

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 Southwestern Berks County are served with public sanitary sewer and water facilities, including the Borough of Wernersville, residential areas in Lower Heidelberg Township north of the Borough and South Heidelberg Township south of the Borough, Spring Meadows in South Heidelberg Township west of Sinking Spring, and Green Valley Estates in Lower Heidelberg Township along Green Valley Road. The above mentioned areas of the three municipalities also contains the larger commercial and industrial developments found in the region.

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 is 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 area 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 agricultural preservation, it is not desirable to extend the public sewer and water service to those areas.

Public Sanitary Sewer Facilities

Three public sewage treatment plants are located just outside Lower Heidelberg Township, including the Robeson-Wernersville Sewage Treatment Plant in the vicinity of Wooltown and Hain's Mill Roads, along the Spring Creek, the Sinking Spring Sewage Treatment Plant along the Cacoosing Creek near Reedy's Road, and the Spring Township Sewage Treatment Plant along the Cacoosing Creek along Reedy's Road. These three plants serve the Borough of Wernersville and portions of Lower Heidelberg and South Heidelberg Townships. Also, the proposed Legacy at Papermill, in Lower Heidelberg Township near Spring Ridge, will use the City of Reading's sewage treatment facility.

The Borough of Wernersville has a sewage collection system throughout the Borough which connects to the Robeson-Wernersville Sewage Treatment Plant via interceptors along Hospital Creek and the tributary to Spring Creek paralleling Ruth Avenue. The Saddlebrook area of Lower Heidelberg and other portions of the Township adjoining the northern part of Wernersville are served by a collection system which also connects to the Robeson-Wernersville plant.

The residential developments south of Wernersville in South Heidelberg Township are connected to the Wernersville collection system and also flow to the Robesonia-Wernersville Sewage Treatment Plant. Flows from the Wernersville State Hospital also are to this plant.

The Green Valley Estates development in the eastern portion of Lower Heidelberg Township flows to the Sinking Spring Sewage Treatment Plant. The two new school facilities near Green Valley Estates are served through this sewer plant, also.

The Rosewood Hills subdivision along State Hill Road in the eastern portion of Lower Heidelberg Township connects to the Spring Township Sewage Treatment Plant through the Cacoosing Meadows area.

In South Heidelberg Township, the Spring Meadows subdivision off of Route 422 and nearby commercial development flow to the Sinking Spring plant. The South Heidelberg Industrial Park will also flow to this plant. While the capacity for Heidelberg Run East and West and the sewer extension to Fritztown are reserved in the Sinking Spring plant, flows are actually to the Spring Township interceptor and the Spring Township plant. There is an agreement that compensating flows be directed to the Sinking Spring plant from other sources. The flows from Heidelberg Run are high enough that an agreement has been completed to construct a pump from the Spring Township interceptor to the Sinking Spring plant.

Soil Suitability for On-Site Sewage Disposal

The availability of public sanitary sewer facilities is important, and the use of such facilities should be encouraged when consistent with the future Land Use Plan, because of the general unsuitability of soils in Southwestern Berks County for on-site sewage disposal. There are no soils considered suitable for on-site sewage disposal in Lower Heidelberg Township and Wernersville Borough based on United States Department of Agriculture Natural Resources Conservation Service rating of limitations for septic tank absorption fields, when limestone soils are excluded because of the hazard of ground water contamination.

Very limited areas of South Heidelberg Township are classified as suitable for on-site sewage disposal. Suitable soils are scattered in the central portion of the Township, south of the limestone area to the north, and in a larger concentration in the southeast corner of the Township.

Public Water Supply Facilities

Generally, areas served by public sanitary sewers are served by public water supply. The Wernersville Municipal Authority serves the Borough of Wernersville, portions of Lower Heidelberg Township north of the Borough, and portions of South Heidelberg Township south of the Borough. A reservoir is located near Hain's Church off of Church Road in Lower Heidelberg Township. Reservoirs, springs, and wells are located in South Heidelberg Township, mainly in the Wernersville Municipal Authority watershed in the vicinity of Furnace and Point Roads. The Rosewood Hills development along State Hill Road receives its water from. There is a backup connection for the development from Western Berks Water Authority. Western Berks and Pennsylvania American have worked cooperatively in the past and would do so in the future.

The eastern portions of Lower Heidelberg and South Heidelberg, including Green Valley Estates, Cacoosing Gardens, Spring Meadows, Heidelberg Run, and the proposed Legacy at Papermill are served by Pennsylvania American.

The Wernersville State Hospital has its own water system, with filtration plant along Hospital Creek and storage tank near Hospital Road, there is an interconnection with the Wernersville Municipal Authority. Galen Hall also has a private water system, with storage facilities, springs and wells located on its property.

The Womelsdorf-Robeson Municipal Authority serves Robeson Borough and Heidelberg Township, but does not extend into Lower Heidelberg or South Heidelberg Townships. The watershed area is located south of Robeson. Wells are located within the watershed and along the railroad tracks near Furnace Road in Heidelberg Township.

Interconnections of Water Systems

Four water systems have been interconnected, the Wernersville Municipal Authority system and the Wernersville State Hospital system, through an extension of a water line from Furnace Road to the Hospital. Western Berks Water Authority has an interconnection with both Wernersville Municipal Authority and Pennsylvania American. The other systems have not been interconnected. Such interconnection could be of value in times of emergency.

Sewer Capacities

Wernersville Borough has capacity in the Robeson-Wernersville plant to serve future development in the Borough. South Heidelberg Township has purchased substantial capacity at the plant to serve anticipated future development in the western portion of the Township and the area around Wernersville.

Lower Heidelberg Township has capacity reserved in the Sinking Spring, Robeson-Wernersville and Spring Sewage Treatment Plants. The Township completed an Act 537 Plan revision in 2010. Wernersville has no involvement in this plant. South Heidelberg has limited capacity available for other uses in the eastern end of the Township in the Sinking Spring plant and has some capacity at the Spring Township Plant. The Reading Sewage Treatment Plant will serve the proposed development of the Legacy at Papermill.

Water Capacities

Both the Wernersville Municipal Authority and Pennsylvania American take the position that they will “take on all comers”. If water capacity were not immediately available, arrangements would be made to secure sufficient capacity. Wernersville Municipal Authority could purchase additional capacity from Western Berks Water Authority. Pennsylvania American has had additional wells provided (such as the case of Heidelberg Run) and has cooperated with Western Berks Water Authority to secure water supply.

CHAPTER 14

AGRICULTURAL RESOURCES

INTRODUCTION

Agricultural resources within Southwestern Berks County are shown on two maps. The Agricultural Preservation Map shows the Agricultural Security areas, ACE (Agricultural Conservation Easements) properties, effective agricultural zoning districts, and the Berks County Conservancy Agricultural Easements. Prime agricultural soils are found on a separate map.

Much of the land in Lower Heidelberg Township outside the Blue Marsh project is included in one or more of those categories. This is also the case for the northernmost portion of South Heidelberg Township.

ACE Properties

These are properties for which permanent easements for agriculture have been purchased. There are ACE properties in Southwestern Berks County found in Lower Heidelberg Township along Faust, Evans Hill and Riegel Roads in the eastern portion, along Steely Road, Sportsman Road and the majority of the border with Heidelberg Township and along the west side of Krick Lane, west of the Wernersville State Hospital land and south of the railroad tracks and in the southeastern corner in South Heidelberg Township.

Agricultural Security Areas

Agricultural Security Areas are properties which owners voluntarily enroll in an agricultural security program created by a municipality. The enrollment in an Agricultural Security Area typically demonstrates a commitment to keeping a property in agricultural use and affords some protection for agricultural properties, but does not prevent development of the Agricultural Security areas. Property owners may leave the program and develop their land. Substantial Agricultural Security Areas are found in the central and western portions of Lower Heidelberg Township. In South Heidelberg Township, substantial Agricultural Security Areas are found east and south of Wernersville, at the western end of the Township south of Route 422, in the southcentral portion of the Township and in the southern tip of the Township. A small section of an Agricultural Security Area crosses the eastern border into Wernersville Borough from South Heidelberg Township.

Prime Agricultural Soils

Prime Agricultural Soils are soils in Capability Classes 1, 2 or 3 as identified by the United States Department of Agriculture Natural Resources Conservation Service. Most of Lower Heidelberg Township outside the Blue Marsh Recreation Area is comprised of Prime

Agricultural Soils, the exceptions typically steep slopes in stream valleys. In South Heidelberg Township, a large band of prime agricultural soils is found through the northern portion of the Township. Scattered areas are found in the southwest, southcentral and southeastern portions.

Prime agricultural land is often easily developable land, and prime agricultural soils have been developed and continue to be developed in the Townships. This is often why there is conflict between new development and areas that are farmed.

Cultivated and Pasture Lands

Much of the land in Lower Heidelberg Township between Route 422 and Blue Marsh is cultivated or in pasture. Substantial cultivated and pasture areas are found in the northern portion of South Heidelberg Township. Smaller areas are found in the southwest, southcentral and southeast portions of the Township.

Surrounding Municipalities

There are adjoining ACE properties along the boundary of Lower Heidelberg and Heidelberg Townships and in the south east portion of South Heidelberg Township along the boundary with West Cocalico Township. There are Agricultural Security Areas in West Cocalico Township in Lancaster County abutting the southeast portion of South Heidelberg Township, abutting Agricultural Security Areas in Heidelberg Township along the Spring Creek, and an abutting Agricultural Security Area in Spring Township between State Hill and Sweitzer Roads.

Effective agriculture zoning is in place in adjoining portions of West Cocalico, Heidelberg, and North Heidelberg Townships.

Existing Agricultural Preservation Zoning

Lower Heidelberg Township has had an effective agricultural preservation zoning program since 1973, when it enacted what has been categorized as the first effective agricultural zoning district east of the Mississippi River. The agricultural preservation district is found through much of the eastern portion of the Township and in the area between Wernersville and Heidelberg Township. The agricultural preservation zoning reflects the presence of prime agricultural soils, and cultivated and pasture land.

South Heidelberg Township developed an effective agricultural preservation zoning district when the Joint Zoning Ordinance was created. Given the extent of prime agricultural soils in the northern portion of the Township and certain areas in the southern portion of the Township, the extent of cultivated and pasture lands in those areas, agricultural security areas (particularly in the northern and southeastern portions of the Township), the adjoining agricultural security areas and agricultural preservation zoning in West Cocalico Township, and the agricultural resources and agricultural zoning in Lower Heidelberg Township, it would be appropriate to continue agricultural preservation areas currently in place and try to expand these areas for the northern and southeastern portion of South Heidelberg Township.

CHAPTER 15

NATURAL FEATURES

INTRODUCTION

Two maps showing natural resources have been prepared. The first is a composite map showing water resources, including wetlands, hydric soils (which are potential wetlands), streams, water bodies, Act 167 designated watersheds, and sub watersheds. The second map shows natural resources, including slopes of 15-25%, slopes greater than 25%, 100-year floodplains (the floodplains are determined by FEMA and are in the process of being updated) and woodlands. It shows wetlands, floodplains, streams, and watersheds of the streams.

There are few natural resources providing limitations to development in Wernersville Borough. A floodplain and wetlands and wooded areas are found along the tributary to Spring Creek in the area of the Borough Park and scattered areas of steep slope are found in the Borough.

In Lower Heidelberg, floodplains, wetlands and hydric soils are found along the watercourses. Wooded areas are scattered through the Township, found in the greatest concentration in the Blue Marsh Recreation Area and along the western boundary with the Heidelberg/North Heidelberg Townships. Steep slopes are also scattered through the Township, often in the headwaters areas of watercourses.

In South Heidelberg, some limiting natural features are found in the valley (north) portion of the Township, including floodplains, wetlands and hydric soils along the watercourses and the Karst (limestone) sinkhole-prone geology. Much of the southern two-thirds of the Township has sensitive natural resources of woodlands, steep slopes, and hydric soils and wetlands along watercourses.

Floodplains

One hundred-year floodplains are shown from Federal Emergency Management Agency (FEMA) Maps. Detailed studies have not been performed to establish, through calculation, the extent of the 100-year floodplains for all watercourses. Any development proposed in the vicinity of watercourses by developers would require a calculated study of the 100-year floodplain by the developer if such detailed studies have not been performed by FEMA. FEMA updates the floodplain maps periodically. Currently, FEMA is updating these maps and will require the municipalities to update their floodplain management ordinances once the process is completed. The maps that are within this Plan are for reference purposes only and do not reflect site specific updates or the revisions being made to the floodplain data. With regard to floodplain location the most current FEMA maps should always be used.

Floodplains are areas adjacent to watercourses which are covered by flood water during times of flooding. A 100-year floodplain is the area which has a 1% or greater chance of being flooded during any one year, and which is typically used for regulatory purposes. The new FEMA maps are going to refer to the 100-year floodplain as the Special Flood Hazard Area or 1% annual chance. The 500-year floodplain areas will be referred to as the 0.2% annual chance. It is best if the floodplains are not developed, because development within the floodplains results in a danger to persons and property. If development occurs within the floodplain, this may constrict the area over which flood waters 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 stream beds can occur, which could cause flood waters to cover a larger area, meandering of streams, decreased water quality and choking of life within the stream, detracting from the aesthetic and habitat 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 of water 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. Low or no flow will effect both plant, animal and amphibious habitats. Also, low flow will increase the temperature of the water and lead to decreased habitat value. It is important for all streams to have riparian buffer areas along the banks to help to avert the issues discuss above. The *Pennsylvania Stream Releaf Initiative* provides information and guidance on riparian buffers.

Agriculture practiced along streams should be practiced with care. Increased tillage and use of the soil can increase the sediment concentration and runoff reaching streams. Animal excretions can result in increased bacteriological concentration in runoff, pesticides can result in increased undesirable chemicals in runoff, and fertilizer and manure can increase nitrate concentrations in runoff. Agricultural operations should follow and keep their Conservation Plans current in order to prevent these types of issues. The Berks County Conservation District and the local NRCS work with farmers to complete and follow the necessary regulations.

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 due to 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 (filtering) 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. It is important to make sure that existing and new septic systems are maintained properly.

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. Since the National Wetlands Inventory is more of a regional mapping tool it is still necessary to do site specific analysis to determine if there are wetlands on any given property.

Wetlands within the area are generally found along the watercourses. 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 can not be identified by hydrophytes (plants adapted 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.

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 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.

Wetlands store water which can replenish groundwater and surface water supplies. In general, no developmental activity or placement of fill material may occur within wetlands without obtaining a DEP permit. Development or disturbance of wetlands and areas directly adjacent to wetlands should be avoided.

Hydric Soils

The hydric soils have been mapped from soils information provided by United States Department of Agriculture 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 are several isolated areas of hydric soil. Also, as with the wetlands mapping, the information for hydric soils is based upon regional information and each site needs to be looked at on an individual basis to determine if hydric soils are present.

Steep Slopes

Areas which 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 and disturbance of steep slopes should be limited, vegetative cover maintained to the greatest extent possible, and erosion controls instituted. Without absorptive vegetation, runoff can rapidly erode the slopes.

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 Townships, sometimes on steep slopes. Wooded areas adjacent to streams help to maintain cooler water temperatures and reduce thermal pollution.

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

Stream valleys, recreational lands and woodlands in the Townships constitute background open space, which is seen and perceived by residents of the entire area. The preservation of these resources is very important because they help create the image of portions of the Townships as pleasant, rural communities. As development occurs in the Townships in the future, if this background open space is not preserved, the remaining rural character of the Townships will be lost. While farmland is not considered open space, since the land is being used for a specific purpose, it does help in the overall view of the area as a rural community.

Streams

The watersheds to the streams in the region are shown on the Watersheds and Wetlands Map. Some of the natural functions of watercourses and the area surrounding the watercourses have been discussed above. It is also important to note that streams provide a recreational resource, particularly fishing.

The Tulpehocken Creek for 3.8 miles below the first deflector below the Blue Marsh Dam downstream to the covered bridge is classified as Special Regulated Trout Waters. Within this area, there is delayed harvest and artificial lures only can be utilized.

Approved trout waters that qualify for trout stocking by the State include the Furnace Creek, of which a small portion of the watershed is within South Heidelberg Township, and Spring Creek.

The portion of the Furnace Creek watershed within South Heidelberg Township drains to the portion of Furnace Creek which is designated High Quality Cold Water Fishery. High Quality Waters designate a stream and watershed that contains excellent quality waters and environmental or other features which require special water quality protection. Streams that are classified as High Quality have additional requirements for potential discharges listed in the Rules and Regulations of the Pennsylvania Department of Environmental Protection. PA DEP requires that a proposed point source discharge to High Quality Waters must show that the discharge is justified for necessary economic or social development which is of significant public value and that the proposed discharge alone or in combination with other discharges will not affect the protected use criteria. A proposed discharger must prove that the best available land disposal and reuse technologies are not feasible

for economic environmental reasons. The designation of Cold Water Fisheries indicates that the stream should be protected as habitat for cold water fish and other life indigenous to cold water.

Streams and watersheds within Southwestern Berks County have the following classifications: Little Cocalico Creek – Trout Stream Fishery; Harnish Run – Trout Stream Fishery; Manor Creek – Cold Water Fishery; Hospital Creek – Trout Stream Fishery; Furnace Creek (portion) – High Quality Cold Water Fishery; Spring Creek (portion) – Cold Water Fishery; Spring Creek (portion) – Trout Stream Fishery; Spring Creek (portion) – Warm Water Fishery; Tulpehocken Creek (portion) – Warm Water Fishery; Tulpehocken Creek (portion) – Cold Water Fishery; Little Cacoosing Creek – Trout Stream Fishery; Cacoosing Creek - Trout Stream Fishery.

The watersheds of the Little Cocalico Creek and Harnish Run are in the Susquehanna River Basin and in the Chesapeake Bay Watershed.

The Tulpehocken Creek/Cacoosing Creek Corridor was found to satisfy eligibility criteria for Scenic River Designation for Historic Value, Fishery/Wildlife and/or Vegetative Value, Recreational Value and Cultural Value.

Tulpehocken Creek Studies

The Forest Resources Report for the Tulpehocken Creek Watershed and Tulpehocken Creek Watershed Protection Plan and Environmental Assessment include proposals for improving water quality and protecting and enhancing natural resources in the watershed. Major recommendations of these reports are the use of riparian forest buffers along the watercourses in the watershed; use of Best Management Practices in urban development, agriculture, and forestry; voluntary conservation easements; and stream habitat improvement, including wetland restoration and stream bank restoration/stabilization.

The Cocalico Creek and Tulpehocken Creek Act 167 Stormwater Management Plans discuss the requirements for stormwater management in new and re-developed areas. These plans are proposed for updating at this time.

Natural Features of Special Interest

Identified natural features of special interest in the area include Big Spring (on private land), PA Big Tree (on State land), Cushion Peak (on YMCA land) and Blue Marsh Lake (as listed in Preserving Berks County's Resources, An Action Plan for the Berks County Conservancy) and Blue Marsh Lake, State Gamelands No. 280 and the Reber's Bridge Mesic Forest between Tulpehocken Creek and Reber's Bridge Road (listed in the Natural Areas Inventory). This woodland illustrates the type of forest found on cool shaded slopes and is dominated by 100-year old hemlocks and an herb layer with abundant ferns. Also, the Berks County Greenway, Park and Recreation Plan of 2006 designates a number hubs and greenways that traverse this region and are recommended for preservation due to their ecological and natural features. Key parts of the greenway include Blue Marsh Lake and the Tulpehocken Creek corridor, South Mountain the interconnection of the creeks that radiate out from the area.

CHAPTER 16

GEOLOGY AND AQUIFER YIELDS

INTRODUCTION

Two maps related to geology have been prepared, a Geologic Formations Map of Southwestern Berks County and a Geologic Map and Aquifer Yield in Gallons per Minute for Southwestern Berks County. The geologic formations map indicates the boundaries of the geologic formations in the area as well as the aquifer yield range in gallons per minute for each formation. In the Geologic Map and Aquifer Yield in Gallons per Minute, formations have been grouped by typical aquifer yields in gallons per minute in order to determine where, in general, the most productive aquifers in the area can be found.

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 and prime agricultural soils. 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.

The highest aquifer yields are found in the Karst (limestone) areas in the northern portion of South Heidelberg Township and eastern portion of Lower Heidelberg Township. This 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."

Karst (Limestone) Sinkhole Prone Geology

The limestone areas discussed above can also present limitations to building and development because of the possibility of sinkhole formation. Care must be taken to mitigate the possibility of sinkhole formation through appropriate building and stormwater management techniques.

CHAPTER 17

SCENIC RESOURCES

INTRODUCTION

The scenic resources in Southwestern Berks County include both scenic roads and scenic vistas. These resources are identified on the Parks and Recreation Map.

The scenic roads are roads which are particularly pleasant to drive because of the views along the roads. The views are typically of farmland, stream valleys, and woodlands.

The scenic vistas are points within the area from which there are particularly attractive views. These views are typically of the farmland, stream valleys and wooded areas of the region.

It can be seen that there are still a number of scenic roads and vistas, though in the past several years some roads that were considered scenic in the past have lost their classification as scenic roads because of strip residential development which has occurred along those roads.

Planning Implications

It will be necessary to determine to what extent preservation of scenic resources will be made a priority within the municipalities. Preservation of scenic resources can be accomplished through broad land use policies such as agricultural, stream valley and woodland preservation and/or through attention to developments as they are proposed. Performance and design standards for developments, including sighting of buildings, and conservation and cluster subdivision design, can encourage retention of scenic areas and protection of viewsheds.

CHAPTER 18

EXISTING PEDESTRIAN CIRCULATION AND PARKING ISSUES

INTRODUCTION

The Bicycle and Pedestrian Network maps that have been prepared include pedestrian circulation within Wernersville Borough and the two Townships. Both maps show the location of sidewalks and existing, proposed, and potential trails throughout Southwestern Berks County.

Wernersville Sidewalk System

The Bicycle and Pedestrian Network maps show the extent of the existing sidewalk system along with gaps and areas where sidewalk is provided along one side of a street but not the other side. Current Borough policy is that sidewalks are constructed when a property is sold, except in the case of a new development in which case new sidewalk would be constructed. It will be necessary for the Borough to determine whether this policy should continue or whether a more proactive policy to eliminate gaps in the system should be followed, particularly when routes to community facilities and schools are involved. In addition borough officials should consider a more extensive sidewalk auditing program. This would entail a detailed examination of existing sidewalks in the borough to determine their condition and safety. The results of that audit could spur actions to promote or require sidewalk maintenance activities.

Pedestrian Friendliness of Route 422 in Wernersville Borough

Route 422 in Wernersville could be made more pedestrian friendly. There are only scattered trees along the length of the road until the west end of the Borough. There are no benches or street furniture. While some areas of sidewalk are wide, most of the sidewalk is narrow hence limiting the provision of street side amenities.

Pedestrian Circulation in the Townships

Prepared mapping shows the extent of sidewalks and pathways, both existing and proposed, in the planning area. It shows in detail the sidewalk system within Green Valley Estates and Spring Meadows, an existing pathway in Wernersville State Hospital, proposed trail systems in Heidelberg Run East and Heidelberg Run West, the remnants of a circulation system in the Wernersville Municipal Authority watershed, the Union Canal walking path in the Tulpehocken Creek Park, the Blue Marsh trail system, the connection between the Union Canal walking path and the Blue Marsh trail system, and walking paths in the vicinity of the Conrad Weiser Schools.

Lower Heidelberg Township has begun to implement a trail along the Little Cacoosing and Cacoosing Creeks. The plan shows the reserved right-of-way through the Calvary Bible Fellowship Church property, the proposed trail route within Green Valley Estates, the existing pathway in

Cacoosing Meadows, and the proposed pathway in the Westbury Golf Course. With the completion of the new Wilson School District campus on Green Valley Road, the proposed trail within Green Valley Estates and a pedestrian link across Green Valley Road to the schools should be completed as soon as possible.

One issue to be discussed is whether additional sidewalk connections from the South Heidelberg and Lower Heidelberg Townships sidewalk/pathway systems to Wernersville sidewalk system should be planned. In order to promote walking and bicycling as viable transportation alternatives, every effort should be made to work together the complete as many of these connections as possible.

The trail system available to the public is very limited at this time. Residents have expressed interest in increased trails available to the public, including new trails within the Townships which would provide access to community facilities and access to the Blue Marsh and Union Canal trails and Robesonia Borough. Interest has also been expressed in opening the remnants of the circulation system within the Wernersville Municipal Authority land to public use. Non-motorized connections to these portions of the circulation system should also be provided where possible.

Parking Issues

In general, parking is not a problem in the Borough and the Townships. On some occasions, parking from the Green Valley shops area overflows onto Aspen Avenue. In Wernersville, employee parking for businesses in the vicinity of Penn Avenue and Fairview Street in the central portion of Wernersville spills out onto Walnut and Stitzer Streets and Washington Avenue.

Route 422 in Wernersville Borough

There are no public parking lots along Route 422 in Wernersville. Given the parking permitted along the north side of the street and private parking areas for businesses, parking is not now a major problem along Penn Avenue. There is substantial onsite parking with access from Fairview for the properties along the north side of Penn Avenue.

Properties on the south side of Penn Avenue do not have on-street parking available. Given the topography of the south side of Penn Avenue, where some buildings are elevated above road level, and the lack of an alley behind most of Penn Avenue to provide access to parking areas, onsite parking is limited. This contributes to a lesser amount of commercial activity along the south side of Route 422. While many would say that additional on-street parking would potentially slow traffic down even further (a negative effect), others would counter that on-street parking and the attendant reduction in speed is a good thing in that it promotes pedestrian and bicycle safety along with added convenience for Avenue-based businesses and residences.