

East Rockhill Township Park and Recreation Plan

October 2006

East Rockhill Township Park and Recreation Plan

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Chapter 1. Introduction and Planning Approach

Introduction

The *East Rockhill Township Park and Recreation Plan's* purpose is to provide officials and the general public with direction and initiative on improving park and recreation programs, facilities, equipment, and financing. The plan will provide an analysis of population and housing trends, provide an analysis of existing park and recreation resources, conduct a recreational needs assessment, and provide appropriate recommendations.

Planning Approach

Anticipating an increase in development pressure and demand for park and recreational facilities, the Board of Supervisors created the Open Space Task Force. In January of 2002, the task force prepared the *East Rockhill Township Open Space and Recreation Plan* (revised February 2002) as a supplement to the Comprehensive Plan of East Rockhill Township (1987). The township recognized the need for a plan to assist the current and future boards in the preservation, acquisition, and use of areas the township presently owns or land suitable for preservation or acquisition. The update evaluated existing open space and recreational areas and recommendations were evaluated for addressing the future needs based upon projected population growth.

To take into account increasing growth and changing planning policies, the Board of Supervisors acknowledged the need to revise the 1987 comprehensive plan. In June 2005, the *East Rockhill Township Comprehensive Plan Update* was formally adopted. The plan provides guidance on future land use policy and decision-making, presents a vision for maintaining a high quality of life for its residents, and establishes strategies to meet the challenge of managing growth through the year 2015. The park and open space policies are an important component of the comprehensive plan.

In November 2005, the Board of Supervisors began the process of implementing the recommendations from the 2005 comprehensive plan update with the preparation of *East Rockhill Park and Recreation Plan*. One of the primary objectives of this plan is to provide compliance with the provisions of the Pennsylvania Municipalities Planning Code (MPC) with regard to mandatory dedication of recreation land and fee in lieu of this land to meet the recreational needs of future residents.

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Chapter 2. Goals and Objectives

The following goals and objectives form the basic framework for this park and recreation plan. A goal is an ideal or desired condition that expresses the values of the township in broad terms while an objective defines a purpose or commitment to achieve a desired goal or condition. Collectively, goals and objectives provide a basis for officials to analyze and evaluate key decisions regarding park and recreational issues confronting the township.

1. **Goal**—Provide park and recreational facilities that satisfy the needs of East Rockhill’s residents.

Objectives

- A. Provide a park and recreational facilities including a variety of active, passive, and educational opportunities.
 - B. Promote the ongoing cooperative use of recreational facilities at public school facilities—Pennridge High School and the Robert B. Deibler Elementary School.
 - C. Continue to support and coordinate recreational activities with area sports/athletic groups/associations.
 - D. Establish greenway linkages to connect areas of protected open space, significant cultural and historic resources, and park and recreation facilities.
 - E. Periodically solicit the input of township residents on their insight of existing park/recreational facilities and the need for additional park/recreational resources.
2. **Goal**—Coordinate park and recreational planning with East Rockhill’s land use and open space planning program.

Objectives

- A. Develop park and recreation facilities that preserve scenic, historic, and natural resources, which contribute to the rural quality and biological diversity of the township.

- B. Provide a means of ongoing communication and coordination between the township's board of supervisors, planning commission, and park and recreation board.
 - C. Establish the basis for a "mandatory dedication/fee in lieu of recreational land dedication" ordinance.
 - D. Establish (and periodically reassess) a reasonable fee schedule for mandatory dedication/fees in lieu program for land dedicated for park and recreational purposes.
 - E. Continue to seek the input of the park and recreation board for the review of proposed residential developments that are required to provide recreational land.
 - F. Implement the goals and recommendations of related planning efforts, including the East Rockhill Township Open Space and Recreation Plan and Natural Areas Inventory of Bucks County, Pennsylvania.
3. **Goal**—Maintain safe and functional park/recreational facilities that meet the needs of residents of all ages and physical abilities.

Objectives

- A. Provide park and recreation facilities that give maximum consideration of the health and safety of its users.
 - B. Establish a program of periodic and systematic maintenance inspections for all park and recreation facilities.
 - C. Coordinate the maintenance of facilities with sports athletic groups/associations that use these facilities.
 - D. Satisfy the goals and standards established by the Americans with Disabilities Act in the East Rockhill Township Park System.
4. **Goal**—Provide the financial resources necessary to support East Rockhill's park and recreation program.

Objectives

- A. Develop a practical and realistic operating budget for park and recreation on an annual basis.
- B. Provide an opportunity for developers to pay a fee in lieu of dedicating land for recreational facilities if there is unsuitable land on a site to serve this purpose.
- C. Pursue alternative means for park and recreational funding sources.
- E. Encourage the sports/athletic groups/associations utilizing recreation facilities to assume a portion of the operation and maintenance costs.

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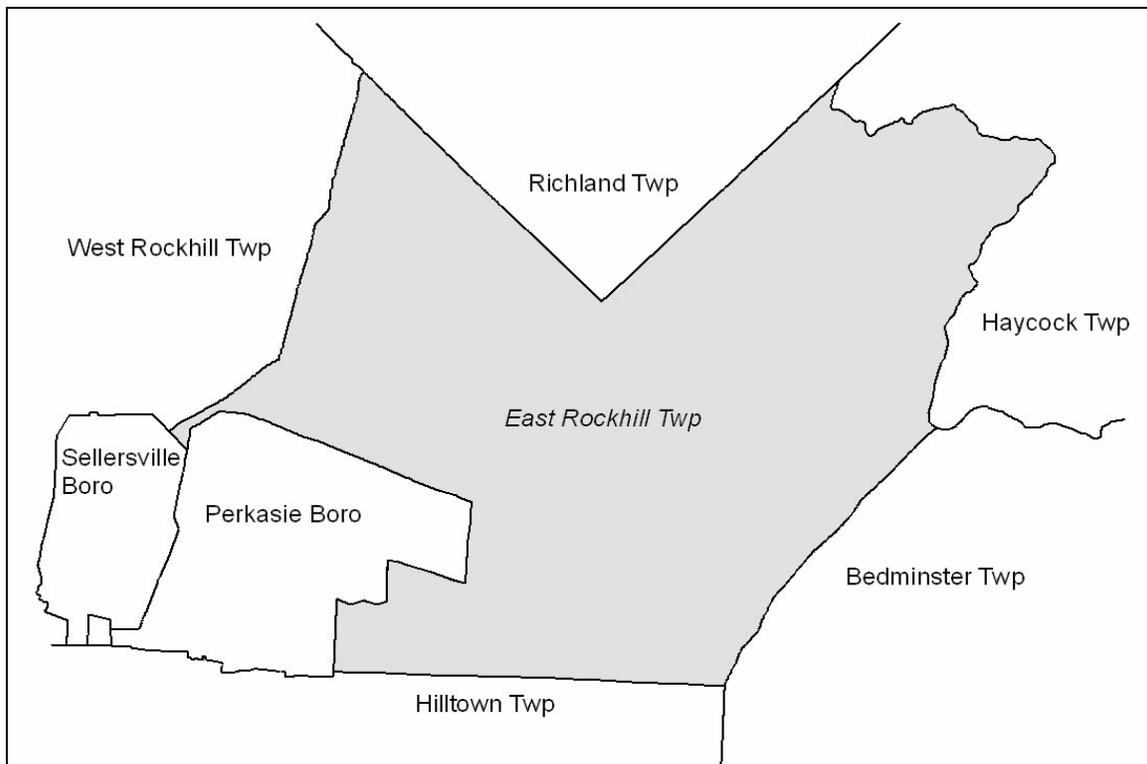
Chapter 3. Community Background

Regional Location

Located in the northwestern region of central Bucks County, East Rockhill Township encompasses 12.95 square miles (8,288 acres). The township lies within the following approximate boundaries: Rich Hill Road to the north, Tohickon Creek and Nockamixon State Park to the northeast, Old Bethlehem Road to the southeast, slightly below the East Branch of the Perkiomen Creek to the south, Callowhill Road to the southwest, and Old Bethlehem Pike to the west.

East Rockhill is part of the Pennridge Planning Area that includes nine municipalities (Bedminster, East Rockhill, West Rockhill, and Hilltown townships and Telford, Sellersville, Perkasio, Silverdale, and Dublin boroughs). The township also abuts Richland and Haycock townships located to the north in upper Bucks County.

East Rockhill is predominantly rural in nature; however, there is a potential for increased development due to the existing transportation system leading to and from the area. Pennsylvania Routes 313 and 309 provide access to the north and south, and PA Routes 563 and 113 provide access to the east and west.



Population and Housing Trends

East Rockhill Township has experienced continued population growth over the past fifty years. Although growth rates were slow (3.6 percent) from 1970 to 1980, they surged during the next 20 years with an overall growth rate of 75 percent, until reaching the municipality's 2000 U.S. Census population of 5,199. East Rockhill also experienced its highest 10-year population increase of 1,446 persons or about 38.5 percent between 1990 and 2000. Housing units increase has paralleled population growth with a 38.6 percent increase during this decade as shown in Table 1 below. East Rockhill's percentage increase for both population and housing are over three times that for Bucks County over this same time period.

Table 1. Population and Housing Growth, 1990–2000

| East Rockhill | 1990 | 2000 | 1990–2000 Change | |
|---------------|---------|---------|--------------------|------------|
| | | | Amount | Percentage |
| Population | 3,753 | 5,199 | 1,446 | 38.5% |
| Housing Units | 1,359 | 1,883 | 524 | 38.6% |
| Bucks County | 1990 | 2000 | 1990 – 2000 Change | |
| | | | Amount | Percentage |
| Population | 541,224 | 597,635 | 118,424 | 10.4% |
| Housing Units | 199,934 | 225,498 | 60,060 | 12.8% |

East Rockhill's average household size fell from 2.92 persons per household in 1990 to 2.84 persons per household in 2000. This trend, which is occurring throughout the county, is due to an increase in the number of smaller families and singles living alone. It may also reflect an increased number of people whose children have grown up and left home.

Age and Gender Composition

According to the U.S. Census, the gender make up of East Rockhill residents remains consistent and nearly equal between 1990 and 2000. In 1990, there were 1,854 females (49 percent) and 1,899 males (51 percent). In 2000, the female and male populations increased to 2,573 and 2,626, respectively but the overall percentages stayed the same.

Census data indicate the composition of East Rockhill's population is very similar to that of Bucks County and the surrounding municipalities within the Pennridge Area. Keeping to earlier trends, the median age within East Rockhill increased from 31.6 to 36.5 during 1980 to 2000. The following tables highlight

the population by age cohort from 1980 to 2000, age cohort by percentage of population, and rank of age cohort by percentage of population.

Table 2. Population by Age Cohort, 1980–2000

| Cohort | 1990 | | 2000 | |
|-----------------|------------|------------|------------|------------|
| | Population | % of Total | Population | % of Total |
| Under 5 | 314 | 8.4% | 357 | 6.9% |
| 5 to 9 | 325 | 8.7% | 444 | 8.5% |
| 10 to 14 | 252 | 6.7% | 444 | 8.5% |
| 15 to 19 | 228 | 6.1% | 365 | 7.0% |
| 20 to 24 | 188 | 5.0% | 212 | 4.1% |
| 25 to 34 | 676 | 18.0% | 639 | 12.3% |
| 35 to 44 | 666 | 17.8% | 1,049 | 20.2% |
| 45 to 54 | 430 | 11.5% | 789 | 15.2% |
| 55 to 59 | 168 | 4.5% | 261 | 5.0% |
| 60 to 64 | 139 | 8.2% | 178 | 8.4% |
| 65 to 74 | 242 | 6.5% | 268 | 5.2% |
| 75 to 84 | 103 | 3.3% | 154 | 3.7% |
| 85 and above | 22 | 0.6% | 39 | 0.8% |
| Total | 3,753 | 100%* | 5,199 | 100%* |
| 19 and under | 1,119 | 29.8% | 1,610 | 31.0% |
| 20–64 | 2,267 | 60.4% | 3,128 | 60.2% |
| 65 ⁺ | 367 | 9.8% | 461 | 8.9% |
| Total | 3,753 | 100%* | 5,199 | 100%* |

Source: U.S. Census, 1990 and 2000
 Note: May not add up to 100 percent due to rounding.

Table 3. Age Cohort by Percentage of Population

| Cohort | 1990 | 2000 | Percent Change |
|-----------------|-------|-------|----------------|
| Under 5 | 8.4% | 6.9% | -1.5 |
| 5 to 9 | 8.7% | 8.5% | -0.2 |
| 10 to 14 | 6.7% | 8.5% | 1.8 |
| 15 to 19 | 6.1% | 7.0% | 0.9 |
| 20 to 24 | 5.0% | 4.1% | -0.9 |
| 25 to 34 | 18.0% | 12.3% | -5.7 |
| 35 to 44 | 17.8% | 20.2% | 2.4 |
| 45 to 54 | 11.5% | 15.2% | 3.7 |
| 55 to 59 | 4.5% | 5.0% | 0.5 |
| 60 to 64 | 8.2% | 8.4% | 0.2 |
| 65 to 74 | 6.5% | 5.2% | -1.3 |
| 75 to 84 | 3.3% | 3.7% | 0.4 |
| 85 ⁺ | 0.6% | 0.8% | 0.2 |

Source: U.S. Census, 1990 and 2000

Table 4. Rank by Percentage of Population

| Age Cohort | Percentage |
|--------------|------------|
| 35 to 44 | 20.2 |
| 45 to 54 | 15.2 |
| 25 to 34 | 12.3 |
| 5 to 9 | 8.5 |
| 10 to 14 | 8.5 |
| 60 to 64 | 8.4 |
| 15 to 19 | 7.0 |
| Under 5 | 6.9 |
| 65 to 74 | 5.2 |
| 55 to 59 | 5.0 |
| 20 to 24 | 4.1 |
| 75 to 84 | 3.7 |
| 85 and above | 0.8 |

Summary of Recent Trends:

Based upon an examination of the age composition in Tables 3 and 4 above, the following trends can be summarized between 1990 and 2000:

- Adults in the 35 to 44 age cohorts represent largest percentage of the township’s population (20.2) and the greatest increase by percentage of population (3.7 percent).
- Adults 55 and over account for about 23 percent of the total population of the township but their growth in the last 10 years has remained relatively neutral.
- School age cohorts, 5 to 19 has grown slightly over the 10-year period and account for 24 percent of the township’s population. The township maintains a base of younger residents will continue to play an important role. There also remains the potential for younger families to start to move into the township and reverse this demographic trend. The township should continue to provide a variety of recreational facilities such as playgrounds, playfields for youth sports and activities and expand these facilities to meet satisfy increasing demands.
- With the future aging of the 35 to 54 cohorts, a higher demand for senior services including housing, healthcare, and transportation may be generated. The township should consider activities that tend to interest older residents when planning for new park and recreation activities, such as golf, walking, and biking.
- Demographic trends suggest a steady increase in population and housing units in East Rockhill over the next decade. Township officials should ensure that the provision of park and recreational facilities will

meet or exceed resident needs and demands. (See Analysis of Park and Recreational Needs for more details.)

Population and Housing Projections

Based upon housing forecasts prepared for the *East Rockhill Comprehensive Plan Update* (2005), approximately 774 additional housing units will be needed through the year 2015. This is a conservative estimate since it is comparable to, and slightly higher than the 2000 to 2004 trend of dwelling units constructed in East Rockhill.

According to the *East Rockhill Township Comprehensive Plan Update* (2005), the number of additional residents projected for 2015 based upon the low growth, medium-growth, high-growth scenarios is 1,571, 2,554, and 3,213, respectively. There are 774 additional dwelling units projected for this time period.

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Chapter 4. Park Facilities and Services

Inventory of Park and Recreation Facilities

East Rockhill Township contains over 1,000 acres of park and recreational land that offer an assortment of recreational opportunities throughout the municipality. An inventory of existing recreational facilities in East Rockhill has been summarized in Table 5 and illustrated in Figure 1.

Table 5. Recreational Facilities, East Rockhill Township

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

Of the existing public parks, Nockamixon State Park is the most significant in terms of area, consisting of approximately 338 acres within the northeastern portion of East Rockhill Township. The park is also located within portions of Haycock, Nockamixon, and Bedminster townships. Park facilities include hiking, biking, horseback riding, swimming, boating, fishing, and picnicking. Located within Nockamixon State Park is the county-owned and leased Weisel Youth Hostel that can provide overnight accommodations for up to 20 persons. This facility is available to members of the Hosteling International American Youth Hostel and all Bucks County residents and groups. Facilities include a kitchen and meeting/social rooms, mill pond for fishing and skating, and hiking.

The township-owned and operated Willard H. Markey Park is very popular with its users, which consist of all ages and physical abilities. The park contains a variety of facilities such as walking trails, pavilion, play equipment, picnic areas, golf driving range, volleyball courts, and soccer, football, multipurpose fields, and a skateboard park. Youth sports athletic groups/associations can be seen using the field facilities on a regular basis.

Obtained in 1998 through Bucks County Open Space Program funds, the site of the proposed golf course is the largest single property preserved in East Rockhill (107 acres). The golf course is designed to be a regulation 18-hole public course complete with clubhouse and driving range after its opening. The proposed golf course will contain multiple tee boxes catering to all skill levels—including youth, beginners, seniors, and experienced golfers.

As part of the Country Hunt Subdivision, the township acquired land that will be used for stream corridor preservation as part of the designated greenway and contains a soccer field, walking path, and fishing areas. This tract currently contains a portion of the Mervin C. Bryan Walking Path, providing a trail system in the Perkasio/Sellersville boroughs to the west, and to a planned walking trail as part of the Valley Green subdivision. Iron Bridge Park is located to the southeast of Country Hunt Subdivision and includes a basketball court, a soccer field, and a playground.

Public schools facilities in the township are Pennridge High School campus and the Robert B. Deibler Elementary School. Pennridge High School campus is currently undergoing a major redevelopment and expansion plan, but once construction is completed in 2007, the inventory of recreational facilities should include a football field, two soccer fields, two baseball fields, and six tennis courts. Robert B. Deibler Elementary School includes softball and baseball fields

and playground equipment. The Upper Bucks Christian School (and Bethel Baptist Church) is a private school that contains a soccer field, a baseball field, and two playgrounds on the site.

Other private recreational facilities that serve to supplement the recreational opportunities in the township are Camp Tohikanee, Keelersville Club, Branch Valley Fish and Game, and Faith Baptist Church.

Analysis of Park and Facility Needs

National Recreation and Park Association Guidelines

The National Recreation and Park Association (NRPA) is a national organization of recreational professionals whose guidelines are widely regarded as acceptable standards for determining the amount of parkland and types of recreational facilities necessary to meet the needs of area residents. In its most recent publication, *Parks, Recreation, Open Space and Greenway Guidelines* (1995), the idea of computing a community's level of service (LOS) is considered more representative of recreational needs than previous publications that prescribed the use of a population-based judgment method with respect to sizing the different types of parks within a community. The problem with this new approach is the amount of time and resources necessary to coordinate and implement the detailed survey and assessment required.

Due to the limited time and resources for this park and recreation plan's scope and production, a brief analysis of park and recreation facilities has been performed that is based upon NRPA population-based method. This analysis is intended as only a means for guiding park and recreational planning—not as an absolute blueprint. It serves as a general gauge for determining whether the provision of park and recreation facilities in East Rockhill is adequate.

The NRPA established a standard ratio of recreation acreage per 1,000 residents for several basic park types: regional, community, neighborhood parks, and mini-parks.¹ These ratios are useful in determining the base needs of the community and establishing standards for the mandatory dedication/fee in lieu of dedication ordinance (See Appendix A.) The results of the Resident Survey, a component of the recently adoption of the *East Rockhill Township Comprehensive Plan Update* (2005), is also used to determine the resident's park and recreational needs as well as provide estimated sizes for trails and special use parks, which

¹ *Recreation, Park and Open Space Standards and Guidelines*, 4th Printing, 1990, National Recreation and Park Association.

have no national standards. Periodic resident survey and input should be used to estimate the need for future park and recreational facilities.

Table 6. Park and Facility Type

| Facility Type | Service Area | Ideal Size | Acres of Land per 1,000 Persons |
|---|---|--------------------------------|---------------------------------|
| Regional Park – Area of natural or ornamental quality for outdoor recreation such as picnicking, boating, fishing, swimming, camping, and trail uses; may include play uses. | Several communities, 1 hour driving time | 200+ acres | 5.0 – 10.0 |
| Community Park – Area suited for intense recreational facilities such as athletic complexes or swimming pools. May include area of natural quality, suited for hiking, walking, or passive enjoyment. Serves a broader purpose than a neighborhood park. | Several neighborhoods, 1 – 2 mile radius | 25+ acres | 5.0 – 8.0 |
| Neighborhood Park – Area for intense recreational activities such as field games, court games, playgrounds, or picnic areas. Basic unit of park system and serves as the recreational and social focus of the neighborhood. | ¼ – ½ mile radius, serving a population of up to 5,000 people | 15+ acres | 1.0 – 2.0 |
| Mini-Park – Specialized facilities that serve a concentrated or limited population or specific group such as tots or seniors. | ¼ mile or less | 1 acre or less | 0.25 – 0.5 |
| Park Trail/Linear Park – System of trails located within greenways, parks, and natural resource areas. | No Standard | No Standard | Variable |
| Special Use – Area for specialized or single-purpose use. (e.g., golf course, nature center, outdoor theater, historic site) | No Standard | Variable | Variable |
| School-Park —Depending on circumstances, combining park with school sites can fulfill the space requirements for other classes of parks such as neighborhood, community, sports complex, and special use. | Determined by location of school district property | Variable— depends on function | N/A |
| Private Park/Recreation Facility — Parks and recreation facilities that are privately owned yet contribute to the public park and recreation system. | Variable | Variable | Depends on type of use |
| Natural Resource Areas – Land set aside for preservation of significant natural resources and open space. | No Standard | Sufficient to Protect Resource | Variable |

*Note: Park type classification based upon 1990 and 1995 National Recreation and Park Association (NRPA) classification systems.

As shown in Table 6 above, the NRPA does not provide a specific standard for several facility types or classifications and is listed as variable. Therefore, these facility types have not been analyzed as part of this plan.

East Rockhill Park Classification

Based upon NRPA’s classification system, East Rockhill’s park and recreational facilities have been designated by park type as shown in Table 7.

Table 7. East Rockhill’s Park Types

| Park Type | Name of Facility |
|----------------------------------|---|
| Regional Park | Nockamixon State Park |
| Community Park | Willard H. Markey Park |
| Neighborhood Park | Country Hunt, Iron Bridge Park |
| Mini-Park | Country Hunt, Cedarbrook Crossing |
| Park Trail | Mervin C. Bryan Walking Path |
| Special Use Park | State Gamelands No. 139, East Rockhill Golf Course (proposed), Weisel Youth Hostel, Camp Tohickanee |
| School-Park | Pennridge High School, Robert B. Deibler Elementary School, |
| Private Park/Recreation Facility | Upper Bucks Christian School, Keelersville Club, Camp Tohikanee Girl Scouts of America, Branch Valley Fish and Game, Faith Baptist Church |

*Note: Park type classification based upon 1990 and 1995 National Recreation and Park Association (NRPA) classification system.

Nockamixon State Park is classified as a Regional Park due to its size, the range of recreational and educational facilities, and service area. **Willard H. Markey Park** is best classified as a Community Park, since it serves surrounding neighborhoods within 1 to 2 mile radius, rather than several communities within an hour driving time as is the case for Regional Park type.

The 60-acre parcel associated with **Country Hunt** subdivision containing walking trails, a soccer field, and fishing opportunities has been designated as a Neighborhood Park, since it satisfies NRPA’s service area classification of ¼ to ½ mile radius and serving a population of up to 5,000 people.

There are two Mini-parks in the township within **Cedarbrook Crossing** and **Country Hunt** (which is a separate area from portion of Country Hunt designated as a Neighborhood Park described above), both containing a tot lot. With the construction of future residential development, additional Mini-parks may be appropriate to satisfy limited recreational needs of the adjacent residents that can be accessed by foot versus motor vehicle.

East Rockhill’s park system is supplemented by various Special Use, School-Park, and Private Park/Recreational Facilities that provide a range of recreational opportunities residents of the township and region alike. For instance, State Gamelands No. 139, Weisel Youth Hostel, (both Special Use Parks) and Camp Tohikannee (Private Park/Recreational Facility) currently attract users throughout the region. The proposed regulation 18-hole East Rockhill Golf Course will be open to the public and with the recent closure of several golf courses in the area, East Rockhill’s golf course will likely attract golfers throughout the multi-county region.

Future Park Needs

NRPA standards can provide a useful look at the types of parks serving a community. Table 8 provides a quick overview of all park types in East Rockhill and the amount of acreage provided:

Table 8. Park Needs Summary *

| Park Type | Acres/ 1,000 Persons | Recommended Acreage | Acres Provided | Surplus Acreage |
|-------------------|-------------------------|------------------------|-------------------|--------------------|
| Regional Park | 5.0 to 10.0 | 26 to 52 | 338 | 286 to 312 |
| Community Park | 5.0 to 8.0 | 26.0 to 41.6 | 92 | 50 to 66 |
| Neighborhood Park | 1.0 to 2.5 | 5.2 to 13.0 | 60 | 47 to 55 |
| Mini-park | 0.25 to 0.5 | 1.3 to 2.6 | 11.0 | 8 to 10 |

*Based upon U.S. Census 2000 population figure of 5,199 for East Rockhill Township.

According to NRPA standards, East Rockhill appears to be more than adequately served in terms of these four park types. However, this could change in the future with additional growth and development.

In general terms, NRPA suggests that a park system be composed of a “core” system of parklands with a minimum total of 6.25 to 10.5 acres of developed open space per 1,000 population. Typically, NRPA standards address the recreational needs of all levels (regional needs, etc.). The township, however, can focus on how to address the recreational needs of local park types—neighborhood, community, and mini-park. The total acreage provided in East Rockhill for these three park types is 163 acres, resulting in a total of 31.3 acres of local parkland per 1,000 population. According to the *East Rockhill Township Comprehensive Plan Update* (2005), the number of additional residents projected for 2015 based upon the low growth, medium-growth, high-growth scenarios is 1,571, 2,554, and 3,213, respectively. If the high growth population projection (3,213) were reached, the current acreage of local parkland (163 acres) will still

result in 19.4 acres per 1,000 population. While this will exceed the national standard, township officials may wish to continue to address the park and recreational facility needs of future residents.

For instance, each municipality has different demographic compositions that relate to specific needs for different types of recreational facilities/equipment. And each recreational facility has a specific space requirement. Appendix B provides a comprehensive listing of recreational facilities and their recommended space requirements, recommended size and dimensions, recommended orientation, number of facilities per population, typical service radius, etc. Thus, the parkland needs resulting from the national standards should only serve as a general barometer of the municipal recreational space needs. The results should be supplemented by observations directly expressed by residents and recreational facility users as to their needs and demands.

Resident Survey

As part of the *East Rockhill Comprehensive Plan Update* (2005), a general resident survey was distributed throughout the township in early 2004. As part of the survey process, questions specifically addressed the provision, adequacy, and satisfaction of park and recreational facilities in the township. Out of all the services provided by East Rockhill, park and recreational areas were deemed excellent by survey respondents, receiving the highest approval rating of 57 percent. When asked what the top three qualities that make up a good neighborhood, residents responded: safe streets (30 percent), quality schools (27 percent), and recreational facilities (18 percent). When asked how often you and your family visit Willard Markey Centennial Park, 9 percent responded several times a week while 42 percent indicated they frequent the park a few times a month. When the same question was posed for Nockamixon State Park, 6 percent said they used the park several times a week and 39 percent used the park a few times a month. These responses suggest that the area parks play an integral part of the lives of area residents for physical and mental well-being.

Respondents also indicated that when planning for the future of the township, recreational facilities should be given a 'medium priority.' An overwhelming 92 percent of respondents supported the notion that East Rockhill should acquire key open space areas, wildlife corridors, and trail linkages. When 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 by respondents were tennis

courts (33 percent), picnicking (31 percent), soccer/football fields (27 percent), baseball/softball fields (25 percent), and playground/tot lots (24 percent). Community clubs and senior citizen programs (both 23 percent) were also identified in the survey as shown in Table 9.

Table 9. Survey Responses

| Recreational Facility or Activity | Percentage of Responses |
|--|--------------------------------|
| Walking Trails | 82 |
| Bicycling | 57 |
| Tennis Courts | 33 |
| Picnicking | 31 |
| Soccer / Football Fields | 27 |
| Baseball / Softball Fields | 25 |
| Playground / Tot Lots | 24 |
| Senior Citizen Programs | 23 |
| Community Clubs | 23 |
| Horseback Riding | 21 |
| Camping | 14 |
| Other | 0 |

Summary of Facility Needs

East Rockhill’s park system is a great asset, providing a wide-range of recreational opportunities. Residents are generally very pleased with the provision of park and recreational facilities. Based upon national standards, East Rockhill exceeds the amount land based on various park types. Yet future growth and demographic changes will inevitably increase the demand for these facilities. Moreover, the recent resident survey identified resident priority for certain types of recreational facilities and activities that must be considered in the township’s recreational facility planning.

A periodic park and recreational survey can provide township officials with a basis of identifying recreational facilities deemed most important to residents and identify changing needs when the time comes to expand park and recreational facilities. For instance, the overall trend of an aging population base suggests that senior citizen programs and activities may be popular with residents.

Administration

The East Rockhill Township Park and Recreation Board serves in an advisory capacity and assists the Township Supervisors in planning, regulating, and maintaining parks, recreation facilities and programs. The Park Board may recommend to the Board of Supervisors such plans and provisions it deems

necessary to acquire, preserve, continue and expand park and recreation facilities, indicating the cost of such recommendations. For instance, the Park Board will review and make recommendations on proposed tot-lot equipment for pending subdivision plans. The Park and Recreation Board is composed of seven members appointed by the Board of Supervisors. Each member serves a 5-year term or until their successors are appointed. All persons appointed serve their full term unless they voluntarily resign, become unable to serve, or are removed by the Supervisors for dereliction or neglect of duty. Vacancies on the Board occurring other than by expiration of term are for the unexpired term and shall be filled in the same manner as the original appointments.

The members of the Park and Recreation Board elect their own chairman and secretary and select all other necessary officers to serve for a period one year from March 1st of each year. The Board meets as necessary to perform its duties and has the power to adopt rules and regulations for the conduct of business which comes before them. An annual meeting is scheduled in March of each year for the purpose of organization.

Township employees handle the day to day operations of the park system. This involves field scheduling, maintenance, and other duties. Staffing levels are determined by the Board of Supervisors and the Township administrative staff. Seasonally, the township employs golf range attendants and other personnel as needed.

With the acquisition and development of new facilities, expenditures for staffing and facility maintenance will increase, and the township should budget accordingly. New programs at township parks will also require additional staffing and expenditures. The Park Board should periodically analyze of the costs related to the staffing and maintenance of any planned or proposed park and recreation facility that may be reasonably be acquired or developed within the budget year.

With the exception of the township-owned and -operated golf driving range, all recreational programs are run by nonprofits including football, soccer, lacrosse, softball, volleyball, and golf lessons provided by outside agencies (e.g., school district, sports organizations). The local scout troops and a home school group also use the park facilities.

To promote the cooperative use of its park facilities, the township makes available to local user groups (e.g., local nonprofit agencies, adjoining

municipalities, and the Penridge School District) recreational fields and equipment, subject to a permitting process and fees. The use and scheduling is on a first come, first served basis.

Chapter 5. Open Space and Resource Planning

East Rockhill Township's open space resources include areas containing rural residential, vacant, agricultural, and park and recreational land uses. Approximately 68 percent of the total land area falls within these four land use categories. A significant portion of this area may not be protected from future development. In the resident survey distributed as part of the comprehensive planning process, over 90 percent of the respondents indicated that East Rockhill Township officials should acquire key open space areas, wildlife corridors, and trail linkages. Over 84 percent of the respondents indicated that both natural resources and open space should be given a high priority when planning for the future of East Rockhill. Subsequently, the preservation of significant open space and natural resources is an important issue in the minds of many residents.

Protected Lands

The following provides a brief description of all protected open space lands or areas that are permanently protected from future development. The protected lands comprise approximately 1,019 acres or about 12 percent of the total area in the township.² The location and extent of these lands are illustrated in Figure 2. The Other Lands category shown on this figure represents lands with recreational facilities and/or open space areas that are not protected by a legal mechanism such as an easement, but are unlikely to be developed in the future due to the nature of the existing use.

State-Owned Lands

The Commonwealth of Pennsylvania owns significant land in East Rockhill in the form of State parklands and State game lands. Approximately 388 acres of Nockamixon State Park is located within East Rockhill Township. East Rockhill is also the site of State Game Land No. 139 that is open to the public for hunting during prescribed seasons. The total area of State Game Land No. 139 is about 131 acres. Therefore, the total acreage of State parklands and State game lands in the township is approximately 519 acres.

County-Owned/Leased Land

Bucks County actually owns only a one-quarter acre parcel adjacent to Nockamixon State Park, containing a radio tower. However, the county leases an 8-acre parcel from the Commonwealth. This is the site of the Weisel Youth Hostel

² The acres shown for both the Permanently Protected Lands and Other Lands are accurate as of September 2004, when the data for these resources were compiled.

located on Richlandtown Road adjacent to Nockamixon State Park. The total acreage of county owned and leased land is 8.25 acres.

Township-Owned Lands

The Willard H. Markey Centennial Park located on Ridge Road is a popular recreational area residents, containing 92 acres. The 107-acre Hildebrand site obtained from the Bucks County Open Space Program funds is to be developed into a regulation 18-hole public course complete with clubhouse and driving range and is scheduled to open in the fourth quarter of 2006. East Rockhill Township has also acquired 63.8 acres along the East Branch of the Perkiomen Creek as part of the Country Hunt Subdivision.

Other open space associated with residential developments that were dedicated to the township is as follows: Pines at Pennridge (15.5 acres), Creek View (2.4 acres) and Valley Green or Cedarbrook Crossing (23.0 acres). The total acreage of land owned by the township is about 336.7 acres.

Township-Owned Lands with Conservation Easement

The township recently acquired three parcels located along Three Mile Run Road. One parcel is located adjacent to Willard Markey Park, and the other two are located on the northwest side of Three Mile Run Road. While owned by East Rockhill, two of the three parcels (TMP#s 12-9-92-1 and 12-9-157 are protected by a joint conservation easement held by the Bedminster Land Conservancy. The easement agreement stipulates that these two lots may not be further subdivided or developed for residential use. Instead, the parcels must be used for educational purposes only, with no buildings to exceed 10,000 square feet. The agreement for the other parcel (TMP#12-9-93) has not been formally accepted yet, but is intended to be restricted to passive recreational purposes. These parcels form a contiguous land holding that may be used to provide a trail network into Willard Markey Park. The Wismer subdivision located adjacent to Blooming Glen Road also contains a 7-acre privately-owned conservation easement that is held by East Rockhill Township. In total, there is about 95 acres of land that contain conservation easements on land owned or jointly owned by the township.

Lands with Conservation Easements by Heritage Conservancy

There are other lands in the township that are not owned by the township, but contain conservation easements. The Musselman farm is located at the corner of Schwenk Mill and North Fifth Street. This property consists of 60 acres and contains a conservation easement held by Heritage Conservancy. The agreement

stipulates that no residential activities (with exception of existing dwelling unit) are permitted on the site.

Other Lands

School Facilities

Public school facilities in East Rockhill include Pennridge High School and The Robert B. Deibler Elementary School. Pennridge High School campus is located at the corner of Blooming Glen Road and North Fifth Street and totals 141.4 acres. The Robert B. Deibler Elementary School contains 12 acres and is located on Schwenk Mill Road. The Upper Bucks Christian School (and Bethel Baptist Church) is a private facility located on Rockhill Road, containing 27.6 acres. Lastly, the Bucks County Community College—Upper County Campus located adjacent to the Glenwood Village Shopping Center consists of 14.4 acres and does not contain recreational facilities. The total land area for school facilities is about 195.4 acres.

Utility-Owned Lands

The Perkasio Borough Authority (PBA) currently owns four parcels in East Rockhill Township. PBA has exclusive easement rights on another parcel that is owned by East Rockhill Township. On two parcels, PBA operates three active wells, one test well, and one well that is in the process of being developed. These wells provide public water supply to both Perkasio Borough and East Rockhill Township. The total land area of PBA sites within the township is approximately 167 acres. Along the northeastern side of Park Avenue, Pennsylvania Power and Light (PP&L) owns a 17.8-acre site.

Natural Areas Program

In June of 1999, an inventory was undertaken to identify and rank the most significant natural areas remaining in Bucks County, including those in East Rockhill. This survey, titled Natural Areas Inventory of Bucks County, provides guidance for implementation of the natural areas protection component of the Bucks County Open Space Initiative. The individual site evaluation to determine the significance of natural areas is based upon 13 criteria addressing biological, ecological, hydrological, and geological components. Sites were assigned one of four levels of importance.

- Priority 1—areas that have statewide or countywide significance based on uniqueness or exceptionally high quality of natural features.

- Priority 2—areas that have countywide or statewide significance based on the overall quality and the diversity and importance of the resources.
- Priority 3—areas that have local or countywide significance that may contain small or degraded resources.
- Priority 4—areas that have biological or ecological resources that are important at the local level.

East Rockhill Township contains the following priority sites as identified in the Natural Areas Inventory. (See Figure 3.)

Quakertown Swamp – Priority 1 Site

Quakertown Swamp is the largest freshwater inland wetland in southeastern Pennsylvania. The swamp encompasses nearly 518 acres bordering Bog Run, a tributary to Tohickon Creek and lies within East Rockhill, West Rockhill, and Richland townships. Located near the dormant Rockhill Quarry, it provides a critical wildlife habitat and is a natural plant community for numerous wetland species ranging from open water to shrub swamp, cattail marsh, tussock sage marsh, and swamp forests. More than 74 bird species nest in the swamp, which also provides habitat for a variety of reptiles and amphibians. The area is largely undisturbed, and at an elevation of 840 feet, its heavily forested areas and steep slopes make the area abundant with aesthetic views and scenery.

The Quakertown Swamp has been awarded several distinctions for its natural significance. In 1996, the Bucks County Audubon Society designated the Quakertown Swamp as an Important Bird Area. The Pennsylvania Game Commission recognized the area as a significant habitat for nesting and migrating waterfowl. The United States Fish and Game Commission has also acknowledged the swamp as an important wetland area within Pennsylvania.

Numerous studies have been conducted investigating the wetland's diverse natural communities. In 2000, the Heritage Conservancy published the Quakertown Swamp Resource Protection Plan, which explains the importance of the swamp, and attempts to encourage landowners and municipalities to preserve the land so that the swamp can be maintained as a complete site. Because many private landowners hold properties encompassing the wetland, Quakertown Swamp is extremely vulnerable to the impacts of land use and development.

The Heritage Conservancy recommends a combination of land protection techniques to preserve and maintain the Quakertown Swamp. Several options include: acquisition in fee simple, placement of deed restrictions, acquisition of easements or development rights, and voluntary preservation by individual landowners. Innovative zoning and regional land management strategies should also be investigated. Heritage Conservancy notes that interagency cooperation is essential in establishing protection guidelines to ensure the permanent protection of this resource.

The Quakertown Swamp Resource Protection Plan is a component of the Heritage Conservancy's Lasting Landscapes initiative. Lasting Landscapes first identifies and maps significant environments that contain a critical mass of both natural and historic resources and then works to develop and implement maintenance and protection strategies. To fulfill its mission the Heritage Conservancy also coordinates the Quakertown Swamp Partnership, consisting of federal, state, municipal and local agencies, landowners, and concerned citizens.

Haycock Mountain and Nockamixon State Park – Priority 1 Site

Nockamixon State Park and State Game Lands 157 make up the largest expanse of protected open space in Bucks County with over 7,000 acres. The southwestern portion of Nockamixon State Park is located in East Rockhill Township. Open year-round, the park's primary attraction is its 1,450-acre lake. The park also contains varied habitats including forests, old fields, rocky streams, and forested wetlands.

Rock Hill – Priority 2 Site

Rock Hill rises to a height of 850 feet above sea level, approximately 300 feet above the surrounding landscape. It includes extensive forested slopes and abundant evidence of past quarrying, including an abandoned quarry pit on its southern face. Rock Hill has been identified as an outstanding scenic geologic feature of Pennsylvania (Geyer and Bolles 1979). As an integral part of the continuous forested band that stretches across Upper Bucks and Montgomery Counties, it should be protected from deforestation and fragmentation.

Tohickon Family Campground

East Rockhill Township is proposing to acquire a conservation easement on approximately 32 acres of the 56-acre property owned by the Tohickon Family Campground located on Covered Bridge Road. The property is located just south of Lake Towhee Park and Dimple Creek, both priority 2 county natural areas, and just north of Haycock Mountain and Nockamixon State Park a priority 1

county natural area. According to the *Natural Areas Inventory of Bucks County*, “Opportunities to acquire inholdings and properties which jut into the area of protected lands should be sought or which would preserve a corridor between this area and Lake Towhee Park.” As shown on Figure 3, the Tohickon Campground is located along the corridor that connects Haycock Mountain and Nockamixon State Park to Lake Towhee Park. The preservation of the campground will help ensure a permanently protected corridor for wildlife between these two important County Natural Areas. According to Ann Rhoads of the Morris Arboretum of the University of Pennsylvania, the Tohickon Family Campground site has high value as a natural area for the following reasons:

- The presence of a PNDI-listed plant;
- A highly diverse and intact forest which borders the west side of the Tohickon Creek for approximately 2,000 feet;
- Its proximity to and habitat continuity with Priority 1 Haycock Mountain/Nockamixon State Park natural area inventory (NAI) site, from which it is separated by a single intervening property. The campground also constitutes a major piece of a corridor linking the NAI site to Lake Towhee County Park.

A vegetated riparian buffer is proposed to be provided along the Tohickon Creek to reduce erosion and sedimentation, preserve habitat, and provide possible pedestrian paths along this greenway. East Rockhill Township is pursuing the provision of a conservation easement on this property to preserve natural and historic resources for enjoyment by the public.

Open Space and Recreation Plan

In 1998, the Open Space Task Force prepared the East Rockhill Township Open Space and Recreation Plan which was adopted as a supplement to replace the Park and Recreational Facilities Section of the previous 1987 comprehensive plan. While East Rockhill has since adopted an updated comprehensive plan in 2005, there are still relevant plan strategies and recommendations worth reviewing. In addition to identifying existing sites, the plan also inventoried unprotected and potentially vulnerable resources and earmarked specific areas for immediate acquisition and future consideration for purchase and/or conservation easements.

The plan outlined the following five objectives to be accomplished through the township’s open space preservation program.

- Preservation of Rural Character and Environmental Integrity
- Controlled Development Areas
- Preservation of Forested Vistas
- Preservation of Stream Corridors and Floodplains
- Provide Recreational Facilities and Parks

Proposed implementation strategies include preservation tools both currently utilized by the township as well as new and innovative techniques to be added to municipal ordinances.

- **Increase Ordinance Requirements.** At this time, Section 27-1905 of the zoning ordinance authorizes the Board of Supervisors to require a fee in lieu of dedication where it is impractical to set aside recreation land as required. The amount of payment for a fee in lieu of such land is determined by multiplying the number of dwelling units by the fees adopted by resolution by the Board of Supervisors. It is recommended that the township investigate the feasibility of instituting open space requirements and a corresponding fee in lieu option for residential developments within the subdivision and land development ordinance. (This implementation strategy will be addressed in this park and recreation plan.)
- **Create a Transfer of Development Rights Ordinance.** A method of exchanging development rights among property developers to increase development density and protect open space.
- **Promote Use of Conservation Easements.** Private property owners place conservation easements on their properties restricting all or a portion of the property from development.
- **Acquisition by State and County Governments.** Encourage agencies that currently own areas within the township to consider other parcels suitable for ownership.

The *East Rockhill Township Open Space and Recreation Plan* serves as a valuable benchmark analysis of the open space preservation practices and opportunities within the municipality. During the past ten years, the township has acquired several tracts of open space. Recently, the township targeted six properties for preservation purposes. Representatives from the Heritage Conservancy have also

been working with township officials to preserve these properties located through various means such as acquisition of conservation easements and development rights or outright purchase. One of the properties is the Sheard's-Clymer's Grist Mill site. Heritage Conservancy has submitted the Pennsylvania Historic Resource Survey form to the Pennsylvania Historic Commission which has recommended the grist mill site for the National Register for Historic Places. A successful open space preservation program will rely heavily upon continued long-term planning considerations of undeveloped park and open space sites and changing needs of the community.

Chapter 6. Greenway and Trail Planning

East Rockhill has a wealth of natural resources that enhance the quality of life of its residents. Farmland, woodlands, steep slopes, and stream valleys are some of the resources that contribute to the aesthetic and rural character of the township. Land use planning should balance future development with the protection of the township's inherent natural resources.

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. Greenways provide numerous benefits to their surrounding communities. In addition to preserving natural resources, greenways may also provide safe, nonmotorized transportation routes to schools, commercial centers, residential developments, and recreational areas. Segments of a proposed greenway network may be intended to provide a recreational trail system 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.

The recreation preference from the 2005 Resident Survey indicated that the top two responses were passive recreation in nature—walking trails and bicycle facilities. It is expected that future residents will share these values and desires for passive recreation. Pedestrian and bike trail facilities may be miles in length and require sufficient width to protect users from the anticipated increase in vehicular traffic. Along with future development, township officials should continue to assemble greenway and trail network through the acquisition of easements along designated routes.

As an active member in the Pennridge Area Coordinating Committee (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 linkages. Among the proposed greenways for the entire Pennridge Area, six are located within or along East Rockhill Township municipal boundary and one spur route (Markey Park Connector Trail) was added to provide a key connection to Willard Markey Park and other points of

interest in the area. The following proposed link parks are based upon the Pennridge Area Greenway Plan and then modified or expanded to satisfy East Rockhill's specific needs. Figure 4 also highlights the township's recommended greenway routes.

The East Branch Perkiomen–Deep Run Greenway extends from Bedminster Township, where Deer Run branches from the Tohickon Creek to along the East Branch of the Perkiomen Creek, to townships in Montgomery County. Points of interest along the greenway corridor include: the Pines at Pennridge, Moods Covered Bridge, Village of Glenwood Shopping Center, and Upper County Campus of Bucks County Community College. 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.

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 and West Rockhill areas. 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 between Nockamixon State Park and the Liberty Bell Trail and West Rockhill Township.

Willard H. Markey Park Connector Trail would provide an additional spur route and 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 proposed 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.

Many of the greenway locations in East Rockhill contain inherent natural resources (e.g., stream corridors, floodplains, steep slopes, and woodlands). Natural resources are protected under the current zoning ordinances; however, public access is not presently possible since these areas are located on private property. Therefore, township officials may wish to purchase public access easements from respective property owners in order to implement a portion of the park and open space network. Township officials can explore a host of funding sources for this purpose. (See Appendix F.)

Public education will play a critical role in the implementation of the link parks, since most property owners are leary of allowing public access for fear of vandalism, littering, or invasion of privacy. In most cases, these fears can be put to rest with appropriate planning or regulatory measures in place (e.g., provisions of evergreen trees or fencing as a privacy screen, policing to prevent malicious activity.) However, often property owners realize that the provision of an adjacent greenway or trail is more of an asset than a liability.

Bike Routes are proposed along area roadways as shown on Figure 4. 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. The Route 313 Bike Lane is a project on the Bucks County Transportation Improvement Program (TIP) list. This bike route will provide an important segment of the regional bike route that runs from the intersection of Mountain View Road southeast through Dublin Borough, possibly all the way to Doylestown Borough. From Mountain View Road, it is recommended that the bike route continue northeast into Nockamixon State Park and Haycock Township.

A comprehensive greenway system is often an assemblage of open space areas of various kinds to create a regional “green” infrastructure. Figure 4 contains a feature known as floodplain greenways that are intended to function as an open space corridor that protects the inherent natural resources along streams and

watercourses. These areas may or may not include trail development. There are various design elements that should be considered in the planning and implementation of trails and bike routes, (see Appendix C). Currently, the township does not have recreational trail or bike route requirements in their ordinances. Appendix D provides a model ordinance that may assist township officials with developing an appropriate greenway and bike route ordinance for East Rockhill.

Section 27-1900.j in the zoning ordinance provides Riparian Buffer Zone requirements, which aids in preserving floodplain greenways. The intent is to preserve a 75-foot-wide buffer from the top of the identified stream/watercourse where no living trees, shall be removed and the site shall not be altered, regraded, filled, piped, diverted, or built upon except for road and utility crossings where design approval is obtained from the Township. Presently, this requirement would prohibit trails within the 75-foot riparian buffer zone, which would be excessive.

The Natural Resource section of the township's comprehensive plan update contains the following recommendation "Evaluate and possibly amend the riparian buffer regulations in the zoning ordinance to provide performance standards for the protection of the township's waterways." In order to enhance and provide more protection of riparian buffers in East Rockhill, township officials should consider adopting a Riparian Corridor Conservation District. (See Appendix E.) A Riparian Corridor Conservation District is provided in the form of an overlay that establishes a 75-foot wide riparian buffer from stream bank (similar to the existing Riparian Buffer Zone) but also establishes two separate zones and permitted uses within each zone that are appropriate for maintaining and protecting the riparian corridor. Zone 1 consists of a 25-foot margin that extends from the edge of the stream or wetland. In Zone 1 typical permitted uses include wildlife sanctuaries, nature preserves, fishing areas, passive park and recreation areas, and stream bank stabilization. Uses permitted by conditional use approval include corridor crossings by farm vehicles and livestock, recreational trails, roads, railroads, and utility lines. Zone 2 consists of a 50-foot margin that extends from the edge of Zone 1. In Zone 2 permitted uses include wildlife sanctuaries, nature preserves, passive park and recreation areas, recreational trails, front, side, and rear yards of private lots, and agricultural uses existing at the time of the adoption of the ordinance. Uses permitted by conditional use approval in Zone 2 include corridor crossings by farm vehicles and livestock, recreational trails, roads, railroads, and utility lines; camps, campgrounds, picnic areas, golf courses, and playgrounds; and naturalized

stormwater basins. Uses such as clear-cutting, hazardous material storage, permanent structures, subsurface sewage disposal areas, chemical application of farmland, and motor vehicle traffic are specifically prohibited within the corridor. Permitted activities within the corridor must be accompanied by the implementation of an approved Corridor Management Plan that identifies management techniques that will be used to offset disturbances to the corridor.

Summary of Greenway and Trail Planning

East Rockhill township officials are committed to greenway and stream corridor protection and establishing a township-wide park and open space network that will connect points of interest within the township as well as the region. In order to implement this greenway network, township official should coordinate with developers to set aside appropriate access easements and trail segments. If property donation is not possible, township officials will explore the available means to purchase public access easements from the respective property owners in order to implement a portion of the park and open space network. Township officials will also consider ordinance amendments to enhance riparian buffer protection and siting recreational trails and provide appropriate standards for trail facilities.

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Chapter 7. Acquisition and Preservation

Two primary means that municipalities have at their disposal for acquiring and preserving land for park use and natural resource/open space preservation are through the implementation of local ordinance provisions and the acquisition of property rights as discussed below.

Local Ordinance Provisions

The subdivision and land development ordinance and zoning ordinance contain means for acquiring park and recreation lands or preserving natural and open space resources. These provisions include the agricultural preservation district, natural resource protection standards, site capacity calculations, and mandatory dedication and fee in lieu contributions.

Agricultural Preservation District

In 2003, the township enacted the Agricultural Preservation (AP) District whose purpose is to recognize and protect those areas of the township where farming predominates. Within this zoning district no more than 40 percent of prime farmland or farmland of statewide importance (as defined by the U.S. Department of Agriculture, Natural Resource Conservation Service) may be developed for sited containing 10 acres or more.

Natural Resource Protection Standards

East Rockhill's natural resource protection standards limit the permitted amount of disturbance to natural resources and environmentally sensitive areas. They are intended to protect the township's floodplains; floodplain soils; steep slopes; woodlands; mature trees; streams, watercourses, lakes or ponds; wetlands; wetland margins; riparian buffer zones; and prime farmland soils (in the Agricultural Preservation District).

These standards apply to all uses and activities including subdivisions and land development proposals, except lot line adjustments and recreational development of open space area pursuant to Section 27-1903(d)(3) of the zoning ordinance. Development of open space recreational areas may exceed the protection standards established for steep slopes and woodlands if approved by the Board of Supervisor. Township officials may wish to eliminate the open space recreation area exception so that they are assured that all required recreation land will be practical and functional for the proposed recreational facilities and uses.

Site Capacity Calculations

In addition to natural resource protection calculations, certain types of residential development proposals (i.e., Detached Dwelling Cluster Subdivision, Performance Standard Development or Mobile Home Park uses) are required to perform site capacity calculations. Site capacity calculations are required to determine which areas of the site are most suited for development and at what density. Site capacity calculations serve the additional purpose of providing a calculated amount of required recreational and open space land. If the township elects to use a mandatory dedication/fee in lieu of recreation land ordinance to provide for recreational land (See Appendix A), the recreational portion of the site capacity calculation should be eliminated.

Mandatory Dedication/Fee in Lieu Contributions

Section 22-525 of the subdivision and land development ordinance contains general requirements for the provision and suitability of land for recreation facilities. For all residential subdivisions of 25 or more dwelling units, recreational facilities must be provided unless waived by the Board of Supervisors. Recreational facilities are required to be constructed within the required open space for cluster subdivisions and performance standard subdivisions. For all residential subdivisions where open space is not required, a minimum of 2,500 square feet per dwelling unit or 3 acres of recreation land (whichever is greater), must be provided. This section also provides minimum recreation facility requirements for playfields, tot lots, basketball and tennis courts, and swimming pools.

Assessment of Local Ordinance Provisions

In order to provide a mandatory dedication/fee in lieu of ordinance that will fairly and consistently meet the requirements of the Pennsylvania Municipalities Planning Code (MPC), while enhancing the recreational facilities provisions in the current ordinances, township officials should consider the following revisions, deletions, or additions to both the subdivision and land development ordinance and zoning ordinance.

Based upon current recreational facilities requirements, Section 22-525 of the subdivision and land development ordinance should be revised as follows:

- Section 22-525.1.A states “For all residential subdivisions of 25 or more dwelling units, recreational facilities shall be provided unless waived by the Board of Supervisors.” Section 22-525.1.B states “Recreation facilities shall be constructed on open space within detached clustered

subdivisions and performance standard developments. If township officials wish to provide a mandatory dedication/fee in lieu contribution for all residential subdivisions and land developments, these two sections should be deleted in place of 22-525.1.C below.

- Section 22-525.1.C states “For all residential subdivisions where open space is not required by the East Rockhill Township Zoning Ordinance [Chapter 27], the applicant shall provide a minimum of 2,500 square feet per dwelling unit or 3 acres of recreation land, whichever is greater.” Based on estimated recreational needs from and standards of the National Recreation and Park Association (NRPA) for residential development, this requirement may be excessive. Furthermore, township officials may wish to consider requiring recreation land for all residential subdivisions, regardless of whether or not open space is required. Therefore, this section could be revised to state “For all residential subdivisions, the applicant shall provide 1,500 square feet of recreation land per dwelling unit.” This assumes a land recreational need of 10.5 acres per 1,000 population in accordance with NRPA standards. (See Appendix A.)
- Revise Section 22-525.1 to add subsection K to read as follow: “Sites designated for recreation land shall not contain lands with natural resources required to be protected in accordance with the zoning ordinance, stormwater management facilities, or lands designated for any other purpose except for provisions of Section 27-1900 of the zoning ordinance.” Recreational land should be exclusive of other resource restriction areas and utility uses. Combining these uses on the designated recreational land may limit the use and effectiveness of this area.
- Sections 22-525.2, 3, 4, 5, and 6 provide recreational facility requirements for tot lots, playfields, basketball and tennis courts, and swimming pools. However, based upon township official’s philosophy and commitment to implementing a greenway and trail network, this section should be revised to add “Trail Development” requirements to the recreation facilities listed. (For model trail regulations see Appendix D.)

Section 503.11 of the Pennsylvania Municipalities Planning Code (MPC), authorizes municipalities to require recreation land and fees in lieu contributions

through the subdivision and land development ordinance. To be consistent with the enabling legislation, it is recommended that all references to mandatory dedication of recreation land should be removed from the zoning ordinance and added to the subdivision and land development ordinance. The following zoning ordinance sections are relevant.

- Section 27-1904 provides a fee in lieu of Recreation Land requirement. It states that:

Where the Board of Supervisors determines, after a hearing pursuant to public notice, that because of size, shape, location, access, topography, or other feature of land or any other need of the Township, that it is impractical to set aside recreation land as required by Section 27-1901(b)(3) of this Chapter, the Supervisors shall require a payment of a fee in lieu of such land. The developer shall pay such fee to the Township prior to final approval of each section of the overall plan by the Board. Such fee shall be calculated by multiplying the number of dwelling units in each section by the fees adopted by resolution by the Board of Supervisors.

This provision should be removed from the zoning ordinance and relevant provisions incorporated into a new mandatory land dedication/fee in lieu requirements section in the subdivision and land development ordinance.

Appendix A is intended to form the basis of the mandatory land dedication/fee in lieu of dedication ordinance and establishes the proper amount of land or fee in lieu of dedication on a dwelling unit basis. Based upon this analysis the land valuation for purposes of fee in lieu contribution is set at \$56,000 per acre or \$1,900 per dwelling unit. The provisions of Appendix A should be incorporated into Section 22-525 of the subdivision and land development ordinance. A yearly cost analysis of vacant lot sales in the township should be conducted to identify if the fee in lieu contribution should be adjusted based upon market conditions. If a change in the fee is warranted, the park and recreation plan does not need to be revised, just an amendment to the mandatory land dedication/fee in lieu requirements section.

- Section 27-1901.b of the zoning ordinance provides site capacity calculations for Detached Dwelling Cluster Subdivision, Performance Standard Subdivision, or Mobile Home Park. Recreational land is required as part of these calculations (an area 1/3 of the required minimum open space ratio). This recreation land requirement should be deleted from Section 27-1901.b in lieu of the mandatory dedication of recreation land requirements of the subdivision and land development ordinance (as discussed previously.)

Acquisition of Property Rights

Mechanisms used to acquire property rights are through purchase, lease, leaseback, donation, and easements. The following is a brief overview of these options.

Fee Simple Purchase

Purchase of land in fee simple is the most direct technique of acquiring land for open space and recreation areas. The land is owned outright with all development rights included. The method is expensive but enables a community to use the land as it sees fit.

Local governments can use many different revenue sources to purchase land, including general revenue funds, user fees, bond issues, and special fundraisers. Other county and state funding sources are also available for open space and recreational purposes, including the Bucks County Open Space Program and Community Conservation Partnerships Program (available through the Pennsylvania Department of Conservation and Natural Resources).

Lease

A lease is a conveyance and temporary possession/use of land for a prescribed period, in return for rent or some other compensation. Lease agreements may or may not be renewable and will be less than the landlord's term of ownership. The terms and conditions of a lease are contained in the lease agreement. The lease may provide for exclusive possession, responsibility for maintenance and insurance, and responsibility for liability. A lease may be appropriate in situations where the township would like to take advantage of existing private recreational facilities and make them available for public use. The township would not have to own the land, and payments would be lower than the cost of ownership.

Leaseback or Resale

Leaseback involves purchasing land in fee simple, placing use restrictions on it (such as residential development), and then leasing the property to an interested party. Leaseback allows a municipality to buy land for future use, before the price becomes prohibitive. Renting the land enables the municipality to recoup some or all of the purchase price of the land. Resale involves buying the land and selling it with deed restrictions placed upon it. Consequently, the municipality would maintain open space on the property while eliminating the expense of tax assessment and maintenance obligations.

Donation

Donation of land can be a gift of a parcel in fee simple or the gift of development rights or access. Land may be donated to local or county governments or to nonprofit organizations. Land donation makes the donor eligible for income tax deductions, which serve as an incentive for this type of acquisition. Due to the sporadic nature of donations from property owners, however, township officials should take advantage of other methods and options in order to satisfy municipal park and recreation needs.

Easements

Easements are specific property rights that are sold or donated by a property owner for the benefit of another party. Easement types include agricultural, conservation, access, façade, or scenic easements. For example, the township may buy an easement from a landowner to permit access along one of its designated greenway routes and allow certain prescribed recreational activities such as hiking and biking. A conservation easement involves purchasing rights to preserve natural features and prevent activity that would harm these features. Easements permit the township to meet open space and park and recreation objectives without actually owning the land.

Chapter 8. Recommendations and Implementation

The following summarizes the park and recreation plan's recommendations divided into the following categories: ordinance amendments, park facilities and services, open space and resource planning, greenway and trail planning, and means of acquisition. The entity or entities responsible for completing the task and an approximate timeframe for action is also provided. Timeframes are broken into short term (0–1 year), mid term (2–4 years), long term (5–8 years), and ongoing.

Ordinance Amendments

1. Revise the zoning ordinance as follows:
 - Remove all reference to mandatory dedication of recreation land from zoning ordinance.
 - Eliminate the recreational land requirement from the Site Capacity Calculations (Section 27-1901.b).
 - Eliminate the fee in lieu of recreation land provision (Section 27-1904).
 - Consider the adoption of a Riparian Corridor Conservation Overlay District. (See Appendix E.) If adopted, Section 27-1900.j (Riparian Buffer Zone) should be deleted.

Entity responsible: Board of Supervisors
Time frame: Short Term

2. Revise the subdivision and land development ordinance as follows:
 - Adopt a mandatory dedication of recreation land/fee in lieu of parkland dedication ordinance to require developers to provide recreation land or fees in lieu of dedication on a per unit basis as presented in Appendix A.
 - Eliminate Sections 22-525.1. A and B.
 - Delete Section 22-525.1.C in its entirety and replace with the following sentence. "For all residential subdivisions and land developments, the applicant shall provide 1,500 square feet of recreation land per dwelling unit." (For more details, see Appendix A.)
 - Revise Section 22-525.1 to add subsection K to read as follow: "Sites designated for recreation land shall not contain lands with natural resources required to be protected in accordance with the zoning ordinance, stormwater management facilities, or lands designated for any other purpose except for provisions of Section 27-1900 of the zoning ordinance."

- Add Trail Development requirements to the recreation facilities listed in Section 22-525 of the subdivision and land development ordinance (For model regulations see Appendix E)

Entity responsible: Board of Supervisors

Time frame: Short Term

Park Facility and Services

3. Acquire suitable land for and develop a park and recreational facilities to satisfy existing and future park and recreation needs (as defined by NRPA standards).

Entity responsible: Planning Commission, Board of Supervisors

Time frame: Long Term

4. Where appropriate, encourage developers of residential subdivisions to develop park and recreational facilities that meet the recommendations of this plan, such as providing certain park types and providing linkages between township resources.

Entity responsible: Park and Recreation Board, Board of Supervisors

Time frame: Ongoing

5. Provide park and recreational facility improvements or additions to East Rockhill's park system that were identified in the 2004 resident's survey.

Entity responsible: Park and Recreation Board, Board of Supervisors

Time frame: Ongoing

6. Ensure that park and recreation facilities are accessible to individuals with disabilities.

Entity responsible: Park and Recreation Board, Board of Supervisors

Time frame: Ongoing

7. Conduct a yearly cost analysis of vacant lot sales in the township to identify if the fee in lieu contribution should be adjusted based upon market conditions.

Entity responsible: Administrators

Time frame: Ongoing

Open Space and Resource Planning

8. Encourage landowners in significant resource areas (e.g., priority sites identified in the Bucks County's Natural Areas Inventory Program and

Heritage Conservancy's Lasting Landscapes Program) to donate their land or provide a conservation easement.

Entity responsible: Board of Supervisors

Time frame: Ongoing

9. Cooperate with the Heritage Conservancy to implement the recommendations from the *Quakertown Swamp Resource Protection Plan* (2000) that attempts to encourage landowners and municipalities to preserve the land so that the swamp can be maintained as a complete site.
Entity responsible: Board of Supervisors
Time frame: Ongoing

10. Continue implementing the recommendations of the *East Rockhill Township Open Space and Recreation Plan* (1998) including:
 - Identify unprotected and potentially vulnerable resources and earmark specific areas for immediate acquisition and future consideration for purchase and/or conservation easements.
 - Explore the creation of a Transfer of Development Rights Ordinance that will exchange development rights among property developers to increase development density and protect open space.
 - Promote the use of conservation easements that would allow private property owners to place conservation easements on their properties restricting all or a portion of the property from development.**Entity responsible:** Board of Supervisors, Planning Commission
Time frame: Ongoing

11. Examine methods of land preservation in addition to land acquisition, such as zoning strategies and development incentives.
Entity responsible: Board of Supervisors; Planning Commission
Time frame: Ongoing

12. Promote the ongoing education of resource protection programs and activities sponsored by various public and private organizations/agencies.
Entity responsible: Board of Supervisors
Time frame: Ongoing

Greenway and Trail Planning

13. Develop road linkages to park and recreation facilities along designated scenic roadways to accentuate hiking, biking, and tourism opportunities.

Entity responsible: Park and Recreation Board, Board of Supervisors

Time frame: Mid Term

14. Place a priority on establishing linkages between the township's many historical, cultural, scenic, and natural resources. Such links can be established on existing roadways, through acquired easements along stream corridors, through significant open space and park acquisitions, or by way of dedicated land through subdivision and land development.

Entity responsible: Park and Recreation Board, Board of Supervisors

Time frame: Ongoing

15. Acquire the Recommended Greenway Routes (see Figure 4) creating an open space/ trail network that will connect points of interest and preserve significant floodplain resources throughout the township.

Entity responsible: Board of Supervisors; Planning Commission

Time frame: Ongoing

16. Coordinate with PennDOT to address traffic speeds and pedestrian safety along Branch Road, Ridge Road, Fifth Street, and Three Mile Run Road. Evaluate possible speed limit restrictions and/or traffic calming measures deemed appropriate for each location.

Entity responsible: Board of Supervisors, PennDOT

Time frame: Ongoing

17. Assist in the coordination and implementation of the 2003 regional Transportation Improvements Plan for East Rockhill (i.e., Hill Road County-owned bridge repair/replacement and Route 313 bike lane).

Entity responsible: Board of Supervisors, PennDOT

Time frame: Ongoing

18. Adopt bike lane requirements (and fees in lieu of bike lanes) for subdivisions or land developments located along the township's designated bike routes.

Entity responsible: Board of Supervisors; Planning Commission

Time frame: Short Term

19. Continue the implementation of the designated greenway routes (see Figure 4) including on-road and off-road linkages while ensuring these facilities are designed to provide adequate safety measures for its users.

Entity responsible: Board of Supervisors, PennDOT

Time frame: Ongoing

Acquisition and Protection

21. Acquire land using methods other than fee simple acquisition, including donation and easements.

Entity responsible: Park and Recreation Board, Board of Supervisors

Time frame: Ongoing

22. Obtain access easements along the township's designated greenway/trail linkages network (when possible) as subdivision and land development review process.

Entity responsible: Planning Commission, Board of Supervisors

Time frame: Ongoing

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APPENDIX A.

Mandatory Dedication/Fee In Lieu Contribution

The analysis that follows shall form the basis of the mandatory land dedication/fee in lieu of dedication ordinance and establishes the proper amount of land or fee in lieu of dedication on a dwelling unit basis. Section 503(11) of the Municipalities Planning Code (MPC) grants the power to the township to require the public dedication of land for the purposes of developing park and recreation facilities, the construction of recreational facilities, or the payment of fees in lieu of such dedication as a condition of final plan approval. However, the township must meet the following conditions:

1. The provisions of the ordinance must not apply to any plan application, whether preliminary or final, pending at the time of the enactment of such provisions.
2. The ordinance must include definite standards for determining the proportion of a development to be dedicated and the amount of any fee to be paid in lieu thereof.
3. The land or fees, or combination thereof, must be used only for the purpose of providing park and recreational facilities accessible to the development.
4. The township must formally adopted the recreation plan, and the required park and recreational facilities must be in accordance with definite principles and standards contained in the subdivision and land development ordinance.
5. The amount and location of land to be dedicated or the fees to be paid must bear a reasonable relationship to the use of the park and recreational facilities by future inhabitants of the development or subdivision.
6. A fee authorized under the ordinance must, upon its receipt by the township, be deposited in an interest-bearing account, clearly identifying the specific recreation facilities for which the fee was received. Interest earned on such accounts shall become funds of that account. Funds from such accounts must be expended only in properly allocable portions of the cost incurred to construct the specific recreation facilities for which the funds were collected.
7. Upon request of any person who paid any fee under the ordinance, the township must refund such fee, plus interest thereon from the date of payment, if the township had failed to utilize the paid fee

for the purposes set forth in this ordinance within three years from the date such fee was paid.

East Rockhill Township will fairly and consistently meet each of these provisions when applying the requirements of the mandatory dedication/fee in lieu of ordinance.

Contribution Analysis

Based on estimated recreational needs from the Resident Survey³ and standards of the National Recreation and Park Association (NRPA) for residential development, areas of development should be set aside for recreational purposes. Not all developments, however, lend themselves to the inclusion of recreational areas. When this is the case, the township should have the option of accepting a fee in lieu of recreational land that can be used to purchase and develop recreational resources in more suitable locations. The land to be dedicated should meet the township standards to ensure that it is usable for recreation and accessible to residents.

The future needs for parkland and recreation will depend upon the existing and future characteristics and growth of its population. The U.S. Census has estimated that the 2000 population of East Rockhill Township is 5,199. The total housing units have been enumerated at 1,883. The average family size is 3.21 persons. It is the intent of the township to require new development to meet the local and community recreational needs of the population to be added by new development. The formula for setting the requirements does not attempt to place the burden of meeting past recreational needs on new development.

Although NRPA standards address recreation needs at all levels (regional needs, etc.), the purpose of the township requirements is to meet the recreation needs for neighborhood and community recreation areas. This would not include consideration for greenway/trail facilities for passive recreation activities since the population-based standard is variable based upon the context and usage.

These facilities are summarized below:

Community Park – Areas of diverse environmental quality. May include areas suited for intense recreational facilities, such as athletic complexes, large swimming pools. May be outdoor recreation, such as walking viewing, sitting, picnicking. May be any combination of the above, depending on site characteristics and community need.

Service Area – 1 to 2 miles

Size – 25+ acres

Acres per 1,000 population – 5 to 8 acres

³ Survey was part of the 2005 *East Rockhill Township Comprehensive Plan Update*.

Neighborhood Park – Area for intense recreational activities such as field games, court games, crafts, playground apparatus, skating, picnicking, wading pools etc.

Service Area – $\frac{1}{4}$ to $\frac{1}{2}$ mile radius

Size – 1 acre or less

Acres per 1,000 population – 1 to 2 acres

Mini-Park – Specialized facilities such as tot lots or areas for senior citizens.

Service Area – less than $\frac{1}{4}$ mile

Size – 1 acre or less

Acres per 1,000 population – 0.25 to 0.5 acres

In summary, East Rockhill's total park needs range from 6.25 to 10.5 acres per 1,000 population to meet community, neighborhood, and mini-park needs. Regional parks have not been considered since they are not part of the local park system (as described in the Analysis of Park and Facility Needs section). This range is the sum of the recommended acreage for each of these three park types for every 1,000 persons. It does not however, address the potential need for greenway/trail facilities associated with linear parks that could function as open space linkages. Linear types of parks are described by the NRPA as area developed for one or more varying modes of recreational travel, such as hiking, biking, snowmobiling, horseback riding, cross-country skiing, canoeing, and pleasure driving and may include active play areas. These parks, however, have no national standards (e.g. acres/1,000 population) associated with them except that acreage needed varies from community to community.

It is recommended that the township set a standard of 10.5 acres per 1,000 persons to address the high range of parkland needs. This standard will provide a clear requirement for land dedication (on a dwelling unit or family basis) within the conditions set forth by Section 503(11) of the Municipalities Planning Code.

Recreational Need = 10.5 acres per 1,000 population

Average family size in 2000 = 3.21 persons per family

Recreational Need = 10.5 acres per 311.53 families

(1,000 persons/3.21 persons per family = 311.53 families)

Recreational need per family = 10.5 acres/311.53 families = 0.0337 acres or 1,468 square feet (**rounded up to 1,500 square feet**)

Land Valuation for Purposes of Fee in Lieu of Dedication

Under the guidelines of the Pennsylvania municipalities Planning Code, municipalities can accept fee in lieu of dedication of parkland if the developer agrees to this approach, or can accept a combination of land and money, as long as the value of land and money does not exceed the value of the land alone. In addition, the developer may agree to dedicate a lesser amount of land and to develop the property for recreational use, again as long as the total value does not exceed the value of the land that would be required and the developer agrees to such an approach.

In determining land valuation for purposes of a fee in lieu, the following methods may be used.

1. The actual per acre market value of the parcel to be subdivided and/or developed as determined by two professional land appraisal experts **or** the purchase price of the property from the Bucks County Board of Assessment office, whichever is greater.
2. Land valuation for purposes of fee in lieu contribution will be set at \$56,000⁴ per acre or \$1,900 per dwelling unit.⁵

Collected fees would not be used to maintain existing facilities but must be used to purchase new parkland or equipment for parks that will serve the residents of the proposed development for which the fee was collected.

Limitations on Use of Fees

Any recreation fees collected should be placed in an interest-bearing recreation fee account that must function as a capital reserve fund and shall be segregated from other township funds.

⁴ According to the Bucks County Board of Assessment, the median sales price per acre of vacant lot sales from 2003 to 2005 was \$56,000. This is based upon 29 sales transactions of vacant lots during this period, excluding all \$1 transfer sales.

⁵ The \$1,900 fee in lieu contribution (rounded up from \$1,887) is consistent with other upper Bucks region municipalities that charge a similar fee as shown in the table below:

| Municipality | Fee in Lieu Contribution |
|---------------------|---|
| Haycock Township | Fair Market Value (FMV) |
| Hilltown Township | FMV |
| Milford Township | FMV |
| Nockamixon Township | \$3,000 per New Lot |
| Plumstead Township | \$2,078 per Dwelling Unit based on 2004 Land Values |
| Richland Township | \$2,000 per Dwelling Unit (DU) |
| Tinicum Township | \$1,120 per DU or Actual Market Value |

All fees and interest within the recreation fee account should only be used for acquisition of recreation land, development of and capital improvement to public recreational facilities, landscaping of recreation land, engineering, legal, planning, architecture, landscape architecture and the payment of debt directly resulting from such expenditures. Such fees specifically should not be used for maintenance, routine repairs, operating expenses, or recreational programs.

Land Suitability and Use

All land set aside for recreation should be suitable to serve the purpose of active or passive recreation. The East Rockhill Township Park and Recreation Board and the Board of Supervisors should evaluate the size, shape, location, and topography of proposed recreation areas.

Section 22-525 of the subdivision and land development ordinance contains general requirements for the provision and suitability of land for recreation facilities. For all residential subdivisions of 25 or more dwelling units, recreational facilities shall be provided unless waived by the Board of Supervisors. Recreational facilities are required to be constructed within the required open space for cluster subdivisions and performance standard subdivisions. For all residential subdivisions where open space is not required, a minimum of 2,500 square feet per dwelling unit or 3 acres of recreation land (whichever is greater), shall be provided. To be consistent with the analysis results above, the recreational land provision in Section 22-525 should be revised to **1,500 square feet per dwelling unit**.

Section 525.1 of the subdivision and land development ordinance provides general requirements and criteria for determining the location and suitability of recreational areas. Township officials should continue to make use of these criteria when they review subdivision and land development plans and make recommendations regarding recreational uses.

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APPENDIX B.

National Standards for Recreational Facilities

Since each town, locality, park, and municipality has different demographics, the recreational needs can vary from community to community. The following table provides minimum goals that can be used as a general barometer or “national standards” for recreational facilities. Conducting surveys of the recreational needs of resident should be conducted periodically to identify the need for additional facilities or changing user needs.

| ACTIVITY FACILITY | RECOMMENDED SPACE REQUIREMENTS | RECOMMENDED SIZE AND DIMENSIONS | RECOMMENDED ORIENTATION | NUMBER OF UNITS PER POPULATION | SERVICE RADIUS | LOCATION NOTES |
|--|---|--|---|--|---------------------------|---|
| Badminton | 1620 sq. ft. | Singles – 17'x44' Doubles – 20'x44' | Long axis north-south | 1 per 5000 | ¼ – ½ mile | Usually in school, recreation center or church facility. Safe walking or bike access. |
| Basketball 1. Youth 2. High School 3. Collegiate | 2400-3036 sq. ft. 5040-7280 sq. ft. 5600-7980 sq. ft. | 46-50'x84' 50'x84' 50' x 94' With 5' unobstructed Space on all sides | Long axis north-south | 1 per 5000 | ¼ – ½ mile | Same as badminton. Outdoor courts in neighborhood and community parks, plus active recreation areas in other park settings. |
| Handball (3-4 wall) | 800 sq. ft. for 4-wall 1000 for 3-wall | 20'x40' – minimum of 10' to rear of 3-wall court. Minimum 20' overhead clearance | Long axis north-south Front wall at north end | 1 per 20,000 | 15-30 minute travel time | 4-wall usually indoor as part of multi-purpose facility. 3-wall usually outdoor in park or school setting. |
| Ice Hockey | 22,000 sq. ft. including support area | Rink 85'x200' (minimum 85'x185') Additional 5000 sq. ft. support area | Long axis north-south if outdoor | Indoor – 1 per 100,000 Outdoor – depends on climate | ½ - 1 hour travel time | Climate important consideration affecting number of units. Best as part of multi-purpose field |
| Tennis | Minimum of 7,200 sq. ft. single court (2 acres for complex) | 36'x78'. 12' clearance on both sides; 21' clearance on both ends. | Long axis north-south | 1 court per 2000 | ¼ - ½ mile | Best in batteries of 2-4. Located in neighborhood/community park or adjacent to school. |
| Volleyball | Minimum of 4,000 sq. ft. | 30'x60'. Minimum 6' clearance on all sides | Long axis north-south | 1 per 5000 | ¼ - ½ mile | Same as other court activities (e.g. badminton). |
| Baseball 1. Official 2. Little League | 3.0-3.85 Acres Minimum 1.2 Acres Minimum | Baselines – 90' Pitching distance 60' ½' foul lines – min. 320' Center field – 400'+ Baselines – 60' Pitching distance – 46' Foul lines – 200' Center field – 200' – 250' | Locate home plate to pitcher throwing across sun and batter not facing it. Line from home plate through pitchers mound run east-north-east. | 1 per 5000 Lighted 1 per 30,000 | ¼ - ½ mile | Part of neighborhood complex. Lighted fields part of community complex. |
| Field Hockey | Minimum 1.5 Acres | 180' x 300' with a minimum of 6' clearance on all sides. | Fall season – long axis northwest to southwest. For longer periods north-south | 1 per 20,000 | 15-30 minutes travel time | Usually part of baseball, football, soccer complex in community park or adjacent to high school. |
| Football | Minimum 1.5 A | 160' x 360' with a minimum of 6' clearance on all sides | Same as field hockey. | 1 per 20,000 | 15-30 minutes travel time | Same as field hockey. |

| ACTIVITY FACILITY | RECOMMENDED SPACE REQUIREMENTS | RECOMMENDED SIZE AND DIMENSIONS | RECOMMENDED ORIENTATION | NO. OF UNITS PER POPULATION | SERVICE RADIUS | LOCATION NOTES |
|---|--------------------------------|---|---|---|---------------------------|--|
| Soccer | 1.7 – 2.1 Acres | 195' to 225' x 330' to 360' with a minimum 10' clearance all sides. | Same as field hockey | 1 per 10,000 | 1-2 miles | Number of units depends on popularity. Youth soccer on smaller fields adjacent to schools or neighborhood parks. |
| Golf-driving Range | 13.5 for minimum of 25 trees | 900' x 690' wide. Add 12' width for each additional tee. | Long axis south-west-northeast with golfer driving toward northeast | 1 per 50,000 | 30 minutes travel time | Part of a golf course complex. As separate unit may be privately owned. |
| ¼ Mile Running Track | 4.3 Acres | Overall width – 276' Length – 600.02' Track width for 8 to 4 lanes is 32'. | Long axis in sector from north to south to north-west-south-east with finish line at northerly end. | 1 per 20,000 | 15-30 minutes travel time | Usually part of high school, or in community park complex in combination with football, soccer, etc. |
| Softball | 1.5 to 2.0 Acres | Baselines – 60' Pitching distance 46' min. 40' women. Fast pitch field. Radius from Plate – 225' between foul lines. Slow Pitch – 275' (men) 250' (women) | Same as baseball | 1 per 5,000 (if also used for youth baseball) | ¼ - ½ mile | Slight differences in dimensions for 16" slow pitch. May also be used for youth baseball. |
| Multiple Recreation Court (basketball, volleyball, tennis) | 9,840 sq. ft. | 120' x 80' | Long axis of courts was <i>primary</i> use is north-south | 1 per 10,000 | 1-2 miles | |
| Trails | N/A | Well defined head maximum 10' width, maximum average grade is 5% not to exceed 15%. Capacity rural trails – 40 hikers/day/mile. Urban trails – 90 hikers/day/mile. | N/A | 1 system per region | N/A | |
| Archery Range | Minimum 0.65 Acres | 300' length x minimum 10' wide between targets. Roped clear space on sides of range minimum 30', clear space behind targets minimum of 90'x45' with bunker. | Archer facing north = or – 45 degrees. | 1 per 50,000 | 30 minutes travel time | Part of regional or metro park complex. |
| Combination Skeet and Trap Field (8 Stations) | Minimum 30 Acres | All walks and structures occur within an area approximately 130' wide by 115' deep. Minimum cleared area is contained within 2 superimposed segments with 100-yard radii (4 acres). Shot-fall danger zone is contained within 2 superimposed segments with 300-yard radii (36 acres). | Center line of length runs northeast-southwest with shooter facing northeast. | 1 per 50,000 | 30 minutes travel time | Part of regional/metro park complex. |

| ACTIVITY FACILITY | RECOMMENDED SPACE REQUIREMENTS | RECOMMENDED SIZE AND DIMENSIONS | RECOMMENDED ORIENTATION | NO. OF UNITS PER POPULATION | SERVICE RADIUS | LOCATION NOTES |
|--|---|--|--|---|------------------------------|---|
| Golf 1. Par 3 (18 hole) 2. 9 hole standard 3. 18-hole standard | 50-60 A Minimum 50 A Minimum 110 A | Average length vary 600-2700 yd. Average length-2250 yards Average length 6500 yards | Majority of holes on north-south axis | — 1/25,000 1/50,000 | ½ to 1 hour travel time | 9 hole course can accommodate 350 people/day. 18 hole course can accommodate 500-550 people/day. Course may be located in community or district park, but should not be over 20 miles from population center. |
| Swimming Pools | Varies on size of pool and amenities. Usually ½ to 2 Acre site. | <i>Teaching</i> –minimum of 25 yards x 45' even depth of 3 to 4 ft. <i>Competitive</i> – minimum of 25 m x 16m. Minimum of 27 square feet of water surface per swimmer. Ratios of 2:1 deck vs. water. | None – although care must be taken in siting of lifeguard stations in relation to afternoon sun. | 1 per 20,000 (Pools should accommodate 3 to 5% of total population at a time.) | 15 to 30 minutes travel time | Pools for general community use should be planned for teaching, competitive and recreational purposes with enough depth (3.4m) to accommodate 1m and 3m diving boards. Located in community park or school site. |
| Beach Areas | N/A | Beach area should have 50 sq. ft. of land and 50 sq. ft. of water per user. Turnover rate is 3. There should be 3-4 A supporting land per A of beach. | N/A | N/A | N/A | Should have sand bottom with slope maximum of 5% (flat preferable). Boating areas completely segregated from swimming areas. |

Source: *Recreation, Park and Open Space Standards and Guidelines – 4th*, National Recreation and Park Association.

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APPENDIX C.

Design Elements for Trails

While one of the primary purposes of designating greenways is to preserve natural resources, greenways may also provide safe, nonmotorized transportation routes to points of interest in the township. Segments of a proposed greenway network can be designated provide a recreational trail system that can accommodate different users such as bicyclists, hikers, and joggers.

The following are excerpts from the Pennridge Area Greenway Plan (April 2000).

User Needs

Users of the greenway will vary in respect to their needs and wants within the system. Therefore, they should be accounted for within the design stages of planning for the system. This is especially important with regard to trail width, surface material, and trail amenities. The greenway will be expected to accommodate a variety of different users such as pedestrians, joggers, bicyclists, and equestrians, parents with baby strollers, and possibly cross-country skiers and snowmobiles during the winter months. Additionally, access to the trail system needs to be arranged so that all expected users and age groups would not experience any problems. Designers of the system should adhere to the Americans with Disabilities Act.

Pedestrians

Pedestrians include a wide variety of people such as walkers, hikers, joggers, runners, and birdwatchers. These users tend to travel at speeds of approximately three to seven miles per hour, and tend to have fewer specific design needs than other users. Many pedestrians prefer a softer surface than asphalt such as crushed rock to prevent knee, shin, and foot injuries. Additionally, crushed wood or natural dirt surfaces are also a surface that could accommodate the pedestrian adequately. However, maintenance requirements will be fairly substantial for a surface of this type.

Bicyclists

When considering bicyclists' needs, it is important to realize that the type of bicyclist will vary. Some forms of bicyclists are commuters, recreational cyclists, touring cyclists, and mountain cyclists. Each different cyclist uses different equipment, and will have slightly different needs.

Guidelines established by the American Association of State Highway and Transportation Officials (AASHTO) are viewed as the national standard for the design of bikeway facilities. Many of the AASHTO design guidelines such as sight distances, trail width, and trail clearances, apply to all bicyclists. However, some aspects of trail design, such as surface materials, may not apply to mountain cyclists.

AASHTO recommends a minimum width of 10 feet for bicycle paths with a 2-foot wide cleared shoulder on either side of the path. Because a high number of pedestrians and children will be expected to use the facilities within the Pennridge Area, a 12-foot wide trail may be more practical to accommodate users. The vertical clearance along a trail system that accommodates bicyclists is 8 feet. However, a vertical clearance of 10 feet is more desirable to accommodate for the regrowth of tree branches during the year. A 10-foot clearance should be the minimum for any overpasses or tunnels however. To accommodate the variable speeds of bicyclists, particularly on paved trails, a specific design speed should be developed for the trail. Design speed is the maximum speed that a bicyclist can maintain over a specific section of the trail. Because of the expected high pedestrian use for the Pennridge Area system, a design speed of 15 to 20 miles per hour should be set for level terrain, and 20 to 25 miles per hour for grades of up to 5 percent. On unpaved areas of the system, a design speed of 15 miles per hour is adequate.

Where the trail or greenway may intersect with roads, it is important to provide adequate stopping distance (the distance required to bring a bicycle to a controlled stop) for bicyclists on the trail system. Both paved and unpaved trail systems should provide a minimum sight distance of 150 feet at intersections for bicyclists.

Trail facilities such as restrooms or access and parking areas should be equipped with bicycle facilities such as bike racks. Bike racks should be visible, and be designed to prevent damage to bicycles.

Equestrians

With the widespread development taking place within the southeastern portion of Pennsylvania, equestrians are experiencing a much more difficult time finding places to ride. Trail corridors are wide enough to accommodate equestrian use, but too frequently, the use is prohibited from the trail system. Hard surfaces such as asphalt or concrete are undesirable for equestrian use. Hard surfaces may

cause damage to the horses' hooves. A preferred surface for equestrians is one made of crushed stone or dirt. Providing access for equestrians within the Pennridge Area may prove to be difficult, but with proper planning this use can be accommodated. Vertical clearance for equestrians should be at least 10 feet high. Low-hanging tree limbs should be cut flush with the trunk. Leaves, branches, and other protrusions that could injure the horse or rider should be removed. Additionally, large rocks, debris, and stumps, which may be in the horses' path, should be removed. Sight distance for equestrians, who usually travel between 4 and 6 miles per hour, should be at least 100 feet.

Other Users

Several other types of users need to be considered when designing the trail facility. Such users consist of in-line skaters, skateboarders, and people using the facility for fishing access, and people in wheelchairs. While it may not always be possible to accommodate for every potential user of the system, every effort should be placed on trying to accommodate as many as possible. During the design stages, it may be beneficial to involve as many of the types of users of the facility with the planning as possible.

A functional trail system is most accommodating when a rest area is provided approximately every 500 feet, preferably containing a bench located outside the trail surface.

Facility Access

Any trail facility must be accessible by members of the public. The access points should be free from barriers, and be easily accessible by people with disabilities. Compliance with the Americans with Disabilities Act should always be adhered to when providing facility access.

If an access point contains a grade, it should not exceed 5 percent. If an access gradient does exceed 5 percent, a ramp (not stairs) should be constructed. A ramp with a maximum grade of 6 percent should be the only type used. Also, ramps should have a level landing for every 30 inches of vertical rise. These landings should possess a hard, slip-resistant surface, and contain a 32-inch handrail.

Recommended Trail Widths

Trails and greenway systems should be able to accommodate the many potential users of the system simultaneously. Accommodating the many types of potential users on a trail system depends upon the trail surface, trail width, and speed of the expected users.

The width of a trail depends primarily on the amount of land that is available for construction. National standards for trail and greenway widths do not exist. For example, the American Association of State Highway and Transportation Officials recommend a 10-foot width for bicycle trails. However, this width may be too narrow to accommodate bicyclists alongside of pedestrians and other types of users. Where trail or greenway traffic is expected to be moderate during peak usage times (weekends and mornings) a minimum width of 10 feet should be sufficient. However, if a segment of the system were expected to generate heavy volumes of users, it would be beneficial to provide a minimum width of at least 12 feet.

Under certain situations, it may be advisable to separate bicyclists from the facility. An example of this would be providing a parallel path alongside the trail at access facilities or other areas where high pedestrian volumes are expected. This may prevent faster-moving cyclists from coming into conflict with pedestrians attempting to access the trail system. Additionally, bicyclists will not be forced to slow down when approaching access areas that are crowded with pedestrians.

Subgrade, Subbase, and Trail Surface

All trail systems are made up of three components: the subgrade, subbase, and the trail surface. The subgrade is the native soil mass of the landscape, the subbase is a man-made layer of stone and constructed on top of the subgrade, and the trail surface is the material that is installed on top of the subbase. As a unit, the structural integrity of these components determines the strength and quality of the trail. When properly constructed, a trail surface can last for years with little or no maintenance requirements.

Ground Surface

When planning for the layout of a trail or greenway, it is important to closely examine the condition of the ground and surrounding vegetation of the proposed corridor. Vegetation should be cleared; roots and stumps should be removed within the corridor and at least 5 feet from either side of the trail. This will prevent roots from encroaching upon the trail surface, increase user safety, allow for the access of construction and maintenance vehicles, and will improve sight lines throughout the corridor.

The Subgrade

The subgrade is the foundation of the trail system. To be suitable for trail development, it is necessary for the subgrade to be able to accommodate the trail's intended uses without overly expensive or severe alterations. The suitability and structural properties of the subgrade will determine how the subbase and trail surface should be designed and constructed.

Because the Pennridge system will traverse a number of landscapes, it is possible that a number of different subgrades will be encountered. The most desirable subgrade is one with moderate slopes, good drainage, and firm, dry soils.

Topography

When planning a trail route, topography must be closely observed. A trail should have a maximum longitudinal slope of 5 percent; however, in the interest of providing access for the disabled a slope of 3 percent is preferred. A cross slope of not more than 2 percent should be provided throughout the entire system.

Drainage

Proper drainage of surface and subsurface waters is one of the most important issues that must be addressed when designing a trail or greenway facility. Inadequate drainage can have severe adverse effects on the trail composition, may be dangerous to the users, and can make the overall facility extremely unattractive.

Proper drainage serves many functions: it prevents erosion of the subgrade and subbase by accommodating surface water flow; it mitigates the effects of flooding by providing areas where floodwaters can be absorbed naturally; it maintains or improves the water quality of adjacent streams and waterways; it maintains areas where surface waters can slowly percolate through the soil mass to recharge aquifers; and it helps to ensure that wildlife is not permanently disrupted by trail development.

There are two types of stormwater flow: surface water runoff and subsurface water runoff. Surface runoff is water that moves on top of the ground, and eventually flows into creeks and streams. Subsurface water runoff is water that runs through the soil horizontally or vertically, depending on the soil type and its permeability. When designing the trail system, it is important that the trail system does not interfere with proper on and off-site surface and subsurface water runoff. On-site runoff typically results from rainfall. The design objective is to maintain the water flow level that existed prior to the construction of the

facility. Off-site runoff, usually in the form of intermittent streams and creeks, should not be altered during the construction of the facility.

Wetlands

Wetlands are an important part of the natural environment, and are required by law to be protected. Not only are they to be protected from development, alterations, and any grading activities, they should also be protected from users of the greenway system. The best way to keep users of the greenway away from wetlands is to construct boardwalks, bridges, or other elevated structures above the wetlands. Any proposed construction within or through a wetland requires a construction permit from the U.S. Army Corps of Engineers.

The Subbase

The subbase lies between the subgrade and the trail surface, and serves as a secondary, built foundation for the trail surface. The purpose of the subbase is to transfer and distribute the weight from the trail surface to the subgrade. The subbase serves a vital drainage function, preventing water from migrating up from the subgrade into the trail's surface. It also allows natural cross drainage to flow through the trail's cross-section.

The subbase is frequently a graded aggregate stone or gravel, which provides bearing strength, and improves drainage. As a general rule, the subbase should be 4, 6, or 8 inches thick. Four inches will suffice if the subgrade is in excellent conditions while eight may be necessary in instances where the ground may be in poor quality.

The Trail Surface

There are many surface types available to complete the cross section of the greenway such as, granular stone, gravel, asphalt, wood chips, concrete, and natural surface. Surface materials may be either soft or hard, defined by the material's ability to absorb or repel moisture. Hard surfaces include concrete, crushed stone, gravel, and asphalt. Soft surfaces include natural earth and wood chips.

Many trail and greenway systems throughout the country use a soft surface. These surfaces do not hold up well under heavy use or adverse weather situations. Hard surfaces are therefore more practical for a trail system that is expected to generate a large variety and volume of users. While hard surfaces are more expensive to install, they require less maintenance, and can withstand

heavy usage. Hard surfaces can also accommodate the greatest variety of users, and are more user friendly for those with disabilities.

Hard Surfaces

The following section will provide a detailed description, ranging from softest to hardest, of the hard surfaces that can be used in the construction of a trail or greenway system.

Cost estimates are approximations and based upon information at the time of Pennridge Area Greenway Plan in 2000.

1. **Soil Cement** – Used frequently in areas where stone is not readily available, soil cement is a mixture of native soil and portland cement. This mixture should be spread approximately four inches thick on a prepared subgrade immediately after the mixture has been formed. It is then rolled and compacted into a very dense surface using machinery.

Soil cement will support most user groups; however, bicyclists and equestrians could have a significant impact on the surface. This surface has been known to crack with significant temperature variations or heavy use. Soil cement is fairly inexpensive to install, costing approximately \$50,000 per mile for a 10-foot wide trail.

2. **Granular Stone** – This is a popular surface for trails because it accommodates a wide variety of trail users and can be compacted into a firm surface. A variety of stones can be crushed and used for the trail surface. The stones can be crushed into a very fine material, and densely compacted to develop a trail surface that will hold up fairly well under heavy use. This surface is also compatible with the natural environment, and blends in with the surrounding landscapes.

When this surface is properly packed, it can accommodate virtually every type of trail user. The surface will also accommodate users in wheelchairs as long as the stone diameter is less than 3/8 inch. However, the surface will not accommodate in-line skaters or skateboarders.

Granular stone is a popular surface because of its moderate price. Crushed limestone or sandstone can cost approximately \$65,000 per mile for a 10-foot wide trail. Maintenance responsibilities are minimal, and the surface should not require replenishing for approximately 7 to 10 years.

Fine-grained stones will tend to retain moisture, causing vegetation to sprout within the surface. Heavy use of the trail will help to prevent this problem; however, a trail-clean-up day should be held at least once a year to do any necessary weeding or required maintenance.

3. **Asphalt** – This surface is commonly used on trail systems that are designed primarily for bicycling and commuting. Asphalt is cement composed of tar and oils. In an asphalt surface, a graded aggregate stone is mixed with the asphalt. Small aggregate stones result in a smooth surface, while coarse stones result in a rough, porous surface.

Asphalt is a flexible pavement that conforms to the subbase and subgrade. On a properly prepared subbase, an asphalt surface will be smooth and level. Asphalt should be installed approximately 2 inches thick, and smoothed with rollers.

Asphalt is more expensive than crushed stone, approximately \$110,000 per mile for a 10-foot trail. It needs minor maintenance, such as crack patching, and has a life expectancy of 10 to 15 years. As a result of heavy use, the surface may last even longer, due to the fact that asphalt is a flexible surface that needs frequent use to remain pliable and resilient.

4. **Concrete** – The hardest of all trail surfaces, concrete is most commonly used in areas with severe climate, susceptibility to flooding, and anticipated heavy use. Like asphalt, it accommodates virtually all uses. Concrete is the most expensive of all the surfaces, approximately \$250,000 per mile for a 10-foot wide trail. However, the surface lasts for often 25 years or more.

Concrete used for trail surfaces should be properly reinforced to prevent cracking. Typically, a wire or fabric mesh is constructed

over a well-prepared subbase, and then 4 to 6 inches of concrete are poured on top of the surface.

Concrete can be shaped to fit most conditions, and is the only surface that can be tailored at the time of installation. It should be smoothed with a stiff brush to create a rough finish that will prevent slipperiness when wet. When properly installed, concrete will need little maintenance.

Soft Surfaces

The following surfaces may not be well suited for a trail system expected to accommodate a high volume of users; however, they are generally suitable for rural areas, and can be extremely useful as a parallel trail system for equestrians, mountain cyclists, and hikers.

1. **Natural Surface** – Natural surfaces include existing soils and vegetation. The trail bed will require less preparation than harder surfaces, but there will be a need to remove rocks, tree roots, and other obstructions from the subgrade. Maintenance will consist of fixing drainage problems, repairing erosion defects, and weeding.
2. **Wood Chips** – An attractive surface, wood chips blend extremely well with the natural environment. Because hikers, equestrians, and runners like the soft spongy surface, it makes for an ideal parallel trail next to concrete or asphalt. However, this surface decomposes quickly under prolonged sun, heat, and humidity, and requires constant maintenance. Minimum thickness at the time of installation should be at least 3 inches, and the entire surface needs replacement usually every 2 years. However, wood chips can often be acquired at little or no cost from commercial landscapers and arborists.

| TRAIL SURFACE MATERIALS | | |
|--------------------------------|--|--|
| SURFACE MATERIAL | ADVANTAGES | DISADVANTAGES |
| Soil Cement | Uses natural materials, more durable than natural surfaces, smooth surface, and low cost. | Surface wears unevenly, not a stable, all weather surface, erodes, difficult to achieve correct mix. |
| Granular Stone | Soft but firm surface, natural material, moderate cost, smooth surface, accommodates many uses. | Surface can rut or erode with heavy rain, regular maintenance required, stone replenishment required. |
| Asphalt | Hard surface, supports most types of use, all weather, does not erode, accommodates most users, low maintenance | High installation cost, costly to repair, not a natural surface, climate variations crack surface, construction vehicles needed. |
| Concrete | Hardest surface, easy to form to site conditions, supports multiple use, low maintenance, resists climate change. | High installation cost, costly to repair, not a natural surface, construction vehicles needed for installation. |
| Natural Surface | Natural material, lowest cost, low maintenance, can be altered for future improvements, easiest to build and maintain. | Dusty, ruts when wet, not an all-weather surface, limited uses accommodated for, can be uneven and bumpy. |
| Wood Chips | Natural material, inexpensive. | Decomposes quickly, needs constant replenishment. |

Road Crossings

Streets and roads are classified in a hierarchical system that determines which street has priority at intersections. The street with the higher classification often has priority. These same principles should be applied in areas where the greenway may cross roadways.

When a trail crosses a road, establishing an at-grade crossing or grade separated crossing, such as a bridge can complete the crossing. Road crossings are usually site specific, and each crossing should be designed on a case-by-case basis.

Ideally a safe at-grade crossing has either light traffic or a traffic signal that trail users can activate. If neither of these exists, the feasibility of installing them should be explored. A gap analysis should be performed in order to determine the times of the day that are the safest for pedestrians to be crossing the road. Understanding the gaps in the traffic stream will help determine the safest type of crossing that could be provided. The intersection may be made safe by adding a pedestrian crosswalk or “Trail Crossing” signs on the road to alert motorists of the potential presence of trail users.

Trails should cross public streets as close as possible to intersections. This creates a predictable movement for trail users and motorists who are used to seeing pedestrians using crosswalks. Curb cuts should be the same width as the trail, and should be designed in strict compliance with the Americans with Disabilities Act.

Railroad Crossings

With only one major rail line located within the Pennridge Area, the frequency of the greenway crossing rail lines is limited. However, it is important to point out the design elements that are necessary to ensure that the greenway intersects the rail line in a safe and efficient manner.

Trail or greenway facilities should intersect with rail lines at a 90-degree angle or as close as possible to a 90 degree angle. The more the crossing angle decreases from 90 degrees, the greater the hazard to bicyclists. Railroad crossings are dangerous to bicyclists because when a bicycle does not cross the rail at a 90-degree angle, there is the possibility for the front wheel of the bicycle to become caught between the rail and the surrounding road surface. This may cause loss of steering and control, possibly resulting in injury to the bicyclist.

If it is not possible for the trail to cross the rail line at a 90-degree angle, every effort should be made to widen the trail approach in order to allow the bicyclist to maneuver the bicycle so they can cross at a 90-degree angle.

Controlling Access

Barrier posts or bollards are the most commonly used method of controlling access to a trail system. They are concrete or wood posts, placed in the center of the trail designed to prevent motor vehicles from using the trail. They should not be placed at all trail access points, only those that may present operational problems, or there is a need to clearly make it known that access for motor vehicles is prohibited. When installing bollards, it is necessary to ensure that they are visible both day and night to bicyclists who may be traveling at potentially high speeds. Bollards should be at least 3 feet tall, and be placed at least 10 feet from the intersection. This will allow users to negotiate the bollard before having to cross an intersection.

One post is generally sufficient for deterring motor vehicles. The post should be placed in the center of the trail. When more than one post would be required, they should be placed approximately 5 feet apart so that bicycle traffic can

proceed through. One or three posts should always be used, never two. Two posts will channel users into the center, potentially causing head-on collisions. More restrictive methods of preventing access to a trail system, such as gates or fencing, should not be used. Such methods of deterrent may also be successful in preventing access for the disabled or those in wheelchairs.

Trail Support Facilities

In addition to simply providing a trail, various types of support facilities will need to be constructed in order to provide for the needs of the users of the trail system. Such facilities should include but should not be limited to rest areas, benches, parking facilities, and informational kiosks or signs. Several of these facilities could be located near access points or high traffic areas.

Parking Areas

Wherever possible, adequate parking facilities should be located at access facilities within the trail system. Parking lots should be equipped with an adequate number of parking stalls, approximately 10' x 20' in size. Each parking facility should have the ability to accommodate parking for approximately 10 cars. However, if a particular access point experiences a higher volume of use or is to serve as the main access facility for the system, it may be necessary to provide additional parking facilities. Parking facilities should be equipped with a defined entrance and exit so as to avoid possible conflicts with traffic on the adjacent road network.

All parking and trail facilities should be equipped with bicycle racks. Bicycle racks should be of either the inverted "U" type or the standard rack. Bike racks should be located as close as possible to possible destinations so users don't decide to use the nearest light pole, bench, or tree. Bike racks should be located in areas where visual contact by trail users is likely, and where lighting and shelter are available if at all possible.

Restrooms

Aside from parking lots, restrooms are probably the most expensive and complex facilities to install along a trail or greenway system. It is necessary to provide sewer and water hookups, and they require constant maintenance and service. When providing restroom facilities, it is important to ensure that the facilities provide at least one handicap-accessible toilet.

Benches

Providing benches along a trail system will make the facility a more attractive destination for the elderly and the handicapped. When installing benches, they should be of a design that offers easy maintenance, durable finish, and comfort for the user. Typically, a bench seat is located between 16 and 20 inches above the ground, with handrails stemming approximately 6 to 12 inches above the surface of the bench. A bench designed to accommodate 3 persons should be approximately 72 to 90 inches wide. Bench backs are usually 15 to 18 inches high and are spaced approximately 3 to 9 inches above the seat back. Benches can be constructed of a vast majority of different materials, and can be constructed in a variety of different styles. Simple, rustic benches can be made from natural materials such as logs and boulders. Other materials such as treated wood, concrete, and metal can also be used to construct benches to be used along the trail system. When designing and locating benches along a trail, they should be located where they offer a good view of the area, and also provide shelter. Benches should be placed where they will take advantage of shade or sunlight, some benches should be placed in the quiet areas, and others should be placed in busier areas along the trail.

Benches should be placed off of the trail path so they do not conflict with users of the system. They should be placed at least three feet off of the trail to allow people to stretch their legs. Wheelchair access to the bench areas should be provided wherever possible to accommodate the disabled users of the trail. There should be enough concrete or asphalt around the bench to accommodate those in a wheelchair.

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APPENDIX D.

Model Greenway/Bike Route Ordinance

The following is an excerpt from the Pennridge Area Greenway Plan (April 2000) that has been modified to conform to the format of East Rockhill Township's subdivision and land development ordinance while incorporating additional standards from other communities that may be appropriate the township. Appendix C may assist township officials with preparing appropriate trail and bike facility design elements (e.g., trail surfaces, trail width.) The ordinance language is not intended to be adopted verbatim; township officials should consult the township solicitor to determine the appropriateness of each section and how the suggested standards could be incorporated into the format of the municipal ordinances.

The Definitions section of the subdivision and land development ordinance could be amended to add the following terms.

1. Comprehensive Trail System— An interlinking greenway and trail network throughout East Rockhill Township designated for transportation, recreation, and stream corridor protection purposes as shown in Figure 4, Recommended Greenway Routes of the *East Rockhill Township Park and Recreation Plan*.
2. Trail— A corridor through which passes, or will pass, a trail as part of township's comprehensive trail system. A trail meets the transportation and recreational needs for one or more of the following: walkers, joggers, bicyclists, horseback riders, and cross-country skiers. Trails shall exclude all motorized vehicles except as authorized by the borough/township for maintenance, and emergency procedures.

Section 22-525 (Recreational Facilities) of the ordinance could be amended to include a subsection for Greenway and Trails and include the following regulations:

A. Applicability

1. Any residential subdivisions and land developments that propose an internal street system shall submit a plan that delineates an internal pedestrian/bicycle circulation system.
2. The system may consist of sidewalks for pedestrians, and bicycles using the proposed streets, and/or a separate trail for use by both pedestrians and bicycles.

3. For developments in which the open space is large enough to accommodate a trail, the internal pedestrian/bicycle system shall include a trail system in the open space.
4. The pedestrian/bicycle circulation system shall connect destination points within the development, such as tot lots and open space/recreation areas as well as points adjacent to the site (e.g., residential development.)
5. When the Township's proposed trail system crosses the subject tract, the development plans shall include the construction of that segment of the trail.
6. The pedestrian/bicycle circulation system within the proposed development shall be connected with the Township's trail system when possible. If the Township's trail has not been constructed in the area of the proposed subdivision, the plan shall reserve a right-of-way to ensure construction of the trail segment, or to provide a connection to the trail when it is developed. The delineation of the right-of-way, with a legal description, shall be included on all phases of the review process.

B. Trail Conservation Standards

1. Disturbance to pedestrian or greenway facilities shall be permitted only when a property cannot otherwise be developed and then only when a relocation of the facilities is approved. No person may block the use of the trail or alter the path thereof unless conservation plans for the relocation of the facility is first submitted and approved by the municipality. No relocation of an existing trail facility shall be permitted if the relocation would cause the facility to be reduced to a width of less than 10 feet.
2. Any trail presently in existence is presumed to exist by a prescriptive easement with public entitlement to its perpetual use. Trails in the community represent an asset having high recreational value, and thus, they are deemed an important natural feature in the township. The Board of Supervisors may authorize the township solicitor, in cases of disputes over the existence of a

perspective easement, to seek a judicial determination of the fact by an action at law or equity.

3. The township in conjunction with a trails association having oversight over a particular trail, shall maintain a map of such trails. That map shall indicate whether the easement of the trail has been confirmed by grant, agreement, or judicial decision. The map shall also bear the name of the association, if any, responsible for the maintenance of the trail.
 - a. At no time shall motor vehicles be permitted on township trail or greenway facilities, except those authorized by East Rockhill Township to perform required maintenance of the facility.

C. Construction Specifications

1. General Standards

Proposed trails shall relate to such trail plans or parts thereof as have been officially prepared and adopted by township.

- a. Proposed trails shall further conform to such municipal, county, and state trail and bicycle plans as have been prepared, adopted, and filed as prescribed by law.
- b. Thoughtful and imaginative design of trails and their relationship to the arrangement and shape of lots shall be required. Trails shall be logically located in relation to natural features so as to minimize disturbance to those features while permitting observation of those features. Additionally, they shall be constructed as reasonable grades, have proper drainage, and provide for adequate vision.
- c. Provisions for trail connections into and from adjacent areas shall be provided where feasible.

2. Reservation of Land

- a. An easement or right-of-way of at least fifteen feet shall be established for the entire length of the trail.
- b. The Township may, but shall not be required to, accept dedication of a trail easement or right-of-way, provide: a) the trail is constructed to township specifications; b) there is no cost to the township for acquiring the easement of right-of-

way; and c) the Township agrees to and has access to maintain the trail.

3. Trail Widths

This following standards have been modified from the Pennridge Area Greenway Plan to provide more generous trail widths. Township officials may wish to revise these standards to provide consistency with current trail construction standards (if appropriate).

- a. The minimum trail widths for all new trails within the municipality shall be as follows:
 - 1) 10 feet (Light volume trails)
 - 2) 12 feet (Heavy volume trails)
- b. Additional trail widths may be specified by the Board of Supervisors for the following purposes:
 - 1) To promote public safety and convenience;
 - 2) To accommodate special topographical features that may result in cut/fill slopes extending beyond the standard trail width. These should in all circumstances be included within the trail width to assure accessibility for maintenance operations.
- c. Trail widths less than prescribed in this ordinance shall not be permitted.
- d. Subdivisions or land developments abutting against existing trails shall provide, for dedication, the minimum widths for those trails in accordance with the provisions of this section.

4. Trail Alignment

- a. To ensure adequate sight distance, minimum centerline radii for horizontal curves shall be as follows:
 - 1) Trails—15 feet.
 - 2) Bikeways—65 feet.
- b. Curves shall not produce excessive flatness in grade. There shall be no dips, cross-gutter bumps, or humps in the surfacing.
- c. Sight lines and stopping sight distances for all new trails in the municipality shall be as follows:

- 1) Trail—60 feet (sight line); 50 feet (stopping sight distance).
- 2) Bikeway—130 feet (sight line); 175 (stopping sight distance).

5. Trail Grades

- a. Grades for trails shall not exceed 4 percent, except that a maximum grade of 8 percent may be permitted for short distances, in no case exceeding 100 feet, where natural contours provide conditions for minimal grading at the steeper grade.
- b. Grades for bikeways shall not exceed 5 percent, except that steeper grades may be permitted for short distances, in no case exceeding 200 feet, where natural contours provide conditions for minimal grading at the steeper grade.
- c. Under no conditions will the maximum grade be permitted within the minimum curve radii.

6. Trail Surface and Construction

The following construction standards conform to AASHTO standards for trails and bikeways. If township officials prefer specific trail surface materials, these standards should be revised to reflect those preferences. (See Appendix C for discussion of trail surface options and applications.)

- a. All materials entering into the construction of trails and methods of construction and drainage shall be in accordance with this section and the applicable standards of the American Association of State Highway and Transportation Officials (AASHTO). Trails shall not be designed or constructed for speeds in excess of 10 mph; bikeways shall not be designed or constructed for speeds in excess of 30 mph.
- b. All trails shall be constructed with a surface that meets township standards, that is suitable for trail use, and that is consistent with the stormwater management philosophy.
- c. Overhead clearance for both trails and bikeways shall be no less than 8 feet.

7. Trail Lighting
 - a. Trail lighting is generally not required unless circumstances warrant it such as in parking facilities, trail heads, or major road crossings.
 - b. In the event that lights are used, the type, style, and wattage of lights shall be up to the discretion of the municipality.
8. Trail Signage
 - a. Trail signage shall conform to the standards of the Federal Highway Administration's Manual on Uniform Traffic Control Devices regarding sign shape, size, and color.
 - b. Unless specifically waived by the municipality, the following types of signs shall be required at applicable points along the trails.
 - 1) Regulatory signs—Such signs were to be used for traffic control or to give operational requirements such as yield signs, stop signs, and speed limit signs.
 - 2) Warning signs—Such signs shall be used to point out potentially dangerous conditions such as changes in surface conditions, or upcoming intersections, bridges, or tunnels.
 - 3) Guidance signs—Such signs shall be used to provide trail information, such as signs that point out areas of interest or special service facilities.
 - c. Excessive signage shall be avoided. Signage that would detract from the natural beauty or scenery of the greenway shall be avoided.

APPENDIX E:

Model Riparian Corridor Conservation District

The following is an excerpt from the Pennridge Area Greenway Plan (April 2000). The riparian buffer zone has been slightly modified to increase the buffer zone width from 75 to 100 feet in overall width.

The Montgomery County Planning Commission developed the following Model Ordinance. The language that follows should be adopted by the Pennridge Area Coordinating Committee (PACC) municipalities, and inserted within each municipality's respective zoning ordinance. The narrative in *italics* is not a portion of the ordinance language, but an explanation for each section.

The legislative intent section should give the rationale for the regulation, including the applicable power to do so. This will provide proof that the regulation is reasonable and related to a defensible public purpose. The authority to protect riparian corridors is contained within the Pennsylvania Constitution and the Municipalities Planning Code (Sections 301(b), 603(b) 5, 603(d), 604.1, and 605.2)

Section 1: Legislative Intent

Under the authority of Article I, Section 27 of the Pennsylvania Constitution, Act 247 of the Pennsylvania Municipalities Planning code as amended, other Commonwealth and federal statutes, and in the recognition of the fact that natural features contribute to the welfare of its residents, the following regulations have been enacted to provide reasonable controls governing the restoration, conservation, disturbance, and management of existing riparian corridors by establishing designated riparian corridor conservation districts. In addition, the specific purposes and intent of this article are to:

The intent section also recognizes the scientifically proven and published benefits of riparian corridors.

1. Reduce the amount of nutrients, sediment, organic matter, pesticides, and other harmful substances that reach watercourses, wetlands, subsurface, and surface water bodies by using scientifically proven processes including filtration, deposition, absorption, adsorption, plant uptake, and denitrification, and by improving infiltration, encouraging sheet flow, and stabilizing concentrated flows.
2. Improve and maintain the safety, reliability, and adequacy of the water supply for domestic, agricultural, commercial, industrial, and

recreational uses along with sustainable diverse populations of aquatic flora and fauna.

3. Regulate the land use, siting, and engineering of all development to be consistent with the intent and objectives of this ordinance, accepted conservation practices, and to work within the carrying capacity of existing natural resources.
4. Assist in the implementation of pertinent state laws concerning erosion and sediment control practices, specifically Erosion Control, of the Pennsylvania Clean Streams Law, Act 394, P.L. 1987, Chapter 102 of the Administrative Code (as amended October 10, 1980 Act 157 P.L.), Title 25, and any subsequent amendments thereto, as administered by the Pennsylvania Department of Environmental Protection and the Montgomery County Conservation District.

Because the intent of this ordinance is to preserve riparian corridors as an implementation tool for this plan, recreational opportunities should be mentioned as part of the regulations intent.

5. Conserve the natural features important to land or water resources (e.g., headwater areas, groundwater recharge zones, floodway, floodplain, springs, streams, wetlands, woodlands, prime wildlife habitats) and other features constituting high recreational value or containing amenities that exist on developed and undeveloped land.

The riparian corridor ordinance should reference existing natural resource protection standards already established by the municipality.

6. Work with floodplain, steep slope, and other ordinances that regulate environmentally sensitive areas to minimize hazards to life, property, and riparian features.
7. Conserve natural scenic, and recreation areas within and adjacent to riparian areas for the community's benefit.

Section 2: Definition, Establishment, and Width Determination of the Riparian Corridor Conservation District

The municipality should designate specific features to preserve based upon past comprehensive planning and scientific analysis. Riparian corridors do not necessarily have to be wooded to provide public and water quality benefits.

A. Definition: The Riparian Corridor Conservation District is defined as an overlay district consisting of:

1. Areas surrounding municipally designated surface water bodies, including creeks, lakes, intermittent watercourses, and wetlands that intercept surface water runoff, wastewater, subsurface flow, and/or deep groundwater flows from upland sources and function to remove or buffer the effects of associated nutrients, sediment, organic matter, pesticides, or other pollutants prior to entry into surface waters. This area may also provide wildlife habitat, control water temperature, attenuate flood flow, and provide opportunities for passive recreation. This corridor area may or may not contain trees and other native vegetation at the time of ordinance enactment.

B. Establishment

Following municipal designation of features to protect, a zoning overlay map should be created and adopted along with the ordinance.

1. The establishment of the Riparian Corridor Conservation District applies to the following areas that are identified on the municipal riparian corridor map:
 - a. Lands adjacent to municipally designated streams within the municipality.
 - b. Lands adjacent to municipally designated intermittent watercourses within the municipality.
 - c. Lands at the margins of municipally designated lakes and wetlands.

It has been scientifically demonstrated that the benefits of riparian corridors are maximized when they extend at least 90 feet from the streambank.

2. The measurement of the Riparian Corridor Conservation Overlay District shall extend a minimum of 90 feet from each defined edge of an identified watercourse or surface water body at bankfull flow or level, or shall equal the extent of the 100-year floodplain, whichever is greater. The District will consist of two distinct zones designated as:

Zone One should be a minimum of 30 feet from the streambank and consist of undisturbed forest and vegetation to shade the stream and provide food for aquatic organisms. The municipality may wish to extend Zone One greater than 30 feet when existing environmental features affect the function of the corridor.

- a. Zone One: This zone will begin at each edge of an identified waterway (which can include wetlands and intermittent watercourses) and occupy a margin of land with a minimum width of 30 feet measured horizontally on a line perpendicular to the edge of water at bankfull flow. The width of Zone One may be required to extend beyond the minimum 30 feet depending upon existing topography, woodlands, and other conditions. The municipal engineer, governing body, or its appointed representative will make this determination.

Where steep slopes are often found adjacent to waterways and could be used to extend this minimum distance. Again, this is an option the municipality should consider depending upon its goals and intent of this ordinance.

1. Where steep slopes (in excess of 25 percent) are located within 30 feet of a municipally designated watercourse, Zone One shall extend the entire distance of this sloped area. If the distance of this sloped area is greater than 90 feet, there will be no requirement for the establishment of Zone Two. If the distance is less than 90 feet, the width of Zone Two will be adjusted so that the total corridor width (Zone One and Zone Two) will be a maximum of 90 feet.

Zone Two is the "outer edge" of the corridor and allows for infiltration of runoff, filtration of sediment and nutrients, and nutrient uptake by plants.

- b. Zone Two: This zone will begin at the outer edge of Zone One and occupy a minimum width of 60 feet in addition to Zone One.
 1. Where the 100-year floodplain extends farther than 90 feet from the waterway, Zone One shall remain a minimum of 30 feet wide, and Zone Two shall extend from the outer edge of the 100-year floodplain.

Like Zone One, the width of Zone Two can be adjusted according to municipal goals, provided it extends a minimum of 90 feet from the edge of the stream. This ordinance requires the applicant to designate the riparian corridor on the subdivision or land development plan. This requirement is similar to the way wetlands and floodplains are designated.

- c. Width Determination: The developer, applicant, or designated representative shall be responsible for the initial width determination of the riparian corridor, and identifying this area on any plan that is submitted to the municipality for subdivision, land development, or other improvements that require plan submissions or permits. This initial determination shall be subject to review and approval by the

municipal engineer, governing body, or its appointed representative.

Section 3: Uses Permitted in the Riparian Corridor Conservation District

Each zone within the riparian corridor permits certain uses by right and others by conditional use. The uses permitted within each zone are directly related to specific benefits the zone provides and should be tailored to the community's specific goals.

The following uses are permitted either by right or as a conditional use in the Riparian Corridor Conservation District. However, within any corridor, no construction, development, use, activity, or encroachment shall be permitted unless the activity is described in the Corridor Management Plan.

For Zone One to function properly, it should remain relatively undisturbed. Therefore, the by-right uses are more passive and provide for streambank stabilization techniques to minimize erosion.

A. Zone One

1. Uses Permitted by Right: Open space uses that are primarily passive in character shall be permitted to extend into the area defined as Zone One including:
 - a. Wildlife sanctuaries, nature preserves, forest preserves, fishing areas, passive areas of public and private parklands, and reforestation in compliance with the guidelines of the corridor management plan.
 - b. Streambank stabilization in compliance with the guidelines of the corridor management plan.
2. Uses Permitted by Conditional Use

The ordinance should not create a conflict between good farming practices and riparian corridor protection.

- a. Corridor crossings by farm vehicles and livestock, recreational trails, roads, railroads, centralized sewer and/or water lines, and public utility transmission lines, provided that any disturbance is offset by corridor improvements identified in the Corridor Management Plan.

Although Zone One should remain relatively undisturbed, selective cutting, when done properly, may be beneficial to the health of the woodlands.

- b. Selection cutting of extremely high economic value trees when removal is consistent with approved standards in the Corridor Management Plan.

B. Zone Two

The main purpose of Zone Two is to impede the flow of runoff, allowing increased infiltration to filter out nutrients for uptake by plants. Uses may be tailored to be consistent with municipal goals.

- 1. Uses Permitted By Right: The following uses, which are primarily passive in character, shall be permitted by right to extend into the area defined as Zone Two:
 - a. Open space uses including wildlife sanctuaries, nature preserves, forest preserves, passive areas of public and private parklands, and recreational trails conducted in compliance with the methods prescribed by Chapter 102 of Title 25 of the Pennsylvania Administrative Code.

To maximize infiltration and its benefits, corridors should be reforested where possible.

- b. Reforestation in compliance with the guidelines of the Corridor Management Plan.

A portion of the required yard setbacks may fall within Zone Two. When Zone Two is 50 feet wide, no more than 25 feet may be used for this purpose.

- c. Minimum required front, side, and rear yards on private lots, provided that no yard may extend into Zone Two more than half the distance between the outer boundaries of Zone One and Zone Two.

Existing agricultural uses should be allowed to continue, as long as best management practices are implemented.

- d. Agricultural uses existing at the time of adoption of this ordinance, so long as they are conducted in compliance with methods prescribed by Chapter 102 of Title 25 of the Pennsylvania Administrative Code.

- 2. Uses Permitted By Conditional Use:

The implementation of corridor protection should not prohibit agricultural uses, provided they are being managed according to appropriate specifications.

- a. New agricultural uses in compliance with methods prescribed by Chapter 102.4(b) of Title 25 of the Pennsylvania Administrative Code.

- b. Corridor crossings by farm vehicles and livestock, roads, railroads, centralized sewer and/or water lines, and public utility transmission lines provided that any disturbance is, at a minimum, offset by corridor improvements identified in the Corridor Management Plan.

There will be situations that precipitate the need for utilities to cross through the riparian corridor. As long as they are for a legitimate public purpose, constructed and revegetated according to specifications, they cannot be prohibited.

- c. Centralized sewer and/or water lines and public utility transmission lines running along the corridor, provided that any disturbance is, at a minimum, offset by corridor improvements identified in the Corridor Management Plan. These lines shall be located as far from Zone One as practical.
- d. Selection cutting of trees when removal is consistent with approval standards in the Corridor Management Plan.

The main purpose of Zone Two is to slow runoff. Therefore, concentrated runoff flow should be prevented. This may be particularly important if impervious surface is introduced into Zone Two.

- e. Passive use areas such as camps, campgrounds, picnic areas, and golf courses. Active recreation areas such as ball fields, playgrounds, and courts provided these uses are designed in a manner that will not permit concentrated flow.

Stormwater basins can be incorporated into this area provided they are constructed and designed to "fit into the landscape" in a natural way.

- f. Naturalized stormwater basins in compliance with the guidelines in the Corridor Management Plan. The entire basin shall be located a minimum of 50 feet from the defined edge of identified watercourses.

Section 4: Uses Specifically Prohibited in the Riparian Corridor District

The ordinance should specifically prohibit uses that may inevitably lead to erosion, sedimentation, pollution, and general disturbance of the corridor, which may not be reasonably mitigated. Once again, this section should be modified to meet the goals of the municipality.

Any use or activity not authorized within Section 3 shall be prohibited within the Riparian Corridor Conservation District. By way of example, the following activities and facilities are specifically prohibited:

- A. Clear-cutting of trees and other vegetation.
- B. Selection cutting of trees and/or the clearing of other vegetation within Zone One, except where such clearing is necessary to prepare land for a use permitted under Section 3.A, and where the effects of these actions are mitigated by revegetation, as specified under Section 8 here within.

A healthy mixture of trees and shrubs is a primary goal of this ordinance. Adequate management of the riparian corridor is necessary to ensure its proper function.

- C. Selective cutting of trees and/or the clearing of other vegetation within Zone Two, except where such clearing is necessary to prepare land for a use permitted under Section 3.B and where the effects of these actions are mitigated by revegetation, as specified under Section 8 here within.
- D. Removal of trees in excess of selective cutting, except where such removal is necessary as a means to eliminate the dead, diseased, or hazardous tree stands that jeopardize public safety or as a part of a reforestation project, provided that the removal is in compliance with a corridor management plan approved by the municipal engineer, governing body, or its appointed representative.
- E. Removal or disturbance of vegetation in a manner that is inconsistent with erosion control and corridor protection.
- F. Storage of any hazardous or noxious materials.
- G. Use of fertilizers, pesticides, herbicides, and/or other chemicals in excess of prescribed industry standards or the recommendations of the Bucks Conservation District.
- H. Roads or driveways, except where permitted as corridor crossings in compliance with Sections 3.A.2 (a) or 3.B.2 (b).
- I. Motor or wheeled vehicle traffic in any area not designated to accommodate adequately the type and volume.
- J. Parking lots.
- K. Any type of permanent structure, including fences, except structures needed for a use permitted in Section 3.
- L. Subsurface sewage disposal areas.
- M. Sod farming.

Section 5: Nonconforming Structures and Uses in the Riparian Forest Corridor District

Structures and uses that legally exist prior to adoption of this ordinance, which will no longer be permitted, are considered nonconforming. It is important to recognize these instances, regulate their expansion, and determine abandonment.

Nonconforming structures and uses of land within the Riparian Corridor Conservation District shall be regulated under the provisions of Article__ herein (existing nonconformance regulations). The following additional regulations also shall apply.

- A. Existing nonconforming structures or uses within Zones One or Two that are not permitted under Section 3 may be continued but shall not have the existing building footprint or uses expanded or enlarged.
- B. Discontinued nonconforming uses may be resumed any time within one year from such discontinuance but not thereafter when showing clear indications of abandonment. No change or resumption shall be permitted that is more detrimental to the Riparian Corridor Conservation District, as measured against the intent and objectives under Section 1, than the existing or former nonconforming use.
- C. This one-year time frame shall not apply to agricultural uses that are following prescribed best management practices (BMPs) for crop rotation.

Section 6: Boundary Interpretation and Appeals Procedure

There may be disputes about the extent of the corridor on specific properties. This section provides the applicant with the opportunity to justify a change in the boundary location.

- A. When a landowner or applicant disputes the Zone (One or Two) boundaries of the Riparian Corridor or the defined edge of a watercourse, surface water body, or wetland, the landowner or applicant shall submit evidence to the municipality that describes the boundary, presents the landowner or applicant's proposed boundary, and presents all justification for the proposed boundary change.
- B. The municipal engineer, governing body, or appointed representative shall evaluate all material submitted and shall make a written determination within 45 days, a copy of which shall be submitted to the governing body, municipal planning commission, and landowner or applicant.

Similar to other zoning appeals, further disputes should be handled by the zoning hearing board.

- C. Any party aggrieved by any such determination or other decision or determination under this section may appeal to the zoning hearing board under the provisions of (existing Zoning Hearing Board Article) this ordinance. The party contesting the location of the district boundary shall have the burden of proof in case of any such appeal.

Section 7: Inspection of Riparian Corridor Conservation District

Once lands start being preserved, and a contiguous system of lands begin to form, some degree of regular inspection will be necessary. The inspection will determine landowner compliance with the ordinance provisions.

- A. Lands within or adjacent to an identified Riparian Corridor Conservation District will be inspected by the municipal representative when:
 - 1. A subdivision or land development is submitted.
 - 2. A building permit is requested.
 - 3. A change or resumption of nonconforming use is proposed.
- B. The district may also be inspected periodically by the municipal representatives for compliance with an approved restoration plan, excessive or potentially problematic erosion, hazardous trees, or at any time when the presence of an unauthorized activity or structure is brought to the attention of municipal officials.

Section 8: Management of the Riparian Corridor District

Once the riparian corridor is established, it will need to be managed properly to function effectively.

- A. Corridor Management Plan: Within any municipally identified corridor area, no construction, development, use, activity, or encroachment shall be permitted unless the effects of such development are accompanied by implementation of an approved corridor management plan, as specified within the subdivision and land development ordinance.

All developments that contain a municipally designated corridor must submit a corridor management plan along with preliminary plan submission requirements. The management plan should contain landowner-identified goals for the corridor and the management proposed to achieve those goals. Where development will impact the function of the riparian corridor, the management plan should identify what steps will be taken to mitigate the impacts during and after construction or development.

- 1. The landowner or developer shall submit to the municipal engineer, governing body, or its appointed representative, a corridor management plan prepared by a landscape architect,

engineer, or other qualified professional, which fully evaluates the effects of any proposed uses on the Riparian Corridor Conservation District. The corridor management plan shall identify the existing conditions (vegetation, 100-year floodplain, soils, slopes, etc.), all proposed activities, and all proposed management techniques, including any measures necessary to offset disturbances to the Riparian Corridor Conservation District. The municipal engineer, governing body, or appointed representatives as part of the subdivision and land development process, shall approve the plan.

Vegetation is one of the key ingredients to a healthy and useful corridor. Therefore, the management plan should be reviewed to ensure that proper plant types are located within the corridor area when revegetation efforts are undertaken.

- B. Vegetation Selection: To function properly, dominant vegetation in the corridor management plan shall be selected from a list of plants most suited to the riparian corridor. The municipal engineer, governing body, or its appointed representative may permit plants not included on the lists when evidence is provided from qualified sources certifying their suitability. The municipality may require species suitable to be verified by qualified experts in the Bucks Conservation District, Natural Resources Conservation Service, Pennsylvania Fish and Boat Commission, the U.S. Fish and Wildlife Service, or state and federal forest agencies.
1. In Zone One, dominant vegetation shall be composed of a variety of native riparian tree and shrub species and appropriate plantings necessary for streambank stabilization.
 2. In Zone Two, dominant vegetation shall be composed of riparian trees and shrubs, with an emphasis on native species and appropriate plantings necessary to stabilize the soil.
 3. Disturbed areas shall be revegetated with riparian corridor plants in compliance with an approved corridor management plan.
 4. Areas that cannot be revegetated shall be restored in compliance with an approved corridor management plan.

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APPENDIX F.

Sources for Funding and Assistance

The following provides an overview of available grants/programs designed to help the township identify sources for park, recreation, trail, and open space funding, planning, and technical assistance. Each listing is detailed as to what kind of help it provides, what eligibility requirements are, how to apply, and whom to contact for further information.

Federal Funding Sources

Safe, Accountable, Flexible, Efficient Transportation Equity Act (SAFETEA-LU)

<http://www.fhwa.dot.gov/safetealu/>

On August 10, 2005, the President signed into law the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU). With guaranteed funding for highways, highway safety, and public transportation totaling \$244.1 billion, SAFETEA-LU represents the largest surface transportation investment in our Nation's history. The two landmark bills that brought surface transportation into the 21st century—the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) and the Transportation Equity Act for the 21st Century (TEA-21)—shaped the highway program to meet the Nation's changing transportation needs. SAFETEA-LU builds on this firm foundation, supplying the funds and refining the programmatic framework for investments needed to maintain and grow our vital transportation infrastructure. SAFETEA-LU retains and increases funding for environmental programs of TEA-21, and adds new programs focused on the environment, including a pilot program for nonmotorized transportation and Safe Routes to School.

A total of \$370 million is provided through 2009 to continue this program to develop and maintain trails for recreational purposes that include pedestrian, equestrian, bicycling and non-motorized snow activities as well as off-road motorized vehicle activities. New eligibilities are provided, including construction and maintenance equipment, real estate costs, educational program costs, State administration costs, and assessment of trail conditions.

Community Development Block Grant Program

<http://www.hud.gov/progdesc/cdbgent.cfm>

The U.S. Department of Housing and Urban Development (HUD) offers financial grants to communities for neighborhood revitalization, economic development, and improvements to community facilities and services, especially in low and moderate-income areas. HUD funds may be used to develop greenways. Grants from this program range from \$50,000 to \$200,000 and are either made to municipalities or nonprofits. There is no formal application process.

Land and Water Conservation Fund (LWCF) Grants

<http://www.ncrc.nps.gov/programs/lwcf/>

This federal funding source was established in 1965 to provide park and recreation opportunities to residents throughout the United States. Money for the fund comes from the sale or lease of nonrenewable resources, primarily federal offshore oil and gas leases and surplus federal land sales. LWCF funds are used by federal agencies to acquire additions to National Parks, Forests, and Wildlife Refuges. In the past, Congress has also appropriated LWCF monies for so-called "state-side" projects. These "state-side" LWCF grants can be used by communities to acquire and build a variety of park and recreation facilities, including trails and greenways. These funds are distributed by the National Park Service to the Pennsylvania Department of Conservation and Natural Resources. They require a 50 percent match from the local project sponsor. In PA contact DCNR, Recreation and Conservation, 717-783-2659.

Conservation Reserve Program

<http://www.fsa.usda.gov/dafp/cepd/crp.htm>

The U.S. Department of Agriculture, through its Agricultural Stabilization and Conservation Service, provides payments to farm owners and operators to place highly erodible or environmentally sensitive landscapes into a 10-15 year conservation contract. The participant, in return for annual payments during this period, agrees to implement a conservation plan approved by the local conservation district for converting these sensitive lands to a less intensive use. Individuals, associations, corporations, estates, trusts, cities, counties, and other entities are eligible for this program. This program can be used to fund the maintenance of open space and nonpublic use greenways along water bodies and ridge lines.

Wetlands Reserve Program

<http://www.nrcs.usda.gov/programs/wrp/>

<http://www.ngpc.state.ne.us/wildlife/wrp.html> - informational site

The Department of Agriculture also provides direct payments to private landowners who agree to place sensitive wetlands under permanent easements. This program can be used to fund the protection of open space and greenways within riparian corridors.

Watershed Protection and Flood Prevention (Small Watersheds)

Grants

<http://www.epa.gov/owow/watershed/wacademy/fund/prevent.html>

The USDA Natural Resources Conservation Service (NRCS) provides funding to state and local agencies or nonprofit organizations authorized to carry out, maintain and operate watershed improvements involving less than 250,000 acres. The NRCS provides financial and technical assistance to eligible projects to improve watershed protection, flood prevention, sedimentation control, public water-based fish and wildlife enhancements, and recreation planning. The NRCS requires a 50 percent local match for public recreation, and fish and wildlife projects.

Rivers, Trails, and Conservation Assistance Program

http://www.nrcs.nps.gov/programs/rtca/ContactUs/cu_apply.html

The National Parks Service operates this program aimed at conserving land and water resources for communities. Eligible projects include conservation plans for protecting these resources, trail development, and greenway development. The program offers *technical assistance only* to nonprofit organizations, community groups, and local or state government agencies. Rivers and Trails technical staff offer various types of assistance for recreation and conservation projects including:

- Building partnerships to achieve community-set goals;
- Assessing resources;
- Developing concept plans; and
- Providing conservation and recreational information;

Pennsylvania Funding Sources

Growing Greener and Growing Greener II

Growing Greener is the largest single investment of state funds in Pennsylvania's history to address Pennsylvania's critical environmental concerns of the 21st century. Signed into law on December 15, 1999, and reauthorized in June 2002, this legislation will double the funding for the Growing Greener program and extend it through 2012. Growing Greener will slash the backlog of farmland-preservation projects statewide; protect open space; eliminate the maintenance backlog in state parks; clean up abandoned mines and restore watersheds; provide funds for recreational trails and local parks; help communities address land use; and provide new and upgraded water and sewer systems.

In Spring of 2005, a state-wide voter-approved plan known as Growing Greener II, will invest \$625 million to clean up rivers and streams; protect natural areas, open spaces and working farms; and shore up key programs to improve quality of life and revitalize communities across the Commonwealth. This plan will extend and augment the existing Growing Greener program. The new law (Act 45 of 2005) brings to fruition more than a year of aggressive efforts by the governor to address some of the state's most pressing environmental problems and help the state win the race for new development and job creation. The \$625 million will be spread out over six years and including \$217.5 million to the Department of Conservation and Natural Resources (DCNR) to preserve natural areas and open spaces; improve state parks; and enhance local recreational needs, which could include recreational facilities and trail projects.

Department of Conservation and Natural Resources (DCNR)

Pennsylvania's Department of Conservation and Natural Resources (DCNR) will use Growing Greener and Growing Greener II funds to augment the already successful and highly requested Community Conservation Partnership grant programs. DCNR will allocate these funding sources over several existing grant programs to help more communities and organizations meet their conservation and recreation goals found on the following pages.

Applying for Funding

Interested parties can request information now by contacting the following DCNR regional office.

Southeast Field Office (Philadelphia)

Bucks, Chester, Delaware, Montgomery, Philadelphia counties

- Fran Rubert
- 908 State Office Building
1400 Spring Garden Street
Philadelphia, PA 19130
- E-mail: frubert@state.pa.us
- Phone: (215) 560-1182 or (215) 560-1183
- Fax: (215) 560-6722

Planning and Technical Assistance Grants

Community Grant Program

DCNR provides grant funding at a level not to exceed 50 percent of eligible costs except when noted otherwise. An applicant may submit **one** grant application per project type listed under this program per funding cycle. Project types include:

- **Circuit Riders:** Four-year grant program to hire a full-time recreation and/or park director to share services through an intergovernmental cooperative effort created by two or more municipalities. Available grant funding for the circuit rider's salary decreases from 100 percent the first year to 75 percent the second, 50 percent the third and 25 percent the fourth year.
- **Comprehensive Recreation, Park and Open Space Plans:** Grants to develop a comprehensive long-range planning document that provides strategies to address a municipality's recreation, park and open space needs.
- **Conservation/Sound Land Use:** Grants to encourage conservation planning and sound land use. Either as a stand alone product or as part of comprehensive recreation, park and open space or a municipal plan, the Department will fund studies that advance conservation or sound land use strategies or practices identified in existing plans.
- **Feasibility Studies (Swimming Pool/Recreation Facilities):** Grants to determine the feasibility of acquiring, developing or rehabilitating swimming pools, ice rinks, sports complexes, recreation centers, etc. DCNR usually requires the completion of these studies before a municipality is funded for development or rehabilitation of major facilities under the Keystone Acquisition and Development Grants.

- Greenways: Grants to explore establishing, developing and managing linear corridors of open space along streams, shorelines, wetlands, canals, ridge tops, etc. These corridors are studied to create recreational trails and bikeways, park connectors, and for environmental protection. DCNR has separate grant programs for river conservation and rail-trail planning.
- Master Site Plans: Grants to *design* the proposed development of a neighborhood, community, or regional park. Site control, either through ownership or a long-term lease, is required.
- County Natural Areas Inventories: Grants to inventory important natural areas, habitats for species of special concern, significant natural plant communities and areas important for open space, recreation and wildlife habitat. Inventories are done on a county or multi-county area.
- Peer-to-Peer Technical Assistance: Grants of up to 90 percent of eligible costs (\$7,500 maximum) to study problem-specific issues dealing with the administration of park and recreation facilities and/or services. These are short-term projects conducted primarily by experienced park and recreation professionals who work closely with community leaders.

Rails-to-Trails Grant Program

Both municipalities and appropriate organizations are eligible applicants. DCNR provides grant funding at a level not to exceed 50 percent of eligible costs. An eligible applicant may submit **one** application per funding cycle under this program.

- Rail-Trail Feasibility Studies: Grants to determine the feasibility of converting an available railroad rights-of-way to a trail. Site control, either through ownership or a long-term lease, is not required in order to conduct the study.
- Rail-Trail Master Plans: Grants to develop a design detailing the proposed development of the trail. Site control, either through ownership or a long-term lease, is required.
- Rail-Trail Special Purpose Studies: Grants to develop a detailed study on a particular issue or structure (culverts, bridges, tunnels) that impacts the conversion of a rail corridor to a trail. Site control, either through ownership or a long-term lease, is required.

Rivers Conservation Grant Program

Both municipalities and appropriate organizations are eligible applicants. The Department provides grant funding at a level not to exceed 50 percent of eligible costs. An applicant may submit **one** application per funding cycle under this program.

- Rivers Conservation Plans: Grants to study watersheds or rivers, including streams and creeks, to identify significant river resources, potential threats to these resources, and recommend restoration, maintenance or enhancement actions.
- Rivers Implementation Projects: Grants directed to resolution of specific issues for a river that is on the Pennsylvania Rivers Conservation Registry. Examples of eligible projects include: investigations into river access, water quality monitoring, and preparation of ordinances and zoning documents.

*Note: A municipality or appropriate organization may submit **one** application per project type.*

Technical Assistance Program

The program helps local governments, land trusts, rails-to-trails and river conservation groups and others interested in recreation, parks, open space and conservation provide services to their constituents through various means. Other organizations, including municipal and civic associations, state agencies, schools, trusts, day care centers, camps, etc., take advantage of the services.

Consultations

Professional recreation and park advisors in the central and field offices provide assistance on numerous issues. Whether one-on-one over the phone, or in meetings with one or more officials in a community or organization, advisors bring a wealth of resources.

- Personnel—Hiring practices, job descriptions, salaries, the "Personnel Referral Service"
- Management—Developing citizen boards, governmental and organizational cooperation, facility design, delivery system evaluation, feasibility studies
- Finance—Budgeting, untapped revenue sources
- Liability—Risk management information, techniques/sources
- Rails-to-Trails—Advise on the planning, acquisition and development of rail-trail corridors

- Rivers Conservation— Advise and assist in the development of river conservation plans

Acquisition and Development Grants

Community Grant Program

Municipalities are the only eligible applicants. DCNR provides grant funding at a level not to exceed 50 percent of eligible costs except for Small Community Development types (see below). A Municipality may submit one application per project type per funding period. Projects include:

Acquisition—grants for the purchase of land for park, recreation and conservation purposes. Projects may include acquisition of land for new areas, inholdings or expansion of existing sites.

Park Rehabilitation and Development—grants for the rehabilitation of existing parks, indoor and outdoor recreation facilities and development of new park and recreation areas.

The Small Community Development Projects—provide a municipal applicant with a population of 5000 or less with an alternate method of funding for rehabilitation and development of minor indoor and basic outdoor park, recreation and conservation areas and facilities. The initial \$20,000 or less in grant funding provided must be used to purchase materials only and approved professional design fees. Additional grant funds of up to \$20,000 may be provided matching the municipal applicant's local cash or non-cash contribution to the project. The additional \$20,000 may be used to cover all other eligible costs and other costs such as labor and/or equipment. The maximum grant under this project type is \$40,000.

Heritage Parks Grants

These grants promote public-private partnerships to preserve and enhance natural, cultural, historic and recreation resources to stimulate economic development through heritage tourism. Grants are awarded for a variety of purposes including feasibility studies; development of management action plans for heritage park areas; specialized studies; implementation projects; and hiring of state heritage park managers. Grants require a 25–50 percent local match.

Land Trust Grants

DCNR can also award land acquisition grants for areas where rare or threatened species exist. Grants are made available to nonprofit land trusts of land

conservancies and require a 50 percent match. Award amounts will vary, and usually supported the acquisition of hundreds of acres of land. Applications are due in October of each year. Part of the Growing Greener Initiative, the program generally has a \$4 million allotment. For more information contact Fred Owen at 717-783-2663.

Urban and Community Forestry Grants

This grant can be used to encourage the planting of trees in Pennsylvania communities. Municipal challenge grants provide 50 percent of the cost of the purchase and delivery of trees. Special grants are available for local volunteer groups, civic clubs, and municipalities to train and use volunteers for street tree inventories, and other projects in urban and community forestry. The program's annual allotment varies but is generally around \$500,000. For more information contact Norm Lacasse at 717-783-0385.

Pennsylvania Recreational Trails Program

The Pennsylvania Recreational Trails Program (PRTP) provides funds to develop and maintain recreational trails and trail related facilities for motorized and nonmotorized recreational trail use. Federal funding for the program is through the Federal Highway Administration (FHWA) and the Transportation Equity Act for the 21st Century (TEA 21).

In Pennsylvania, the Recreational Trails Program is administered by the DCNR, Bureau of Recreation & Conservation (BRC) in consultation with the Pennsylvania Recreational Trails Advisory Board (PARTAB), which is composed of both motorized and nonmotorized recreational trail users.

Funding

For this grant round the Department has approximately \$1 million available for grants. This funding must be distributed among motorized, nonmotorized, and diverse trail use, as follows:

- 40% minimum for diverse trail use
- 30% minimum for motorized recreation
- 30% minimum for nonmotorized recreation

Match requirements for Pennsylvania Recreational Trails Program Grants are 80 percent grant money, up to a maximum of \$100,000, and 20 percent project applicant money.

"Soft match" (credit for donations of funds, materials, services, or new right-of-way) is permitted from any project sponsor, whether a private organization or public agency.

Eligibility

Eligible applicants include federal and state agencies, local governments and private organizations.

Eligible project categories are:

- maintenance and restoration of existing recreational trails;
- development and rehabilitation of trailside and trailhead facilities and trail linkages;
- purchase and lease of recreational trail construction and maintenance equipment;
- construction of new recreational trails (with restrictions on new trails on Federal land);
- acquisition of easements or property for recreational trails or recreational trail corridors.

The Commonwealth may also use up to 5 percent of its funds for the operation of educational programs to promote safety and environmental protection related to the use of recreational trails.

The Department will also give consideration to projects that provide for the redesign, reconstruction, nonroutine maintenance, or relocation of recreational trails to benefit the natural environment.

Project sponsors are encouraged to enter into contracts and cooperative agreements with qualified youth conservation or service corps to perform trail construction and maintenance. For more information contact Vanyla Tierney at 717-783-2654.

Pennsylvania Department of Transportation (PennDOT)

<http://www.dot.state.pa.us/>

PennDOT's primary means of funding greenways projects is through the Transportation Enhancements Program that is part of TEA-21. Greenways projects with a tie to transportation, historic preservation, bicycle/pedestrian improvements, or environmental quality are eligible candidates for Transportation Enhancements funding. PennDOT will receive \$40 million in funding for the fall 2001 funding cycle. \$32 million is available for projects

selected by MPOs/LDDs and the remaining \$8 million is a set-aside for use at the Secretary's discretion and for projects of statewide significance.

The following three programs relate to providing corridors for pedestrians and bicycle travel through surface transportation improvements:

- **Surface Transportation (Transportation Enhancement: TE) Program**

The TE program funds 'non-traditional' projects that enhance the transportation experience, mitigate the impacts of transportation facilities on communities and the environment, and enhance community character through transportation-related improvements.

Funding can be either 80/20 if the project entails design, engineering and construction or 100 percent for construction-only projects. Eligibility applicants include any federal or state agency and county or municipal governments. Types of improvements eligible for funding include:

- Provision of facilities for pedestrian and bicyclist;
- Provision of safety and educational activities for pedestrian and bicyclists;
- Acquisition of scenic easements and scenic or historic sites;
- Scenic or historic highway programs;
- Landscaping or other scenic beautification;
- Historic preservation;
- Preservation of abandoned railway corridors, including the conversion and use of trails.

- **Congestion Mitigation and Air Quality (CMAQ) Improvement Program**

Projects providing facilities for pedestrians and bicycles may be funded under CMAQ if it is either determined to contribute to the attainment of a national ambient air quality standard or included in the state's implementation plan designed to comply with the Clean Air Act.

- **PennDOT's Hometown Streets & Safe Routes to School**

The Home Town Streets program was designed to encourage reinvestment in and redevelopment of the state's downtowns.

Typical projects include sidewalk improvements, benches, pedestrian crossings, kiosks, planters, street lighting, signage, and bicycle amenities.

Safe Routes to Schools activities are designed to work with school districts, local governments, and bicycle and pedestrian advocates to make physical improvements that promote safe walking and biking passage to schools. Typical projects may include sidewalks, bike lanes, curb extensions, crosswalks, trails to schools, and traffic diversions.

The following websites provide greater detail on the program and application process.

<http://www.dot.state.pa.us/pennidot/Bureaus/CPDM/Prod/Saferoute.nsf>

http://www.dvrpc.org/transportation/capital/hts_srs.htm/

Department of Community and Economic Development (DCED)

DCED's mission includes four elements that each have a relationship to greenways: economic development, travel and tourism, technical assistance, and community development. Each of DCED's funding programs is listed and described below.

- **Community Revitalization Program**

This funding source, which ranges from \$5,000 to \$50,000, supports local initiatives aimed at improving a community's quality of life and improving business conditions. For more information contact Oliver Bartlett at 717-720-7352.

- **State Planning Assistance Grant**

This program provides funding to municipalities for preparation and maintenance of community development plans, policies, and implementation measures. The grant requires a 50 percent match and priority is given to projects with regional participation. For more information contact Kerry Wilson at 717-783-1402.

- **Community Development Block Grants**

This program provides financial and technical assistance to communities for infrastructure improvements, housing rehabilitation, public services, and community facilities. The program targets local

governments and 70 percent of each grant must be used for activities or projects that benefit low to moderate income people. For more information, contact Scott Dunwoody at 717-787-5327.

- **Main Street Program**

The Main Street Program provides grants to municipalities and redevelopment authorities to foster economic growth, promote and preserve community centers, creating public/private partnerships, and improve the quality of life for residents. The program has two components: a Main Street Manager and Commercial Reinvestment. The Main Street Manager component funds a staff position that coordinates the community's downtown revitalization activities. The Community Reinvestment component provides funding for actual improvement projects in the community. The Main Street Manager is partially funded for a 5-year period while the Community Reinvestment activities require a minimum of a 50 percent match. A business district action plan must be completed for eligibility in this program. For more information contact Diana Kerr, 717-787-5327.

Local Government Funding Sources

Contact your local government for more information on the funding sources listed below.

Taxes

Greenways can be funded through sales tax revenues. One example of a community that is using sales tax dollars to fund bicycle and pedestrian facilities is Cobb County, Georgia, where citizens voted to implement a one percent local sales tax to provide funding for transportation projects. Over four years, Cobb County Department of Transportation will receive \$3.8 million of this sales tax revenue for bicycle improvements alone, to be used as a match for federal dollars. Another example is Oklahoma City, where voters approved a temporary \$0.01 sales tax, which generated millions of dollars for greenway acquisition and development.

Impact Fees

Impact fees are monetary one-time charges levied by a local government on new development. Unlike required dedications, impact fees can be applied to finance greenway facilities located outside the boundary of development. These fees can

be levied through the subdivision or building permit process to finance greenways.

Bond Referendums

Communities across the nation have successfully placed propositions on local ballots to support greenway development. The Charlotte-Mecklenburg County, North Carolina, area passed four consecutive referendums that generated more than \$3 million for greenways. Guilford County, North Carolina also passed a referendum that appropriated \$1.6 million for development of the Bicentennial Trail. Since bonds rely on the support of the voting population, an aggressive education and awareness program will need to be implemented prior to any referendum vote. In Pennsylvania, the Local Government Unit Debt Act provides a procedure for obtaining approval of the voters for issuing local government debt for a particular purpose or project.

Capital Improvements Program

Some local governments have initiated a yearly appropriation for greenway and trail development in the capital improvements program. In Raleigh, North Carolina, greenways continue to be built and maintained, year after year, due to a dedicated source of annual funding that has ranged from \$100,000 to \$500,000, administered through the Parks and Recreation Department.

Private Sector Sources

Many communities have solicited greenway funding from a variety of private foundations, corporations, and other conservation-minded benefactors. As a general rule, local foundations and businesses will have a greater interest in and be more likely to fund local projects. These local sources should be approached first, before seeking funds outside the community.

Local Businesses

Local industries and private businesses may agree to provide support for development of greenways through:

- Donations of cash to a specific greenway segment
- Donations of services by corporations to reduce the cost of the greenway
- Implementation, including equipment and labor to construct and install elements of a trail
- Donations in the cost of materials purchased from local businesses that support greenway implementation and can supply essential products for facility development.

This method of raising funds requires a great deal of staff coordination. One example of a successful endeavor of this type is the Swift Creek Recycled Greenway in Cary, North Carolina. A total of \$40,000 in donated construction materials and labor made this trail an award-winning demonstration project. (Some materials used in the "recycled trail" were considered waste materials by local industries!)

Trail Sponsors

A sponsorship program for trail amenities allows for smaller donations to be received both from individuals and businesses. The program must be well planned and organized, with design standards and associated costs established for each amenity. Project elements which may be funded can include wayside exhibits, benches, trash receptacles, entry signage, and picnic areas. Usually, plaques recognizing the individual contributors are placed on the constructed amenities or at a prominent entry point to the trail.

Volunteer Work

Community volunteers may help with trail construction, maintenance, fund raising and a whole host of other activities. Potential sources of volunteer labor could include local bicyclists, local historical groups, neighborhood associations, local churches, conservation groups, school groups, and local civic clubs such as Kiwanis, Rotary and Lions Clubs.

A good example of a volunteer greenway program is Cheyenne, Wyoming, which generated an impressive amount of community support and volunteer work. The program has the unusual problem of having to insist that volunteers wait to begin landscaping trails until construction is completed. A manual for greenway volunteers was developed in 1994 to guide and regulate volunteer work. The manual includes a description of appropriate volunteer efforts, request forms, waiver and release forms, and a completion form (volunteers are asked to summarize their accomplishments). Written guidelines are also provided for volunteer work in 100-year floodplains.

To better organize volunteer activity, Cheyenne developed an "Adopt-a-Spot" program. Participants who adopt a segment of trail are responsible for periodic trash pick-up, but can also install landscaping, prune trail-side vegetation, develop wildlife enhancement projects, and install site amenities. All improvements must be consistent with the Greenway Development Plan and must be approved by the local Greenway Coordinator. Adopt-a-Spot volunteers are allowed to display their names on a small sign along the adopted section of greenway.

"Buy-a-Foot" Programs

"Buy-a-Foot" programs have been successful in raising funds and awareness for trail and greenway projects across the country. Under local initiatives, citizens are encouraged to purchase one linear foot of the greenway by donating the cost of construction. An excellent example of a successful endeavor is the High Point, North Carolina Greenway "Buy-a-Foot" campaign, in which linear greenway "feet" were sold at a cost of \$25 per foot. Those who donated were given a greenway T-shirt and a certificate. This project provided an estimated \$5,000 in funds.

Developer Dedications

Some communities have used a dedication program to acquire land for its greenway program (e.g., Cary, North Carolina). Other communities have used such programs to build facilities, such as sidewalks, trails and other amenities, as part of new development. The developer typically fronts the cost of these improvements and passes the costs along to home buyers.

American Greenways DuPont Awards

The Conservation Fund's American Greenways Program has teamed with the DuPont Corporation and the National Geographic Society to award small grants (\$250 to \$2,000) to stimulate the planning, design, and development of greenways. These grants can be used for activities such as mapping, conducting ecological assessments, surveying land, holding conferences, developing brochures, producing interpretive displays, incorporating land trusts, building trails, and other creative projects. Grants cannot be used for academic research, institutional support, lobbying, or political activities.