres</u>	<u>0.3 percent</u>
TOTAL ALL LAND USES	17,959 acres	100.0 percent

Source: Bucks County Planning Commission: 1990 Bucks County Land Use Report

While some might argue that it is not necessary to prepare an open space plan since more than three-quarters of the land area of the township was essentially open in 1990, now is the ideal time to prepare a strategy to preserve open space for a full range of uses.

PLANS, ORDINANCES AND POLICIES RELATED TO OPEN SPACE PLANNING

Municipal Comprehensive Plan

In 1992 the Milford Township Board of Supervisors adopted the Quakertown Area Comprehensive Plan. The plan was written by the Quakertown Area Planning Committee, which is comprised of the six municipalities in the Quakertown School District, and the school district. The QAPC has maintained an active planning program since its inception in 1972. As a multi-municipal comprehensive plan, it is able to blend the characteristics, needs, obligations and interests of the six municipalities with the broader issues and implications of the area. The Comprehensive Plan has delineated the following five planning areas:

Development Areas were located and sized to accommodate the anticipated growth, to maximize efficient use of existing services and facilities, and to direct intensive

development away from Resource Protection Areas.

Reserve Areas are areas into which Development Areas can be extended once they approach capacity and the need arises to accommodate more intensive uses.

Resource Protection Areas are areas with substantial amounts of significant environmental limitations, particularly wetlands, floodplains, steep slopes, water bodies and woodlands.

Areas of Existing Development were developed or substantially developed at the time the comprehensive plan was prepared.

Villages and Towns — There are six villages in Milford Township: Spinnerstown, Milford Square, Steinsburg, Finland, Brick Tavern and Geryville.

It is important to note that the vast majority of the development since 1990 has occurred in the Development District located around the village of Spinnerstown, at the Turnpike Interchange, and generally between the village of Milford Square and Trumbauersville Borough. The residential development has consisted of single-family detached, twins and condominiums. New commercial and industrial uses as well as an institutional facility (consisting of a nursing and convalescent home and all ages day care) are located in the Route 663 corridor between the Turnpike Interchange and the eastern boundary of the township. Since 1990, some single-family detached houses have been constructed on lots of one acre or larger in what the Comprehensive Plan designates as Rural Areas of the township. Other notable land uses that will have some influence on the open space plan include Pfaff and Tohickon Elementary schools, Milford Middle School, Trumbauersville Elementary School and the Upper Bucks Airport. Based on the township's comprehensive plan, the zoning ordinance and development trends, it is anticipated that the majority of development will continue to occur in the Development Area. It is also anticipated that some land outside the Development Area will be subdivided for single-family houses.

Natural Resource Protection and Open Space

In addition to having a land use planning category for concentrated areas of natural resources, the Quakertown Area Comprehensive Plan outlines a program for the protection of natural features. The plan also states the township's position on protecting natural resources: "To protect the people's right to clean air, pure water and the other natural and historic resources of our environment and to guarantee a quality environment for present and future residents of the Quakertown Area."

Objectives:

1. Protect specific natural features of the landscape through natural resource standards incorporated in zoning and subdivision/land development ordinances.
2. Conserve the Quakertown area's groundwater supply through sewage facilities planning, water resource planning, effective stormwater management, enforcement of sound development standards and promotion of proper site design.
3. Require evaluation of the environmental impacts of certain planning, zoning and development decisions and to minimize adverse environmental impacts through sound design and proper planning.
4. Ensure proper collection, treatment and disposal of wastewater and to remedy

conditions where pollution exists. Water supplies must be husbanded and protected from contamination and depletion. To achieve this, water that eventually becomes effluent should be used when feasible, to recharge the groundwater resources.

5. Require useable open space in intensive residential developments that is adaptable for active or passive recreation.
6. Support state and federal programs that result in the continuation of open space in the municipalities.
7. Support efforts that will protect and enhance historic structures and areas of the Quakertown area.
8. Protect the character and enhance the quality of the Quakertown area's villages through appropriate land planning techniques and ordinance standards.
9. Foster state and national registration of structures and sites that are of historic significance and protect by similar means the immediate area surrounding these landmarks

Municipal Zoning Ordinance

The Milford Township Zoning Ordinance was also drafted by the Quakertown Area Planning Committee and then tailored to the specific needs of the township. There are two aspects of the zoning ordinance that are particularly relevant to the Open Space Plan: the protection of natural resources and the requirement that certain types of residential developments have open space.

Protection of Natural Resources

Section 504 of the zoning ordinance contains critical natural resources protection standards that prohibit or limit intrusion by development into areas containing the resource. There are also procedures for evaluating the extent of natural resources on a site as a precursor to beginning the development process. All types of development must protect any natural resources on the site in accordance with the standards of the zoning ordinance.

- ***Flood Plains*** — ***100 percent protection.***
No development activity may occur in a flood plain except for minor road crossings with the approval of Department of Environmental Protection.
- ***Flood Plain (Alluvial) Soils*** — ***100 percent protection***
except for minor road crossings with the approval of the Department of Environmental Protection.
- ***Wetlands*** — ***100 percent protection***
- ***Wetland margin*** — ***80 percent protection***
- ***Lakes, ponds and watercourses*** — ***100 percent protection***
- ***Steep slopes*** — slopes of 8 to 15 percent — ***60 percent protection***
slopes of 15 to 25 percent — ***70 percent protection***
slopes over 25 percent — ***85 percent protection***
- ***Woodlands*** — ***80 percent protection***
- ***Lake shore*** (300 feet from shoreline) — ***90 percent protection***
- ***Pond shore*** (100 feet from shoreline) — ***80 percent protection***
- ***Tree protection zone*** — The area within the drip line shall not be disturbed during construction.

In addition, Section 507 of the zoning ordinance contains regulations for the protection of flood plains that are consistent with the guidelines of the National Flood Insurance Program and Pennsylvania's Floodplain Management Act (Act 166 of 1978).

Open Space in Residential Developments

The Milford Township Zoning Ordinance has three use options for residential development: Use B1 Single-family detached, Use B5 Single-family detached cluster, and Use B6 Performance Subdivision. For both single-family cluster and performance subdivision a minimum amount of the development site must be reserved for open space. The percentage of open space required varies with the zoning district as shown in the chart below. The open space may consist of the natural resource protection areas required by Section 504 and a portion of the open space must be suitable for recreation.

<u>District</u>	<u>Cluster</u>	<u>Performance Subdivision</u>
RP	75 percent	N/A
RA	50 percent	N/A
RD	50 percent	N/A
SRL	25 percent	55 percent
SRM	15 percent	45 percent

Quakertown Area Linked Open Space Plan

In 1981 the Quakertown Area Planning Committee prepared a plan for a system of linear open space throughout the six municipalities. The purpose is to establish a system of open space that can be used to provide pedestrian/bicycle access connecting residential areas with recreation facilities, community facilities, schools, shopping areas, and employment centers. An equally important objective of the plan is the protection of natural resources, particularly watercourses and floodplains. The Milford Township Planning Commission and Board of Supervisors have been actively pursuing the implementation of the plan.

Agricultural Security Area

In April 1992, at the request of a group of farmers, the board of supervisors established an Agricultural Security Area under state legislation. Since that time the number of properties in the program has grown to 120 for a total of 4,328.17 acres. Milford Township has more acreage included in its Agricultural Security Area than any other township in Bucks County. Participation in the program is a statement by the property owner of his/her intent and interest in continuing with farming. The action of establishing an Agricultural Security Area is an acknowledgement by the board of supervisors of its support of the farming community. An Agricultural Security Area is also an important part of a municipal open space program because it is one of the criteria for a farm to be eligible for the Bucks County Farmland Preservation Program. The county program is part of a state initiative for the purchase of the development rights of farms. Under the program a farmer petitions the county to purchase the development potential or rights to the land and place an easement on the land that eliminates the development potential in perpetuity.

LAND USE SUMMARY

The current land use planning program of Milford Township has a very strong orientation and commitment to the preservation of open space. The township has the following programs in place that provide a very solid foundation upon which to prepare an open space plan.

- The comprehensive plan advocates the protection of natural resources.
- The comprehensive plan establishes a Development District to accommodate the projected population growth.
- The zoning ordinance requires the protection of natural resources for all types of development.
- The zoning ordinance requires that open space be provided in certain types of residential developments.
- The Linked Open Space Plan establishes a plan for a comprehensive greenway and trail system throughout the township.
- The township has been actively implementing the Linked Open Space Plan through fee simple dedication of required open space and through purchase of parkland.
- At the request of property owners the supervisors have established an Agricultural Security Area.

CHAPTER TWO

GOALS AND OBJECTIVES

GOAL — RURAL AMBIENCE

Ensure that scenic vistas, stream valleys, woodlands, farmland, historic structures and a healthy environment will continue to define the character of our township.

Objectives

- Devise means to protect the scenic vistas through land use regulations.
- Identify and secure land that provides the greatest open space values.
- Guide growth into the development districts.
- Continue protection of natural resources in the land development process.
- Preserve scenic roads by conserving existing vegetation and limiting cartway width and access points. Ensure replacement bridges maintain that character.
- Encourage the preservation of historic properties.

GOAL — NATURAL RESOURCES

Enhance the quality of life by discouraging degradation of natural resources and encouraging creative efforts to promote their environmental functions.

Objectives

- Continue using site capacity calculations to limit and control intrusion.
- Cluster development to protect contiguous areas of natural resources.
- Encourage a diversity of habitats recognizing unique breeding grounds, wildlife corridors and fragile natural features.
- Protect groundwater supplies from contamination or depletion.
- Protect all wetlands, floodplains, existing vegetated riparian buffers, steep slopes, and woodlands from adverse impacts of land use.
- Establish riparian buffers where they are needed.
- Encourage cooperation among landowners, conservancies, land trusts, individuals and civic groups through appropriate programs and classroom instruction in the schools to protect natural resources.
- Establish an Environmental Advisory Council to evaluate impacts on the natural environment.

GOAL — RECREATIONAL NEEDS

Ensure that sufficient, appropriate, and conveniently located lands are permanently preserved to satisfy the active and passive recreation demands of existing and future residents.

Objectives

- Promote permanent retention of a variety of existing public and private active and passive recreation facilities for continued use by residents.
- Prepare a plan that addresses the current and future recreation needs of

the township residents.

- Establish appropriate pedestrian and bicycle routes .
- Establish greenways linking active and passive recreation areas.
- Ensure that all new residential developments are served by appropriate recreational facilities.
- Acquire sufficient open space with public access to enhance recreational opportunities

GOAL — LINKED OPEN SPACE AND TRAILS

Establish a system of linked open space to serve as multi-purpose community greenways.

Objectives

- Continue to implement the Linked Open Space Plan to develop a pedestrian/bicycle trail system throughout the township.
- Provide active and passive recreational opportunities for the residents.
- Protect watercourses and associated floodplains so that they can continue their natural functions and to provide wildlife habitat.
- Provide a linear greenway that is an important part of the landscape and rural ambiance of the township.

GOAL — FARMLAND PRESERVATION

Support and encourage the continuation of farming in the township.

Objectives

- Encourage the maintenance and enlargement of an Agricultural Security Area within the township under the provisions of the State legislation.
- Encourage farmland owners within the Agricultural Security Area to apply to the county's agricultural land preservation program for the purchase of the development rights for the farm. Provide municipal support for legitimate applications.
- Recognize the changing economic conditions of farming in Bucks County by allowing on-site sale of produce and other farm related activities.
- Explore possibilities for creating a Milford Farmers' Market.

GOAL — HISTORIC RESOURCES

Recognize and promote the preservation of historic resources to maintain an important link to the history and cultural heritage of the township.

Objectives

- Encourage the creation of historic districts in the villages and establish historic and architectural review boards under the provisions of the State legislation.
- Recognize the historic significance of the houses, barns and outbuildings of the farms in the township.
- Encourage the adaptive reuse of historic buildings as a means of renewing the economic vitality of the structure and preserving its historic character.

GOAL — DEVELOPMENT AREAS

Ensure that the villages and development areas continue to be a positive element in the ambience and character of the township. Recognize the importance of open space in the developed environment.

Objectives

- Promote the construction of pedestrian/bicycle paths throughout the residential, commercial and industrial areas, connecting them and providing a link to residential neighborhoods.
- Continue to allow only minimal environmental disturbance on construction sites.
- Encourage the use of natural planting schemes and the use of native plant material in buffer yards and landscape plantings.
- Encourage a unified design of the landscape amenities at the entry points of the township, including such things as plantings, signs, lighting, parking and pedestrian circulation.
- Establish village regulations that will promote and encourage new development to be in scale with the existing buildings.

GOAL — INTER-MUNICIPAL COOPERATION

Promote cooperation among the contiguous municipalities in planning for preserving open space.

Objectives

- Coordinate with neighboring municipalities for open space planning for effective acquisition of open space, protection of environmental resources, interconnection of open space and operation of recreation facilities.
- Remain receptive to joint ventures proposed in neighboring communities' open space plans.

CHAPTER THREE
EXISTING PROTECTED LANDS

PERMANENTLY PROTECTED LAND — 319.67 acres

Land Owned by Federal, State or County Government — None

Land Owned by Milford Township — 250.54 acres

1. Milford Township Municipal Building	40.51
2. Krammes Road Park	22.47
3. Milford Public Park (Allentown Road)	60.39
4. Lands along the Barrel Run Creek - 51.50	
Milford Meadows	15.70
Woodview Crossing - 1	1.79
Woodview Crossing - 2	5.47
Deer Path Crossing	5.94
Willow Stream	4.70
Milford Glen	6.94
Meadowoods	10.96
5. Spinnerstown Area - 45.76	
Valley View Estates - Phase 1 & 2	27.14
Spinnerstown Crossing	18.62
6. Milford Square Estates	12.31
7. Cedarfield	2.65
8. Wise Subdivision	14.95
<i>Note: Parcels 1, 2 and 3 were purchased by the township. The remaining lands were received through fee simple dedication.</i>	

Land Owned by Homeowners Associations — 69.13 acres

1. Oak Run	5.65
2. Franklin Acres	13.64
3. Willow Stream (38.65 acres in condo.)	18.64
4. Milford Glen	8.08
5. Tollgate Landing (also in Richland Twp.)	13.85
6. Woodlands Creation	9.27

Farmland Retained Through Purchase of Development Rights — 162 acres

Mood Farm- <i>approval expected by 12/31/99</i>	110
Nichols Farm - <i>approval expected by 12/31/99</i>	52

TEMPORARILY PROTECTED LAND — 726.70 acres

1. Churches — 91.73 acres	
Swamp Church	17.54
West Swamp Church	9.18
East Swamp Church	10.29
Quakertown United Methodist Church	20.41
Finland Mennonite Church	3.84
Quakertown Presbyterian Church	11.75
St. John’s Lutheran Church	18.72
2. Milford Trumbauersville Sewer Authority	32.85
3. PP&L	5.88
4. Camp Men-O-Lan	153.79
5. Trumbauersville Authority	4.07
6. Milford Township Fish & Game	83.92
7. Miford Township Fire Company	4.42
8. Quakertown Airport	120.60
9. Schools — 70.26	
Pfaff Elementary School	9.56
Tohickon Elementary School	10.39
Trumbauersville Elementary School	11.44
Milford Middle School	38.87
10. Fox Hollow Golf Course	159.18

RESTRICTED LANDS — 5,662 acres

These lands have no binding legal arrangements permanently preventing them from being developed. In some cases, the restriction reflects the owner’s intent to exclude development. In others, there may be a financial benefit, such as tax relief, that could succumb to a developer’s offer. Unfortunately, some of this land has already been developed due to economic hardships or personal reasons, even if their owners might have preferred to exclude development.

Preferential Assessment

Numerous property owners in the township have registered their properties with the county under the preferential assessment programs established by Acts 319 and 515. Regis-

tered properties are assessed as farmland rather than at market value. Both Acts have eligibility requirements based on current use and a commitment to continue that use.

Act 319, the Pennsylvania Farmland and Forest Land Assessment Act, soil classification and yield per acre determine the property value. There are currently 174 parcels, totalling 3,281.45 acres, in Milford Township covenanted under Act 319.

Act 515, the Pennsylvania Open Space Covenant Act, enables a property owner to enter into a covenant with the county that the land will be kept in open space. Act 515 is in the process of being phased out in Bucks County. The program is closed to new applications and it is estimated that all of the covenants will have expired by 2004. Landowners have the option of converting their properties into Act 319. There are 116 parcels, totalling 2,381.93 acres, protected under Act 515 in the township.

Land covenanted under Acts 515 or 319 is considered only temporarily protected because the property owner can terminate the agreement at any time. When a covenant is broken, the property owner is obligated to pay "rollback taxes" (the difference between the taxes under the covenant and what the taxes would have been without the covenant) plus interest for a limited period (5 years for Act 515 and 7 years for Act 319). Even though land assessed under these programs is only temporarily committed to open space it is still an important consideration for open space planning. It shows an intent and interest by the property owners in maintaining the land in an open space use at least for the near future.

Agricultural Security District

Inclusion in the agricultural security district implies a serious commitment on the part of the land owner to continue farming the land. However, there is no obligation or guarantee that farming will continue. 120 properties are included in the agricultural security district comprising 4,328.17 acres or 24.15 percent of the township land area.

CHAPTER FOUR

NATURAL RESOURCES

Growth and development will continue in Milford Township for a variety of practical, economic, and legal reasons. This makes it increasingly important to use controls that help to preserve natural resources and the quality of the environment. The township comprehensive plan's analysis of natural features serves as a basis for regulating the amount of intrusion that may occur in each natural resource. The plan also establishes development districts that direct growth to certain areas reducing the pressure for higher intensity development over vast areas of the township.

NATURAL FEATURES

Geology

The influences of bedrock geology are strong and pervasive. Bedrock, along with the hydrologic cycle, is responsible for the changes in elevation, steep slopes, location of watercourses, and orientation. Orientation, in turn, influences vegetative communities, soils, and availability of sunlight. The geology of the Unami Creek's valleys has created a varied landscape that is interesting and visually attractive.

During the Triassic Period, 150 to 180 million years ago, internal geologic forces determined the basic configurations of the earth's surface and bedrock formations in the Unami Valley. External forces since that time have constantly acted to reshape the earth's surface through the erosion and depositional effects of wind, water, gravity and chemical activity, with their effects evident in the following features:

- Aquifers producing variable groundwater supplies.
- Slopes ranging from gentle to very steep.
- A variety of soil types suitable for woodlands, farming or development purposes.
- The variety of plants and plant materials seen in natural conditions and farmlands.
- The visual character and wildlife habitats created among these natural features.

Milford's bedrock also results in different groundwater yields from one formation to another. In general, wells in Bucks County yield from under one gallon per minute (gpm) in the Diabase to over 30 gpm in the Brunswick. The bedrock in the Unami Valley has produced some wells yielding more than 100 gallons per minute.

The red shale Brunswick formation underlies northern Bucks County. Most of the Unami Valley is within this area of red shale and sandstone, with intrusions of Diabase. Adjoining the Diabase are areas of contact metamorphism where the high heat of the igneous intrusions altered the surrounding rock formations. Finally, very dense siltstone or argillite underlie the northwestern corner of the township. Their influences are described below.

Brunswick Shale and Sandstone

Brunswick shale and sandstone, characterized by reddish brown rock, almost completely underlies the township, contributing to Milford's rolling topography. Secondary openings in the bedrock joints and fractures are the key to adequate groundwater flow. These random

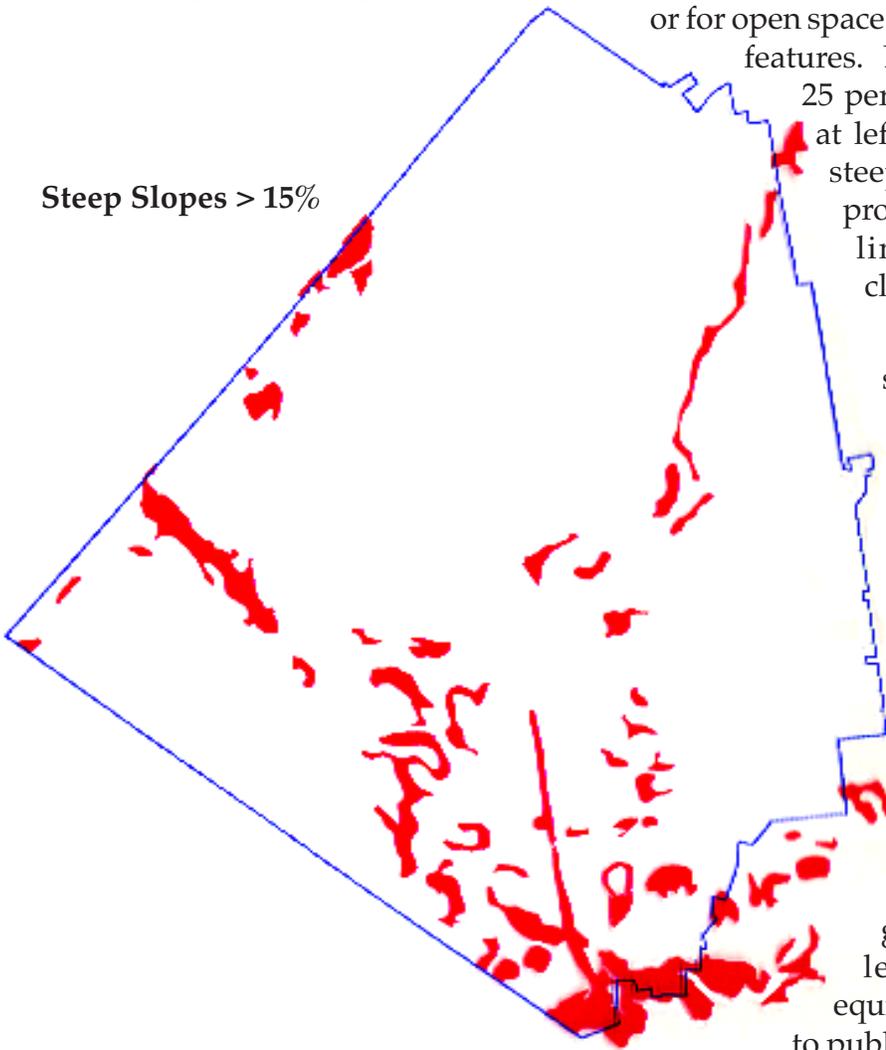
openings are the cause of considerable variance in well yields across the township.

Diabase

Diabase is igneous bedrock which was extruded as molten rock into large cracks in the surrounding Brunswick geologic formation. The intrusions of Diabase, called sills and dikes, are generally narrow (less than a half mile wide, and in some cases only several feet in width). Diabase intrusions have had an interesting effect on the topography of western Bucks County. Most notably are the “Rockhills” extending from Haycock Township westward through the southern end of Milford Township with ridges running northwest along Miller Road and north through Milford Square then along Mill Hill Road. This hard to excavate rock is resistant to erosion, weathering, water infiltration, and groundwater movement. The result is notorious low well yields. Areas of Diabase are often steeply sloped and wooded, with numerous surface rocks and boulders.

Topography

Much of the township consists of gentle to moderate slopes of up to eight percent, which easily accommodates agriculture or development. There are small areas with slopes of eight to 15 percent and greater than 15 percent suitable only for less intensive development or for open space and preservation of natural features.



Land with a slope of 15 to 25 percent, depicted on the map at left, is generally considered steeply sloped and should be protected by regulations which limit development and clearing of vegetation.

Among the steepest slopes in the township are along the main stem of the Unami Creek with characteristic bedrock outcrops. These slopes, with their dense woodlands, are a benefit to air and water quality and provide extensive habitats for wildlife.

The slope and soils present on steep slopes are in balance with vegetation, underlying geology and precipitation levels. Maintaining this equilibrium reduces the danger to public safety posed by unstable

hillsides. Generally speaking, as the slope increases, the depth of topsoil and the ability of the soil to support structures usually decrease. Therefore, development should be limited on steep slopes because the soils are prone to erosion when actively used or where vegetation is removed. When runoff and sedimentation from disturbed slopes increases, public expenditure for flood control and storm water management will also increase. Also, different species of plants and the associated wildlife that depend on these plants may be present only on the slopes in unique habitats.

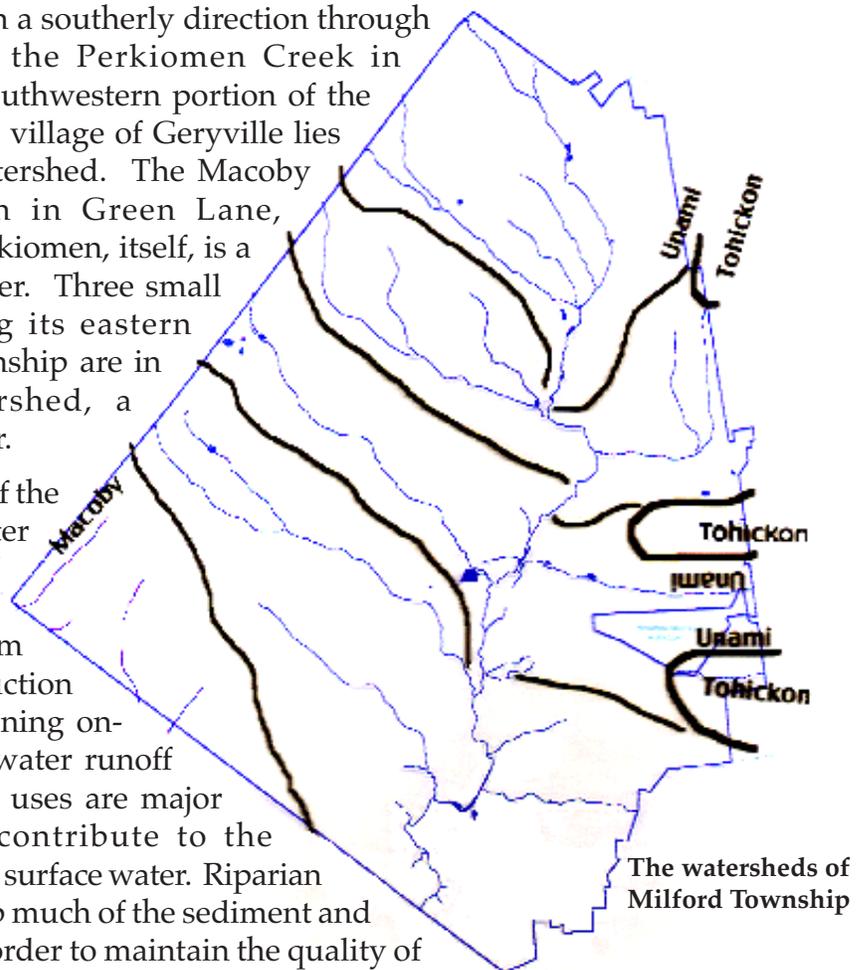
The township's comprehensive plan explains that it is not unduly restrictive to prohibit farming or residential development on steep slopes in the township because there is sufficient gently sloping land available elsewhere. The zoning ordinance contains regulations that limit the extent of development on steep slopes.

Watersheds

The Unami Creek watershed dominates the vast majority of Milford Township. The resulting Unami Creek flows in a southerly direction through the township joining with the Perkiomen Creek in Montgomery County. The southwestern portion of the township in the vicinity of the village of Geryville lies within the Macoby Creek watershed. The Macoby Creek joins the Perkiomen in Green Lane, Montgomery County. The Perkiomen, itself, is a tributary to the Schuylkill River. Three small areas of the township along its eastern boundary with Richland Township are in the Tohickon Creek watershed, a tributary to the Delaware River.

Much of the drainage area of the Unami Creek is rural in character with extensive amounts of farmland. Throughout the entire watershed, sediment from inadequately protected construction sites, effluent from malfunctioning on-lot septic systems and storm water runoff from unprotected agricultural uses are major non-point pollutants that contribute to the degradation of the quality of the surface water. Riparian buffers along watercourses trap much of the sediment and other potential pollutants. In order to maintain the quality of the water in the Unami Creek, riparian buffers must be maintained where they exist and provided where they do not through zoning and land development ordinances. The township's existing erosion control and sedimentation regulations are important to protect water quality.

Another important tool that can be used to protect the quality of surface water is a storm water management plan which would provide a strategy for managing storm water based on the physical and hydrologic characteristics of the watershed. Act 164, the state's



Stormwater Management Act, provides the authority for preparing a stormwater management plan. Bucks County plans to initiate such a plan in 2000.

The township has developed an on-lot sewage disposal systems (OLDS) management program to guard against malfunctioning on-lot sewage disposal systems.

Groundwater Supply

The Brunswick formation is considered to be a reliable source of small to moderate supplies of groundwater. Yields of 100 gallons or more per minute have been reported from wells drilled more than 200 feet deep.

Milford Township has its own water authority and relies on its own wells. However, the Milford water distribution system is interconnected with Trumbauersville and Quakertown boroughs and Richland Township for mutual benefits. Existing sources, new wells, and appropriate expansion of the distribution systems should be capable of supplying the growth areas proposed in the Land Use element of the Milford Township Comprehensive Plan. Outside the growth areas, low densities of development are expected to be compatible with the groundwater supply. Based on the planned land use scheme the groundwater resource should be in balance between withdrawal and recharge. The balance of withdrawal and recharge is helped by the use of on-lot sewage disposal systems, which naturally filter effluent and return approximately fifty percent of water usage for recharge. Spray irrigation of effluent also returns large quantities of water to the aquifer.

It is vital that the groundwater supply be continually replenished. If the locations of prime aquifer recharge areas are identified, such as faults and seeps in the bedrock, measures can be taken to assure that these sites are preserved in their natural state, or at least developed at the lowest intensities to minimize impervious surface coverage. In many cases, these areas may be heavily wooded, located in areas of soils that are not suitable for development (hydric and/or alluvial, explained later in this chapter), or upon slopes that constrain development potential. The more natural constraints that are located in the recharge areas, the more likely that these areas can be preserved through ordinances or innovative development techniques. Recharge of aquifers is a regional process in which recharge areas in one community often supply groundwater that is extracted in another community. Regional cooperation is needed to ensure maximum protection of recharge areas.

Stream Quality

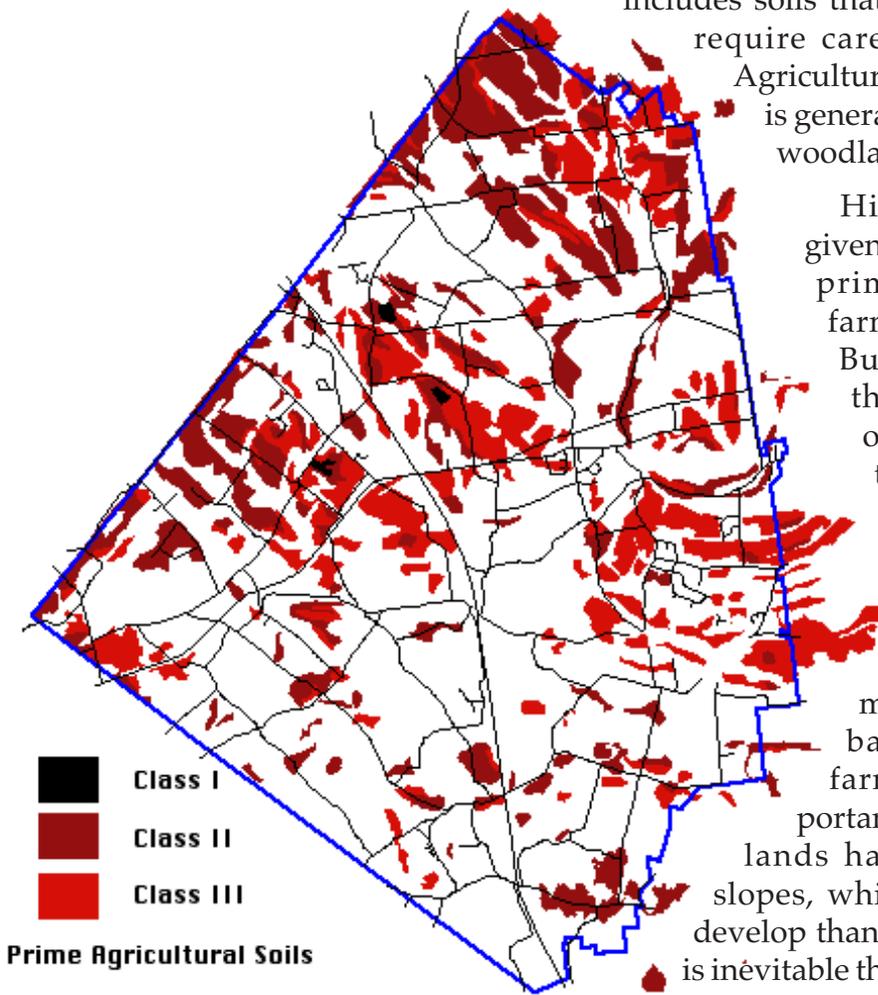
Title 25, Chapter 93 of the Pennsylvania Code contains regulations regarding stream classification. The classification system places emphasis on use and condition of the stream. The classifications cold water fish (CWF) and trout stocking (TSF) have been applied to creeks in Milford Township. For example, a stream with a classification of TSF is heavily protected, so that an application for a package sewage treatment plant must meet stringent water quality standards that will continue to support the trout stocking activity.

Soils

Agricultural Soils

Soils in Bucks County are classified as prime farmland (Class I, II and III, see map on next page), farmland of statewide importance, and 11 categories of other soils, based on the soil's fertility, depth to bedrock or groundwater, texture, erodibility, slope and amount

of large stones. Prime farmland includes deep, well-drained, and mildly sloped soils that can support high yields of crops with little management. Farmland of statewide importance includes soils that support cultivation, but require careful crop management. Agricultural use of the 11 other soils is generally limited to pasture and woodlands.



High priority should be given to continuing farming on prime and important farmlands in the township. But it must be noted that these soils are found not only in rural parts of the township, but also close to the boroughs and near other concentrations of development. In fact, most of the remaining developable lands immediately north of Trumbauersville Borough are farmland of statewide importance. Also, the best farmlands have gentle to moderate slopes, which make them easier to develop than other lands. Although it is inevitable that some farmlands will be developed, strong efforts should be made

to continue farming the better quality farmlands in the non-development areas of Milford Township.

Farmers in Bucks County have expressed varying attitudes toward the future of farming in the county. Many have sold, or are ready to sell their farms to developers, while others struggle to retain farming as a viable industry and way of life. Since there are many factors involved in farmland preservation, municipalities alone cannot do the job. Support from the farmers, residents, and the county, through its farmland preservation program, is necessary. The township has formed an agricultural advisory group to explore methods of keeping farming viable in the township and develop a program for these purposes. This is more likely to be successful if it is coordinated with other communities in the region.

Development has occurred on prime and important farmland soils identified in the 1967 soil survey. If these areas are deleted from the agricultural soil map, the extent of prime and important farmland is significantly reduced. If the locations for new development are chosen carefully, the amount of good farmland lost to new development can be minimized, especially in the low-density areas.

Under current zoning regulations, land in the low-density areas of Milford Township can be subdivided into residential lots of two acres or more, which can use up farmlands

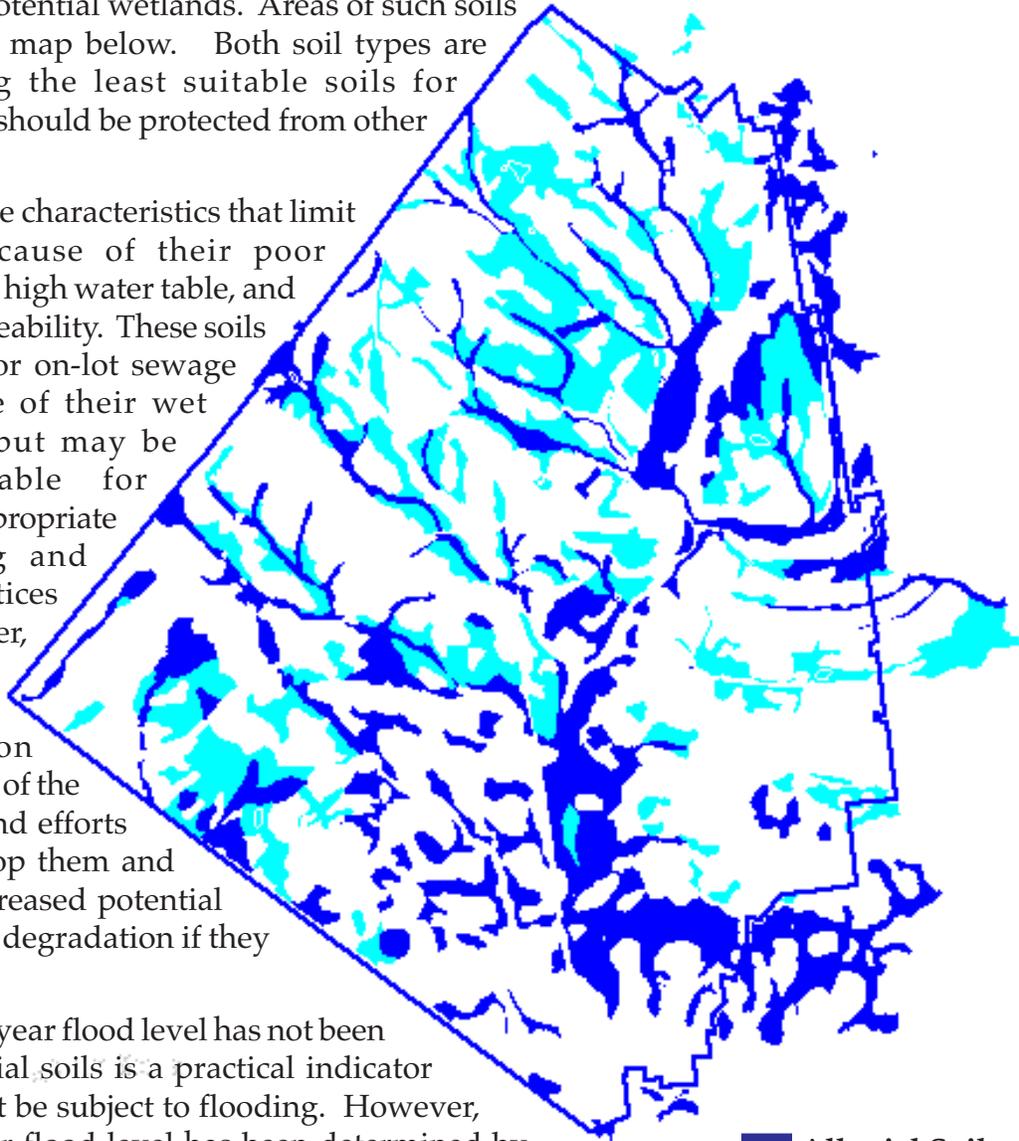
rapidly. If cluster regulations or another form of flexible development are applied to low density areas proposed under the township's Land Use Plan, then residential subdivision can be done at the same low densities, while saving vast areas that may include good farmlands. Developers should be encouraged to work with the township and local farmers to locate new residential lots away from the better agricultural soils.

Alluvial and Hydric Soils

Alluvial soils were deposited in floodplains, while soils with major hydric components are indicators of potential wetlands. Areas of such soils are shown on the map below. Both soil types are generally among the least suitable soils for development and should be protected from other encroachments.

Other soils have characteristics that limit construction because of their poor drainage, seasonal high water table, and slow rates of permeability. These soils are not suitable for on-lot sewage disposal because of their wet characteristics, but may be otherwise suitable for development if appropriate site engineering and construction practices are used. However, it would be better to avoid development on these soils because of the additional costs and efforts required to develop them and because of the increased potential for environmental degradation if they are developed.

Where the 100-year flood level has not been determined, alluvial soils is a practical indicator of areas that might be subject to flooding. However, where the 100-year flood level has been determined by accepted engineering methods, the alluvial soil limits should not be used to define floodplain. Alluvial soils are unsuitable for development purposes and the 100-year floodplain presents real dangers from flooding. Therefore, alluvial soils and 100-year floodplains should be avoided.



Vegetation and Wildlife

The following was prepared by the the Morris Arboretum of the University of Pennsylvania.

Bucks County Natural Areas Inventory Milford Township

Milford Township is located in the northwest corner of Bucks County. Towns include Milford Square and Spinnerstown. Major highways which bisect the township include the Northeast Extension of the Pennsylvania Tumpike and Route 663.

Milford Township is almost entirely within the Unami Creek watershed. The northern part of the township (above Rt. 663 roughly) is underlain by Brunswick Formation shales and is almost entirely agricultural. Much of the area below Rt. 663 is part of the diabase belt of upper Bucks and Montgomery Counties. This boulder-strewn region is mostly wooded with low density residential and several large camp properties dominating the land use. Extensive riparian forests, swamp forests, shrub swamps, and floodplain wetlands occur along the Unami and the larger tributaries in the diabase region.

An extensive area of floodplain also extends along the Unami Creek between Allentown Road and the turnpike, part of which is a golf course and part cultivated. More floodplain exists from the mill dam on the Unami Creek at Nursery Road to Upper Ridge Road at Finland.

Major Natural Vegetation Types

The following classifications are based on *Vegetated Natural Communities of Pennsylvania* by Jean Fike, report to DCNR, Bureau of Forestry, Harrisburg, PA., September 1998.

Tuliptree-Beech-Maple Forest

Sugar Maple-Basswood Forest

These two similar upland forest types are found on slopes and other well-drained areas in the diabase region and on north- and east-facing slopes above waterways in the shale region. Dominant species include:

American beech	<i>Fagus grandifolia</i>
Basswood	<i>Tilia americana</i>
Red oak	<i>Quercus rubra</i>
Sugar maple	<i>Acer saccharum</i>
Tuliptree	<i>Liriodendron tulipifera</i>
White ash	<i>Fraxinus americana</i>
White oak	<i>Quercus alba</i>

Red Oak-Mixed Hardwood Forest

This forest type occurs as scattered wood lots on uplands in the northern half of the township. Dominant species include:

Mockernut hickory	<i>Carya tomentosa</i>
Red oak	<i>Quercus rubra</i>
Shagbark hickory	<i>Carya ovata</i>

Tuliptree
White oak

Liriodendron tulipifera
Quercus alba

Conifer Plantations

These are planted stands, not a natural forest type.

Norway spruce

Picea abies

Successional Red Maple Forest

This forest type occurs on low, wet sites, often in riparian zones. Young red maple forests, especially those on diabase, often include red cedar which represents an earlier phase of succession.

Red cedar
Red maple
Tuliptree
White ash

Juniperus virginiana
Acer rubrum
Liriodendron tulipifera
Fraxinus americana

Bottomland Oak-Hardwood Palustrine Forest

This forest type occurs mainly on diabase, in extensive flat areas along some of the smaller tributaries. Dominant species include:

American elm
Pin oak
Red maple
Shagbark hickory
Swamp white oak

Ulmus americana
Quercus palustris
Acer rubrum
Carya ovata
Quercus bicolor

Silver Maple Flood Plain Forest

Sycamore-River Birch-Box Elder Flood Plain Forest

These flood plain forest types are found in along stream courses throughout the township, the width of the flood plain forest varies with the topography. Dominant species include:

Black walnut
Box elder
Hop hornbeam
Pin oak
River birch
Shagbark hickory
Silver maple
Sycamore

Juglans nigra
Acer negundo
Ostrya virginiana
Quercus palustris
Betula nigra
Carya ovata
Acer saccharinum
Platanus occidentalis

Buttombush Wetland

Alder-Ninebark Wetland

These shrubby wetlands are common in the Diabase region. Characteristic species include:

Alder
Arrowwood
Buttombush
Elderberry

Alnus incana var. serrulata
Viburnum recognitum/V. dentatum
Cephalanthus occidentalis
Sambucus canadensis

Red-twig dogwood	<i>Cornus amomum</i>
Silky dogwood	<i>Cornus racemosa</i>
Spicebush	<i>Lindera benzoin</i>
Swamp rose	<i>Rosa palustris</i>
Willow	<i>Salix spp.</i>
Winter-berry holly	<i>Ilex verticillata</i>

Tussock sedge marsh

Mixed forb marsh

These herbaceous marsh communities often occur in openings within the shrubby wetlands above. Characteristic species include:

Marsh marigold	<i>Caltha palustris</i>
Reed canary grass	<i>Phalaris arundinacea</i>
Sedge	<i>Carex bromoides</i>
Sensitive fern	<i>Onoclea sensibilis</i>
Skunk cabbage	<i>Symplocarpus foetidus</i>
Sweet flag	<i>Acorus calamus</i>
Touch-me-not	<i>Impatiens capensis/l pallid</i>
Tussock sedge	<i>Carex stricta</i>

Existing Township-Owned Protected Areas

- Along Unami Creek above Allentown Road
- Along Molasses Creek just below Rt. 663
- Along Butter Creek above the vacated section of Benner School Road

Highest Priority Sites Identified by the Natural Areas Inventory

Unami Creek from Upper Ridge Rd to the Montgomery County line (Kauffman property)

This site consists of forested slopes on diabase with rock outcrops and several small streams and seeps. The Unami Creek flows through the site and is bordered by flood plain forest with a complex of scoured back channels, pools etc. This site is a continuation of the Unami Hills area of Montgomery County, which was identified as a major priority for preservation in the Montgomery County Natural Areas Inventory.

Rare species found in 1997-1998 field surveys include Pineland pimpernel (*Samolus parviflorus* - PE*), a small plant of muddy stream banks, Allegheny River skimmer (*Macromia allegheniensis* - G4*, SH*), a rare dragonfly, and eastern floater (*Pyganodon cataracta* - /S2JS3*) a freshwater mussel.

Butter Creek corridor from the boundary with West Rockhill Township to the confluence with the Unami Creek. This site contains a mosaic of swamp forest, shrub swamp, herbaceous marsh, successional red maple forest and wooded slopes. It is continuous with the Heritage Conservancy's Manderfield Preserve on the upstream end. No rare species have been identified within this site, however, several bog turtles (*Clemmys muhlenbergii* - LE*) have been collected on nearby roads in the past few years.

Second Level Sites

Unami Creek Flood Plain /Riparian Areas Between Upper Ridge Rd and Allentown Rd

This stretch of the Unami includes extensive flood plain, some of it cultivated, some in a golf course and other scoured areas. Wooded slopes with Tuliptree-beech-maple forest occur below Allentown Road. A 1997 survey of fish documented high native fish diversity (15 species) in the Unami Creek in the vicinity of Allentown Road (Criswell, 1998).

Hazelbach Creek corridor

The Hazelbach Creek corridor is typical of diabase streams, with extensive wooded, shrubby and herbaceous wetlands forming a mosaic of habitat which includes amphibian and reptile habitat. A bog turtle found on Old Plains Road in May 1998 may have come from wetlands in the Hazelbach Creek corridor.

Watershed Protection

Well-drained areas of permeable soils, headwaters, small tributaries, riparian strips and buffers are all important to the health of streams. Healthy aquatic ecosystems downstream are dependent on maintaining areas of permeable soils for purpose of ground water recharge. Ground water maintains stream flow year round. Riparian buffers also help to reduce erosion and siltation and protect water quality in streams. When development occurs, ~~impervious surfaces increase runoff causing~~ frequent scouring, erosion, and siltation. Reduced permeability reduces ground water, reduces base flow, and also reduces ground water available for human use. Thus a program of farmland protection and riparian restoration throughout the watershed is a necessary part of preserving natural areas that are based on water resources.

**Status rankings for rare species*

LE - listed as endangered under the Federal Endangered Species Act

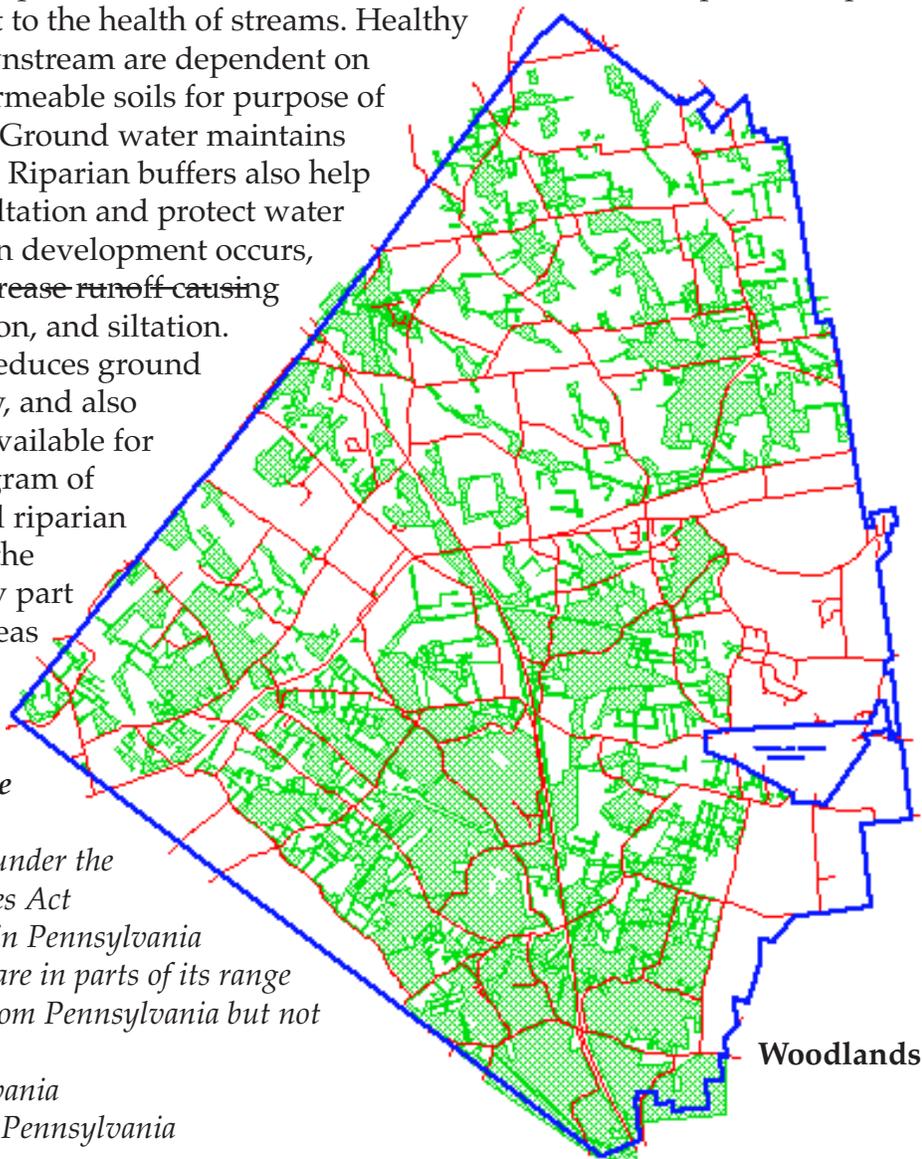
PE - listed as endangered in Pennsylvania

G4 - secure globally, but rare in parts of its range

SH - known historically from Pennsylvania but not collected recently

S2 - imperiled in Pennsylvania

S3 - rare or uncommon in Pennsylvania



Woodlands

Milford Township has extensive woodlands as shown at right. The types of woodland found in the township largely result from the previously discussed environmental features. Cultural reasons for the locations of the existing woodlands include the fact that farmers will not cultivate lands that are too steep, too rocky, or too wet. If farming were stopped on the gently sloped, less rocky and drier soils, then natural succession of vegetation would eventually result in woodlands.

The types of trees found within the woodlands vary with soil conditions, slopes, and solar orientation. For instance, the soils on north facing slopes will tend to be cooler and moister than south facing slopes, as a result of the shorter period of exposure to sunlight. As a result, northern slopes tend to have more softwood, such as pines and hemlocks, but will also have some hardwoods. The southern slopes tend to have more hardwoods, such as tulip, poplar, ash, oak, beech, and black walnut.

Woodlands, particularly large contiguous tracts, serve both functional and aesthetic purposes. Generally, woodlands prevent soil erosion, particularly in areas of steep slopes and shallow soils, thereby reducing siltation and minimizing non-point source pollution. They also provide natural buffer areas around surface water features, habitats for wildlife, and offer recreation and educational opportunities for residents. In addition, woodlands create a scenic quality to the landscape that cannot be quantified, but adds an intrinsic value that enhances the character of the community.

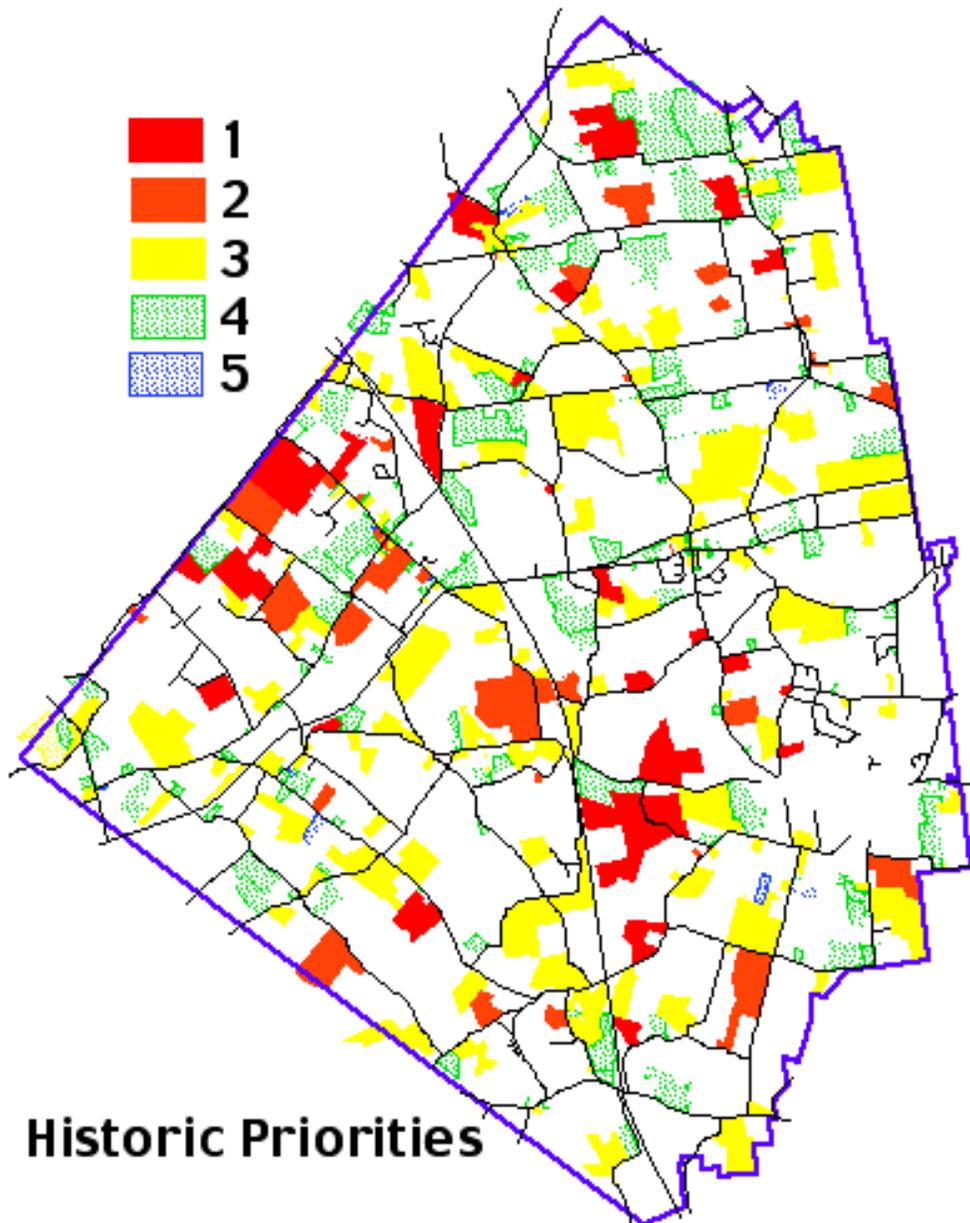
Woodlands make “corridors” that provide cover for wildlife movement and migration. These include hedgerows and larger woodland connections, such as those found along stream valleys. These areas also provide important shelter and foraging opportunities for wildlife. Hedgerows, also contribute to the scenic quality and serve as a barrier to soil erosion. These areas are often found along roads, property lines, and separating fields within one property. In a community such as Milford Township, preserving these types of woodlands will help to maintain the rural quality that defines the area.

The largest contiguous wooded area within Milford Township is almost entirely congruent with the existing Diabase geology and areas of steep slopes. This area stretches along the southern border with West Rockhill Township and contains some of the only Class One Forest Land in the county.

Because of the type and regional importance of the extensive woodlands, every effort should be made to preserve this valuable resource intact. Soils in this area are thin, of low fertility, stony, contain large rock outcrops, and their clay sub-soil is typically covered with a humus layer of less than one inch thick, which is very prone to erosion once exposed. Not only does this forest cover protect the steep areas from erosion, it also allows the groundwater to be replenished by slowing down surface run-off. The forest also acts as a natural buffer for surface water traveling through the watershed on its way downstream. The forest cover helps filter out pollutants and sediments before they can make their way into the larger regional watercourses. The extent of the forest also encourages and provides for wildlife habitat and scenic quality that helps to define Milford Township. Development within the forest area, even at low densities or along its edges, can significantly change the

forest's characteristics. Removal of trees alters the ecology by exposing areas to greater effects of wind, sunlight, erosion, and other factors that can encourage competing plant species or cause physical damage that would not have otherwise occurred. Clearing of woodland cover, and the important understory and herbaceous cover, can also have severe impacts on erosion and sedimentation, while increasing the potential wind throw hazard to which shallow rooted trees are vulnerable.

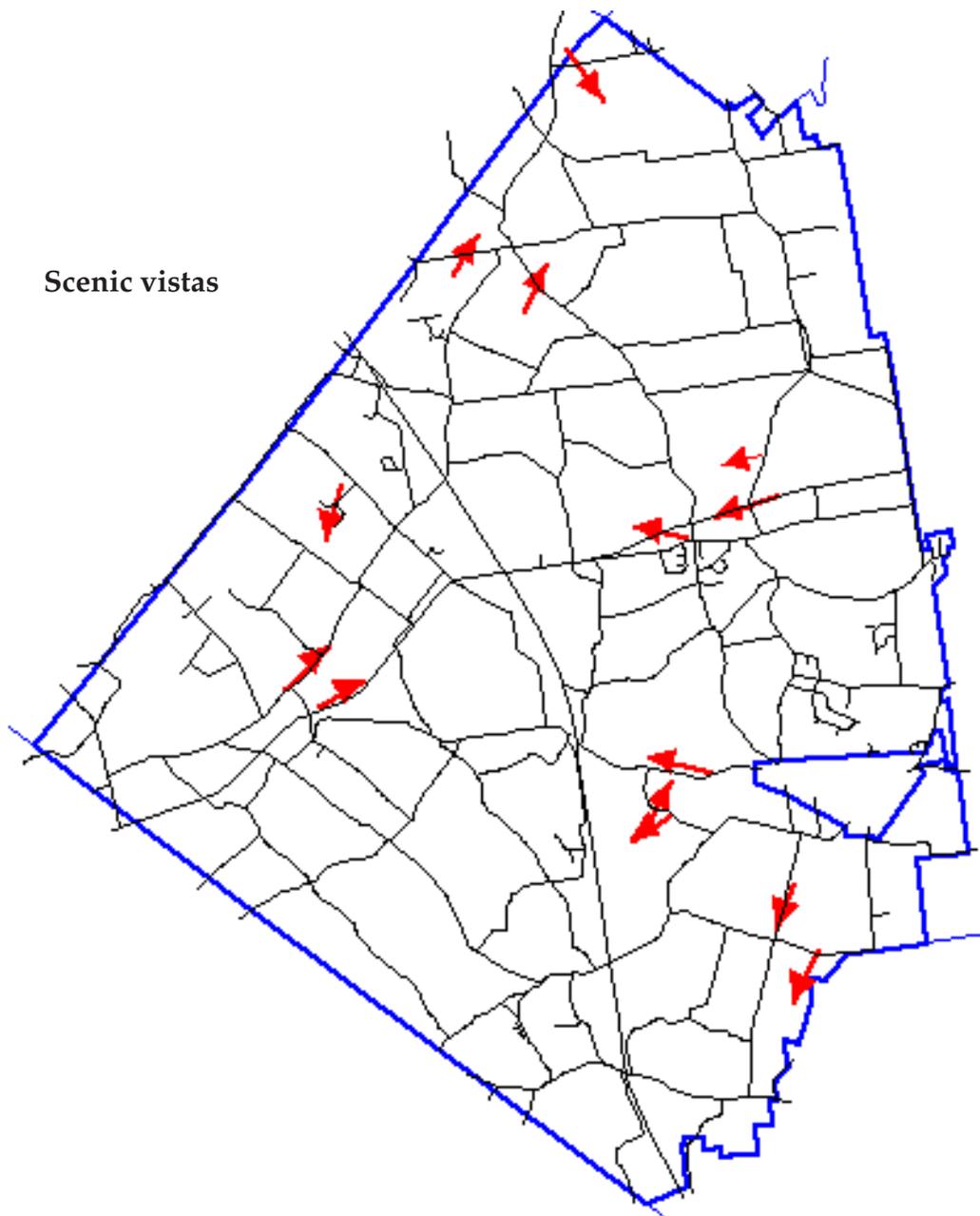
Remnants of woodlands are scattered throughout Milford Township as a result of development and agricultural practices on a landscape that was once entirely forested. These remnants of the once expansive forest stand are also important for habitat and buffering, particularly along creeks. Many of the smaller woodland areas are not large enough to sustain wildlife, but when they are connected by hedgerows or other natural links, they form important corridors for wildlife migration. These areas also lend a rural quality to the landscape by being located in areas that are being predominantly used for agriculture. There are some soils in the remnant area suitable for agriculture. However, many of these areas also exhibit shallow depth to bedrock



and are more protected with woodland cover.

HISTORIC AND CULTURAL RESOURCES

Historic sites and sites of local cultural significance in Milford Township includes old farmsteads and churches that contribute to the rich cultural heritage of rural Milford Township. These sites are inventoried in and assigned priorities in a separate study done by the Bucks County Conservancy (now Heritage Conservancy). There are currently no known resources listed as National Landmarks or on the National Register of Historic Places and no known pending applications. While there are currently no documented significant archaeological sites or ruins designated in the township, the Unami contains ancient vestiges of the Lena'pe culture in the remains of spiritual stone circles, mounds, medicine bowls and shelter sites.



CHAPTER FIVE

POTENTIAL OPEN SPACE LINKAGES

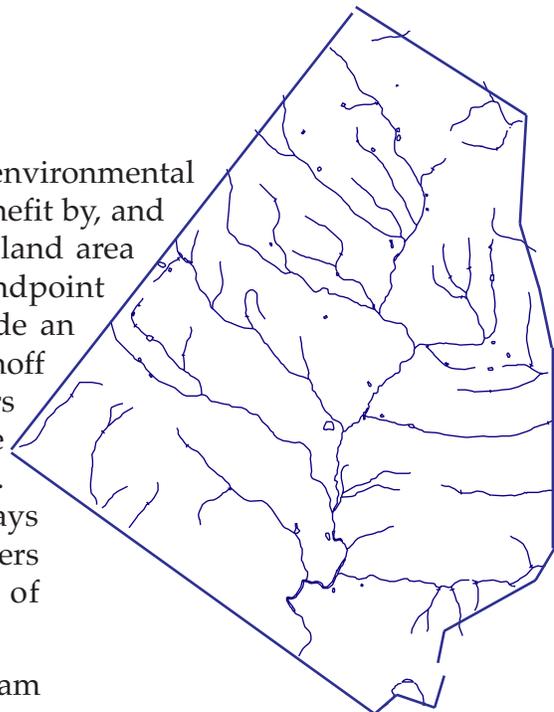
Creation of a linked open space system in Milford Township is not a new concept. In 1981, the Quakertown Area Planning Committee prepared the Quakertown Area Linked Open Space Plan which the township endorsed. That plan proposes a network of greenways and interconnected links throughout the six-municipality Quakertown area. As stated in the plan, “[t]he linked open space system would consist of open areas connecting residential areas with recreation areas, community facilities, schools, general purpose parks, playgrounds, shopping areas, and employment centers.” The system is also a mechanism for achieving the goal of protecting the natural resources associated with stream corridors such as floodplains, wetlands and riparian buffers. The Quakertown Area Linked Open Space Plan has been an important part of the land use planning program in Milford Township and is therefore an important component of this plan.

Links or greenways along stream corridors and other appropriate routes will also function as linear parks providing trails for hiking or biking or access to fishing areas or areas with special botanical or wildlife habitats. Most residents live within one-half mile of a potential greenway and therefore would have easy access to a trail as a “jumping off point” to their destination.

The Quakertown Area Comprehensive Plan advocates the protection of natural resources when development of any type is proposed in the township. As the implementing tool of the comprehensive plan, the township’s zoning ordinance also contains provisions requiring the protection of natural resources. These regulations require that development not intrude into wetlands or floodplains and severely limits intrusion on steep slopes and in woodlands. Thus, the regulations already provide a high level of protection. In addition, the comprehensive plan and zoning ordinance promotes and encourages cluster-type development for new residential neighborhoods. Cluster development locates the houses on the portion of a site suitable for housing and preserves the areas of natural resources as permanent open space.

STREAM CORRIDORS

The use of stream corridors for recreation and environmental protection are complimentary concepts that will benefit by, and function better with, the preservation of sufficient land area paralleling their courses. From an ecological standpoint greenways along streams (riparian buffers) provide an opportunity to filter pollutants from storm water runoff before it can enter the stream. Wooded riparian buffers also provide habitats for wildlife, offer attractive scenic views and are a pleasant place for trails. Therefore, the development of a system of greenways can be combined with efforts to preserve riparian buffers along the stream corridors and the protection of groundwater recharge areas.



In establishing an open space link along a stream

corridor, the minimum width should be at least equal to the width of the floodplain. At the same time, the floodplain should be examined to determine if it provides an adequate riparian buffer and can accommodate a trail. If not, additional land should be included. Also, steep slopes and protected woodlands contiguous with, but outside of the floodplain, should also be included. As a result, the minimum width of the greenway will vary along its length depending upon the physical characteristics of the stream and adjoining land. To allow for public access to these open spaces, stream corridors and greenways, the township or an open space conservation or recreation-oriented organization can acquire easements or titles as appropriate.

The vast majority of Milford Township lies within the Unami Creek watershed. This provides an excellent opportunity for Milford to extend its greenway system along the Unami Creek into neighboring municipalities; to the north into Lehigh County and to the south into Marlborough Township, Montgomery County. In three small areas along the border with Richland Township and Quakertown Borough, the Tohickon Creek watershed extends into Milford affording the opportunity for a connection to the east. To the southwest, the Macoby and Stony Run creeks flow into Upper Hanover Township. To the southeast, Butter Creek extends into West Rockhill Township allowing a greenway connection with that community.

UTILITY AND OTHER POTENTIAL CORRIDORS

Seven major utility corridors criss-cross the township. Some of these could provide short vital links in the system or alternative corridors in themselves. Use of these corridors as open space linkages must be in accord with each utility's rules and regulations and may not be permanently guaranteed. In some areas, road corridors will be needed to complete linkages. This practice must be kept to a minimum due to the narrow shoulders along most township roads, although some shoulders can be widened or easements acquired where necessary.

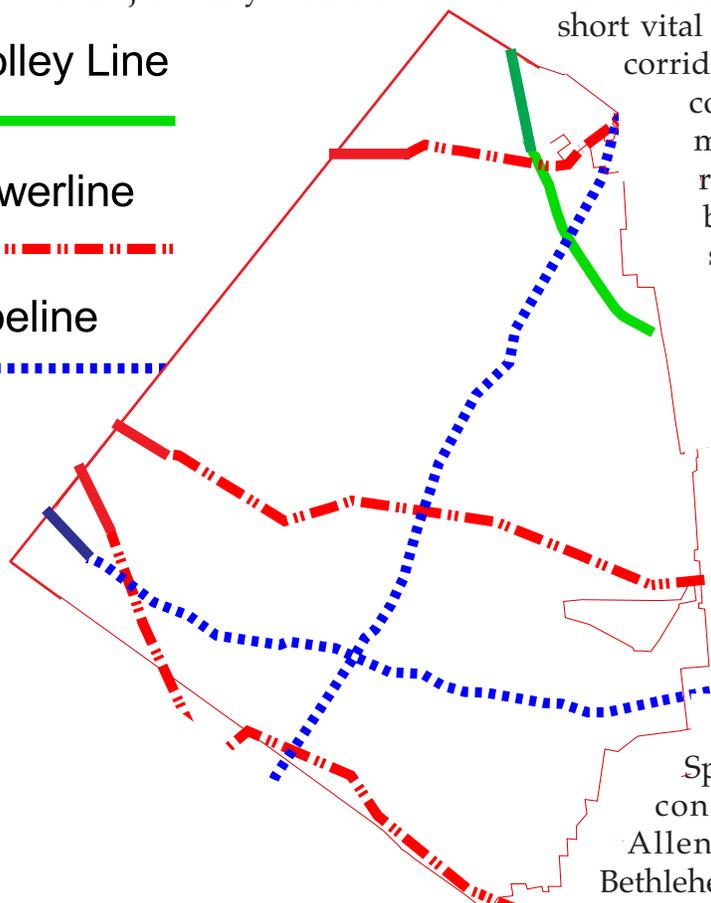
Trolley Line



Powerline



Pipeline



The abandoned right-of-way of the Liberty Bell trolley line is a potential for trail development that was not part of the Quakertown Area Linked Open Space Plan. The trolley line, which connected Norristown with Allentown, roughly parallels Old Bethlehem Pike through the northeastern corner of the township.

A group of municipal and civic officials in the North Penn area are already studying the establishment of a pedestrian/bicycle trail along their portion of the old line. Milford Township supports this effort.

LINKAGE OWNERSHIP AND MAINTENANCE

Open space linkages will be owned and maintained by the municipality, a homeowners association, a non-profit conservancy or land trust, or an individual when an easement has been established for the link. When a utility right-of-way is selected as a greenway the utility company will retain easement rights granting to the township the right to use it as a trail. Public access will then be negotiated with and approved by the property owner.

CHAPTER SIX
GROWTH AREAS

RESIDENTIAL GROWTH AREAS

It is Milford Township's policy to direct growth toward *Development Areas* where available infrastructure can accommodate the demand. As currently sized, the *Development Areas* provides adequate room for the projected 2020 population with significant additional capacity in the *Reserve Areas*. This additional capacity would not encroach on the low density *Resource Protection Areas* of the township which supports preservation of open space and natural resources in the non-growth areas, while performance zoning and clustering provide a method to retain open space within the growth areas.

Based on regional population growth projections by the Bucks County Planning Commission, Milford Township's population could grow from 7,360 persons in 1990, to between 12,300 and 15,450 persons by 2020, an increase of up to 8,090 residents. With a projected average household size of 2.75 in 2020, those additional residents would require 3,193 new dwelling units.

The township has designated the Spinnerstown and Milford Square areas for medium density and north of Trumbauersville for low density residential growth on its Land Use Plan. The opportunity to build a variety of reasonably priced housing in these areas will retain an overall balance of housing types. Clustering and open space provisions are encouraged in both the low and medium density areas.

Although most dwelling units needed for the 2020 population will be built in the growth areas, it is reasonable to expect that some will be built in the low density *Resource Protection Areas*. This presents a considerable challenge to preserve open space for public use by avoiding "cookie-cutter" housing dispersed throughout the subdivision. One important element of Milford Township's planning program is the requirement to perform site capacity calculations that recognize and exclude from development sensitive natural resources. By clustering dwellings on smaller lots a maximum amount of contiguous open space can be preserved.

NON-RESIDENTIAL GROWTH AREAS

The Land Use Plan also provides sufficient areas for non-residential growth. Bucks County Planning Commission projections and data from the Quakertown Area Comprehensive Plan of 1992 were used to compare the needs projected for 2020 and the capacity provided under the Land Use Plan. The resulting calculations show that there is sufficient land to accommodate non-residential growth through the next 20 years.

Two areas along Route 663, totaling 318 acres, have been delineated in the Land Use Plan for commercial, office or industrial purposes. Based on regional employment projections by the Bucks County Planning Commission, Milford should have sufficient land available to accommodate non-residential growth through 2020

Since there are no legislative or court-determined "fair share" standards for non-residential uses, the methods used to project future demand for employment may not be as reliable as those used for projecting residential growth. But the fact that the demand projected by BCPC is essentially the same as provided under the Land Use Plan is considered a confirmation of the suitability of the area provided on the Land Use Plan.

CHAPTER SEVEN

EVALUATION OF OPEN SPACE NEEDS

As the population of the township increases so will the need for a greater diversity of recreational activities. Ultimately, the township will be required to expand and convert parts of its open space into active and passive recreational facilities.

While facilities for active recreation are desirable and necessary, linear greenway links are also needed. Currently in Milford there are no trail systems allowing for safe passage of residents between developments, schools, commercial districts or the like. With many narrow, winding roads throughout the township, pedestrians and bikers are forced uncomfortably close to passing vehicles as they make their way along roadways. Linear greenways will help to eliminate the problem. These linkages will also play a role in determining the location and activities available at the township's new recreation areas.

Milford Township must be proactive in acquiring lands and linkages to ensure, where appropriate, the lands remain open to the public. Reliance on private or semi-public facilities to provide recreation opportunities for residents could be a vulnerability. Methods should be sought, even for lands in the public domain, to guarantee that they will remain as open space for the long-term. However, short-term reliance on private and semi-private facilities to supplement the needs of the residents may be necessary. This could allow the township to systematically add open space to complement its facilities as opportunities arise rather than being pressured into unwise decisions to fulfill its needs.

EXISTING RECREATION FACILITIES IN MILFORD TOWNSHIP

Two public parks, a 22-acre neighborhood park and a 60-acre community park currently serve township residents. A variety of activities, including volleyball, basketball, baseball, sledding, handball, hiking, playgrounds, picnicking and ice-skating, are available at these facilities. In addition, a running track, tennis courts and playing fields are available at the Milford Middle School and playgrounds are located at Pfaff and Trumbauersville Elementary schools. Two mini-parks, totaling about six acres, are under development in the Valley View Estates Subdivision.

MILFORD'S GOALS AS STATED IN THE COMPREHENSIVE PLAN

As stated in the Quakertown Area Comprehensive Plan, Milford Township is obligated to protect the people's right to clean air, pure water and other natural and historic resources and to guarantee a quality environment for present and future residents. To that end, Milford encourages useable open space in intensive residential developments that is adaptable for active or passive recreation. That goal allows, and in some instances demands, the building of centralized capital-intensive recreation facilities near housing developments where they are needed and desired.

Determining the Demand

To ensure sufficient recreational opportunities for current and future residents, Milford must know how much parkland will be needed to satisfy all of the recreational demands. Determining that demand is the first step for planning acquisition and development of parkland and facilities. These projections are based on population ratio standards and general location guidelines and are expressed in terms of land area and types and number of parks needed.

Population Ratio Standards Used to Project Demand

The National Recreation and Park Association (NRPA) has developed ratios that relate recreational demand to population size and serve as guidelines that indicate how much municipal parkland is ordinarily needed to serve each 1,000 residents.

The NRPA guidelines include three categories of municipal parks — mini-parks, neighborhood parks and community parks. A mini-park provides recreational facilities on a limited or isolated basis, or for unique needs, and is usually located within residential neighborhoods. Generally, a mini-park is between 2,500 square-feet and one acre, however, a park less than five acres is considered a mini-park.

Neighborhood parks are the basic unit of a municipal park system serving as the recreational and social focus of a community. These parks should be designed for both active and passive recreational activities. An important criterion in designing a neighborhood park should be in the accommodation of a wide variety of age and user groups. A prime consideration in the selection of a site for a neighborhood park is ease of access via road networks and greenways. The site should have physical characteristics appropriate for both active and passive recreational uses and should have innate aesthetic qualities. Recreational facilities such as field games, playground equipment and picnicking are provided in a neighborhood park. Such a park can be developed as a joint venture between the municipality and the school district. The NRPA suggests that in general a neighborhood park be five to ten acres in size.

A community park serves a broader purpose than a neighborhood park. For this type the focus is on the recreational needs of the municipality as a whole. The park should provide for group activities and, as in neighborhood parks, should have provisions for active and passive recreational opportunities. The NRPA guidelines set the optimal size of a community park at between 20 and 50 acres. A site for a community park should have access to an arterial or collector road and have the potential to be connected to a trail system. Natural features play an important role in selecting a site for a community park. For the active recreational facilities soils, topography and drainage are important considerations. Woodlands, steep slopes, watercourses and bodies of water provide opportunities for passive recreation and preservation of natural features.

When applying the NRPA criteria to Milford Township it must be remembered that they are only guidelines providing general indications of the land area that should be available for recreational purposes. The criteria presented in the following table are a broad range allowing for the varying conditions and circumstances that exist in the municipalities throughout the country. Ultimately, what is most important in meeting the recreational needs of the residents are the facilities provided not the land area. There-

fore, the table's estimates are only a general indication of the parkland needed in Milford Township for planning purposes.

NRPA Guidelines As Applied to Milford Township

Population	Mini-Park .25 - .5 ac/1,000	Neighborhood Park* 1.0 - 2.0 ac/1,000	Community Park* 3.0 - 8.0 ac/1,000
1990 Census 7,360	1.8 – 3.6 acres	7.4 – 14.7 acres	22.1 – 58.8 acres
1997 estimate 8,837	2.2 – 4.4 acres	8.8 – 17.6 acres	26.5 – 70.7 acres
2000**			
Low Range 8,690	2.2 – 4.4 acres	8.7 – 17.4 acres	26.0 – 69.5 acres
Mid Range 8,970	2.2 – 4.5 acres	8.9 – 17.8 acres	26.9 – 71.8 acres
High Range 9,120	2.3 – 4.5 acres	9.1 – 18.2 acres	27.4 – 72.9 acres
2010**			
Low Range 10,570	2.6 – 5.3 acres	10.6 – 21.1 acres	31.7 – 84.5 acres
Mid Range 11,090	2.8 – 5.5 acres	11.1 – 22.2 acres	33.3 – 88.7 acres
High Range 11,640	2.9 – 5.8 acres	11.6 – 23.3 acres	34.9 – 93.1 acres
* Source: National Recreation and Park Association			
** Source: Bucks County Planning Commission's Population Projections			

PARKLAND NEEDS IN MILFORD TOWNSHIP

The table above reveals that there is no immediate or short-term need for additional parkland in Milford Township. Based on the estimated 1997 population, the combined parkland needs for mini, neighborhood and community parks ranges from 37.5 to 92.7 acres. The 82.86 acres of parkland available in Milford Township is within the range and four acres less than the high range.

Using the mid range population projection for 2000, the guidelines suggest an increase of only six acres for the total of the three types of parks. For the long-term, to 2010, the guidelines increase to 116.4 acres for the mid-range population projection. Based on these results, township officials should consider acquiring an additional 30 to 35 acres of land for parks in the next ten years.

According to NRPA standards, a municipality should provide an average of 8.5 acres of developed, active parkland per 1,000 residents.

Using the 8.5 acres of developed parkland ratio, Milford, with 82.86 acres of developed parkland and a 1997 population of 8,837, provides about 9.4 acres of parkland per 1,000 residents or 0.9 acres more than desired.

The 82.86 acres of developed parkland in Milford will fall below the 8.5-acre ratio when the population reaches 9,748; a population expected by about 2005. The township will need 98.94 acres, or 16 more acres, to meet an estimated high population of 11,640 by 2010. Should development maintain the accelerated pace of the mid-1990s, by 2020 the population could reach 15,450. Milford will then need to maintain 131 acres of developed parkland to satisfy the needs of its residents.

Should Milford's population reach 15,450 by 2020, the overall density of the township will climb to 550 residents per square mile, still well within the six acres of parkland per 1,000 resident ratio.

Another NRPA guideline is that a municipality with a population density of less than 1,000 persons per square mile provide six acres of parkland per 1,000 residents. Milford, with a 1997 ratio of 314.9 residents per square mile, easily falls within this density classification and should remain there for quite some time in the future.

At this point, three questions should be evaluated in terms of the park facilities in Milford Township.

- 1) What facilities are currently available;
- 2) What facilities are needed to meet the demands of the township residents; and
- 3) What is the remaining potential of the 82.86 acres to accommodate additional facilities to meet the current needs?

The analysis needed to answer these questions can best be handled with the preparation of a park and recreation plan. A park and recreation plan will provide the township with a comprehensive analysis of the park and recreation needs in the township for the current population and to outline a strategy for providing the necessary facilities and programs.

PARKLAND LOCATIONS

Most of the township's population live in areas shown as low-density non-growth areas on the Land Use Plan. Numerous farms, large rural lots and scattered concentrations of homes on lots of one acre or more, attest to the resident's desire to take advantage of the township's attractive, spacious, rural character. While these characteristics may be desirable to township residents, the low density, limited number of homes and sometimes remote locations do not strongly support provision of developed township parks in those areas at this time.

However, most of the new residential development is anticipated to occur within the growth areas designated on the Land Use Plan. These new homes will be built at high enough densities and in sufficient numbers to require conveniently located mini and neighborhood parks. Therefore, a plan for these future facilities and a strategy for providing lands and facilities in the interim period are needed. That plan should satisfy current and future recreation demand with public parks and private facilities to serve residents in all areas of the township.

Milford also desires linkages between the existing and future developed parks. Numerous undeveloped lots throughout the township allow for the acquisition of narrow portions of the land, most likely along stream corridors or adjacent to significant natural features (wetlands, steep slopes, woodlands, etc.) requiring protection. These linear greenways will be used for biking and hiking trails between the parks and throughout the township without significant encroachment on the landowner.

PARKLAND PRIORITIES

Milford Township has set two priorities for acquiring open space for public access. Each priority has equal footing in the overall plan since each must be met to complete the envisioned design. As land becomes available or desirable for acquisition, objective tools such as the Open Space Land Evaluation System (see chapter 10), the goals and objectives of the Open Space Plan and the cost will be factored. Subjective weights will also factor into the equation. Those weights will include, but are not limited to, the location of the parcel and necessity of fulfilling a portion of the plan.

One priority is acquisition of linear greenways. In addition to their value as natural features, stream corridors, woodlands and steep slopes, they are resources worthy of protection for active and passive recreation throughout the township. While it is understood that much of this land cannot be developed and is therefore already functionally open space, the township desires to acquire the land as the linkages between its developed parks, natural preserves and environmental education areas and to ensure public access and protection in perpetuity.

The other priority, an equal partner to the first, is acquisition of larger parcels of open space. Analysis and population projections show the need for a stand-alone easily-accessible community park within the next 10 years or so. Smaller parcels acquired near or in development areas will be used as neighborhood recreation areas where a mix of activities is concentrated. Individual parcels, if acquired before development occurs, can be banked to eventually become a neighborhood park. Or the parcel can be added to contiguous open space dedicated to the township by a development to create the park.

Parcels acquired in non-growth areas will be primarily used as natural preserves and environmental education areas with little to no capital investment in the near-term.

CHAPTER EIGHT
COMPARISON TO OTHER PLANS

BUCKS COUNTY PLANS

The Bucks County Parks Department has had a plan for a linear greenway in northwestern Bucks County since 1986. The director of the park recently reported that tentative plans call for a linear park of at least 200 acres beginning at the Great Swamp in West Rockhill Township tracing the Butter Creek west to the intersection with the Unami Creek in Milford Township.

With Milford planning to establish a trail system for the length of the Unami Creek and its tributaries, linking with the county park along the Butter Creek would create a roughly 12- mile greenway / trail system from the Great Swamp to Lehigh and Montgomery Counties.

REGIONAL PLANS

The Quakertown Linked Open Space Plan proposes a system for public access running through Milford, Richland and Haycock townships, and Trumbauersville and Quakertown boroughs. The linkages would follow stream corridors and open spaces from the western border of Milford Township to Nockamixon State Park in Haycock Township. Land acquisition is proposed to occur almost entirely through lands donated during the subdivision development process.

Milford's Open Space Plan envisions greenways along the Unami Creek and its tributaries and other creeks in the township. Thus, Milford would expand the Linked Open Space Plan to create a system of trail fingers inside the township off of the main link across the region.

ADJACENT MUNICIPALITIES

Upper Hanover Township/Red Hill Borough

The two have been acquiring land for active recreation in and around the borough and establishing links along stream corridors throughout the township.

Marlborough Township

Marlborough Township is similar to the adjoining portion of southern Milford with woodlands and steep slopes. The Macoby and Unami creeks flow through the township. Marlborough's open space plan focuses on natural resource conservation of the woodlands and greenways along the creeks. The greenway along the Macoby has linkages with a township park and extends into Upper Hanover Township. The plan proposes a greenway along the Unami creek from the Milford border south to the village of Sumneytown.

Richland Township

Richland intends to establish an open space linkage from Milford Township eastward to East Rockhill and Haycock townships with a final connection to Nockamixon State Park. In addition, they too are considering using abandoned trolley lines, one of which passes through Richland, Springfield and the northeast corner of Milford, as linear greenways.

West Rockhill Township

The township is interested in preserving areas along Butter and Ridge Valley creeks, with a focus on Ridge Valley Creek. They are considering a connection from the Quakertown Swamp to the Butter Creek, but are waiting to see what the Bucks County Park Department decides regarding a park along the creek. The township is also exploring using utility rights-of-way for trails which would connect into Milford Township.

Springfield Township

This rural township has a generalized plan which focuses attention on preservation of Cooks Creek and its watershed, water supply protection, recreation needs and a trail system, and farmland preservation.

Lower Milford Township

The township has no formal open space plan. They have a Natural Features Preservation section in their zoning ordinance. Twenty farms are already preserved in their agricultural security area.

Trumbauersville Borough

The borough is surrounded by Milford Township and has virtually no open space remaining. Officials intend to earmark their county funding to improve the existing parks.

CHAPTER NINE

IMPLEMENTATION

Milford Township recognizes a responsibility for protecting natural resources, preserving open land of high public value and planning for recreation. Implementation of the Milford Township Open Space Plan shall be guided by the following principles:

- *We are blessed with stream valleys, hillsides, woodlands, and natural resources that shape our quality of life. It is incumbent upon us to be responsible stewards.*
- *Private property rights must be respected through appropriate programs that protect public interests without testing the limits of regulatory taking.*
- *Maximum benefit will be achieved through cooperation. Therefore emphasis will be placed on willing and voluntary landowner participation as well as cooperative efforts with other municipalities and agencies.*
- *Milford Township will use a full range of land preservation techniques. The highest priority is placed on municipal ownership of open space. However, other methods such as acquisition of development rights and conservation easements will serve a role in preserving the greatest amount of land.*

OPEN SPACE PLAN

The areas that this plan proposes to preserve as open space are shown in Figures 9-1 and 9-2. Figure 9-1 depicts Primary Conservation Areas. These areas are valuable and vulnerable, and are generally considered “unbuildable” under current township regulations. Primary Conservation Areas include streams (light green), floodplains (dark green), wetlands (blue), and steep slopes of over 15% (red). Since these areas are restricted for development, nothing specifically needs to be done to maintain them as open space in perpetuity. However, the township may seek title to these lands to facilitate public access.

Figure 9-2 depicts Secondary Conservation Areas. These are areas with resource value that would be destroyed by development. The Secondary Conservation Areas include prime agricultural soils (brown hatching) and woodlands (green hatching). While development may occur in these areas, these resources should be preserved where possible. Current regulations protect 80% of woodlands, but don’t address farmlands which require broader measures oriented towards retaining a viable agricultural industry.

RESOURCE PROTECTION

Land Use Regulation

A primary emphasis of this plan is a reaffirmation and refinement of the township's strong land use planning program that has been followed for over a quarter of a century, yielding tangible results. High priority is placed on acquiring fee simple dedication of open space through the land development process. This technique yields open space at no cost and in proportion to the rate and location of development. From Milford's experience, a number of desirable refinements become apparent.

Municipal actions for consideration

- Require that all subdivisions and land developments provide open space consistent with this plan. For small lot minor subdivisions this requirement may be waived or modified by the Board of Supervisors if the proposed open space is not consistent with the goals as stated in this plan.
- Incorporate procedures into subdivision regulations that encourage conceptual reviews of open space layout.
- Require that open space provided from subdivisions and land developments correspond with the map of primary conservation areas and, where possible, with secondary conservation areas.
- Incorporate design guidelines into subdivision and land development regulations that:
 - require consolidation of open space within a site and linkage of open space between sites into a contiguous and integrated open space system,
 - maximize preservation of existing features, such as streams and vistas,
 - minimize the impact of development to retain the rural ambiance.
- Allow, at the discretion of the Board of Supervisors, other mechanisms (contribution to open space fund, transfer of development rights, or other methods) to be used to satisfy the open space requirement if the proposed on-site open space would not be consistent with this plan.

Greenways

Recognizing that the Unami Creek and its tributaries are the backbone of Milford Township Open Space Plan, special attention must be focused on these corridors.

Municipal actions for consideration

- Adopt Riparian Buffer protection standards into the Zoning Ordinance.
- Initiate a voluntary conservation easement program that does not remove the ability of land owners to use covenanted land toward open space requirements in the event of future subdivision of that site.
- Initiate a formal riparian buffer protection and restoration program.
- Establish a wellhead protection program to protect the groundwater.
- Explore the feasibility of an aquifer recharge area protection program
- Form a permanent Environmental Advisory Council (EAC) to continually monitor the impact of development on the environment and make recommendations to municipal officials concerning environmental policies.

PARKS AND RECREATION

It is important to note that much of the smaller scale park and recreational needs can be met if Milford continues its orientation to meeting these needs through the land development process with requirements for open space and recreational facilities. But two needs may be difficult to meet through development generated open space alone.

Parks

While Milford Township has adequate parkland at the current time based on NRPA standards, population projections indicate that a community park will be needed in approximately ten years.

Municipal actions for consideration

- ® Develop a comprehensive park and recreation plan.
- ® Acquire a parcel for a community park.
- ® Encourage the Bucks County Park Board to develop a linear park along the Butter Creek.
- ® Investigate the possibility of acquiring land to develop as a golf course to retain open space and generate income that would be designated for open space purposes.

Trails

Township residents now use roads for walking and biking. Alternate travel ways must be developed.

Municipal actions for consideration

- ® Acquire interests in land that will enable installation of a linked trail system along all of the tributaries of the Unami and other stream corridors to link parks, schools, villages, housing, and commercial and employment centers.
- ® Develop a comprehensive trail plan to be part of the park and recreation plan.
- ® Make cross-linked trail connections between the trails along the stream tributaries.
- ® Identify areas to widen roads and improve shoulders for bike use and install sidewalks for pedestrian use where appropriate.
- ® Acquire interest in land to utilize utility corridors for trails.
- ® Acquire fee simple interests for PP&L's parcel #23-21-109-002.
- ® Investigate the potential to use the abandoned Liberty Bell trolley line for a trail.

FARMLAND PRESERVATION

Our farmers still have contiguous areas of productive agricultural soils and are served by agricultural support services including Rosenberger's Feed Mill, Wonsidler's tractor and implement dealership and Central Tractor's Farm and Country supply store.

Municipal actions for consideration

- ® Encourage applications to the Bucks County Agricultural Lands Preservation program for purchase of development rights.
- ® Explore creation of a Milford Township Farmer's Market.
- ® Reconvene the Milford Township Agricultural Advisory board to reevaluate the agricultural security area and recommend actions to support farming.
- ® Pursue grant funding that would enable Milford to purchase development rights.

RURAL AMBIANCE & SENSE OF PLACE

The look of a community conveys a sense of place and a feeling of openness or congestion. The appearance of well designed communities, historic buildings and signage establishes an image as important as the sheer numbers of preserved open space acres.

Municipal actions for consideration

- ® Designate scenic roads in the township along with applicable development standards or preservation techniques to preserve the scenic quality of the area.
- ® Investigate more stringent controls on billboards including an amortization program for the removal of existing billboards.

USAGE PLANNING

How open space is intended to be used, in large part, dictates how it is to be preserved. Where open space is acquired through land development, fee simple dedication to the municipality is preferred. Where open space with public access is not likely to be acquired through fee simple dedication during the land development process, purchase may be appropriate. But where the intent is to protect open space without public access, such as bird breeding areas, conservation easements of land in private ownership may be acceptable. In developing this plan, the following uses were identified.

- ® **Natural Preserves** - their purpose is to protect environmental features with human intrusion being minimized. They can be general areas like parks or linear features like greenways. Any acquisition method can be used, although fee simple dedication is preferred.
- ® **Recreational Areas** - their purpose is to meet primarily active recreational pursuits and are characterized by capital investment in facilities. Implicit is municipal land ownership through fee simple dedication or purchase.
- ® **Trails** - their purpose is to connect destinations as well as being a destination. Trails can be developed on easements, but fee simple acquisition is preferable.
- ® **Environmental Educational Areas** - their purpose is to protect sensitive and unique natural features with controlled public access to appreciate those areas. The access can range from low scale bird blind, dirt trails and seating to capital intensive Nature Centers. Implicit is land ownership through fee simple dedication or purchase.
- ® **Agricultural Areas** - their purpose is to retain contiguous, productive farmland capable of supporting a sustainable farming industry. This use is best served by private ownership with public acquisition of development rights, possibly purchased through grant funding to the township. A major emphasis should be to fully utilize the Bucks County Agricultural Preservation Program. The township must be an advocate for farming by encouraging farming infrastructure and maintaining contiguous land that can be farmed.
- ® **Scenic Areas** - their purpose is to preserve the perceptual and aesthetic conditions that create our rural ambiance. They include vantage points/ vistas, scenes and roads. This purpose can be served by acquiring visual easements and by encouraging good design of subdivisions that recognizes the scenic qualities of each site.
- ® **Historic Sites** - their purpose is to preserve evidence of the past whether that be buildings or sites. This purpose is best served through private initiative and through demolition regulations.

ACQUISITION CRITERIA

When parcels are considered for purchase to implement the objectives of this plan, recommendations to the Supervisors for their priority will be determined by calculating a score which is the sum of the following criteria.

Linked Open Space – Maximum 100 points

Does land conform to the linked open space plan?

Trails – Maximum 100 points

Does land conform to the trail plan?

Recreational Opportunity – Maximum 80 points

Is there enhancement of recreational opportunity?

Growth Objectives – Maximum 80 points

Would acquisition stop infrastructure from intruding into reserve and resource areas?

Sale Price/Matching Funds – Maximum 80 points

Is the price below market value or are additional funds available?

Proximity to Protected Lands – Maximum 80 points

Is the land close to other protected lands?

Rural Ambiance – Maximum 70 points

Would development significantly degrade the rural ambiance

Resource Value – Maximum 70 points

Would acquisition protect resources?

Educational Value – Maximum 70 points

Are there opportunities to use the land for environmental education?

Willing Seller – Maximum 70 points

Is the owner willing to sell and provide favorable terms?

Scenic Qualities – Maximum 70 points

Does the property contain scenic vistas or areas?

Appropriate Access – Maximum 50 points

Is access available consistent with open space objective?

Inter-Municipal Cooperation – Maximum 50 points

Is the land a common interest with other municipalities?

Historic Significance – Maximum 40 points

Does the land contain significant historical resources?

Figure 9-1

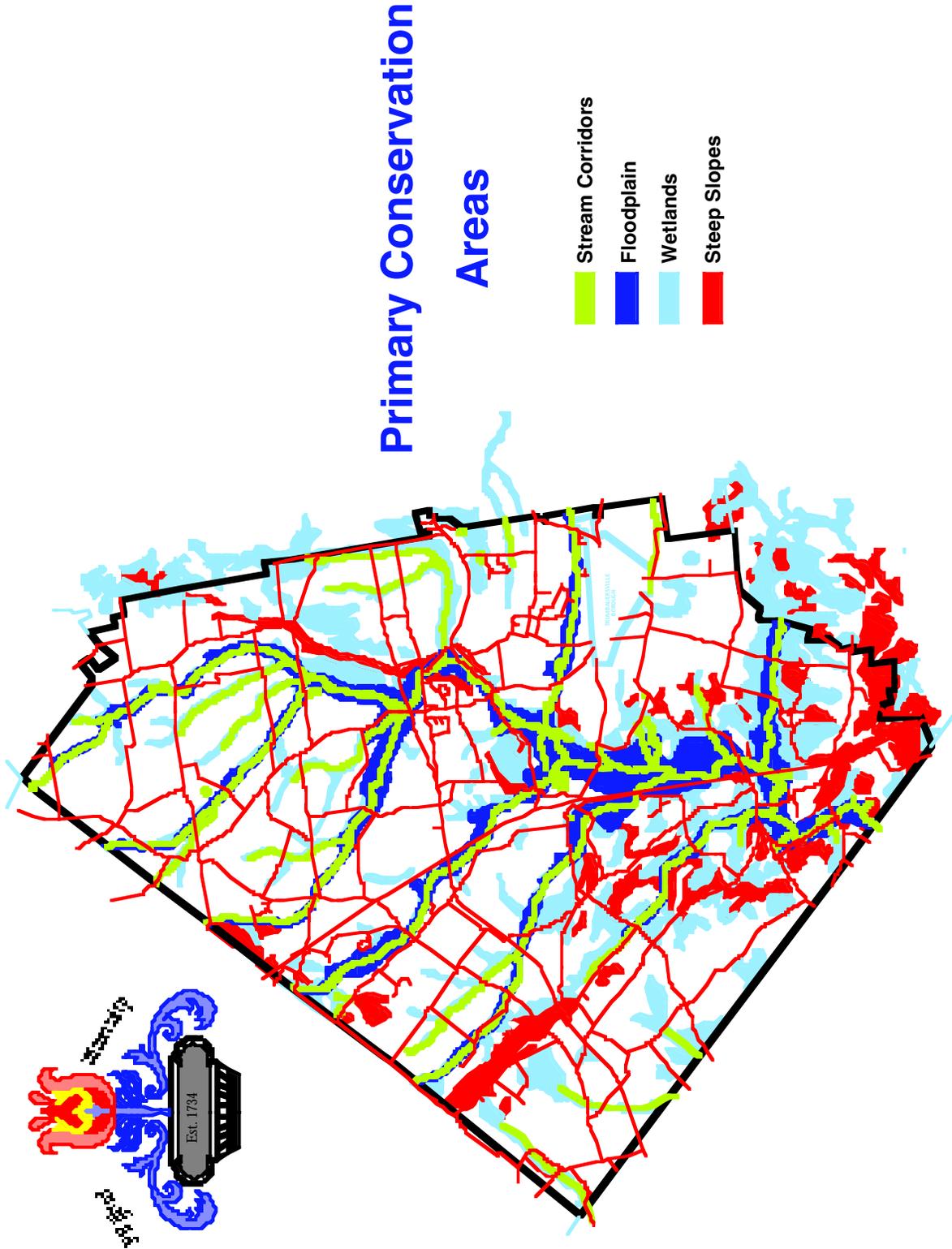
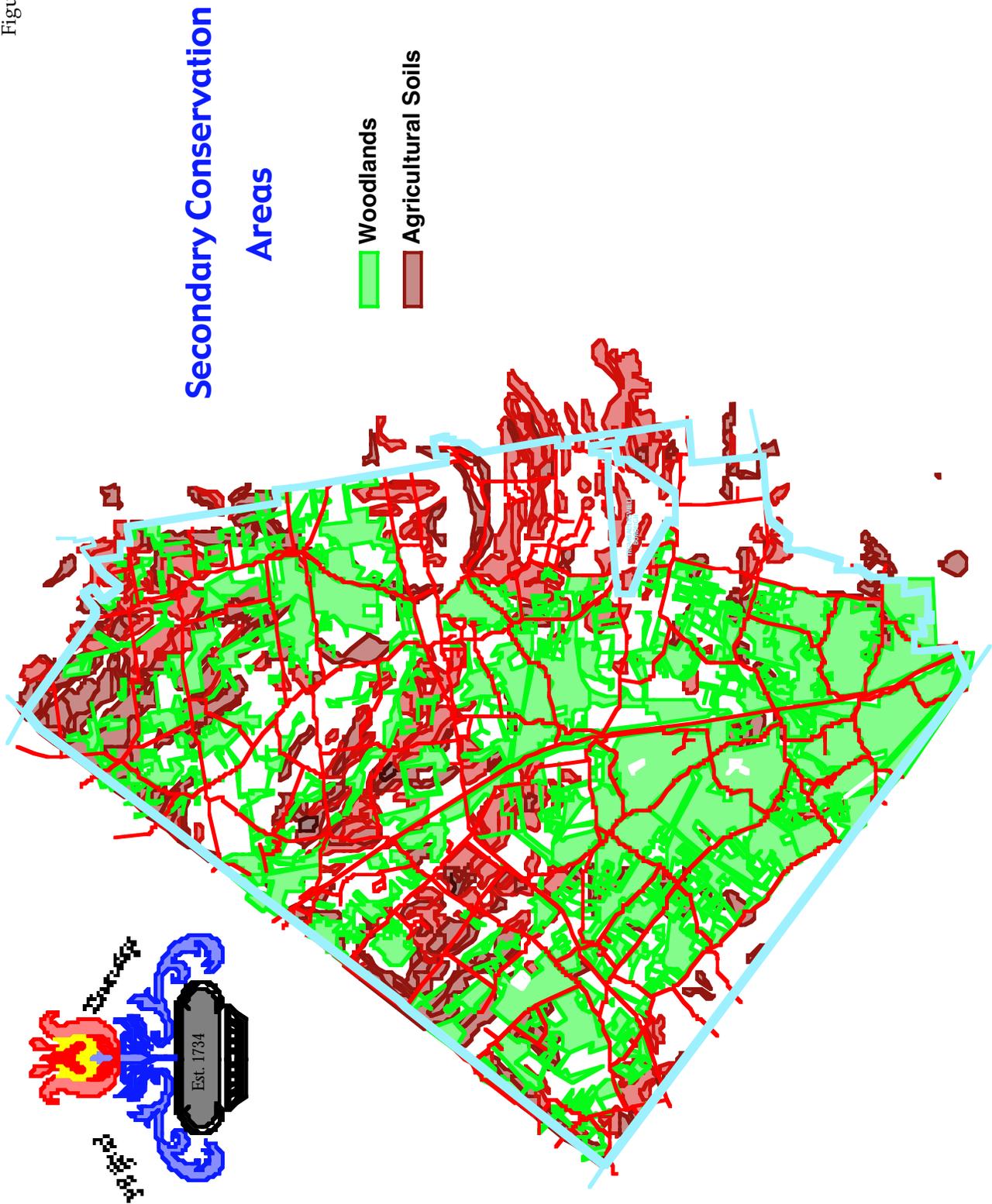
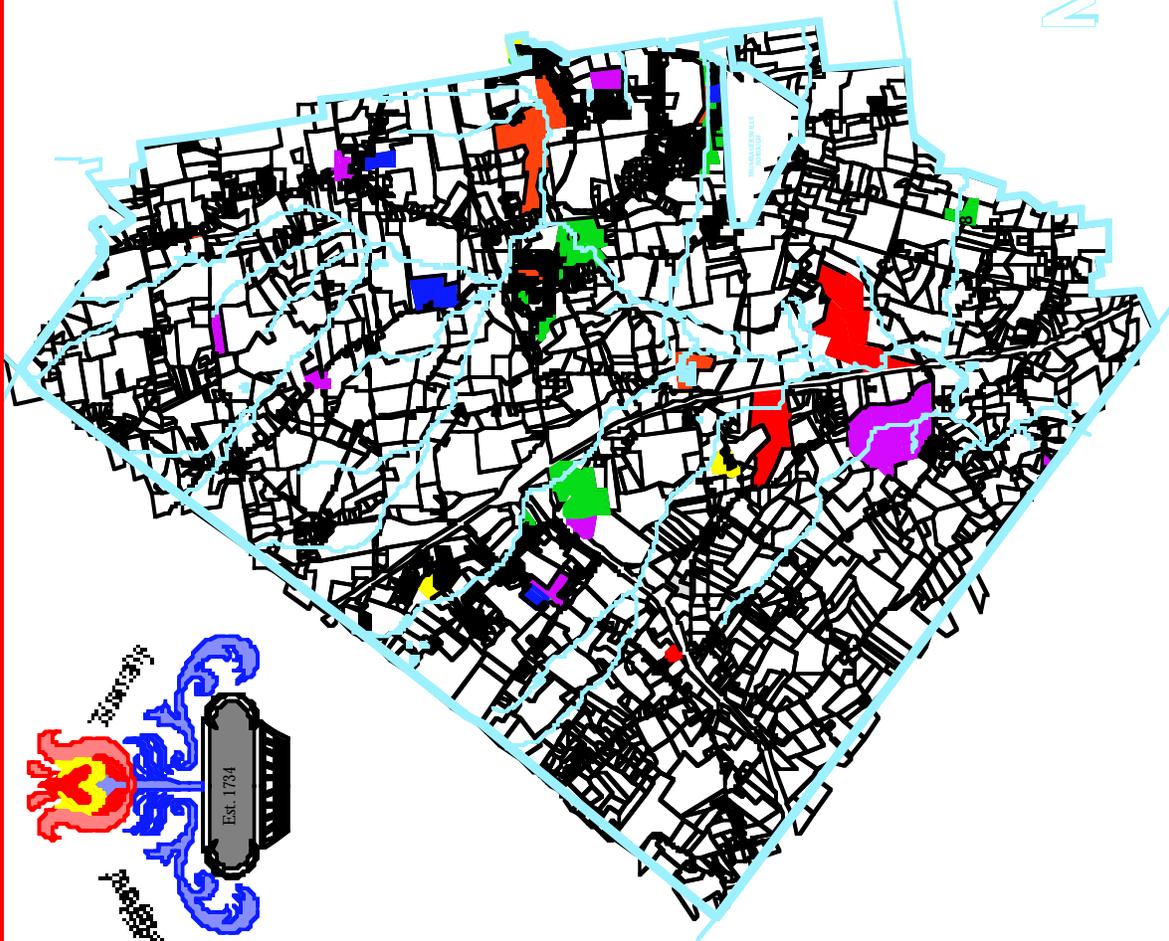
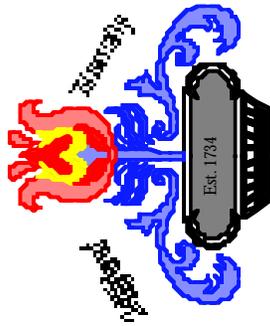


Figure 9-2





Protected Lands

- Township Owned
- Quakertown Community School District Owned
- Authority, Fire Co, Utility Owned
- Homeowners Association Owned
- Church Owned
- Private Recreation (Golf, Gun Club) Owned

STREAMS, PONDS AND LAKES



MILFORD TOWNSHIP

BUCKS COUNTY, PENNSYLVANIA