

# CHAPTER 4

## **INVENTORY OF POTENTIALLY VULNERABLE RESOURCES**

A key component of the open space plan is a review of existing protected land. An inventory of existing conditions, along with an assessment of future needs, is necessary for formulating many of the plan's goals and objectives. Existing protected land refers to land preserved for active or passive recreation use and/or for environmental conservation purposes. In addition to municipally-owned areas, it can include land preserved by private conservation groups, farmland, schools sites, and private open space preserved as part of residential or non-residential development.

### **GEOLOGY**

Except for surface outcrops, bedrock geology is unseen, and as a result its influence on natural features is not always acknowledged. However, the influence is both strong and pervasive, for bedrock geology is the foundation of an area. Bedrock, along with the hydrologic cycle, is responsible for the changes in elevation, steep slopes, location of watercourses, and orientation (orientation, in turn, will influence vegetative communities,

soils, and availability of sunlight). The bedrock or parent material has a great influence on the type of soil formed. For example, hard, igneous bedrock has resulted in soils with a high stone and boulder content. Groundwater yield differs from one bedrock formation to the next. In Montgomery County, the difference ranges from under 1 gallon per minute (gpm) to over 30 gpm.

Montgomery County is located in the Triassic Lowland and Piedmont Upland section of the Piedmont Physiographic Province. The Piedmont Uplands are located in the eastern part of the county and include Rockledge. They are comprised of older metamorphic and igneous rock (granite and schist), although there is a band of carbonate rock that stretches east from Chester County to Abington Township.

Rockledge's soils are underlain by the Wissahickon Schist geologic formation, which covers most of Abington and the far eastern portion of Montgomery County. Schist is soft rock and is highly weathered near the surface. Joints through which groundwater flows are moderately abundant, making groundwater yields variable, though generally moderate (usually less than 20 gal/min).

Although Rockledge is completely served by a piped water system, in more rural communities the underlying geologic formations can significantly affect the potential for adequate well-water yields. The Wissahickon Schist formation only yields small well-water supplies unless well depths exceed 250 feet. The intensity of development in the borough, however, precludes the use of well-water to serve community needs.

## **TOPOGRAPHY**

### **STEEP SLOPES**

Slope, or frequency of change in elevation, is an important environmental condition. When expressed as a percentage, slope is defined as the amount of change in vertical elevation over a specified horizontal distance. For example, a three foot rise in elevation over a one hundred foot horizontal distance is expressed as a three percent slope. These changes in elevation throughout a community contribute a great deal to its appearance and natural diversity.

This is especially true of the steep slope areas of a community, which also cause limitations

to development. 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 health and safety posed by unstable hillsides.

Steep slopes often have a combination of vegetation, climate, soil and underlying geology that differs from the surrounding area. Frequently this means that the environmental sensitivity of the steep slope are different as well. Susceptibility to erosion and mass movement may be greater than the surrounding area, especially if vegetation is removed. Increased runoff and sedimentation from disturbed slopes require increased public expenditure for flood control and stormwater management. Also, different species of plants and the associated wildlife that depends on these plants may be present only on the slopes, creating unique recreation opportunities.

Overall, Rockledge is characterized by relatively flat terrain with no areas of steep slopes. Some of the steepest slopes in the borough slope down to the Rockledge Branch of the Pennypack Creek, along Blake Avenue, Robbins Avenue, and Jarrett Avenue. The borough recently acquired two parcels with modest slopes: Mill Park at 27 North Jarrett (4 to 12 percent slopes), and Rockledge Park on Rockledge Avenue (4 to 8 percent slopes).

### **WATERSHEDS AND DRAINAGE AREAS**

Soils are a natural assortment of organic materials and mineral fragments that cover the earth and support plant life. The composition of soils changes slowly over time, due to weathering of rock and activity of soil organisms. As a consequence, soils vary with respect to depth to bedrock, depth to groundwater, color, mineral characteristics, fertility, texture, and erodibility. One of the most influential natural features, soils are a result of the hydrology and

the weathering capacity of the underlying geology in a given area. They are also influenced by the orientation of the land and the types of vegetation that grow in them. Conversely, the type of soil influences the vegetative cover of the land, which effects the quality and quantity of surface and groundwater, wildlife diversity, rates of erosion, and the aesthetic quality of the landscape.

Though soils are diverse, soil scientists have classified the soils found in Montgomery County into several groups called soil series. Soils listed within the same series will display similar subsurface characteristics. The surface characteristics of soils within a particular series can vary in slope, degree of erosion, size of stones, and other easily recognizable features.

The majority of the soils in and around Rockledge are classified as fill or “made land” of Wissahickon Schist origin. Made land is simply areas where earthmoving during development has removed or altered the characteristics of the original soils.

In addition to the soil mapping units, soils can also be divided into prime and important agricultural soils, hydric components, and

alluvial soils. The groups of soil pertinent to the Borough are described below.

## SOILS

### HYDRIC SOILS

These are periodically wet soils in an undrained condition that often support the growth of wetland vegetation. There are no hydric soils in Rockledge. The closest area with hydric soils is just west of the borough, south of Fox Chase Road in Abington.

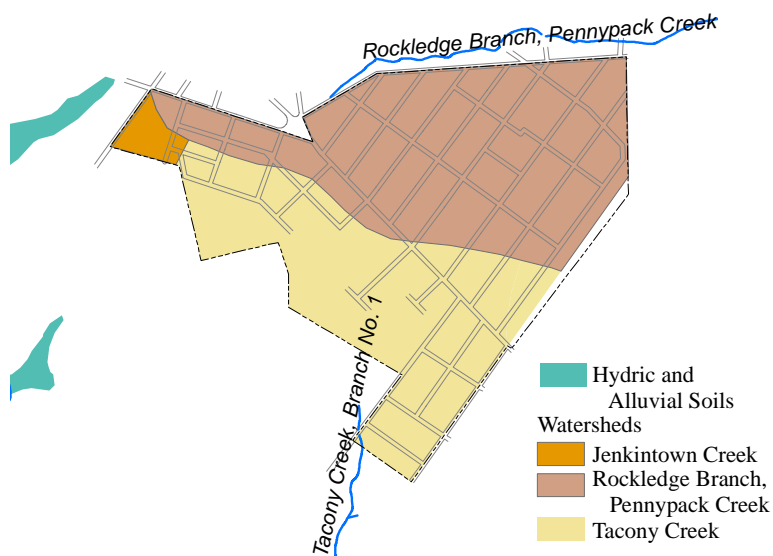
### ALLUVIAL SOILS

Alluvial soils are frequently, but not always, located within a floodplain. They have been deposited by flowing water and are not stable as a result of their texture and composition. The presence of alluvial soils is only one indicator of a floodplain. An important aspect of alluvial soils is that they often form aquifer recharge areas. There are no alluvial soils in Rockledge. However, there is an area of alluvial soils which overlaps with the hydric soils area just west of the borough, south of Fox Chase Road in Abington.

## SURFACE WATERS AND HYDROLOGY

Water is a valuable resource, consumed by people and industry, enjoyed at recreation facilities, employed in the assimilation of treated sewage, and integral to the landscape. The average rainfall in the county varies from 43 inches in Lower Merion near City Avenue to 47 inches in the vicinity of the Green Lane Reservoir. It should be noted that in any given year, annual precipitation can vary from the average by as much as ten inches. Generally speaking, in a natural setting 25 percent of precipitation becomes direct runoff, 50 percent evaporates or is transpired by plants, and 25 percent replenishes groundwater.

Figure 4.1  
*Soils & Watersheds*



The surface water that falls on or is carried through Rockledge affects the topography, soils, vegetation, and groundwater and comes from two natural sources: direct runoff and groundwater. A third, manmade source, may also contribute to stream flow: effluent from sewage treatment plants, which tends to dampen the variation between high and low flow periods.

**WATERSHEDS AND STREAM CORRIDORS**

The borough drains toward the Delaware River. As shown in Figure 4.1, this occurs within the Pennypack and Tookany Drainage Basins, which also cover parts of Abington Township, Bryn Athyn Borough, Cheltenham Township, Hatboro Borough, Horsham Township, Jenkintown Borough, Lower Moreland Township, and Upper Moreland Township.

These basins are comprised of a series of smaller basins. For example, the Rockledge Branch is within the Pennypack Creek Watershed, while the Jenkintown Branch is within the Tookany Creek watershed.

**FLOODPLAINS**

There are no floodplains in Rockledge.

**GROUNDWATER AND PUBLIC WATER SERVICE**

Groundwater behaves much like surface water, flowing like a stream, only much slower. Groundwater is tapped as a source of drinking water and for industrial purposes where surface water is unavailable.

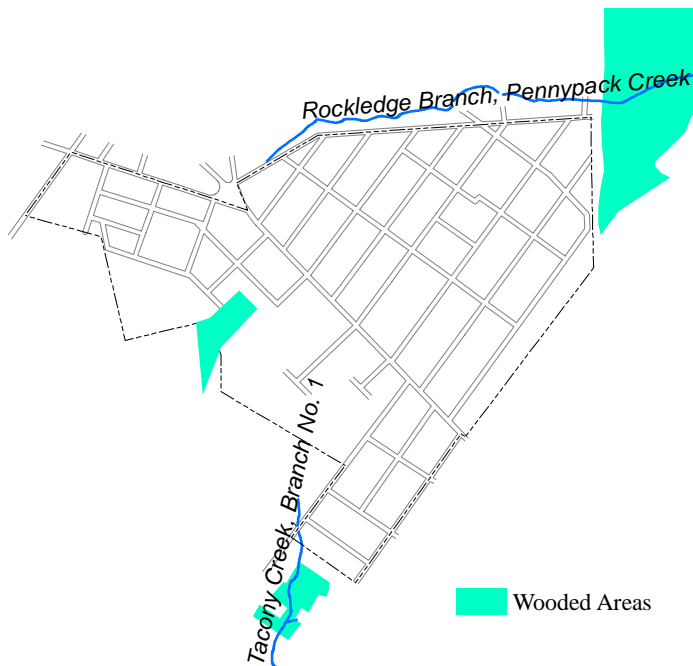
Groundwater replenishment occurs slowly, as precipitation and in some cases stream water seeps through the soil, down to the aquifer. Open, undisturbed land is essential to groundwater recharge, since vegetation serves to retain precipitation where it falls, allowing it to soak into the soil rather than run off the surface. Impervious surface from development prevents infiltration of precipitation.

Rockledge is serviced by public water mains provided by Aqua Pennsylvania. Water service in Rockledge should continue to be adequate in the future. Aqua Pennsylvania operates a public water supply system that services Rockledge as well as the southeastern portion of Montgomery County from Upper Merion to Lower Moreland. The water is drawn from the Schuylkill River, Neshaminy Creek, Pickering Creek, Perkiomen Creek, and wells. In addition, the system is integrated with other public water companies.

**VEGETATION AND WILDLIFE WOODLANDS**

The original vegetation of Montgomery County was a dense forest of hardwoods which covered over 99 percent of the county. Oaks were the dominant species, but chestnut, tulip poplar, hickory, ash, red maple, and dogwoods were also present. Several hundred years of clearing and cultivation, and in more recent times the rapid development of houses and

Figure 4.2  
Wooded Areas



commercial facilities, have reduced woodlands to a shadow of their former extent. The principle types of woodlands remaining in the county are:

Red Oak - About 60% of all remaining woodlands. Northern Red Oak is predominant, but Black, Scarlet and Chestnut Oak are also abundant.

Ash/Maple/Elm - About 19% of all woodlands. Local mixtures will vary, and include minor species, such as the Slippery Elm, Yellow Birch, Black Gum, Sycamore, and Poplar.

Eastern Red Cedar - 18% of the county's wooded acres are covered with this species and associated species: Gray Birch, Red Maple, Sweet Birch, and Aspen.

Sugar Maple/Beech/Yellow Birch - The

for wildlife, provide buffers for creeks, and offer recreational opportunities for residents. Hedgerows and wooded corridors also prevent erosion, and provide cover for wildlife movement, shelter, and migration.

The distribution of woodlands in Montgomery County can be described in three different patterns. Small, widely scattered stands can be found east of the central county ridge, often strung along alluvial soils. Long, linear stands along streams and on alluvial soils are typical in the central part of the county. Large forested blocks of land, often hundreds to thousands of acres in size, are found on ridges in the central and northern areas of the county.

Forested areas, however, are less common in the eastern part of the county. Some of the most significant stands in this region include those in Lorimer Park and Alvethorpe Parks (Abington Township), Bryn Athyn Borough, and Pennypack Valley Park (Philadelphia).

The borough of Rockledge is a built-out area with no woodlands. However, parts of the borough, including Rockledge Park, the cemeteries, residential lots, and streets are partly wooded or tree-lined. This adds to the borough's character and produces an attractive shade canopy in the summer. Rockledge borders wooded areas along Shady Lane and the abandoned Newtown Branch of the Reading Railroad line in Abington Township. The latter area is notable since it is the site of the proposed Pennypack Greenway County Trail.



*Montgomery Avenue, One of Many Attractive Tree-Lined Streets in the Borough*

remaining three percent of woodlands is comprised of this association. Associated species include Red Maple, Hemlock, Northern Red Oak, White Ash, and Tulip Poplar.

Woodlands and hedgerows serve many purposes, both functional and aesthetic. Woodlands prevent erosion, provide habitat

**SCENIC ROADS AND VISTAS**

Scenic resources are elements of the natural and/or built environment that stand out among all the attributes of a community. They tend to be the most pleasant and interesting places, such as historic sites, natural features like lakes or creeks, and recreation areas.

Although the process of identifying a scenic resource is largely dependent on the observer's

Figure 4.3  
*Historic Resources*

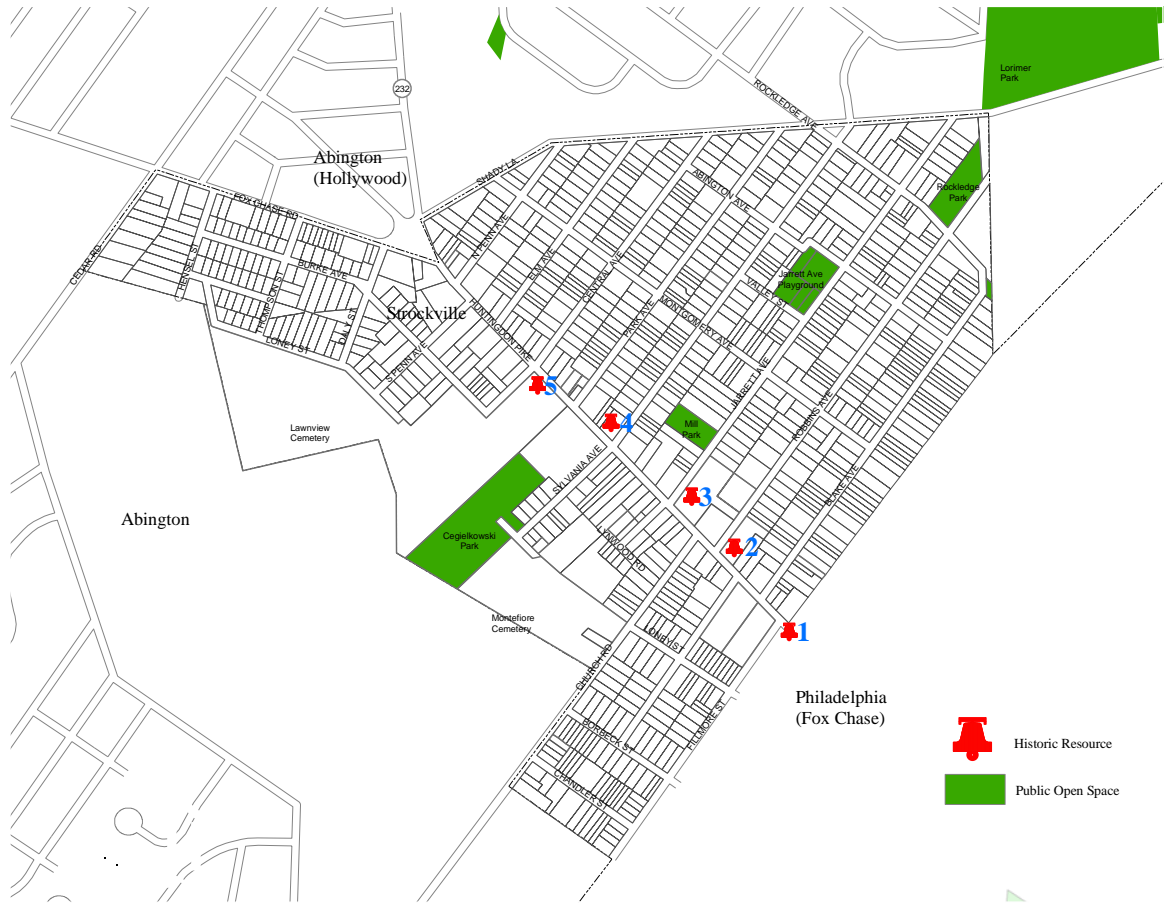
Address/Site	Number on Map	Construction Date	Historical Significance
Huntingdon Pike (boundary with Philadelphia)/Gateway Monuments	1	c.1921	Rockledge Gateway—This location contains two stone war memorial monuments marking the gateway to Rockledge. The monuments lie on the Philadelphia side of the boundary and are under the jurisdiction of the Fairmount Park Commission.
121 Huntingdon Pike/former Rockledge Elementary School	2	1903-1917	The original Rockledge Elementary School building was erected at the northeast corner of Huntingdon Pike and Robbins Avenue in 1889. The building had a wood frame structure, and was destroyed by fire in 1902. In 1903, a new stone school opened on the same site, and a four-room expansion was completed in 1917; the school closed in 1977.
205 Huntingdon Pike/Church of the Holy Nativity	3	1893	This church was constructed in 1893-1898, having been funded by the Ryers family. It was modeled after St. Neott’s Church in England and the architects were the renowned firm of Milligan & Webber of Philadelphia. It was built by the respected Fox Chase builder, Joseph Ashly. The first building on the site was constructed in 1893 for the then-Mission Parish of the Holy Nativity.
501 Huntingdon Pike/First Firehouse	4	1910	Was the first firehouse constructed for that purpose in the borough. The current firehouse, at 505 Huntingdon Pike, was constructed in 1953. Rockledge’s Fire Company No. 1 was organized in 1903.
400 block of Huntingdon Pike (at Lawnview Cemetery)/ Former Site of Tollhouse	5	Unknown	The Fox Chase and Rockledge Turnpike Company operated the Rockledge Tollhouse near the current entrance to Lawnview Cemetery until the 1920s. At that time the state took over maintenance of the road and the Tollhouse was moved to 208 Central Avenue in 1935. [Source: “Images of America: Abington, Jenkintown, and Rockledge”, Old York Road Historical Society, 2000]

**Source:** “Rockledge Borough Parks, Open Space and Recreation Plan,” 1995 (Lord, Anderson, Worrell & Barnett, Inc., Consultant).

own opinions and preferences, information collected from a community group, such as a planning commission, can provide a relatively broad inventory. Wherever possible, these areas should be preserved and linked to the community’s open space and recreation system. Scenic resources in Rockledge are generally considered to include the borough’s residential tree-lined streets, which feature a pleasant shade canopy and well-kept, attractive homes.

Roadways with scenic attributes contribute to a community’s open space system because they provide a way to view its scenic resources and in some cases also serve as recreation routes for walkers, bicyclists, and joggers. In Rockledge there are many areas that have scenic qualities, including streets lined with large, mature shade trees and well-kept, attractive homes.

Figure 4.4  
*Historic Resources*



## HISTORIC AND CULTURAL RESOURCES

As Rockledge is an older, developed borough, it has historic resources located within its borders. Although there are no sites on or designated as eligible for inclusion on the National Register of Historic Places, there are sites of local historic and cultural significance.

Rockledge was part of the Waterman Plantation, first settled c. 1688, by Captain Humphrey Waterman of Barbados. He died c. 1695 and the lands went into a trust until his son Isaac reached his maturity c. 1707. The oldest homes within the Borough can be traced to this family.

Huntingdon Pike (PA 232) is the Borough’s “Main Street”. It originated as an Indian path before the arrival of William Penn, and was used by the first settlers to homestead parts of Montgomery and Bucks Counties. It became a turnpike (toll road) in 1846, and remained as such well into the 20th century.

Many Philadelphians sought to move out of the city in the 1880’s seeking a suburban lifestyle. This migration generally followed the rail service at that time. Some of these newcomers were very wealthy businessmen, who established large country estates in the surrounding area. Joining the exodus from the city were members of the middle class. These are the

people who settled around the Village of Fox Chase, and founded the Borough of Rockledge in 1883.

Figures 4.3 and 4.4 (Historic Resources) describe the location and styles of important structures. Figure 4.5 is an 1877 map showing the future site of Rockledge (circled).

Figure 4.5  
1877 Map of Abington & Cheltenham

