CHAPTER 12

EXISTING LAND USE

INTRODUCTION

The base Existing Land Use Map for Mt. Penn and Lower Alsace was supplied by the Berks County Planning Commission. The existing land use mapping for both the Borough and the Township was updated by the consultant through windshield survey performed in 2001.

The categories shown on the Existing Land Use Map include Residential Single-Family, Residential Multiple-Family, Residential/Commercial, Commercial, Industrial, Farm/Rural, Public, Quasi-Public, and Open.

Overall Land Use Pattern

Most of Mt. Penn has been developed, primarily for residential purposes. Even though Lower Alsace Township experienced some of the first substantial population growth and residential development extending from the City of Reading, much of the Township still remains rural. Much of the undeveloped land is in public or quasi-public ownership on Neversink Mountain, Mt. Penn Preserve, Antietam Lake Watershed, Mt. Penn Borough Municipal Authority land, and City of Reading land.

In Lower Alsace Township, much of the farm/rural land is wooded land, with some pasture and cultivated lands interspersed.

LAND USE CATEGORIES

Residential Single-Family

Most of the residential uses within the region are Residential Single-Family. These uses are found throughout the Borough of Mt. Penn. In Lower Alsace, most single-family homes are found north of Mt. Penn, along Highland Avenue, scattered in the western portion of the Township, north of Antietam Road to the boundary with Alsace Township, and in the vicinity of Haag and Hill Roads.

For assessment purposes, fee simple owned townhouses are considered single family dwellings.

Residential Multi-Family

In Mt. Penn, Multi-Family Residential uses are mixed in with residential single-family uses and are not concentrated in any one area. In Lower Alsace Township, multiple family uses are primarily along Carsonia Avenue in the central portion of the Township. Conversions of single family homes to apartments and creation of apartments above commercial uses have occurred at a number of locations in the Borough.

Residential/Commercial

These are a mix of residential and commercial, typically with the residential use above or adjacent to the commercial use. In Mt. Penn, mixed uses are primarily located along and near Perkiomen Avenue and 23rd Street. In Lower Alsace, residential/commercial uses tend to be scattered in the central portion of the Township.

Commercial

Much of the commercial development in the region has occurred along Perkiomen Avenue (Business Route 422), Howard Boulevard, 23rd Street, and Carsonia Avenue. In Lower Alsace, commercial uses are also scattered in the Township, with most of these along Spook Lane or Friedensburg Road. In Mt. Penn Borough, examples of uses include an auto service and transmission service, a gas station/mini market, sandwich shops, a hardware store, a restaurant, a bank, real estate offices, a music shop, and a sports card shop. In Lower Alsace Township, examples of uses include an auto service business, towing service, a sandwich shop, a restaurant and two private clubs.

Industrial

Industrial development has been very limited and generally scattered. The nearest example of a cluster occurs in the Township along Columbia, Melrose, and Oak Avenues.

Farm/Rural

The Farm/Rural areas include lands that are cultivated, pasture, and wooded, further differentiated on the Land Cover, Agricultural Security Areas, Conservation Easements, and Clean and Green Lands Map. Only one small parcel of farm/rural is located in Mt. Penn along Highland Avenue.

Public and Quasi-Public

Public and Quasi-public uses are found throughout both municipalities. Many of these are indicated on the Community Facilities Map in Chapter 24. The largest areas are Earl Trust land, Berks County Conservancy owned and leased land, and City of Reading land.

Vacant

Vacant land is scattered within the region. Typically, these parcels are lots which are not improved and which may be able to be developed.

Trends

Little development has occurred in the region in recent years. Data from Berks County Data Book indicates one (1) new housing unit was added to assessment roles in the Borough from 2000 to 2003. Twenty-four (24) housing units were added in Lower Alsace Township. From 1998 to 2000, there were no permits issued for residential construction in the Borough. Seven (7) permits were issued in the Township. Commercial activity has typically been renovations rather than new construction.

Commercial development continues outside the region along the Route 422 Corridor in Exeter Township. Development has included shopping centers, banks, as well as a number of chain stores, restaurants, and gas stations. The impact of this commercial development in Exeter Township can affect commercial activity in Mt. Penn and Lower Alsace.

Trends which have occurred, and some towns have tried to reverse, is the relocation of businesses which serve the day-to-day needs of residents to shopping centers and larger nationwide chains locating in the areas where once local small businesses served residents. In many cases it is difficult for the small local businesses to compete.

CHAPTER 13

PUBLIC SANITARY SEWER AND WATER FACILITIES

INTRODUCTION

Public sanitary sewer and water facilities are discussed in a separate chapter from community facilities because of the importance of sewer and water facilities in shaping land use patterns. The greatest concentrations of residential development in the Mt. Penn and Lower Alsace region are served with public sanitary sewer and water facilities, including the entire Borough and residential areas in Lower Alsace north of the Borough, west of Friedensburg Road and south of Lewis Road.

Availability of sanitary sewer and water facilities plays an extremely important role in the shaping of development patterns, including location and density. One of the major concerns of the Comprehensive planning effort will be to coordinate land use and utility planning so that future land use concentrations would reflect the availability of public sewer and water facilities, while assuring that sewer and water planning in the region would not be at odds with the goals for future land use reflected in the future Land Use Plan. For instance, if areas are proposed for Open Space and Park and Rural Conservation, it is not desirable to extend the public sewer and water service to those areas.

Public Sanitary Sewer Facilities

Mt. Penn and Lower Alsace are served by two sanitary sewage collection systems. Most of the sewage service area is treated by the Antietam Valley Municipal Authority with a sewage treatment plant located in nearby St. Lawrence Borough. A small western portion of the sewage service area is conveyed to the City of Reading sewage collection system with a plant located on Fritz Island in the Schuylkill River.

The Antietam Valley Municipal Authority continues to address infiltration problems within its system. Flows to the plant can exceed the rated capacity of the plant.

Soil Suitability for On-Site Sewage Disposal

Most of the unsewered areas are considered as having severe limitations for on-site sewage disposal in Lower Alsace Township based on United States Department of Agriculture Natural Resources Conservation Service rating of limitations for septic tank absorption fields.

Public Water Supply Facilities

Generally, areas served by public sanitary sewers are served by public water supply. The Mt. Penn Borough Municipal Authority serves the Borough of Mt. Penn, Lower Alsace Township as well as St. Lawrence Borough and portions of Exeter Township. Community wells are located between Hill Road and Spook Lane.

The Mt. Penn Borough Municipal Authority also maintains water storage facilities. These facilities are located adjacent and in close proximity to the Authority's wells between Hill Road and Spook Lane.

CHAPTER 14

AGRICULTURAL RESOURCES

Land cover and agricultural resources within Lower Alsace Township and Mt. Penn Borough are shown on the map which shows Agricultural Security areas (none), Agricultural Conservation Easements (none), Clean and Green Lands, and Land Cover, including areas that are cultivated, developed, pasture, and wooded.

Lower Alsace and Mount Penn Borough over the years has developed into a suburban area due to its proximity to the Reading City limits. Most of the employment of the residents lies outside the region. The 2000 Census indicates the number and percent of persons working in agriculture related fields. Only 5 people, or 0.3% of Mt. Penn Borough's population, worked in the agricultural industry. Fourteen (14) persons from Lower Alsace Township, or .5% of the total population, worked in the agricultural industry. These are low percentages compared to Berks County as a whole, which has 3,215 persons, or 1.8% of the County population, in the agricultural industry.

A majority, (67%) of the Lower Alsace Township residents responding to the Community Questionnaire, believed that remaining agricultural land in the Township should stay as agricultural land. They were split between wanting farmland available for future generations to farm, like to view farmland, and wanting to limit development which occurs in the community as the reason for keeping farms. Comments included in questionnaire responses were that the new generation should be encouraged into farming with lowered taxes and that farmland is viable open space for the community and needs to be carefully planned and maintained.

Farmland preservation is not a high priority for the community; however, keeping some rural flavor in the region while also having access to farm goods and services was desired. Angora Farms orchard was mentioned to be unique to the area and worth preserving.

Agricultural Resources in the Area

As seen on the Land Cover, Agricultural Security Areas, Conservation Easements, and Clean and Green Lands Map, there are limited cultivated and pasture lands within the region. The Borough and the Township have not designated agricultural security areas, and in turn agricultural conservation easements have not been purchased within the region. Cultivated and pasture land is scattered in the northern portion of the Township and between Hill Road and Friedensburg Roads.

Both municipalities have zoning ordinances, however, neither municipality has a designated agricultural zone. On the Future Land Use Plan, there is no recommendation for an establishment of this type of category for the region. The Plan designates Open Space and Park, Rural Conservation, Rural Residential, and Low Density Residential for land within Lower Alsace Township that is currently enrolled in the Clean and Green Program.

CHAPTER 15

NATURAL FEATURES

INTRODUCTION

Three maps showing natural resources have been prepared. The first is a composite map showing natural resources including streams, wetlands, hydric soils (which are potential wetlands), 100-year floodplains; areas of steep slope, including slopes of 15% - 25% and slopes greater than 25%; and wooded areas. The second map showing water related features, includes streams, floodplains, wetlands, hydric soils, and watersheds (the Antietam Creek, Bernhart Creek, and Schuylkill River watersheds). The Historic Properties and Natural Areas Inventory Sites map in Chapter 22 shows two major Natural Areas Inventory Sites in Lower Alsace (Neversink Mountain and Antietam Lake Watershed) from the Berks County Natural Areas Inventory.

There are areas where natural resources provide limitations to development in Lower Alsace Township. Wooded areas with steep slopes found along two mountains in the Township (Mt. Penn and Neversink Mountain) and in a band in the central portion of the Township are not conducive for development.

Wooded areas are also found within the Antietam Lake Watershed and on open space land in the northwestern portion of Lower Alsace Township. Some of these areas also have steep slopes. These wooded areas should be preserved as a valuable resource for the preservation of the steep slopes and to minimize the erosion, mud or land slides that could occur if disturbed by clear cutting and/or development.

On the Proposed Antietam Lake Easement Map, areas for a proposed easement are shown in yellow. There are also properties shown in green which include already conserved areas around the proposed easement owned by the Berks County Conservancy and the Earl Trust Property. These properties can play a key role in conserving valuable open space and preserving the recreational use of the lake.

On the Neversink Mountain Project Status map, Neversink Mountain is broken down into individual parcels. There is an area depicted with a red line which outlines the proposed reserve area. Within this area there are parcels already acquired by the Berks County Conservancy and ones that have been leased to the Conservancy. There are lands that are owned by the City of Reading, the County, and the Earl Trust.

The Earl Trust Property map provides an overview of Earl Trust and City owned properties in the Township.

A Neversink Mountain Feasibility Study was completed for the Berks County Conservancy in 1997. This Study included a Long Range Plan for the Mountain. Details can be seen on the Proposed Long Range Plan, Project Phasing Plan and Improvements Plan. (See Appendix 5) A detailed analysis of the Mountain is provided in the study.

FLOODPLAINS

One hundred-year floodplains are shown from Federal Emergency Management Agency (FEMA) Maps. Floodplains are areas adjacent to watercourses which are covered by floodwater during times of flooding. A 100-year floodplain is the area which has a 1% chance of being flooded during any one year, and which is typically used for regulatory purposes. It is best if the floodplains are not developed, because development within the floodplains results in danger to persons and property. If development occurs within the floodplain, this may constrict the area over which floodwaters may flow, resulting in increased flood damage downstream because of resultant increased flood velocities downstream. Outdoor storage of materials within floodplains is not desirable because of the possibility of the materials entering the stream when flooding of the banks occurs.

Care must be taken in disturbing areas along watercourses because increased sedimentation within the stream (increased depositing of soil within the stream) can occur. Increased impervious cover along watercourses typically increases the storm water runoff in the streams. The runoff can erode stream banks and channels. If sedimentation is increased, filling of streambeds can occur, which could cause floodwaters to cover a larger area, meandering of streams, and choking of life within the stream, detracting from the aesthetic value of the stream.

It is desirable to keep pervious surfaces on stream banks, as opposed to impervious surfaces such as paved areas. As surface runoff moves toward streams, water can be absorbed into the ground if the surface is pervious. Increased absorption can result in replenishment of groundwater and also in decreased flood peaks because less water reaches the stream from the surface of the land. Inadequate supply of groundwater can result in an inadequate flow of water to the stream during dry months. The inability to sustain stream flow can mean a greater concentration of pollutants at periods of low flow.

The floodplains along the watercourses within the Antietam Creek Watershed should be preserved and serious consideration should be taken to restrict development on hydric soils. The floodplains and hydric soils act like a sponge when floodwaters rise, and can filter nutrients and pollutants to protect the surface and ground water that feed the Antietam Lake and Creek.

On-site sewage disposal systems should not be located within areas subject to flooding because of the danger of contamination of the stream and the groundwater because of the proximity of the stream and the presence of the high water table. There may not be an

adequate distance between the on-site facility and surface water to permit renovation of sewage effluent prior to its reaching the stream. In some instances, soils found in the floodplains are very porous and the movement of sewage effluent is too rapid to allow for the renovation of the effluent prior to reaching the groundwater table or the stream. In other situations, the soil near the surface may be saturated with water or become readily saturated with sewage effluent, resulting in effluent remaining near or rising to the surface of the land. When flooding occurs, sewage effluent could then contaminate the surface water. The efficiency of filter fields of septic tanks can be impaired or destroyed as a result of flooding.

WETLANDS

The wetlands shown are from the National Wetlands Inventory, prepared by the Office of Biological Services, U.S. Department of the Interior, Fish and Wildlife Service. The wetlands inventory was prepared by stereoscopic analysis of high altitude aerial photographs, with the wetlands identified on the photographs based on vegetation, visible hydrology, and geography. A detailed on the ground and historical analysis of any site may result in a revision of the wetland boundaries, and it is possible that small wetlands and those obscured by dense forest cover may not be identified. Limited wetland areas are identified, primarily along the southern boundary of Lower Alsace Township.

Wetlands are areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, prevalence of vegetation typically adapted for life in saturated soil conditions. During on-site investigation, wetlands can sometimes be identified when they are saturated with permanent or semi-permanent standing water and contain common wetlands plants such as cattails and willows. If wetlands cannot be identified by hydrophytes (plants adopted to life in saturated soil conditions), soils may be investigated to determine whether wetlands are present. Hydric soils mapping can be used to identify potential wetlands sites. Hydric soils are discussed below.

To try to put wetlands into less technical terms, often low lying land that remains wet for considerable periods of the growing season, land that can not be farmed because it is too wet or can only be farmed every few years, or low-lying land that can only be developed by filling are likely to be wetlands. These areas store water which can replenish groundwater and surface water supplies.

Wetlands can be areas rich in plant growth and animal habitat. They often serve as breeding places for many organisms. In addition to providing a home and a source of food for organisms, wetlands can protect water sources and can help keep water sources clean by acting as natural filters and removing pollutants such as bacteria and sediment from water. This occurs as plants growing in and around wetlands trap pollutants.

In general, no developmental activity or placement of fill material may occur within wetlands without obtaining a DEP permit.

HYDRIC SOILS

The hydric soils have been mapped from soils information provided by United States Department of Natural Resources Conservation Service and indicate areas of potential wetlands. Hydric soils developed under conditions sufficiently wet to support the growth and regeneration of hydrophytic vegetation and are soils that are saturated, flooded, or ponded long enough during the growing season to develop anaerobic conditions (an anaerobic situation is one in which molecular oxygen is absent) in the upper part.

Criteria for identifying hydric soils include somewhat poorly drained soils that have water table less than 0.5 ft. from the surface for a significant period (usually a week or more) during the growing season; are poorly drained or very poorly drained and have either water table at less than 1.0 ft. from surface for a significant period during the growing season if permeability is equal to or greater than 6.0"/hr. in all areas within 20", or have water table at least 1.5 ft. from the surface for a significant period during the growing season if permeability is less than 6.0"/hr. in any layer within 20"; soils that are ponded for long duration (from 7 days to 1 month) or very long duration (greater than 1 month) during the growing season; or soils that are frequently flooded for long duration or very long duration during the growing season.

The areas of hydric soil are more extensive than the areas of wetlands, and are generally found in the vicinity of the watercourses within the Township. There also are several isolated areas of hydric soil, also within the Lower Alsace Township, as displayed on the Water Related Features Map.

STEEP SLOPES

Areas that have slopes greater than 15% have severe limitations to development. In general, this land is too steep for residential subdivisions and cultivation. Development of steep slopes can result in hazardous road conditions, costly excavation, erosion and sedimentation and storm water runoff problems. These slopes are quite prone to erosion, and protection of them is particularly important for water resource protection when watercourses are nearby. Development should be limited, vegetative cover maintained to the greatest extent possible, and erosion controls instituted. Without absorptive vegetation, runoff can rapidly erode the slopes, especially on the two mountains and hills located in Lower Alsace Township and around Antietam Lake, as shown on the Natural Resources and Slope Map.

WOODED AREAS

Wooded areas are scenic amenities and habitats for wildlife and home to most of the native species in the County. They provide visual relief from developed land areas. In addition, they increase capacities for absorption of storm water runoff, diminishing flood potentials and decreasing erosion. Wooded areas are especially valuable when on steep slopes, playing the important role of reducing runoff and erosion and sedimentation by binding the soil.

Maintenance of wooded areas on steep slopes is of even greater importance when the steep slopes are near streams, which could be disturbed through sedimentation, and experience greater flood peaks if they are swelled by increased surface runoff. Wooded areas are in some cases in proximity to the watercourses within the Township, sometimes on steep slopes.

When wooded areas are retained, the quantity and quality of groundwater can be better maintained than if woods are removed, because the natural cover allows for infiltration of rainfall into the groundwater system. Retention of wooded areas will also preserve the home of most of the native species in the County.

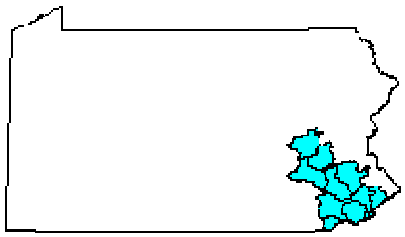
Wooded areas also have recreational potential, whether for individual lot owners or, when within public recreational facilities, for the population as a whole.

ROLE IN OPEN SPACE SYSTEM

Streams, mountains, hills, and woodlands in the Township are important elements in the open space system, which is valued by residents of the entire region and people who live outside the region. The preservation of these resources is very important for natural processes as well as recreation.

STREAMS AND WATERSHEDS

The watersheds and streams in the region are shown on the Water Related Features map. Natural functions of watercourses and the areas along the watercourses have been discussed above. It is also important to note that streams also provide a recreational resource.



DEP Watershed website map

Natural Areas of Special Interest

The following Natural Areas Inventory sites are found in the region and shown on the map in Chapter 22.

Neversink Mountain – This mountain provides open space in an urban setting and provides habitat for four rare species. Although there is a small residential development on the mountain, it does not appear to be influencing the species of special concern there. What is of concern is the use of herbicides and pesticides to control plants on the powerline right-of-way and for gypsy moth control in the surrounding woods. Herbicide use should be limited to control of tree saplings to ensure survival of the food plants used by two rare butterflies. The electric utility company and Berks County Conservancy have made progress toward this end. Aerial spray for gypsy moths should be avoided because the two butterflies are susceptible to the same chemicals.

It will be important to manage habitat on the mountain to limit the further spread of exotic plant species and maintain the small dry, rocky openings on the south slope that are important for the rare plant limited to this habitat. No logging has occurred recently but it should be completely discouraged in the future.

There is potential for Neversink to be a low-impact recreational asset to Reading and surrounding towns. The former trolley line offers opportunities for environmental education and nature observation, and walking and horseback riding.

The mountain is one of the four most important sites identified in Berks County.

Antietam Lake Watershed – SP525 marks a fair population of a state-rare plant growing near Antietam Reservoir in Lower Alsace Township on property owned by the City of Reading. Although the area is safe from development, trampling by hikers who use a nearby nature trail could be a problem. To avoid this unnecessary disturbance, trail-maintenance crews should avoid re-routing the trail through the population and cutting trees and brush in the area. The land manager is aware of the population and working to protect it.

Protected Use Status of Antietam Creek – Antietam Creek protected use designation is Cold Water Fishes, CWF:

> **CWF** *Cold Water Fishes* **–** Maintenance and/or propagation of fish species including the family Salmonidae and additional flora and fauna which are indigenous to a cold water habitat.

CHAPTER 16

GEOLOGY AND AQUIFER YIELDS

INTRODUCTION

A Geology and Aquifer Yield by Formation Map of Lower Alsace Township and Mount Penn Borough has been produced indicating geologic formations and aquifer yields. This map depicts the boundaries of the geologic formations in the area as well as the aquifer yield range in gallons per minute (gpm) for each formation. The map gives typical aquifer yields in gallons per minute in order to determine where, in general, the most productive aquifers in the area can be found.

In the details of each formation, porosity and permeability will be indicated. Below are the definitions of each term.

Porosity – the quality of being porous, full or abounding in pores. The porosity of rocks is the ratio or percentage of the total volume of the pore spaces (minute interstices through which liquids or gases can pass) in relation to the total volume of the rock. Sand, gravel, and sandstones, with open textures and coarse grains, are typical porous rocks. Porosity is quite different from perviousness. Dry clay, for example, is highly porous and will hold much water in its pores, but when saturated the small spaces between the grains become blocked with water held by surface tension, preventing the passage of water. To be an aquifer or source of water a rock must be both porous and pervious. Porosity may be increased by leaching or decreased by compaction.

Permeability – is capable of being wholly penetrated by a fluid, of allowing the passage of a fluid, of being saturated. The opposite condition is termed "impermeable".

Permeable Rock – a rock that allows the free passage of water through it owing to its porosity, e.g., sandstone, oolitic limestone. Some authors include also rock with joints, bedding planes, cracks, fissures, etc. that allow the free passage of water, defining the porous rock as being of primary permeability, the rock with joints etc. of secondary permeability. Other authors distinguish the secondary group as being pervious.

INFLUENCE OF GEOLOGY

For planning purposes, we are concerned about the way that geologic formations determine soils types and potential groundwater supplies. We have previously discussed suitability of soils for onsite sewage disposal. It is desirable to identify the areas with the most potential for groundwater yields to determine where a particular effort should be made to protect groundwater supplies.

Limestone Fanglomerate

The highest aquifer yields are found in the Limestone Fanglomerate (limestone) with a yield of 200 gpm areas in the southernmost portion of Lower Alsace Township, next to the Schuylkill River. Fanglomerate is composed chiefly of limestone and dolomite pebbles and angular fragments which are yellow-gray to light medium gray, and up to 8 inches in diameter. The limestone and dolomites can be completely dissolved in places, leaving an uneven hole in the rock.

This formation has good surface drainage and the joint and solution openings provide a moderate secondary porosity and moderate to high permeability. The potential for large groundwater yields is coupled with an increased potential for pollution of the groundwater because seepage from on-site sewage disposal systems or other sources of pollutants may reach underground channels and pollute the ground water supply. Underground channels, which frequently extend over long distances, are formed when a chemical interaction of air and water forms a weak carbonic acid solution, which in conjunction with humic acid formed from the decayed vegetation slowly dissolves the limestone.

Because of the potential for groundwater solution in the limestone areas, development, which does occur should be served by public sanitary sewer facilities. The initial Master Sewer and Water Plan for Berks County noted, "The limestones and dolomites appear to be the best aquifers within the County, based primarily on the fact that they are subject to solutioning by subsurface waters and therefore the secondary structures have been enlarged to a greater extent than other type rocks. This produces greater reservoir areas and increased permeability for transmitting water to the wells."

Leithsville Formation

This formation encompasses most of Mt. Penn Borough and extends into the easternmost area of Lower Alsace Township. This formation has the second highest yield for groundwater, with a median yield of 100 gpm. This aquifer can be easily contaminated and turbidity is a common water-quality problem. The water is relatively hard as well.

This formation is dark-gray to medium-gray dolomite with some calcareous shale and sandy dolomite and is approximately 1,500 feet thick. It is moderately resistant to weathering. Its

topography has undulating valley of low to medium relief, natural slopes are gentle to moderately steep and stable. Most of the area within this formation is developed and existing public sewer and water facilities serve the area.

Granite Gneiss

This is a light buff to light pink with primary minerals being quartz, microcline, hornblende (5 to 10%), and occasional biotite, and is the predominate formation in Lower Alsace Township. This rock formation is highly resistant to weathering and has topography of hills of medium to high relief; natural slopes are steep and stable.

This formation has good drainage and has a very low secondary porosity and low permeability, providing a median yield less than 20 gpm, but wells should be at least 100 feet deep and not over 200 feet deep for maximum yield. Most of this area is not currently serviced by public sewer or water facilities.

This rock is difficult to excavate because it has a slow drilling rate. This rock is commonly used in road material, riprap, building stone, embankment facing and used as fill material.

Hardyston Formation

This is a light-gray quartzite and weathers to a yellow brown color. This formation is found on Mt. Penn and Neversink Mountains in Lower Alsace Township, with a little appearing in Mt. Penn Borough. The rock in this formation is highly resistant to weathering, usually slightly moderately weathered to shallow depth. The topography is rough mountains of medium to high relief with natural slopes that are steep and stable.

This formation has good surface drainage with joint-and cleavage-plane openings to produce a secondary porosity of low magnitude and low permeability. The median yield is 20 gpm and water is usually soft and of good quality, however iron may be a problem.

It is very difficult to excavate because it has a slow drilling rate, in part due to many quartz veins that exceed 12 inches in width and boulders may also be a special problem. This rock is a good source of road material, riprap, building stone, and embankment facing; in some localities, provides material for refractory brick, and, where intensely fractured and weathered, sand.

Hornblende Gneiss Formation

This formation, found in central portions of the Township, is dark-gray to black in color with hornblende making up approximately 50% of the rock. The other 50% is labradorite (feldspars). This rock is extremely resistant to abrasion and very resistant to rupture, but may be susceptible to crumbling. It is moderately resistant to weathering, but is highly and deeply weathered in many places, resulting in a rubble that contains small-to-medium-sized rectangular fragments. The topography is undulating hills of medium relief containing natural slopes that are moderately steep and stable.

This formation generally has good surface runoff, and has extremely low primary porosity and low permeability, however in highly weathered areas, near surface rock may have high porosity. Permeability is low. The median yield of reported wells in this formation is only 10 gpm; yields of 35 gpm or more may be obtained from wells properly sited and developed.

The ease of excavating ranges from highly weathered rocks being moderately easy to excavate, to unweathered rocks being difficult to excavate, however the formation has a fast to moderate drilling rate. This rock is a good source for fill.

CHAPTER 17

SCENIC RESOURCES

The Scenic Resources Map indicates scenic roads and scenic views by highlighting the roads in green and pointing out the vistas with green arrows.

The scenic roads are roads which are particularly pleasant to drive because of the views along the roads. Identified roads include: Skyline Drive, Angora Road, Antietam Road, List Road, a section of Hill Road, Neversink Mountain Road, and Old Spies Church Road, in Lower Alsace Township. Scenic views are available from Skyline Drive.

Skyline Drive from Pagoda Skyline, Inc. website.

The entire Skyline Drive Area is part of the City of Reading Park System. The park closes at sunset. The stone wall was constructed in part by stone from a rock quarry located on the eastern slope of Mount Penn. It is approximately 2 feet wide by 3 feet high and extends for about two and one-half miles.

View of the City of Reading from Skyline Drive. (from the Pagoda Skyline, Inc. Website.)

There are three lookouts located on the road, which provides a view of the City of Reading.

Due to natural erosion and general wear with age, the wall has been crumbling in some areas and needs repair work. The restoration will involve stabilizing the bank with 3:1 slopes. At these locations, the wall must be dismantled to allow placement of fill and re-establishment of ground cover. With the new foundation in place, the wall can be rebuilt.

The other scenic roads are through wooded areas, remaining rural areas, and along Antietam Creek and Antietam Lake.

Planning Implications

Preservation of scenic resources can be accomplished through broad land use policies such as open space and woodland preservation and through attention to developments as they are proposed. Performance and design standards for developments, including sighting of buildings, and protection of woodland, can encourage retention of scenic areas.

CHAPTER 18

EXISTING PEDESTRIAN CIRCULATION

A map has been prepared showing the pedestrian system within Mt. Penn Borough and Lower Alsace Township. The map indicates the location of existing sidewalks, as well as a proposed trails system throughout the region. There are gaps in the existing sidewalk system, and areas where sidewalk is provided along one side of the street but not the other. Some sidewalk is not in good condition. Of particular concern is lack of sidewalks to the Junior-Senior High Complex.

The municipalities have the opportunity to explore the possibility of a trail system that would link existing sidewalks and trails to important community facilities and natural treasures. Some trails now exist on Neversink Mountain, on Mt. Penn, around Antietam Lake, and on City-owned land in between. The Berks County Conservancy participated in a Feasibility Study for Neversink Mountain, presented in part in Appendix 5. The Delaware Valley Orienteering Association maintains orienteering maps of the Mount Penn Pagoda and Mount Penn-Antietam area, which identify existing trails in those areas.

CHAPTER 19

POPULATION AND HOUSING

INTRODUCTION

This chapter will look at population and housing trends for Mt. Penn Borough and Lower Alsace Township, Berks County as a whole, and surrounding municipalities. The focus will be on past population trends and projections.

Additional population and housing data has been collected and is found in Appendix 2. The tables found in Appendix 2 include:

Gender
Land Area and Population Density Per Square Mile
Racial Characteristics
Average Persons Per Occupied Housing Unit
Income, Poverty and Education Characteristics
Persons by Age
Employment by Industry
Employment by Occupation
Housing Occupancy, Tenure and Value
Housing Type
Households by Type
Age of Householder Per Occupied Dwelling Unit
Means of Transportation to Work

Population and Housing Trends

Table 1 gives total population for Mt. Penn Borough, Lower Alsace Township and Berks County in 1980, 1990 and 2000.

TABLE 1

TOTAL POPULATION

MT. PENN BOROUGH AND LOWER ALSACE TOWNSHIP, BERKS COUNTY

Year	Mt. Penn Borough			Lower Alsace Township			Berks County		
	Persons	Number Change	Percent Change	Persons	Number Change	Percent Change	Persons	Number Change	Percent Change
1980	3,025	-	-	4,906	-	-	312,497	-	-
1990	2,883	-142	-4.6	4,627	-279	-5.6	336,523	24,014	7.6
2000	**3,016**	**133**	**4.6**	**4,478**	**-149**	**-3.2**	**373,638**	**37,115**	**11.0**

Source: U.S. Census

From 1980 to 1990, the population of Mt. Penn Borough decreased 4.6%, however, from 1990 to 2000, the population increased by 4.6%. Lower Alsace Township decreased 5.6% from 1980 to 1990 and 3.2% from 1990 to 2000. The Berks County increases were 7.6% from 1980 to 1990 and 11.0% from 1990 to 2000.

Table 2 gives total population in 1980, 1990 and 2000 and the percentage of change from 1990 to 2000 for Mt. Penn Borough and Lower Alsace Township, Berks County and adjacent municipalities.

TABLE 2

TOTAL POPULATION

MT. PENN BOROUGH, LOWER ALSACE TOWNSHIP, BERKS COUNTY AND ADJACENT MUNICIPALITIES

1980-2000

Municipality	1980	1990	2000	% Change 1990-2000
Alsace Township	3,456	3,459	3,689	6.6
Cumru Township	11,474	13,142	13,816	5.1
Exeter Township	14,419	17,260	21,161	22.6
Lower Alsace Township	4,906	4,627	4,478	-3.2
Mt. Penn Borough	3,025	2,883	3,016	4.6
Muhlenberg Township	13,031	14,127	16,305	15.4
Reading City	78,686	78,380	81,207	3.6
Robeson Township	4,729	5,954	6,869	15.3
St. Lawrence Borough	1,376	1,542	1,812	17.5
Berks County	312,497	336,523	373,638	11.0

Source: U.S. Census

A number of municipalities grew at a faster rate than the County as a whole. St. Lawrence Borough and Exeter, Muhlenberg and Robeson Townships all grew at a rate faster than the County from 1990 to 2000, with increases of 17.5%, 22.6%, 15.4% and 15.3%, respectively.

Table 3 indicates Total Housing Units for Mt. Penn Borough, Lower Alsace Township and Berks County in 1990 and 2000 and the Percent Change from 1990 to 2000.

TABLE 3

TOTAL HOUSING UNITS

MT. PENN BOROUGH AND LOWER ALSACE TOWNSHIP, BERKS COUNTY

2000

	Total Housing Units		Change 1990-2000	
	1990	2000	Number	Percent
Mt. Penn Borough	1,303	1,335	32	2.5
Lower Alsace Township	1,984	1,956	-28	-1.4
Berks County	134,482	150,222	15,740	11.7

Source: U.S. Census

The total number of housing units increased at a rate less than that of population for Mt. Penn Borough. From 1990 to 2000, the increase in housing units was 2.5%, while the population increased 4.6%. In Lower Alsace Township, the total number of housing units decreased. The decrease in housing units was 1.4%, while the population decrease was 3.2%. In Berks County, the increase in housing units was 11.7%, while the population increase was 11.0%.

Table 4 provides population projections for Mt. Penn Borough and Lower Alsace Township for the years 2010, 2020 and 2030. Two projection techniques have been used to provide a range of possible population outcomes for the region. Due to a number of variables that can affect population projections, a single projection cannot be viewed as the sole source on which to base planning decisions. For this reason a range of population levels calculated to 2030 is provided.

The Low Range projections use the average rate of growth per decade for each municipality from 1980 to 2000. The High Range projections use the average rate of growth per decade for each municipality from 1990 to 2000.

TABLE 4

POPULATION PROJECTIONS 2000-2030

MT. PENN BOROUGH AND LOWER ALSACE TOWNSHIP

	2000	2010	2020	2030
Mt. Penn Borough				
Low Range	3,016	3, 011	3,007	3,002
High Range	3,016	3,154	3,299	3,450
Lower Alsace Township				
Low Range	4,478	4,264	4,050	3,836
High Range	4,478	4,255	4,043	3,841

Source: U.S. Census, SSM 2001.

In the Low Range, Mt. Penn Borough is projected to decrease in population to 3,011 for 2010, to 3,007 for 2020, and to 3,002 for the year 2030. In the High Range, the Borough is projected to increase to 3,154 in 2010, to 3,299 in 2020, and to 3,450 in 2030. Given the limited amount of land available in Mount Penn, an increase to 3,450 in 2030 could be difficult to achieve, particularly if conversions of single family units to apartments can be decreased. Lower Alsace Township is projected to decrease in population to between 4,255 and 4,264 for 2010, to between 4,043 and 4,050 for 2020, and to between 3,836 and 3,841 for the year 2030.

Table 5 provides residential construction information for Mt. Penn Borough and Lower Alsace Township in 1998, 1999 and 2000, as published by the Berks County Data Book.

TABLE 5

MT. PENN BOROUGH AND LOWER ALSACE TOWNSHIP

NEW HOUSING UNITS ADDED TO ASSESSMENT ROLLS 2000 TO 2003

Municipality	2000	2001	2002	2003	Total 2000 to 2003
Mount Penn Borough	0	1	0	0	1
Lower Alsace Township	3	8	6	7	24

Source: U.S. Census

From 2000 to 2003, the Borough had one (1) unit added to the assessment rolls. The Township had 24.

U.S. Census Bureau Population Estimates

The following are U.S. Census Bureau population estimates for 2001, 2002, and 2003.

Municipality	2000 Census	2001 Estimate	2002 Estimate	2003 Estimate	Change 2000 to 2003
Lower Alsace Township	4,478	4,464	4,465	4,456	-22
Mount Penn Borough	3,016	2,996	2,984	2,970	-46

Based on U.S. Census Bureau estimates, the population of both municipalities is decreasing, even with construction of 24 dwelling units in Lower Alsace Township. If the estimated trends from 2000 to 2003 continue, the population of Mount Penn will decrease to 2,863 by 2010 and the population of the Township will decrease to 4,405. The population of the Borough would be lower than population projections, including the low range. The population of the Township would be higher than projections, but still would be lower than in 2000, continuing the trend in previous decades.

CHAPTER 20

REGIONAL INFLUENCES

ROAD SYSTEM

Lower Alsace Township and Mount Penn Borough both adjoin the City of Reading. Business Route 422 goes through the center of Mt. Penn Borough, creating an easily accessible route to and from the City for the Borough and the Township, as well as municipalities east of the region. Business 422 connects to the Warren Street Bypass and West Shore Bypass, located west and south of the City of Reading, which link to U.S. Route 222 and Business 222 (North and South), Route 61 North, and Route 183 North. Carsonia Avenue, Angora Road, and Friedensburg Road carry significant through traffic in Lower Alsace Township north to Alsace and Oley Townships and Route 73, north to Alsace and Muhlenberg Townships, and south to Perkiomen Avenue. This road system links the region to places such as Philadelphia, King of Prussia, Harrisburg, and Hershey.

LAND USE

Lower Alsace and Mt. Penn are between the developed urban core of Reading and rapidly growing and suburbanizing Exeter and Amity Townships. Reading continues revitalization efforts, which would increase movement into the City. The Civic Center is operating, the Goggle Works has been proposed, and efforts are being made to plan for the riverfront.

Mount Penn Borough is predominantly developed, with higher density residential neighborhoods, generally developed in a grid pattern. The Borough lacks a strong commercial core, due in part to the close proximity to the City of Reading and commercial development to the east. The hilly nature of Borough streets and slopes in the vicinity of Perkiomen Avenue also play a role, as pedestrian movement is difficult for some and the topography limits the extent of development and parking.

Lower Alsace is a township of contrasts. The Pennside area is highly developed. The Township also contains major open space areas such as Mt. Penn Reserve, Neversink Mountain, and the Antietam Lake region. Much of the open space is owned by the City of Reading. Much of the population within the Township is found along Carsonia Avenue, and roads that intersect Carsonia Avenue. This area also developed in a grid pattern.

St. Lawrence Borough, Exeter Township, and Amity Township Joint Comprehensive Plan

A Comprehensive Plan is being prepared for St. Lawrence Borough, Exeter Township, and Amity Township. The future land use plan for this area, compared to Lower Alsace and Mt. Penn's future land use plan, indicates a general consistency (see Chapter 11). Exeter Township is designating the land within Neversink Mountain as Rural Preservation, to help preserve the mountain area and its setting.

Mount Penn and Lower Alsace recognize the potential for the Schuylkill Valley Metro to stop in the adjoining region, and the planned trail system will connect to trails in Exeter which will lead to the metro. Park and ride facilities which will facilitate use of the metro are also considered important.

Adjoining Zoning

Zoning of adjacent municipalites is mapped in Chapter 11.

CHAPTER 21

PARKS, RECREATION AND OPEN SPACE

INTRODUCTION

Parks and open space can enhance the quality of life within an area by preserving natural and cultural features for the enjoyment of all residents and strengthen the sense of community by providing opportunities for residents to interact. Some leisure activities, such as hiking, fishing and boating are directly dependent upon natural resources. Recreational activities can also be enhanced by the cultural features of a community. For instance, historic resources in the area can play an educational role for residents and be incorporated into hiking and bicycle trails.

Existing Parks, Recreation and Open Space System

A number of major recreational facilities are available in Berks County to serve residents in Mt. Penn and Lower Alsace. Some of these recreational facilities include:

Blue Marsh Lake Recreational Area
French Creek State Park
Nolde Forest Environmental Education Center
Tulpehocken Creek Park System
Mount Penn Preserve
Daniel Boone Homestead
French Creek State Park
State Gamelands
Appalachian Trail
Kaercher Creek Park
Kernsville Recreation Area
Conrad Weiser Park
Camp Joy
County Youth Recreation Facility
Allegheny Aqueduct
Horseshoe Trail
Hawk Mountain Sanctuary
Neversink Mountain Preserve

Recreation resources in close proximity to Mt. Penn and Lower Alsace include:

Lorane Hollow Community Park - Exeter Township
Exeter Golf Course - Exeter Township
Antietam Valley Recreation and Community Center - Exeter Township
Angelica Park - Reading
Baer Park - Reading
Centre Park - Reading
City Park - Reading
Dana Memorial Park - Reading
Egelman's Park - Reading
Heritage Park - Reading
Hillside Playground - Reading
Keffer Park - Reading
Mineral Spring Park - Reading
Pendora Park - Reading
Riverfront Park - Reading
Riverdale Park - Reading
Schlegel Park - Reading
Schuylkill River Park - Reading
Exeter Community Park – St. Lawrence
Township Park - Alsace
Poplar Neck Park - Cumru
Lock House Park - Cumru
Hunter's Run Park – Exeter
Trout Run Recreation Area – Exeter
River Bend Park - Exeter

Types of Recreation Facilities

The National Recreation and Park Association (NRPA) has prepared a classification scheme for use by municipalities in creating and evaluating a park and open space system. It is intended to serve as a planning guide and can be modified to address the recreational needs unique to each municipality. The NRPA classification scheme is divided into two categories: (1) park and open space areas that are considered to be "local" or "close-to-home" due to their smaller size and close proximity and (2) park and open space areas that are considered "regional" due to their larger size and broader service area. Within each category, there are various types of parks and open space areas that can be identified according to their specific characteristics, as described in Table R-1. Overall, the NRPA recommends that municipalities have between 6.25 and 10.5 acres of local park land and open space per 1,000 residents. This land, considered the "core" of a municipal park and open space system, should be suitable for intense development and used primarily for active recreational purposes. In addition,

municipalities should also provide between 15 and 20 acres per 1,000 residents of "regional" park and open space areas that can be used as open space, active or passive recreational areas. Sufficient regional park and open space is and could be available in the Mt. Penn Preserve, Antietam Lake and Neversink Mountain areas.

TABLE 1

NRPA PARK; RECREATION AND OPEN SPACE CLASSIFICATION SCHEME LOCAL/CLOSE-TO-HOME SPACE = TOTAL OF 6.25 TO 10.5 ACRES OF DEVELOPED OPEN SPACE PER 1,000 PERSONS

Type of Park Service Area	Desirable Site Size	Acres/1,000 Persons
Mini-Park Less than ¼ mile Specialized facilities that serve a concentrated radius or limited population or specific group such as tots or senior citizens.	1 acre or less	0.25 to 0.5 acres
Neighborhood Park/Playground ¼ to 1/2-mile radius to serve a population up to 5,000 persons Area for intense recreational activities such as field sports, court games, crafts, playground (a neighborhood) activities, skating, picnicking, swimming, etc.	15+ acres	1.0 to 2.0 acres
Community Park Area of diverse environmental quality. May Several include areas suited for intense recreational neighborhoods. I to facilities such as athletic complexes and/or 2-mile radius. large swimming pools. May be an area of natural quality for outdoor recreation such as walking, viewing, sitting, picnicking. May be any combination of the above, depending upon the site suitability and community needs.	25+ acres	5.0 to 8.0 acres

Source: National Recreation and Park Association - Recreation, Park and Open Space Standards and Guidelines

TABLE 1- Continued

NRPA PARK, RECREATION AND OPEN SPACE CLASSIFICATION SCHEME REGIONAL SPACE = TOTAL OF 15.0 TO 20.0 ACRES FOR 1,000 PERSONS

Type of Park	Service Area	Desirable Site Size	Acres/1,000 Persons
Regional/Metropolitan Park Area of natural or ornamental quality for outdoor recreation (such as picnicking, boating, fishing, swimming, camping, and trail uses)	Several communities. 1-hour driving time.	200+ acres	5.0 to 10.0 acres
Regional Park Preserve Area of natural quality for nature-oriented outdoor recreation (such as viewing/studying nature, wildlife habitat, conservation, swimming, picnicking, hiking, fishing, boating, camping and trail uses) which may include, active play areas. Generally, 80% of the land is reserved for conservation and natural resource management, with less than 20% used for recreation development.	Several communities. 1-hour driving time	1,000+ acres or sufficient area to encompass the resource to be preserved and managed.	Variable
Community Park Area of diverse environmental quality. May include areas suited for intense recreational facilities such as athletic complexes and/or large swimming pools. May be an area of natural quality for outdoor recreation such as walking, viewing, sitting, picnicking. May be any combination of the above, depending upon the site suitability and community needs.	Several neighborhoods. 1 to 2-mile radius.	25+ acres	5.0 to 8.0 acres

Source: National Recreation and Park Association - Recreation, Park and Open Space Standards and Guidelines

Parks, Recreation and Open Space System in Mt. Penn and Lower Alsace

Mt. Penn Borough

Mt. Penn currently does not have a Borough park. A playground with limited availability is located at the Mt. Penn Elementary School.

Lower Alsace Township

Recreation facilities in Lower Alsace Township include:

The Antietam Valley School District Athletic Fields. These fields include baseball fields, field hockey fields, soccer fields, softball fields, tennis courts and a track.

Rotary Park. This park includes a baseball field, football field and a nature study area. The field is for the use of City of Reading residents only at this time.

The Antietam Valley Recreation and Community Center adjoins the Township, in Exeter Township.

Neversink Mountain

The Township of Lower Alsace and the Borough of Mount Penn are two of the six municipalities with land on Neversink Mountain.

In 1979, the Berks County Conservancy acquired its first parcel of land on Neversink Mountain with the goal of protecting the parcel for use as open space and recreation. Since this first acquisition, the Berks County Conservancy has protected approximately 292 acres on the mountain, 204 of which are located in Lower Alsace Township. An additional 127 acres on Neversink Mountain are owned and protected by the Earl Trust. The goal of this preservation activity is to provide residents and Berks County visitors with permanently preserved open space to be used for educational and recreational activities as defined in the Feasibility Study for Neversink Mountain completed in 1997. The Long Range Plan, outlined in the Feasibility Study, proposes that about 950 acres be included for a Neversink Mountain Park.

Presently the access and circulation facilities on Neversink Mountain consist of existing paved public streets, public trails, access lanes for utilities, access lanes to private properties, and trails on private lands. Often, lands have multiple uses, such as a utility land that is also used as an access to a private property and/or as a hiking trail. The mountain is accessible from the Borough of Mount Penn by 20th Street, which serves as the primary access for the residents of the mountain. The long-range plan also identifies access via a hiking trail from 23rd Street in Mount Penn. This hiking trail would connect

the mountain with 23rd Street and the local neighborhoods in Mount Penn Borough and Lower Alsace Township. Mount Penn Borough residents may also have the opportunity to utilize nearby hiking/biking access to the mountain through a proposed St. Lawrence Access point at 27th Street that would utilize an existing lane extended from Fairview Avenue.

In the long run, Neversink Mountain Park could be better linked to other open space areas and recreation facilities. By creating an urban trail along the east side of 19th Street, the trail system could be continued through Pendora Park, the historic Mineral Spring Park, and Egelman's Park to the 1500-acre Mount Penn Reserve and Antietam Lake.

Antietam Lake

Currently, the approximate 560-acre Antietam Lake Reservoir property offers recreational opportunities, including trails that connect to Mt. Penn. In 2001, a grassroots organization formed to encourage the use and preservation of the Antietam Lake Reservoir.

Earl Trust Properties

The Clinton F. Earl Trust was set up by the Executor of the Earl estate under a provision of his Will dated July 11, 1921. The Will stipulated that 25% of the residue of the estate be used *"for purchasing nearby property for Park purposes preferably woodland on Mt. Penn or Neversink Mountain"*. This Trust was established with a bank that has now become Wachovia.

A majority of the Earl Trust properties are located in Lower Alsace Township and on Neversink Mountain. Approximately 127 acres of Earl Trust land is located on the western end of Neversink Mountain, and about 239 acres of Earl Trust land are located elsewhere in Lower Alsace Township.

A majority of the Earl Trust land is woodland, with the exception of the Hill Road property previously known as the Community Gardens. This property had been used by the City of Reading for community gardens and now sits vacant. The Joint Planning Committee members have identified this site as a potential location for active recreational fields for the community.

Recreation Programs

Programs are available within the Antietam Valley School District, YMCA located in the City of Reading and the Stony Creek Recreation Association.

Recreation Acreage Needs Analysis

The following table presents a recreation acreage needs analysis for Mt. Penn and Lower Alsace Township.

The Recreation Acreage Needs Analysis indicates for each municipality its projected population in the years 2000, 2010 and 2020, and local recreation requirements applying the National Recreation and Park Association Standards. A range is given, the lower number for the NRPA standard of 6.25 acres per 1,000 population and the higher figure for the high end range of 10.5 acres per 1,000 population. Public recreation acreage in 2000 is indicated as well as projected public acreage in 2020, the 2000 deficit in acres, and the projected 2020 deficit in acres.

No deficit is indicated in Lower Alsace Township in 2000 for the low range need. A deficit of 12 acres is indicated for the high range need. Recreational lands that are accessible to Township residents within the Township total 35 acres, including the Antietam School District athletic fields and the Antietam Valley Recreation Association grounds, which are in Exeter Township but adjoin Lower Alsace Township.

Mt. Penn Borough has a deficit of 16.8 to 29.6 acres in 2000 and a deficit of 16.8 acres to 29.6 acres in 2020.

If one looks at the year 2020, there is no deficit in Lower Alsace Township, if Hill Road athletic fields are added to the available acreage. Total available acreage in 2020 would be 91.

If the region is looked at as a whole, in 2020 there is a deficit of 12 acres at the low range need and 43 acres at the high end need. In 2020, there would be no deficit at the low range and high range needs.

PENN & LOWER ALSACE
RECREATION ACREAGE NEEDS ANALYSIS

	Projected Population			Local Recreation Requirements Applying Projected Population NRPA Standards of 6.25 to 10.5 Acres per 1000 Population			Acreage 2000	Projected Public Acreage 2020	2000 Deficit in Acres	Projected 2020 Deficit in Acres
	2000	2010	2020	2000	2010	2020				
Mt. Penn	3,016	3,011	3,007	18.8 to 31.6	18.8 to 31.6	18.8 to 31.6	2.0[1]	2.0	16.8 to 29.6	16.8 to 29.6
Lower Alsace	4,478	4,264	4,050	27.9 to 47.0	27.9 to 47.0	27.9 to 47.0	35 0[2]	91[2]	0	0

[1] Includes Elementary School
[2] Includes School District Athletic Field, Antietam Junior/Senior High School, Antietam Valley Recreation Assn. In 2020, Hill Road acreage is included.