

Community Facilities

Land use planning and community facilities and services planning should be closely interrelated. Generally, suburban sprawl can increase the cost of providing community facility and services, while concentrating development often results in more cost efficiency to service providers and ultimately to residents. Community facilities are considered essential for health, safety, and welfare of township residents and help provide a higher quality of life.

As part of the comprehensive planning process, the resident survey can assist township officials in evaluating the current level of service for various community facilities. Township residents were asked to rate 10 separate categories of services as excellent, good, adequate, or poor.¹ Park and recreation areas and snow removal received the highest rating with 57 and 44 percent of the respondents rating them as excellent. A majority of the respondents ranked stormwater/groundwater as adequate but this service category also received the highest percentage of poor rating at 25 percent. The majority of the remaining responses for other service categories received a good rating. Therefore, it appears that residents believe that the level and quality of services in the township is generally acceptable.

This section will analyze the adequacy of existing and projected community facilities and services (i.e., police services, fire protection, emergency medical services, schools, solid waste management, park and recreational resources, water facilities, and wastewater facilities). A more detailed study of each service or facility should be undertaken before it is provided, extended, or expanded. In such a study, the land use implications and consistency with the adopted goals included in this comprehensive plan should be analyzed.

Police Services

The Pennridge Regional Police Department (PRPD) provides police services to both East Rockhill and West Rockhill township residents. The joint police force was originally established along with West Rockhill Township and Sellersville Borough in 1992. Sellersville Borough withdrew from the partnership at the close of 2002 and joined the Perkasio Borough Police Department. In the past, each municipality purchased Police Protection Units (PPU's) for a desired level of service. Since 2003, East and West Rockhill Townships have shared the costs equally. Both townships have representation on the police commission, which governs the PRPD. In the event of an emergency requiring additional personnel, the state police stationed in Dublin Borough can be called on for assistance on an as needed basis. Also, PRPD provides manpower for the Major Incident Response Team (MIRT) and Central Bucks Emergency Response Team (CBERT) when called upon. In 1993, MIRT was created to provide comprehensive security or emergency coverage in the post 9/11 era. The ERT is a special weapons and tactics team that are called upon to control regionally-based crises and MIRT provides

¹ The service categories that were ranked were park and recreational areas, street maintenance, garbage collection, snow removal, fire protection, police protection, ambulance service, street lighting, code enforcement, and stormwater/groundwater

crisis mitigation on a countywide basis. MIRT was recently called upon to provide crowd control and traffic control during the floods resulting from the remnants of Hurricane Ivan in September 2004.

PRPD is located at the James Farm House along Ridge Road across from the West Rockhill Township Building. One Chief of Police, 12 officers (i.e., two sergeants, nine patrol officers, and one detective), and 2 civilian staff members staff the department. The department provides 24-hour coverage and is equipped with a Traffic Safety and Accident Reconstruction Unit, Bicycle Patrol Unit, Criminal Investigation Unit, Tactical Team and Youth Services Unit including Drug Abuse Resistance Education (DARE) School Resource Officer, and Youth Aid Panel. A Criminal Processing Center located within the Perkasio Fire Company Sub-Station 76 helps to enhance police work in the upper Bucks area. In 2004, a substation was provided in the Glenwood Shopping Center.

The office of research and development of the state police does not provide guidelines for evaluating the adequacy of municipal police services. Typically, evaluation is based on factors such as crime rates, requests for police services, settlement patterns, and the rate of development. The current level of police service appears to satisfy the basic needs of the township.

Although the present level and quality of police services is adequate for existing conditions, the township's full-time police department with the back-up services of the state police in Dublin may be taxed as development continues. An economy and efficiency of providing police protection can be ensured if intensive residential and nonresidential land uses are directed into concentrated areas surrounding existing centers of development. In addition to the quality of service and the response time in emergencies, the cost to the taxpayers for providing the service could be lower if most development is concentrated rather than dispersed.

Fire Protection

While East Rockhill Township does not have a fire station or any fire equipment; Substation 76 from the Perkasio Fire Company owns a fire engine and a quick response pumper/field truck, which is located at the East Rockhill township building. The fire companies of Perkasio, Quakertown, Dublin, Sellersville, and Haycock provide fire protection coverage for the township. Volunteers serve all of these fire companies. The five volunteer companies serve the portions of East Rockhill nearest their stations in the neighboring municipalities. The entire township is within five road-miles of at least one of the stations, and response times for the fire companies range from three to eight minutes. The boundaries of fire service areas are determined by a "box system" that establishes zones that correspond to one of the respective fire companies. The Perkasio and Quakertown companies provide a majority of the service coverage encompassing over 80 percent of the township. The other three companies serve the remaining portions of East Rockhill. However, in times of emergency, all of the departments can communicate through the Bucks County radio network in order to solicit the aid of any other fire departments in the region.

The Insurance Services Office (ISO) performs surveys to evaluate the level of fire service provided in a community.² A community's service is graded Class 1 (best) to Class 10 (worst) according to such factors as the building code, fire fighting equipment and manning, fire alarm systems, as well as the community's water systems and the fire company's response time for answering calls. In 1997, ISO conducted a community survey for East Rockhill. Based on aforementioned factors, ISO has graded the level of fire service in East Rockhill as Class 5 where there are fire hydrants in the vicinity of Perkasio Borough, and Class 9 in the remainder of the township. Much of the existing development in the township falls within range of an existing fire hydrant. A majority of the township has a low classification of fire service; however, this is not unusual for a rural community such as East Rockhill. For the outlying development, water tankers from the one of the participating fire companies are providing adequate fire protection now and for the immediate future. However, the township officials should continually consider and assess the fire protection needs of its residents.

Emergency Medical Services

There are two forms of emergency medical services—basic life support (BLS) and advanced life support (ALS). Basic life support service can include first aid and basic pre-hospital patient care and transport. Advanced life support service includes enhanced pre-hospital care consisting of adjunctive equipment, administration of medication and fluids, and condition stabilizing treatment.

Emergency medical services are provided in East Rockhill from a variety of sources. The volunteer fire companies in Perkasio and Dublin fire companies as well as Upper Bucks Paramedics, Inc., provide basic life support service. The Perkasio Volunteer Fire Company Ambulance, which serves most of the township, also provides advanced life support. Upper Bucks Paramedics, Inc. services northeastern third of the township and the Dublin fire company services the southeastern corner of the township. Grand View and St. Luke's Quakertown hospitals provide both ALS and BLS. Grand View Hospital, located on Lawn Avenue in West Rockhill, is a private, not-for-profit community hospital that provides healthcare services to Bucks and Montgomery counties. Founded in 1913, Grand View Hospital provides a full range of medical services, including emergency care, birth and maternity care, rehabilitation programs, pediatric medicine, diagnostic services, cardiology care, home and hospice care, and behavioral health services. The hospital has about 250 beds and is licensed by the Pennsylvania Department of Health. St. Luke's Quakertown Hospital located in Quakertown is a nonprofit, 78-bed acute care facility. Both hospitals provide emergency room services, community education programs, diagnostic services, medical, surgical and hospital care, extended care, outpatient care, senior services, women's and children's services, and rehabilitation programs. (For a discussion of continuing care retirement communities, assisted living, and nursing home care, see the Residential Development section).

² Insurance Services Organization (ISO) is a private, for-profit organization that supplies data, analytics, and decision-support services for professionals in many fields, including insurance, finance, real estate, health services, government, and human resources.

Both hospitals also have transport services that transport nonemergency patients to and from the hospital. Grand View serves the southern two-thirds of East Rockhill, and St. Luke's serves the northern third. East Rockhill does not provide regular financial assistance to emergency services and will consider funding requests on a case-by-case basis.

It appears that the township has adequate emergency medical services. As with the other community services, emergency medical service can be provided more economically and efficiently if the township's growth is concentrated in specific areas rather than scattered through the township, which is the current and potential pattern of development.

Schools

East Rockhill Township is located within the Pennridge School District, which serves seven additional municipalities including the boroughs of Dublin, Perkasio, Sellersville, and Silverdale; and the townships of Bedminster, Hilltown, and West Rockhill. The district includes seven elementary schools, grades K–6; two middle schools, grades 7–8; and one high school, grades 9–12.

In East Rockhill Township, Robert B. Deibler Elementary School (grades K–6) has an enrollment of 523. Pennridge High School (grades 9–12) has an enrollment of 2,397.³ During the summer of 2003, the Pennridge School District began an extensive construction project that features the expansion of the Upper House on the high school campus, which will ultimately accommodate 2,400 students, demolition of the Lower House, and conversion of the Freshman Center into the district's third middle school. Renovations are scheduled for completion at the start of the 2006–2007 school year.

In fall 1999, the Bucks County Community College opened a campus to serve the upper Bucks County region. The 14-acre campus site located at 1 Hillendale Drive behind the Glenwood Shopping Center is adjacent to the township-owned open space along the East Branch of the Perkiomen Creek. The facility offers lecture and seminar classrooms, interactive videoconferencing, library, and computer lab. Courses offered include opportunities for associate's degrees and continuing education programs.

Given the central location of the Pennridge School District and the Upper Bucks Campus of the Bucks County Community College, the institutions may wish to continue exploring the possibility of developing academic partnerships. The Upper County Campus of the Bucks County Community College has experienced rapid growth since their advent in 1999, and they are currently constructing additional parking and considering facility expansion.

Based on the conclusions of the Pennridge School District's 1982 plan, no additional land for school use will be needed in the township in the next five years. State law requires school districts to update their plans periodically. Future school plans, accounting for the population increases due to in-migration and to the families that will be formed by

³ According to Pennridge School District Records, September 2004.

today's teenagers, may find it necessary to expand school facilities. However, the school district has the policy that it is unreasonable to project enrollments and facility needs farther than five years into the future. Therefore, it is important for the township to review the updates of the school plan as they become available.

Solid Waste Management

Solid Waste Management is the process of providing an economically and environmentally sound means of storage, collection, transportation, processing, and disposal of municipal waste recyclable materials. In Pennsylvania, through the Municipal Waste Planning, Recycling, and Waste Reduction Act of 1988 (Act 101) municipalities are required to adopt resolutions, ordinances, regulations and standards to carry out the responsibilities contained within these regulations. In addition, the counties were given the responsibility to prepare a solid waste management plan that would guide the management of municipal solid waste for the next ten years.

The Pennsylvania Department of Environmental Protection (PADEP) approved the *Bucks County Solid Waste Management Plan*, prepared by the Bucks County Planning Commission, in March of 1991. The plan provided for the regulation of haulers, the designation of disposal sites for municipal solid waste and recyclables, documentation of the flow of municipal waste generated in Bucks County, and provided an assurance of disposal capacity during that time.

On December 23, 2000, the Commonwealth of Pennsylvania adopted changes to the municipal waste planning regulations. Those changes to the regulations required that each county revise its Act 101 plan at the earlier of: (1) having less than three years of assured capacity, or (2) within three years of the expiration of its plan. As ten years had lapsed since the preparation of the current plan, it was necessary that Bucks County initiate the preparation of a plan revision.

This plan revision (Draft) provides continued guidance for the management of solid waste in Bucks County through the year 2014. It provides recommendations for attaining the goal of recycling 35 percent of the waste stream and proposes language to amend municipal ordinances, due to the elimination of flow control requirements, and the adoption of Title 27 by the Commonwealth of Pennsylvania, which provides for the licensing of waste haulers by the PADEP.

Section 1501 of Act 101 requires that all municipalities with a population of more than 5,000 residents, but less than 10,000, and a population density of over 300 persons per square mile establish and implement a source-separation (curbside) and collection program for recyclable materials. In the most recent census (2000) the population of East Rockhill Township was determined to be 5,199 residents. Based upon this recent assessment, and a land area of 12.9 square miles, the population density of East Rockhill Township is now 403 persons per square mile, resulting in the township being considered a "mandated" community. Therefore, the township has established a curbside recycling program and report the results of the program annually to the County of Bucks.

In the early 1990's, East Rockhill Township established a drop-off recycling program that provides the opportunity for residents to drop off various types of recyclable paper and food and beverage containers. With the implementation of a curbside program the township officials will need to determine whether to continue the drop-off program to provide for individuals who may not have access to curbside collection of recyclables. According to information submitted to the county for the year 2003, the township recycling drop-off center resulted in residents recycling 29.94 tons of material. Based upon an estimated annual waste generation figure of 4,159 tons this indicates a less than 1 percent recycling rate. It is anticipated that the implementation of a curbside recycling program and an ordinance requirement for haulers to report the amount of commercial recycling they collect in the township will result in a significant increase towards the goal set by the Commonwealth of Pennsylvania, of 35 percent.

Through the enactment of the appropriate municipal ordinances, it is anticipated that private haulers operating within the township will continue to provide for the collection, transportation, processing and disposal of municipal solid waste as well as recyclables generated in the township. Along with the municipal ordinances it will be necessary to implement an education program for both residents and businesses within the township. The activities associated with the development of the necessary ordinances and educational program are eligible for funding assistance through Sections 902 and 904 of Act 101 as well as through the Technical Assistance Grant program, all of which are administered through the PADEP.

Libraries

There are no libraries in the township, but there are three libraries in nearby municipalities. The Samuel Pierce Branch of the Bucks County Free Library is located on Arthur Avenue in Perkasio. The Samuel Pierce Branch has a circulation of about 182,000 and a collection of 85,000 books, videos, DVDs, and music CDs. The library offers computers with internet access and a small meeting room. There are no plans for expansion in the near future. Located on West Mill Street in Quakertown, the James A. Michener Branch of the Bucks County Free Library opened in September of 2004. It is located on the former Krupp Factory site. There are about 83,000 books and over 6,000 audio-visual items to choose from. The library offers computers with internet access and there are two conference rooms and meeting room with a capacity of 150. Lastly, the Indian Valley Public Library is located on Church Avenue in Telford Borough. Indian Valley Public Library is an independent member of the Montgomery County Library District and provides service to the Souderton School District. The Indian Valley Public Library has a circulation of about 521,000 and a collection of 125,000 books, videos, DVDs, and music CDs. The library offers computers with internet access and two meeting rooms. The library recently added an extension on its children's room and added space to the reading room.

Park and Recreational Resources

Existing Parks and Facilities

East Rockhill Township contains over 1,000 acres of parkland that offer an assortment of recreational opportunities throughout the municipality. Based on 1983 guidelines from the National Recreation and Park Association (NRPA), the *1998 East Rockhill Township Open Space and Recreation Plan* categorized existing parks according to size, location, design, and amenities into five park types: regional reserve, community, neighborhood, mini, and linear parks. The plan indicates that the township is currently well served by both public and private park and recreation areas. Of the five categories mentioned above, the township offers facilities of each type, except neighborhood parks.

The NRPA updated their park and recreational classification system in their 1995 publication.⁴ Based upon the updated classification system, East Rockhill contains a variety of park types including large urban park, community, neighborhood, park trail, special use, school-park, private park/recreational facility, and mini-park. With the advent of future development in the township, municipal officials may wish to provide a neighborhood park in strategic areas that are convenient to residents in the immediate vicinity. A neighborhood park is defined as the basic unit of a park system and serves the recreational and social focus of the neighborhood. Focus is on informal, active, and passive recreation. The location criteria is described as one-quarter to on-half mile distance and uninterrupted by road and other physical barriers. Five acres is considered the minimum size for this park type (five to ten acres is optimal).

Greenway Planning

A greenway is a linear open space area established along either a natural corridor, such as a riverfront, stream valley, or ridgeline; or along an abandoned railroad right-of-way, a canal, scenic road, or other route. As noted in Table 6, the Mervin C. Bryan Walking Path provides a two-mile linear park within the 46-acre stream corridor preservation area that extends along the East Branch of the Perkiomen Creek between East Callowhill and Schwenk Mill roads. Greenways provide numerous benefits to their surrounding communities. In addition to preserving natural resources, greenways create safe, nonmotorized transportation routes to schools, commercial centers, residential developments, and recreational areas. A recreational greenway provides a system of paths that can accommodate different users such as bicyclists, hikers, and joggers. By linking individual parks together, linear trails can create a unified park system throughout a municipality and even beyond its borders.

As an active member in the PACC, East Rockhill Township is among the eight municipalities that developed the *Pennridge Area Greenway Plan*. The plan evaluates the feasibility of developing a linear park throughout the Pennridge Area. By incorporating cooperative land use planning principles, the proposed greenway system will enhance the coordination among neighboring municipalities. Recommended greenways routes within the plan incorporate streams, existing trails, floodplains, on-road bike routes, and off-road

⁴ Classification system from *Parks, Recreation, Open Space, and Greenway Guidelines*, National Recreation and Park Association (NRPA), 1995.

linkages. Among the proposed greenways for the entire Pennridge Area, six are located within or along East Rockhill Township lines as described below and shown on Figure 9.

An inventory of existing parks in East Rockhill has been summarized in Figure 8 and Table 18 below.

Table 18. Recreational Facilities, East Rockhill Township

Name	Park Types*	Facilities	Acreage	Ownership
Lake Nockamixon State Park	Large Urban Park	Hiking and biking trails, swimming, boating, fishing, and picnicking	338 acres (in E. Rockhill)	Public
Willard H. Markey Park	Community	Pavilion, play equipment, picnic areas, golf driving range, volleyball courts, and soccer, football, and multi-purpose fields	92 acres	Public
Mervin C. Bryan Walking Path	Park Trail	Stream corridor preservation, walking path, and greenway preservation	46 acres	Public
State Gamelands No. 139	Special Use	Gamelands for hunting	131 acres	Public
Weisel Youth Hostel	Special Use	Kitchen and meeting/social rooms, mill pond for fishing, skating, and hiking	8 acres	Public
Proposed Municipal Golf Course	Special Use	Regulation 18-hole golf course	140 acres	Public
Pennridge High School Campus	School-Park	Football, soccer, and baseball fields, and tennis courts	141 acres	Public
Robert B. Deibler Elementary School	School-Park	Softball and baseball field, and playground equipment	12.0 acres	Public
Upper Bucks Christian School	Private Park/ Rec. Facility	Soccer and baseball field, and playground equipment	28 acres	Private
Keelersville Club	Private Park/ Rec. Facility	Baseball and softball fields, play equipment, picnic areas	6 acres	Private
Camp Tohikane Girl Scouts of America	Private Park/ Rec. Facility	Baseball and softball fields, picnic areas, swimming facilities, boating, and cabins	82 acres	Private
Branch Valley Fish and Game	Private Park/ Rec. Facility	Picnic areas, fishing, ice fishing, and trap shooting	29 acres	Private
Faith Baptist Church (lot in East Rockhill)	Private Park/ Rec. Facility	Soccer field	4 acres	Private
Cedarbrook Crossing	Mini-Park	Basketball, playfields, and playground	10 acres	Public
Country Hunt	Neighborhood	Soccer field, walking trails, fishing area	60 acres	Public
Country Hunt	Mini-Park	Tot lot	1 acre	Public

*Note: Park type classification based upon 1995 National Recreation and Park Association (NRPA) classification system.

Willard H. Markey Centennial Park Link serves as a spur route to the Dublin Borough–Nockamixon State Park corridor, a primary route through the center of the Pennridge Area. The proposed Markey Park trail follows PA Route 563 with the possibility of adding linkages from PA Route 313 to Markey Park. The Perkasio Borough Authority also owns parcels adjacent to Markey Park that could also be included in the spur.

The East Branch Perkiomen-Deer Run Greenway extends from Bedminster Township, where Deer Run branches from the Tohickon Creek to townships in Montgomery County. The link would be comprised of an entirely off-road facility along the East Branch Perkiomen and Deer Run Stream Corridor. Points of interest along the Lenape–Menlo Park Link include: the Pines at Pennridge, Moods Covered Bridge, Village of Glenwood Shopping Center, and Upper County Campus of Bucks County Community College.

The Tohickon Creek Greenway follows the Tohickon Creek stream corridor and extends from Stover-Myers Mill to the Richland Township border. Nockamixon State Park and Quakertown Swamp are significant features along this link, which has the potential to become a high-use corridor.

Plumstead–East Rockhill Greenway is situated along the Texas-Eastern pipeline right-of-way located through Bedminster and East Rockhill townships, and would serve as an off-road link to the East/West Rockhill area. The utility right-of-way is free of trees and is generally flat the entire length of the corridor. The Willard H. Markey Centennial Park and East Rockhill Township open space facilities would be accessible through a spur route along an unnamed tributary of Three Mile Run.

Three Mile Run Greenway utilizes the Three Mile Run stream corridor and connects residents of East and West Rockhill townships with Nockamixon State Park. The greenway follows the Three Mile Run corridor providing a trail connection to and from Nockamixon State Park. Low traffic volumes on Rockhill Road provide an excellent opportunity for an on-road connection to State Game Lands #139 and the Plumstead–East Rockhill Greenway. An additional spur route would travel through the Willard H. Markey Centennial Park, Pennridge Senior High School, and the Pines at Pennridge. This spur would connect the Three Mile Run Greenway with the East Branch Perkiomen–Deer Run Greenway. A lateral spur route would connect Markey Park and the municipal golf course.

Liberty Bell Trail is an anticipated greenway opportunity for the township. The Regional Improvement Consortium has secured federal funding to complete a study on the potential greenway, which follows the historic Liberty Bell Trolley route, which ran from Bethlehem to Philadelphia. The project plans for a recreational trail system along the trolley path, linking Bucks and Montgomery County communities to Norristown.

Future Improvements

In addition to evaluating existing park areas, the NRPA recommends determining the recreational needs of a community by means of user surveys and observation. As part of a general resident survey distributed throughout the township in early 2004, residents were

asked to identify recreational facilities and activities that they would like to see improved or added to the township's park system. Overwhelmingly, the top two responses were walking trails (82 percent) and bicycling facilities (57 percent). Other top recreational facilities and activities desired were tennis courts (33 percent), picnicking (31 percent), soccer/football fields (27 percent), baseball/softball fields (25 percent), and playgrounds/tot lots (24 percent). Community clubs and senior citizen programs (both 23 percent) were also identified in the resident survey.

Water Resources and Wastewater Facilities

The coordination of water resources, wastewater facilities, and land use planning is a vital component to the comprehensive plan, and all are part of the township's interrelated water system. Water and wastewater facilities are key factors in determining the location, nature, and density of future development. Periodic assessment of water resources, wastewater disposal methods, and service areas is necessary to ensure that adequate facilities can be provided to satisfy future development needs. Effective stormwater management practices can ensure that water quality is protected, peak stormwater flows are controlled, and groundwater recharge is enhanced.

Water Resources

Water resources can be broken into three primary factors—water supply, water quality, and stormwater management. The following discussion addresses the specific concerns and considerations of each.

Water Supply

Many Bucks County communities are concerned with water supply issues related to the safe yield of groundwater withdrawal and the potential reduction in groundwater recharge to local aquifers. The Pennsylvania Municipalities Planning Code directs municipalities to consider water facilities in municipal comprehensive planning, zoning, and the development review process. Section 301(b), a revision to the code that became effective on January 2001, states that the comprehensive plan shall include a plan for the reliable supply of water, considering current and future water resource availability, uses and limitations, including provisions adequate to protect water supply sources. Any such plan should be generally consistent with the State Water Plan and any applicable water resources plan adopted by a river basin commission.

Groundwater is the source of water supply for the majority of the property owners in the township. Although several creeks, tributaries, and Lake Nockamixon are located in East Rockhill, surface water resources are not used as a source of water supply.⁵ The use of individual on-lot wells will continue to be the primary source of water for properties located outside the Development Area.⁶ As discussed in the Natural Resources section,

⁵ Lake Nockamixon is designated as a future water supply source and flow augmentation (after 2010) in the *Delaware River Basin Commission Comprehensive Plan* (2001).

⁶ The Development Area is designated as four zoning districts—R-1, Residential, Cultural-Educational, Commercial-Office, and Industrial districts. The purpose of the Development Area is to accommodate the more intensive residential, commercial, office, and industrial uses in the most appropriate locations.

many of the geologic formations underlying parts of East Rockhill are not conducive to storing and transmitting large quantities of water.

Because water supply is not unlimited, the Delaware River Basin Commission (DRBC) has established Ground Water Protected Area Regulations for portions of southeastern Pennsylvania, which includes portions of Berks, Bucks (including East Rockhill Township), Chester, and Montgomery counties. Rock formations underlying much of this study area experience low recharge rates during dry years, which can lead to declines in water table levels, diminished flow in adjacent streams, and cessation of flow from springs. Many public water systems in the area relying on groundwater resources have peak and/or average demands, which closely approach or exceed the dry period capacity of their existing wells. As a result, withdrawals in the DRBC Ground Water Protected Area shall not exceed a daily average withdrawal of 10,000 gallons per day during any calendar month unless approved by DRBC. According to DRBC, all of Perkasio Borough Authority's (PBA) wells in East Rockhill and Perkasio Borough have a net annual groundwater withdrawal that is less than the withdrawal limit of as set by Section 6.1 of the Ground Water Protection Area Regulations.

Section 408 of the township's subdivision and land development ordinance requires a water resource impact study be conducted when the proposed development is not served by a public water supply and meets specific conditions based upon the size and land use proposed. The purpose of the water impact study is to determine if there is an adequate supply of water for the proposed use and to estimate the impact of additional water withdrawals on existing nearby wells, underlying aquifers, and streams. The township will not approve a water system that does not provide an adequate supply and water quality for the proposed use.

Public Water Service—Public water service in East Rockhill is provided by two separate entities—the North Penn Water Authority (NPWA), which operates a small satellite water system in East Rockhill Township, and the Perkasio Borough Authority (PBA), which is the primary public water supplier to East Rockhill.

Whether development is served by on-site wells or the public water system depends on several factors including regulatory provisions, hydrological situation, and economics. Section 519.2 of the subdivision and land development ordinance requires that all residential subdivisions of 15 lots or more, all residential subdivisions of five lots or more with a density of 1.8 dwelling units per acre or greater, and all nonresidential subdivisions of three lots or more be provided with public or centralized water supply and distribution systems. An important hydrological issue confronting East Rockhill relates to water that is being exported to the adjacent watershed instead of recharged back to the original local watershed. This situation may require further study (as discussed below).

PBA owns and operates five existing and a well being developed in East Rockhill. These wells primarily provide public water service to East Rockhill and West Rockhill townships and Perkasio Borough. (See Figure 10.) In April 2003, a DRBC permit was issued to allow a total monthly allocation of 40.2 million gallons per 30 days. Due to

federal changes to acceptable arsenic levels, \$4 million of infrastructure improvements are also proposed to satisfy more stringent requirements.

In 2004, as part of planned future improvements of the water system, PBA submitted an application for a groundwater withdrawal project to supply up to 11.67 million gallons per 30 days of water to the distribution system from the proposed well in East Rockhill. The new well will be used to replace some of the groundwater supply from PBA's existing wells that may be lost due to regulatory changes pertaining to the concentration of arsenic in public drinking water supply. Other improvements include the replacement of the 1 million gallon reservoir (constructed in 1895) that is located in Perkasio Borough. A new booster station will be required to meet the needs of the system expansions and to provide a measure of redundancy. To fund these planned improvements, the water authority is proposing to increase water bills to the more than 4,000 customers served by PBA by about 8 percent in 2005. Another rate hike is expected in 2006, when the water authority determines the cost of treating a well (located on the Perkasio Borough/Hilltown Township border) to bring it into compliance with the EPA standards. The water authority recommends making the remediation of excessive arsenic levels a priority and postponing some of the expansion projects until after 2006 or as required by development in this area. (For further discussion on this topic, see the Water Quality subsection below.)

The PBA *Comprehensive Plan Update for the Water System* (adopted October 2004) projects the average demand for the water system to increase from 0.71 to 0.89 million gallons per day by the year 2030. To assess the water source adequacy, PADEP has identified two criteria: (1) the average daily demand should not be equal to or less than the safe yield of the combined sources of supply with the largest supply not in service, and (2) the maximum daily demand should be equal or less than the safe yield of the combined sources of supply. According to PBA, both criteria have been satisfied.

An issue that has not been addressed in the PBA *Comprehensive Plan* is the issue of water not being returned to the watershed of the original withdrawal. Groundwater withdrawal from wells located in Tohickon watershed serves residences in the East Branch Perkiomen watershed. Therefore, the water is being exported to the adjacent watershed instead of recharged back to the local aquifer. An accurate assessment of the affect of existing and future increases in groundwater withdrawal may have on the depletion of the source aquifer would have to be a conclusion of a thorough hydrological study of the watershed. That issue should be addressed in the implementation of plan recommendations from the *Pennridge Water Resources Plan* (2002) as discussed below.

The secondary water supplier in East Rockhill is the North Penn Water Authority (NPWA), which owns and operates a satellite water system in the Ridge Run development in East Rockhill. The system consists of two groundwater wells, a 250,000-gallon tank or standpipe (for fire protection purposes only), and a booster station. In 2003, the average well withdrawal was 35,364 and 3,914 gallons per day. The NPWA line ties into the PBA water system at the intersection of Stone Edge Road and Three Mile Run Road for emergency purposes only. No future expansions are planned in East

Rockhill at this time; however, if development were proposed adjacent to, or near an existing NPWA water line, the water authority would consider providing water service to the respective development.

Regional Water Resource Planning—The *Pennridge Water Resources Plan* (2002) was developed for eight municipalities in Bucks County that formed the Pennridge Area Coordinating Committee (PACC).⁷ The plan addresses the impacts on and threats to the water in an area where there is a steady conversion of the natural environment to the built environment. Ensuring sustainable water resources for the future need of the Pennridge Area requires a multifaceted comprehensive water resource management approach to address the various issues including water supply, stormwater management, flood control, nonpoint pollution control, and wastewater treatment and reuse. The plan’s main objectives are (1) protect the supply of surface waters and groundwater resources for existing and future recreational, industrial, household and commercial users; and (2) protect surface water and groundwater resources from point and nonpoint pollutants. A potential byproduct of the plan is the development of a standardized “water resources protection plan” for each new or proposed land development or water withdrawal. Such a plan would not only incorporate all the existing water-related requirements (e.g., stormwater management and floodplain management) but would also include additional computations to balance land use with water budget. The individual water resources protection plans would comprehensively describe specific performance requirements that, when implemented, would ensure that the land development proposal does not adversely affect water resources.

The purpose of the *Pennridge Water Resources Plan* is not to limit growth but to provide a scientific approach for analysis of the water resources in the Pennridge Area while applying sound planning principles to implement the plan’s overall recommendations, which are as follows:

- A. Form an Intermunicipal Water Resources Committee
- B. Develop a Public Education and Awareness Program
- C. Develop a Model Water Resources Management Ordinance
- D. Update Municipal Act 537 Sewage Facility Plans
- E. Establish the Pennridge Area Watershed Monitoring Program
- F. Conduct Nonpoint Source Pollution Assessment
- G. Develop a Source Water Protection Program
- H. Prepare an Integrated Water Resources Plan (IRP)

In October of 2003, the PACC was awarded a planning grant from the Pennsylvania Department of Community and Economic Development (DCED) to implement A and C from the above recommendations. Once it is formed, the Intermunicipal Water Resources Committee would educate the public about the importance of protecting water resources,

⁷ The Pennridge Area Coordinating Committee (PACC) includes eight municipalities in the Pennridge Area—Bedminster, East Rockhill, Hilltown, and West Rockhill townships as well as Dublin, Perkasié, Sellersville, and Silverdale boroughs. Telford Borough, although not a member of the PACC, is participating in the water resources planning effort. The Pennridge School District, Pennridge Chamber of Commerce, and the Bucks County Community College also have representatives on the PACC.

research the integration of land use regulations and water resources, and develop an Intermunicipal Cooperative Agreement. The PACC's consultants are developing the *Model Water Resources Management Ordinance* that will address regulations to protect natural water resources. These regulations represent the minimum protection standards; municipalities may modify the regulations to be more restrictive. The township should consider the adoption of all, or relevant portions, of the model ordinance to further enhance water resource protection in the township.

Recommendation E (Establish the Pennridge Area Watershed Monitoring Program) is in part being addressed using funding from both a Coastal Zone Management Zone (CZM) grant and a Growing Greener grant issued by the Pennsylvania Department of Environmental Protection (PADEP) to PACC (in which East Rockhill is the fiscal administrator) to conduct an inventory of existing stormwater systems in the entire East Branch Perkiomen Creek watershed. The Growing Greener grant is a match for the CZM grant that provides funding for an inventory of stormwater facilities in the whole Pennridge Area, with the exception of the Tohickon Creek watershed.

Recommendation G (Develop a Source Water Protection Program) is currently being developed for all of the Pennridge Area water suppliers (as discussed in the Water Quality subsection below).

East Rockhill township officials will continue their ongoing cooperation with the PACC and its coordination of municipal water resource planning to address monitoring, protection programs, and regulatory ordinance provisions to ensure an adequate supply of water in the township and the surrounding PACC communities.

Water Quality

Inappropriate or insensitive land uses and activities can negatively affect ground water quality on a site. Groundwater contamination from sewage and organic chemicals is the most common and serious health concern for private water supplies in East Rockhill. Two aspects of water quality in East Rockhill need to be considered. One is the provision of potable water to properties with contaminated sources of water. In the cases of the confirmed instances of organic chemical pollution, the contaminated areas are too distant from the public water system to be a feasible alternative source of water. Similarly, most of those areas where pollution from malfunctioning on-site septic systems is likely are too distant from the existing public water system and too small to support a separate community water system. In any event, changing to an alternative water supply is an avoidance of a problem rather than its solution.

The second aspect of water quality has to do with public awareness of contamination, its occurrence and its solution. Many pollutants are not detectable to human senses, and property owners usually do not test the quality of their water unless they suspect a problem. When tests such as those provided by the Bucks County Department of Health are made, they usually measure only the bacteriological pollutants normally associated with contamination from failing septic systems. Most property owners would not think to test the chemical contaminants such as TCE and PCE. A basic lack of information about

the quality of water remains a problem in East Rockhill. Some common sources of groundwater contamination are summarized in the table below.

Table 19. Common Sources of Groundwater Contamination

Category	Contaminant Source	
Agricultural	Animal burial areas Animal feedlots Fertilizer storage/use	Irrigation sites Manure spreading areas/pits Pesticide storage/use
Commercial	Auto repair shops Construction areas Car washes Cemeteries Dry cleaners Gas stations Golf courses	Laundromats Paint shops Photography establishments Railroad tracks and yards Research laboratories Scrap and junkyards Storage tanks
Industrial	Asphalt plants Chemical manufacture/ storage Electronics manufacture Foundries/metal fabricators Machine/metal working shops Mining and mine drainage	Petroleum production/ storage Pipelines Septage lagoons and sludge Toxic and hazardous spills Wells (operating/abandoned) Wood preserving facilities
Residential	Fuel oil Furniture stripping/ refinishing Household hazardous products Household lawn chemicals	Septic systems, cesspools Sewer lines Swimming pools (chemicals)
Other	Hazardous waste landfills Highway spills Municipal incinerators Municipal landfills Municipal sewer lines Open burning sites	Recycling/reduction facilities Road deicing operations Road maintenance depots Stormwater drains/basins Transfer stations

(Adapted from US EPA. 1991. *Protecting Local Groundwater Supplies Through Wellhead Protection*. Publication #570/9-91-007. p. 18 p.)

Effective in February 2006, new federal drinking water standards will require that arsenic levels be lowered to 10 parts per billion (ppb), compared to the present 50 ppb. Although the PBA water supplies meet the current standards, three wells will exceed the standards after February 2006 deadline. Two separate wells tested also contained trichloroethylene (TCE) in excess of the maximum contamination level (MCL). Blending is a process that involves mixing water that exceeds the MCL with water that is below the MCL in proportions so that the end product does not exceed federal standards. The water authority anticipates abandoning certain wells and installing arsenic and TCE removal facilities by 2010.

The Bucks County Department of Health (BCDH) monitors the water quality of public supplies and enforces the water quality standards set by federal and state agencies.

However, private water supplies are owned and operated by individual property owners, and the quality of the private water supply is the responsibility of the respective property owner. State laws do not require testing of private domestic water supplies, and regulatory agencies do not regularly monitor the quality of private supplies. Therefore, information on water quality problems of private wells is not readily available.

Beginning in 2005, BCDH will begin certifying new private wells to help prevent residents from drinking contaminated water. The regulation will apply to new, but not existing wells. One of the key components of the new program will be to certify that each well has a proper sanitary seal that can safeguard against groundwater contamination. To offset start-up costs, funding for this project is provided by a federal grant from the Centers of Disease Control and Prevention. While the well inspection/certification will only occur at the time a well is constructed, it is still recommended that people who rely on private wells have them tested every year or so to make sure they are safe.

Amendments to the federal Safe Drinking Water Act of 1986 require that states create a wellhead protection program to protect the quality of groundwater used as sources of public drinking water supplies through local land use planning and other management means. Open space and low-density land uses are appropriate uses near high-production well fields. Wellhead protection programs have become both pollution prevention and water supply planning tools.¹⁸ Developing a wellhead protection program will help to increase public awareness about the location of community water supply wells and the potential pollutant threats throughout the area. To address the issue of protecting public water systems, the Pennridge Area water suppliers in conjunction with the Pennridge Area Coordinating Committee (PACC) are establishing a source water protection program for the Pennridge Area. The PACC in conjunction with the Bucks County Planning Commission and the respective water suppliers in the Pennridge Area have established a committee to develop and implement this program. The project will include developing a Wellhead Protection Ordinance for the Perkasio Borough Authority and North Penn Water Authority well sites in East Rockhill Township. The wellhead protection ordinance will enhance the protection of water quality from these public water supply sources.

Stormwater Management

Stormwater runoff is the rainwater that moves over the ground during and immediately following a rainfall event. Stormwater runoff will move through a specific drainage area referred to as a watershed. In a watershed undergoing land development and urban expansion, the amount of stormwater runoff from a rainfall event can increase dramatically. This is due to the reduction of natural grassy or wooded areas resulting

¹⁸ The Pennsylvania Safe Drinking Water Act (1994) mandates that after October 9, 1995, for any new or expanding community water system (i.e., systems serving more than 25 persons on a regular basis or systems with over 15 service connections) the municipality, municipal authority, or private water purveyor that provides a community water supply to the public must have ownership, or substantial control by deed restriction, the area known as Zone 1 surrounding the wellhead. As required by 25 PA Code Chapter 109, Zone 1 should contain a minimum wellhead protection radius of 100 feet, but can be expanded based upon the results of detailed hydrological testing of the area surrounding the wellhead.

from increasing the impervious land (i.e., natural landscape being covered by pavement, rooftops, or buildings), which reduces infiltration.

It is this increased amount (volume) and speed (rate) of runoff that is responsible for some of the localized flooding and drainage problems associated with stormwater runoff. As development and impervious surfaces increase within the watershed, so does the problem of dealing with greater quantities of stormwater runoff. Failure to properly manage this runoff can result in more flooding; greater stream channel erosion; siltation and sedimentation; and a reduction in groundwater recharge. It is important to recognize the watershed scope of stormwater management problems and potential solutions.

Recognizing the need to address this serious and growing problem, the Pennsylvania General Assembly enacted the Pennsylvania Stormwater Management Act (P.L. 864, No. 167, October 4, 1978). Act 167 requires DEP to designate watersheds and establish guidelines for the preparation of stormwater management plans for these watersheds. Counties are responsible for preparing the plans and developing ordinance language that municipalities must adopt to manage the volume and rate of stormwater runoff and the impact on water quality.

East Rockhill Township is located within two watersheds whose boundary approximately mirrors Ridge Road. The majority of the township is located within the Tohickon watershed northwest of Ridge Road, and the remainder of the township is located in the East Branch Perkiomen watershed southeast of Ridge Road. The major program objectives of the *Tohickon Creek* and *East Branch Perkiomen Creek Stormwater Management Plans* can be summarized as follows:

- Manage stormwater runoff created by new development activities taking into account the cumulative basinwide stormwater impacts from peak runoff rates and runoff volume;
- Preserve existing natural drainageways and watercourses and provide for proper maintenance of all stormwater management facilities;
- Maintain and/or improve existing water quality, especially in those areas which drain to existing lakes and reservoirs, by preventing additional loading of various stormwater runoff pollutants into the stream system;
- Maximize groundwater recharge where feasible and attainable throughout the watershed in an attempt to maintain the existing hydrologic regime; and
- Provide sound guidelines and methods for stormwater management for communities in the watershed.

In September 2002, township officials adopted the East Rockhill Township Stormwater Management Ordinance (Ordinance No. 199). Since the *East Branch Perkiomen Stormwater Management Plan* was being prepared at that time, the stormwater management ordinance incorporates the regulatory provisions of the *Tohickon Creek Watershed Stormwater Management Plan* over the entire township. The ordinance applies to various temporary and permanent stormwater management facilities constructed as part of any regulated activity that is specified. The ordinance contains the performance standards and design criteria that are necessary or desirable from a

watershedwide perspective. Until the adoption of the *East Branch Perkiomen Plan*, the entire watershed located in East Rockhill is a 100 percent release rate district with required infiltration and water quality measures. The *East Branch Perkiomen Plan* was adopted in April of 2004, and it is anticipated that East Rockhill will adopt this plan and incorporate its contents into the township's stormwater management ordinance prior to DEP's February 2005 deadline.

NPDES II Regulations—The National Pollutant Discharge Elimination System (NPDES) is a two-phase federal program created as an outgrowth of the Federal Clean Water Act (1972), which attempts to establish local regulations creating a nationwide reduction of the pollutants found in our nation's waterways. The purpose of the program is to reduce pollution, promote and require better stormwater management, and educate the public about water pollution. This program was amended in 1987 to include stormwater discharge regulations. The first phase of the NPDES program was established in the early 1990's, and targeted large communities and industrial facilities. These entities were required to obtain permits from the state which enforce good housekeeping practices on-site and a reduction of hazardous materials kept on the premises where they could be washed off the site by rainfall and enter local waterways. This latest phase of the NPDES program, Phase II (2003), is aimed at smaller urban communities, as defined by the Pennsylvania Department of Environmental Protection (DEP) based on U.S. Census data. Small urban areas that are designated as "MS4s" (Municipal Separate Storm Sewer System) must obtain a state permit showing how they intend to manage pollution in the municipality.

In accordance with the goals of the NPDES program, small communities, including East Rockhill Township, must develop a stormwater management program that includes six minimum control measures. These measures include public education and outreach, public participation, illicit discharge detection and elimination, and construction and post-construction runoff control and pollution prevention. Thus far, East Rockhill is in compliance with this program; however, in the coming years, the township will be expected to maintain its compliance by further developing the required control measures and filing an annual report on its activities. Bucks County is assisting municipalities in planning for, and meeting, the requirements of the federal and state mandates of the NPDES Phase II by providing methods and ordinance language. This assistance is established in accordance with existing Act 167 guidelines and goals to help to merge critical stormwater management issues, including groundwater recharge, under the comprehensive umbrella of water resources protection.

Wastewater Facilities

Consideration of wastewater collection, treatment, and disposal are important factors in comprehensive land use planning. Coordination of the township's sewage facilities planning and land use planning is a primary aspect of this comprehensive plan. Planning for the proper types of sewage systems aids in implementing the township's land use goals and aids in ensuring the quality of the natural environment.

The Pennsylvania statutes that authorize wastewater facilities planning functions direct and encourage municipalities to coordinate land use planning and facilities planning efforts. Section 71.14(5) of the Pennsylvania Sewage Facilities Act (Act 537 of 1966) directs municipal officials to consider their community's comprehensive plan, zoning ordinance, and subdivision regulations in the preparation, review, and amendment of their official sewage facilities plan. Section 301(4) of the Pennsylvania Municipalities Planning Code of 1968 (Act 247) requires that a plan for sewage facilities be included in a comprehensive plan. Section 604(1) of the Code, dealing with the purposes of zoning, states that the provisions of zoning ordinances shall protect the public health and general welfare through adequate provisions for sewage facilities. Section 503(3) of the Code states that a community's subdivision and land development ordinance should contain standards for the installation of sewage facilities.

The Pennsylvania Sewage Facilities Act assigns to municipalities certain specific responsibilities for wastewater facilities. Each municipality is required to have an official wastewater facilities plan, and unless proposed facilities are consistent with the plan, the Pennsylvania Department of Environmental Resources cannot issue permits for the facilities. Permits can be issued only after the revision/supplement process outlined in Act 537 has been followed. Act 537 also provides for municipal involvement in proposals for holding tanks and rural residences.

In 1996, the township officials adopted the *East Rockhill Township Wastewater Facilities Plan*, replacing the *Pennridge Wastewater Facilities Plan* (1988) as the official Act 537 plan for the township. The plan update examines four study areas for adequacy of the public sewerage system to meet the projected growth in the Development Area and analyzes various alternatives for resolving failing on-lot sewage systems for two areas of the township. The recommended plan for wastewater facilities within East Rockhill Township includes the following:

- Implementation of a collection and conveyance system and construction of a treatment facility to serve the portion of the development study area (identified as Study Area B that includes the Suburban and a portion of the R-1 Residential Zoning districts) in the vicinity of Branch Road.
- Continued reliance on treatment facilities of the Pennridge Wastewater Treatment Authority (PWTA) to provide public sewer service in Study Area A (which includes areas of the Suburban, Commercial-Office, Industrial (I-1 and I-2 districts), Cultural-Educational, and R-1 districts).
- Extension of the public sewer collection and conveyance system to serve Study Area C in the vicinity of Ridge Road and Old Bethlehem Pike to correct malfunctioning on-site disposal systems. Treatment of effluent will be at the facilities of the PWTA.
- Increased municipal involvement in wastewater facility planning and maintenance through implementation of a public education program.
- Continued monitoring of on-site sewage disposal systems within Schwenk Mill Road and Keelersville/Butler Lane Study areas. Pursue long-term goal of providing public sewer service to the Schwenk Mill Road Study Area.

- Implementation of a wastewater alternative selection process for all new development to ensure utilization of cost effective and environmentally sensitive sewage disposal/treatment facilities.

Many of these plan recommendations have been implemented since the adoption of the Act 537 plan as discussed below.

Public Sewer Service—In East Rockhill, the Pennridge Wastewater Treatment Authority (PWTA) and the East Rockhill sewage treatment facility provide public sewer service to the Development Area. (See Figure 11.) There are four areas of East Rockhill that are served by public sewers. Three of these areas are connected to the PWTA treatment plant in Sellersville via the South-side Interceptor that runs along the East Branch of the Perkiomen Creek. A sewer line runs eastward along Three Mile Run Road from Old Bethlehem Pike to a pumping station on Schoolhouse Road. This line also serves the properties fronting on Schoolhouse Road, Deibler Elementary, and approved Schwenk Mill Road extension before it reaches the pumping station. The third area is a small section at the western end of the township between Perkasio and Sellersville boroughs. East Rockhill has 345 Equivalent Dwelling Units (or EDUs which is a gallon per day measure for the purpose of determining wastewater generation per household) remaining from 1,060 EDUs originally allocated to the township by the Pennridge Wastewater Treatment Authority (PWTA). In 2003 the PWTA sewage facility was expanded; this may result in a rerating and thus additional capacity for East Rockhill in the future.

The fourth public sewer service area, which is located in the watershed of East Branch Perkiomen Creek west of Blooming Glen Road, is served by East Rockhill's sewage treatment facility, which came on line in 1998. Properties on Blooming Glen, Branch, and Seven Corners roads are connected to the lines in this area. East Rockhill's sewage treatment facility is designed to accommodate 0.113 million gallons per day with a stream discharge to the East Branch of the Perkiomen Creek. As of November 2004, the East Rockhill sewage treatment facility has a remaining capacity of 60 EDUs.

The planning of wastewater facilities in East Rockhill must also address areas where problems exist with on-site septic systems. Because these problems are scattered throughout the township, it is not feasible to extend sewer lines to most of them. Due to the limited number of failing systems within the Schwenk Mill Road Study Area and excessive costs of a community system/public sewer service alternative, the current Act 537 plan recommends that the township implement a program to educate residents regarding on-lot disposal system and maintenance and other methods to reduce septic system failures. The selected long-term alternative proposed was to connect to public sewer via the Deibler Elementary School system. Township officials have decided to pursue public sewer service for the Schwenk Mill Road Study Area sooner than expected, and sewer lines have been extended and service to this study area is anticipated in 2005. However, the two lots within this study area located to the northwest of Three Mile Run probably will not be connected. The opening of the municipal golf course is anticipated in 2006, and a public sewer lateral will serve the site from Schwenk Mill Road. Since the sewer line extension to the golf course was not anticipated in the current Act 537 plan, the plan will be revised to reflect the provision of public sewer service to this site.

The sewer line on Three Mile Run presents a situation that deserves special attention. As with most of the lines in the Pennridge Area, the sewer line transports sewage to the PWTa treatment plant in Sellersville, where the treated effluent is released into the East Branch of the Perkiomen Creek. However, the properties served by the line obtain their water supply through the groundwater withdrawals from Three Mile Run watershed, which the Delaware River Basin Commission is monitoring for excessive withdrawals. Therefore, water is not being returned to the watershed of the original withdrawal. The issue is that the water is being exported to the adjacent watershed instead of recharged back to the local aquifer. A determination of what role the Three Mile Run sewer line plays in the depletion of the aquifer would have to be a conclusion of a thorough hydrological study of the watershed. (For more information, see the Water Supply section.)

Nockamixon State Park has its own wastewater treatment plant. This plant is located outside of East Rockhill, but a sewer line lies within the township. This line does not extend beyond the park's boundaries. The plant has capacity in excess of the projected needs of the park. The Pennsylvania Department of Parks and Recreation has a firm policy of reserving the plant solely for use within Nockamixon State Park and for use by the Upper Bucks Vocational School.

To satisfy future housing projections, the Future Land Use and Growth Management section recommends zoning changes and alternative for handling wastewater in order to concentrate higher density development with the designated Development Area. By concentrating the public sewer facilities in these areas, East Rockhill can realize direct cost savings, and the coordination of other municipal services in these service areas can result in additional savings. Based upon the unplanned sewer lateral to the municipal golf course and changes to the future land use policies in the township, the Act 537 plan is not consistent with the comprehensive plan update. Therefore, an Act 537 Plan revision will take place.

Alternative Systems and Holding Tanks—The limited availability of adequate sewage disposal systems due to poor soils is a major limiting factor for development in East Rockhill. Adequate surface and subsurface disposal depends on the capacity of the soil to absorb and filter effluent. The filtering ability of soil is directly related to various factors including its permeability, stoniness, underlying slope, depth to bedrock, seasonal high water table, and inherent flood prone conditions. Soil conditions that do not permit the proper filtering process can lead to malfunctioning systems (as discussed below) and potential health hazards, such as contaminated drinking water, exposed effluent, and odors. While there are no known community sewer systems or spray irrigation systems in the township, there are ten separate holding tanks and a five alternative systems (in the form of privately owned, non-municipal sewage treatment facilities) serving individual residential and nonresidential uses in the township. (See Figure 11.)

On-lot Systems and Malfunctions—The majority of the township is served by individual on-lot sewage systems. Design, review, permitting, and construction

inspection of septic systems is administered by the Bucks County Health Department (BCHD). Septic system failure may be the result of problems related to the design, construction, operation, or maintenance of the system. Many septic systems operate satisfactorily for a period of time and then, for a variety of reasons, begin to malfunction, either periodically or on a continuous basis. Inadequate septic tank capacity and hydraulic overload are the primary causes of failure in older systems. There are reports of malfunctioning individual on-lot sewage systems scattered throughout the township. However, the largest concentrations are in the vicinity of Schwenk Mill Road between Ridge and Three Mile Run roads (which is to be provided with public sewer as discussed above), Keelersville, Butler Lane, and Hagersville. The Act 537 plan recommendation for these areas is public education and technical assistance program. Due to the small number of failed systems within these study areas and excessive costs of a community system/public sewer alternative, the plan recommends a program to educate residents regarding on-lot disposal system maintenance, water conservation fixtures, and other methods to reduce septic system failures.

In 2005, this education program recommendation was initiated through a multimunicipal planning effort between East Rockhill, West Rockhill, Bedminster, and New Britain townships. The byproduct will be a joint on-lot management septic ordinance and program. This management program provides residents with maintenance and education of on-lot sewage systems. Key program elements include an explanation to property owners for the need to periodically pump out their sewage disposal systems to inspection and monitoring of nonmunicipal, industrial, and individual alternative disposal systems (e.g., package treatment plants with stream discharge or spray irrigation systems serving individual lots. This program is intended to be a preventative means of reducing the potential malfunction of a system that can affect the quality of water resources in the township.

According to representatives from the Bucks County Health Department, there have been numerous complaints of malfunctioning on-lot sewage systems in the vicinity of the Hagersville in the form of both gray water (shower, faucet, and laundry) and black water (toilet) overflows. While this area was not identified as one of the study areas needing to address failing systems in the township's Act 537 plan, township officials have decided to remedy these malfunctioning systems while satisfying the future land use policy of limited expansion of the village zoning districts. This comprehensive plan recommends promoting village-style development in two specific areas adjacent to Hagersville and has proposed rezoning of lands. (See the Future Land Use and Growth Management section for more discussion on future land use policies for Hagersville.)