

Tri-Municipal Master Trail & Greenway Plan



Chalfont Borough, New Britain Borough & New Britain Township, Bucks County

November 2010

Tri-Municipal Master Trail & Greenway Plan

Prepared for:

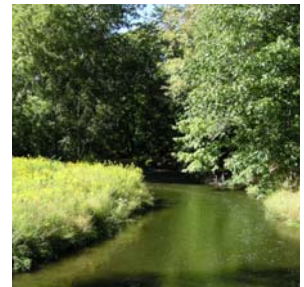
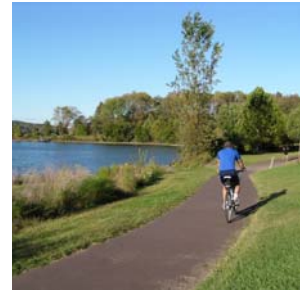
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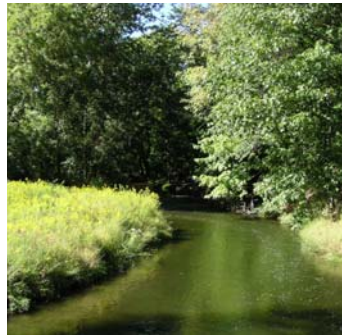
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Chapter 1

Introduction

The Tri-Municipal Master Trail & Greenway Plan explores the opportunities and constraints of developing greenways and trails throughout the municipalities of Chalfont Borough, New Britain Borough, and New Britain Township. The three municipalities are located just west of Doylestown Borough in central Bucks County. The communities are naturally linked by the Neshaminy Creek, which is formed by the confluence of the North Branch Neshaminy Creek and West

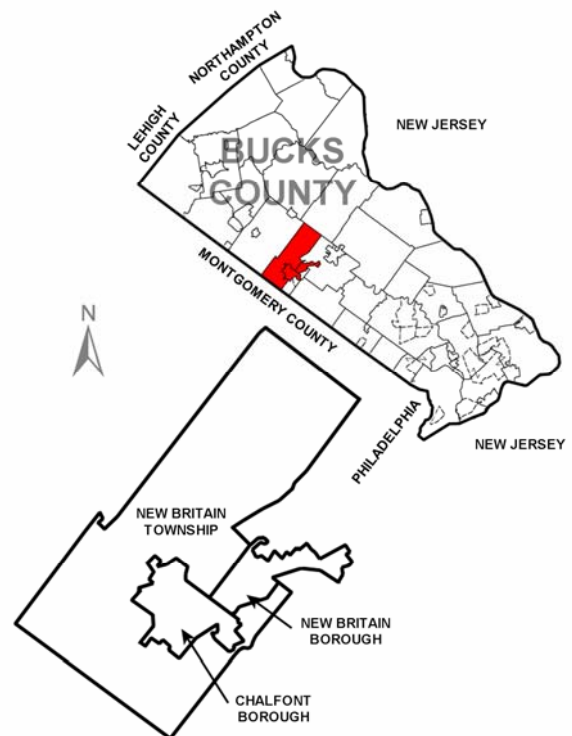


Branch Neshaminy Creek in Chalfont Borough. While much of the two boroughs are developed, more rural areas are found in New Britain Township, north of the boroughs.

The Region, the Communities and Bicycling

The three municipalities are located in Central Bucks County, bordered by Doylestown Township, Warrington Township, Hilltown Township, Plumstead Township and Hatfield and Montgomery Townships in Montgomery County. The Tri-Municipal area is minutes away from the Bucks County seat of Doylestown Borough.

Chalfont Borough, New Britain Borough, and New Britain Township share contiguous borders, with New Britain Township nearly surrounding the two boroughs. In addition to the shared water resources of the Neshaminy Creek and its branches, PA Route 202, and the SEPTA Doylestown Regional Rail Line link the three communities. To the southeast are Doylestown Township and the County seat, Doylestown Borough. To the south is Warrington Township, to the north is Hilltown Township, and Plumstead Township adjoins New Britain Township to the northeast. The municipalities of Hatfield and Montgomery Township in Montgomery County lie to the west of the three municipalities.



Together the three municipalities had over 17,700 inhabitants in 2000 with growth over the decade between 1990 and 2000 ranging from 17.6-percent in New Britain Township, 27.1-percent in Chalfont

Borough, to 43.7-percent in New Britain Borough. This rapid growth and the associated traffic and development has limited opportunities for pedestrian and bicycle transportation in the three municipalities. While many residential subdivisions have sidewalks, connections throughout the communities to primary destinations such as schools, shopping areas, and train stations, have been cut off in many instances and difficult in others. New Britain Borough's population is affected by the presence of Delaware Valley College students who live in the municipality and are important trail users. Additional demographic data is provided in Appendix A.

Hotbed of Bicycle Planning Activity

As this project was underway, several other major initiatives were in progress. These included the Doylestown Bike & Hike Trail system expansion, the New Britain Borough Citizens Trail Committee bicycle and pedestrian plan, the nine-mile Route 202 Parkway with its five foot wide dedicated bicycle lane extending into Montgomery County, the quest to connect the Tri-Municipal and Doylestown area to Peace Valley Park, the Bucks County Bicycle Plan and the Bucks County Greenway and Open Space Plan. Almost 20 years ago, Doylestown Borough and Doylestown Township partnered to create the Doylestown Community Bike & Hike System, now an 18 mile network. The Bike and Hike System is an off-road trail system that connects the town center, schools, parks, the Cultural Center, Doylestown Hospital, the train stations, Delaware Valley College, and neighborhoods. Linking trails in Chalfont and New Britain Boroughs and New Britain Township to the Doylestown Community Bike & Hike System and other initiatives in neighboring communities will expand the off-road transportation system available to community residents well beyond the borders of the three municipalities.

At this time, there is a lot of interest in the regional connections that will enable bicyclists to get from this area to New Hope and the Delaware Canal National Heritage Corridor with its 60 mile towpath. Regional connections in the Montgomery County area will enable cyclists to access another 60 miles and growing regional trail network.

The Planning Process

The Tri-Municipal Master Trail & Greenway Plan planning process included five parts:

1. Inventory, Research, and Assessment
2. Public Participation
3. Development of a Trail Conceptual Plan
4. Financial Feasibility
5. Strategic Operations and Management Plan

1. Inventory, Research, and Assessment

The physical features and natural resources of the three communities were explored through mapping and field work. Mapping was developed using aerial photographs and available GIS data. Field work explored community destinations, natural and man-made corridors, and residential areas. Potential connections to surrounding communities were investigated and research was completed on regional initiatives like the Route 202 Parkway. Chapter 3 – Resources of the Tri-Municipal Area documents the findings of the inventory and research work and provides an assessment of the opportunities and constraints that informed the planning process.

2. Public Participation

To assure that the Tri-Municipal Master Trail & Greenway Plan is community based, with broad support, citizen input was gathered through a variety of methods. A study committee guided the planning process providing feedback and input to the consultant team. Interviews were completed with key stakeholders. An open house and public presentations provided the general public a chance to view the plans and provide input. Public meetings were held in each of the three municipalities to consider the final plan.

3. Development of a Trail Conceptual Plan

A conceptual trail plan was developed to illustrate the proposed trail network throughout the communities. Destinations were highlighted and trails, both on-road and off-road, were mapped to illustrate the connectivity of the system. The conceptual trail plan was shared with the study committee and general public for review and comments which guided the final plan.

4. Financial Feasibility

Probable construction costs to develop trail segments and trail amenities were developed. Typical cost of easement acquisition was researched and future operating costs of the trail system was defined. Implementation strategies were evaluated and an action plan developed to guide initial implementation tasks.

5. Strategic Operations and Management Plan

Operations are the most significant lifetime cost of a recreation facility. Recommendations for operation, management maintenance, and financing the trail improvements are defined for the Tri-Municipal Master Trail & Greenway Plan.

Greenway & Trail Planning

Greenway and trail planning at various levels of government has preceded this planning effort. These previous planning efforts have informed this Tri-Municipal Trail & Greenway Plan and provide the foundation for planning consideration and ideas.

Commonwealth of Pennsylvania

The Commonwealth of Pennsylvania has adopted a plan, “**Pennsylvania Greenways: An Action Plan for Creating Connections**” with a coordinated and strategic approach for developing a statewide system of connected greenways¹. The vision of a network of greenways throughout Pennsylvania includes regional, state, county, and local greenways, all interconnected and spanning the Commonwealth. This network of landscape connections will create a “green infrastructure” of open space vital to the health of Pennsylvania’s resources, both ecological and manmade. The statewide greenways network can also provide a new connectivity within and among Pennsylvania’s communities and promote healthier lifestyles with more abundant recreational opportunities and transportation alternatives, and stronger connections to cultural and historic places. This connectivity can be represented by the metaphor of the "hubs and spokes" of a wheel.



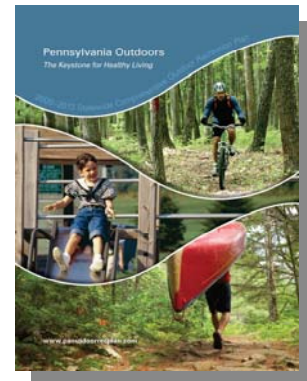
¹ Pennsylvania Greenways: An Action Plan for Creating Connections, Pennsylvania Greenways Partnership Commission and Greenways Partnership Advisory Commission, (2001), p.33.

"Hubs and Spokes" - Pennsylvania's greenways network will ultimately take the form of "hubs and spokes." The "hubs" of this network will include parks, forests, game lands, nature preserves, lakes, vistas, cultural attractions, or other destination areas including our communities. The "spokes" of the network will be greenways connecting our natural areas and recreation and cultural destinations with the places where we live.² These greenways may conserve ecologically sensitive corridors for wildlife; provide land and water trails for transportation, fitness and outdoor recreation; and accommodate motorized recreational vehicles such as snowmobiles or ATVs.

Greenways Defined

A greenway is a corridor of open space. Greenways vary greatly in scale, from narrow ribbons of green that run through urban, suburban, and rural areas to wider corridors that incorporate diverse natural, cultural, and scenic features. They can incorporate both public and private property, and can be land- or water-based. They may follow old railways, canals, or ridge tops, or they may follow stream corridors, shorelines, or wetlands, and include water trails for non-motorized craft. Some greenways are recreational corridors or scenic byways that may accommodate motorized and non-motorized vehicles. Others function almost exclusively for environmental protection and are not designed for human passage. Greenways differ in their location and function, but overall, a greenway will protect natural, cultural, and scenic resources; provide recreational benefits; enhance natural beauty and quality of life in neighborhoods and communities; and stimulate economic development opportunities

The State-wide Comprehensive Outdoor Recreation Plan – **Pennsylvania Outdoors: the Keystone for Healthy Living** identified goals and priorities for the Commonwealth. The following goals identified in the plan relate to trails and greenways: *Strengthen Connections Between Outdoor Recreation, Healthy Lifestyles and Economic Benefits in Communities and Develop a State-wide Land and Water Trail Network to Facilitate Recreation, Transportation, and Healthy Lifestyles.* This plan promotes one of the recommendations of the Plan: *Encourage local land use policy that promotes best management practices and models to preserve important green spaces, creates more walkable communities, and provides safe connections to outdoor recreation amenities.* The Plan is provided on the PADCNr website: <http://www/dcnr.state.pa.us/brc/elibrary/brcpublications/index.htm>.



Bucks County

Bucks County's Parks and Recreation Plan of 1986 set forth a vision of link parks that would connect Bucks County via greenways and trails. This plan is being updated with two projects underway and slated for completion in 2011: a Greenway and Open Space Plan and a Bicycle Plan. Both plans are incorporating municipal and regional greenway and trail planning efforts.

Chalfont Borough, New Britain Borough, & New Britain Township

Chalfont Borough Open Space Plan

The **1999 Chalfont Borough Open Space Plan** recommends the following relative to trail and greenways: Preservation of open space along the Neshaminy Creek for recreational use and to preserve important

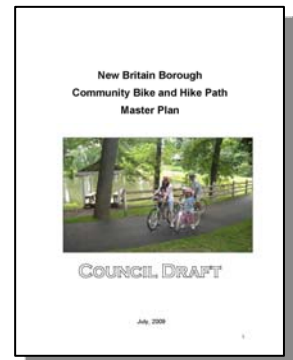
² Pennsylvania Greenways: An Action Plan for Creating Connections, Pennsylvania Greenways Partnership Commission and Greenways Partnership Advisory Committee, (2001),p.8.

natural and environmental features, provide for trail links throughout the Borough, include open space recommendations as part of the zoning ordinance, and explore community trail connections with New Britain Township and New Britain Borough. The 2009 Update of the Open Space Plan provided additional recommendations for trail initiatives that have been incorporated into this plan.

New Britain Borough Open Space Plan

The **2001 New Britain Borough Open Space Plan** and the **2009 Update** includes the following open space goal: “Work with neighboring municipalities to provide for bike/pedestrian paths and links in appropriate area”. An action step identified in the plan is to “consider establishing a pedestrian/bicycle path parallel to Butler Avenue, within the right-of-way.” Additionally, the Open Space Recommendations map recommends investigation of a trail/path in the area of the Bristol Road extension from Route 202 to Park Avenue.

In 2009 New Britain Borough appointed a project study committee to develop the **New Britain Borough Community Bike and Hike Master Plan** with the goal of planning recreational trails in the Borough. The committee completed extensive field work and analysis of optional routes and their findings and recommendations are incorporated into this planning document.



New Britain Township Open Space Plan

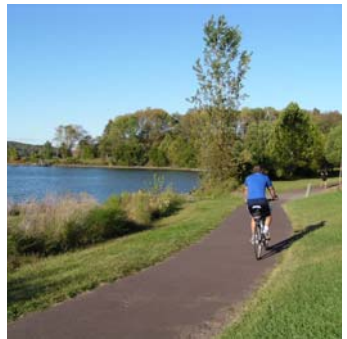
The **2000 New Britain Township Open Space Plan** identifies potential open space linkages which are described as conducive to the development of greenways. Four stream corridors are listed as open space linkages: Neshaminy Creek – West Branch, Pine Run Creek – North Branch, Hardiakan Creek, and Neshaminy – Mainstem. The plan further promotes pedestrian access between New Britain Township and destinations in adjoining municipalities. The Potential Trails and Linkages Map listed the following trails in addition to the linkages noted above: County Line Trail, Lexington Park Trail, Brittany Trail, Highlands Trail, Pine Run Link Trail, Old Iron Hill Link, Ferry Trail, Chapman Trail, Hardiakan Trail, Kink Link, Old Limekiln Trail, Callowhill Trail, Upper Stump Trail, Sellersville Link, Lexington Park West Trail, and Creek Trail. These linkages primarily follow roadways. The 2008 Supplement to the New Britain Township Open Space Plan references this planning project to identify additional potential trails in the community.

Butler Avenue Revitalization Strategies

In 2009 the Delaware Valley Regional Planning Commission completed the **Butler Avenue Revitalization Strategies Plan** for the three municipalities. The plan assessed revitalization opportunities for Butler Avenue following the completion of the US 202 Parkway project. The expected reduction of traffic through the municipalities was considered and recommendations promote improved mobility conditions for pedestrians, bicyclists, and motorists; pedestrian-oriented streetscaping features, and placemaking strategies. The proposed traffic lights, trails, sidewalks, and crosswalks were incorporated into this planning study.

Greenway and Trail Planning in Adjacent Municipalities

Local and regional trail initiatives in municipalities surrounding the project study area were investigated to identify existing and planned trails and linkage potential to trails proposed in the three municipalities. The opportunities for linkage to adjacent municipalities are listed in Chapter 3. Doylestown Bike & Hike Committee is working with a consultant on a trail feasibility study, **Destination Peace Valley**, to explore the best route to link the existing system trails to Peace Valley County Park. The recommended connection route traverses communities of this project study area and has been incorporated into this plan.



Chapter 2

Public Input & Research

Citizen Participation

Greenway and trail projects, by their linear nature, affect many people. Communicating with citizens in the project area throughout the planning process is critical to gain a comprehensive understanding of the opportunities, benefits, and concerns related to greenways and trail development as well as to identify public needs related to trails and community linkages. The public participation process for the development of the Tri-Municipal Master Trail & Greenway Plan included four parts: working with an advisory committee, interviewing key people and organizations, hosting an open house, and holding three public meetings.

Advisory Committee

The Tri-Municipal Master Trail & Greenway Plan Advisory Committee was established to guide the planning process, act as a sounding board for ideas and strategies, provide input and guidance, and review the findings as the trail and greenway plan was developed. The Advisory Committee included representatives from the three participating municipalities.

Key Person Interviews

Key person interviews were conducted throughout the planning process to provide critical insight into the concerns and issues of developing a trail and greenway system. Interviewees were identified by the Advisory Committee and included utility companies, the Central Bucks School District, Bucks County Conservation District, municipal staff, local police, SEPTA, Bucks County Planning Commission, bicycle shops and biking enthusiasts, the Heritage Conservancy, and others. In addition to these interviews, on-site meetings were held in each municipality with the municipal manager, to obtain information and explore a partnership/ multi-municipal agreement for the long term cooperation to develop and maintain the trail system.

Open House

An open house was held to present the Greenway Plan and the Conceptual Trail Plan to interested citizens. The open house was publicly advertised and held at the Chalfont Borough Municipal Building. Approximately 32 interested citizens attended. Graphic displays included the trail and greenway vision and goals, the Greenway Plan, illustrations of typical trail cross-sections, the Conceptual Trail Plan, the Pilot Trail Plan, and graphic renderings of trail development opportunities. The consultant team members were available to provide background information and answer questions. Attendee input was actively sought and a short survey was also available for citizens to record their thoughts. The survey findings are summarized in Appendix B of this report. Following the two-hour open house a power-point presentation was provided to describe the proposed greenway and trail plan.

Public Meetings

Public meetings were held in each of the three communities at the conclusion of the planning process to present the findings, recommendations, and strategies for implementation of the Tri-Municipal Master Trail & Greenway Plan.

Findings of the Public Participation Process

General

- The citizens of the region are active and engaged in hiking and bicycle planning, development and programming efforts.

- The majority of citizens that provided input to this project have a comprehensive knowledge of the benefits of trails and greenways.
- The success of the Doylestown Community Bike & Hike System and the Montgomery County Bicycle Trail System appear to be a major positive influence on public attitudes about trails and greenways.
- The healthy benefits of trail use and walking and biking are important for the community. Walking and bicycling are not currently convenient or safe throughout the three communities.



Trail and Greenway Considerations

- Citizens want to be able to hike and bike to Peace Valley Park. Peace Valley Park is a major bicycle and walking destination in the region with the wonderful trail around Lake Galena that was a major undertaking of the Bucks County Park Department.
- There are crosswalks painted on Park Avenue to promote safe connections to North Branch Park.
- The Bucks County Greenway and Open Space survey found that 64 percent of the respondents indicated that on-road bike lanes are needed.
- There is not enough parking at Peace Valley Park.
- There is no need to connect to the north side of Peace Valley Park as the land use north of the park is agriculture.
- The extension of Bristol Road, between Butler Avenue and Park Avenue has been debated and considered for some time and is a desired connection by the local municipalities.
- SEPTA is open to the development of parallel trails within its right-of-way under certain circumstances and with the implementation of specific safety accommodations.
- There are avid cyclists in the area that commute to work by bicycle.
- The trail system needs to accommodate a range of bicyclists including “A”, “B”, and “C” riders. Group A includes Advanced Bicyclists who are experienced riders with a level of comfort operating in traffic conditions. They use the existing roadway system and operate at maximum speed with minimum delay. Require minimal operating space on the roadway or shoulder to reduce the need for either the bicyclist or the motor vehicle operator to change position when passing. They are best served by wide outside lanes on urban arterials and collectors as well as usable shoulders on rural highways. Group B includes basic bicyclists who are casual or new adult or teenage riders. They are less confident of their ability to operate in traffic without special provisions for bicycles. They prefer low-speed, low traffic-volume streets or designated bicycle facilities. Group B bicyclists are best served by extra operating space when riding on the roadway and ensuring low speeds on neighborhood streets. Group C bicycle riders include children and pre- teens who may not comply with traffic regulations. Parents usually monitor their roadway use. They (and their parents) prefer residential streets with low motor vehicle volumes and speed limits, and well-defined separation of bicycles and motor vehicles or separate pathways. Group C bicycle riders are best served by ensuring low speeds on neighborhood streets; extra operating space when riding on the roadway or facilities separated from motor vehicle traffic; a network of designated bicycle facilities (bicycle lanes, paved

shoulders, side- street bicycle routes, shared use paths, and rail trails); and riding on a sidewalk where pedestrians are not endangered or when pedestrian activity is low.

Safety

- The need for safe walking and bicycling opportunities was cited as important in the area.
- Many of the roadways in the project area are narrow, heavily traveled, and have narrow or no shoulder to accommodate non-motorized travelers.
- Safe walking opportunities should be developed to get students to the schools in the community.
- Several roads in the area are dangerous for pedestrians and bicyclists, in present conditions. Route 202 – Butler Avenue has a history of car and bicycle accidents.
- Trails that connect to parks where youth athletic activities occur will help to alleviate parking problems. There is an ongoing safety concern with children crossing between parked cars on local streets at athletic events.

Environmental Protection

- There are significant PNDI (Pennsylvania Natural Diversity Inventory) hits within the study area.
- The Bucks county Conservation District suggests the preferred width of 50'-100' for riparian buffers in the project area.
- Stream erosion is a concern.
- Pine Run Reservoir is a secondary water supply.
- A water quality based watershed assessment was recently completed for the North Branch Neshaminy Creek. The North Branch Watershed Association provides speakers on watershed conservation, hosts annual stream clean-ups and special events, and coordinates other activities to protect the natural resources of the watershed.
- Peace Valley Park is known for its bird habitat and is popular with birders.
- Bucks County Park Department views water quality as highest priority criteria when considering land acquisition.



Management

- The three municipalities formed a partnership to undertake this planning project. Continuing this partnership for the development and operation of the Tri-Municipal Trail & Greenway system would be advantageous in terms of pooling resources to do more at less cost and without duplication of effort. Details would need to be worked out on roles, responsibilities, decision-making and communications. The Tri-Municipal municipalities have a varying level of resources to maintain trails. All would need to commit staff time and resources to ensure that the trails have proper maintenance for health, safety, and appearance. Chalfont Borough has a small staff that maintains existing trails as part of park maintenance. The maintenance of markings on the on-road bicycle lanes and symbols would be done in conjunction with their street work. New Britain Borough has limited resources in terms of staff and budget to maintain parks and recreation facilities including trails. New Britain Township has the most resources and staff of the three municipalities. It is essential that a fair and equitable way of managing the trail system be established in order to achieve a seamless trail system that is a community asset.

Consideration could be given to expanding the partnership with Doylestown, Hilltown, and Plumstead as some relationships regarding the performance of trail maintenance tasks may make more sense with these entities.

Financing

- Financing has two concerns: the cost of developing the trail system and the cost of operating the trail system once developed. The Doylestown Bike & Hike System has served as an example which shows that the trail is developed over time. In Doylestown's case, about one mile of trail per year was developed over the 18 years of planning.

Communication and Outreach

- A variety of key stakeholders identified the need for enhanced and timely communication to facilitate further planning, development, operation, and management of the Tri-Municipal Trail system. It may be possible to ultimately look at the trail network pieces in the Tri-Municipal area, the Doylestown community, Buckingham, Warrington, and other municipalities as a Central Bucks system. This would take a great deal of discussion and communication.

Walking and Biking & Trail and Greenway Research and Observations

National Trends and Statistics

- Communities where citizens can walk or bike safely to shops, schools, parks, and other destinations are often referred to as livable communities. These communities include accommodations for walking, bicycling, and exercise and provide the following benefits:
 - Reduce congestion on heavily traveled motorized transportation routes.
 - Promote a healthy lifestyle of walking and cycling to destinations.
 - Reduce air pollution from vehicle emissions.
 - Provide a low-cost means of local transportation.
 - Provide opportunities for trail-based recreation.
- A recent survey found that 71 percent of Americans report that they would like to bicycle more, while 53 percent favor increasing federal spending on bicycle lanes and paths.¹
- The National Sporting Goods Association ranked walking for exercise as the highest sport by participation in 2009 with 93.4 million participants. The ranking considered 45 sports. Bicycle riding was ranked as seventh with 38.1 participants.

Regional and Local Trends and Statistics

- The success of the Doylestown Community Bike & Hike System has provided close to home evidence of the benefits of biking and walking. Since the planning and implementation effort began in 1992 - the all volunteer committee has spearheaded the development of approximately 18 miles of bike trails in and around Doylestown.
- The design for The Parkway includes an independent 12-foot wide shared-use trail for walkers and cyclists and five-foot wide paved shoulder/bicycle lanes adjacent to the cartway as significant elements of the overall transportation design.

¹ Top 10 Facts on Bicycling and Walking in the United States. Washington : American Bikes, 2009. (No authors given.)

- A 2009 statewide survey into residents’ outdoor recreational activity, attitudes and opinions found the following:
 - “Parks or trails account for a notable portion of Pennsylvanians’ physical activity. Nearly three-fourths of survey respondents indicated that they walk or ride a bike in their neighborhood. They are more likely to walk or bike for fun or fitness than for commuting to work or shops, parks or other places in their community. Over two-thirds of those with school-aged children indicated that their children never walked or biked to school. However, nearly half stated they would like their children to walk or bike to school more frequently.”²
 - “When asked what kinds of recreational facilities should be provided more widely or in greater numbers, respondents cited bicycle lanes more often (69%) than any other type of recreational resource (respondents could name multiple types of facilities). Similarly, a desire for more bicycle paths or trails was indicated by over half (55%) of survey participants.”³
 - Residents of the Southeast Region (includes Bucks County) report the need for more facilities as follows: Walking paths (46.4%), Jogging/Fitness Trails (48.2%), Bicycle Paths(57.4%), and Bike Lanes (73.2%).⁴
- Walking and bicycling improve personal health and fitness. Since 1980 national obesity rates in children and adolescents have more than doubled. In Pennsylvania, 21% of children and adolescents were found to be overweight in 2003.⁵
- Today only 10% of children walk to school versus 80% in their parents’ generation.⁶
- Many studies demonstrate that greenways increase nearby property values. In turn, increased property values can increase local tax revenues.⁷

Tri-Municipal Trail & Greenway Vision and Goals

The following vision and goals were established for the Tri-Municipal Trail and Greenway.

Vision

Chalfont and New Britain Boroughs and New Britain Township are communities where residents can safely travel to community and regional destinations via a network of non-motorized access ways. The access ways promote a healthy lifestyle of walking and bicycling for transportation and recreation. Natural corridors are incorporated into the network to protect water, quality and scenic and natural resources.

Goals

- Provide close to home places to walk and bicycle.
- Provide trail connections to local and regional destinations (Peace Valley Park-Lake Galena, the schools, the Parkway).
- Coordinate with other trail and greenway planning efforts to expand the network regionally.
- Protect the riparian corridors of the Neshaminy Creek and its tributaries.

² The 2009 – 2013 Statewide Comprehensive Outdoor Recreation Plan – Pennsylvania Outdoors – the Keystone for Healthy Living, Commonwealth of Pennsylvania, 2009, p. 17-18.

³ The 2009 – 2013 Statewide Comprehensive Outdoor Recreation Plan, p. 20.

⁴ The 2009 – 2013 Statewide Comprehensive Outdoor Recreation Plan, *Outdoor Recreation in Pennsylvania Resident Survey*, p. 97.

⁵ *Better Models for Development in Pennsylvania*, Ed McMahon and Shelley Mastran, The Conservation Fund, 2005, p 120.

⁶ *Better Models for Development in Pennsylvania*, p. 121.

⁷ *Better Models for Development in Pennsylvania*, p. 121.



Chapter 3

Resources of the Tri- Municipal Area

The natural and man-made resources of Chalfont Borough, New Britain Borough, and New Britain Township were explored as part of the planning process. Natural resources are divided into water and land resources. Man-made resources include transportation and utility resources as well as historic and cultural resources. Existing parks, trails, and community destinations which are important to consider when developing a trail network are also identified as part of man-made resources.

Water Resources

Streams

The streams within the three municipalities are the most defining natural features of the area. The North Branch Neshaminy Creek and West Branch Neshaminy Creek converge south of Butler Avenue in Chalfont Borough to form the Neshaminy Creek. Important tributaries to the Neshaminy and its branches are Reading Creek, Hardiakan Creek, Cooks Run, and Pine Run. The three Neshaminy Creeks and Cooks Run are classified by the Pennsylvania Department of Environmental Protection, under Title 25. Environmental



Protection - Chapter 93 Water Quality Standards, which establishes protected water uses. Neshaminy Creek and the North Branch Neshaminy Creek between the Lake Galena Dam and the confluence with the North Branch are classified as TSF, MF. The West Branch Neshaminy Creek and the North Branch Neshaminy Creek from the source to Lake Galena Dam are classified as WWF. Cooks Run is classified as a WWF, MF.

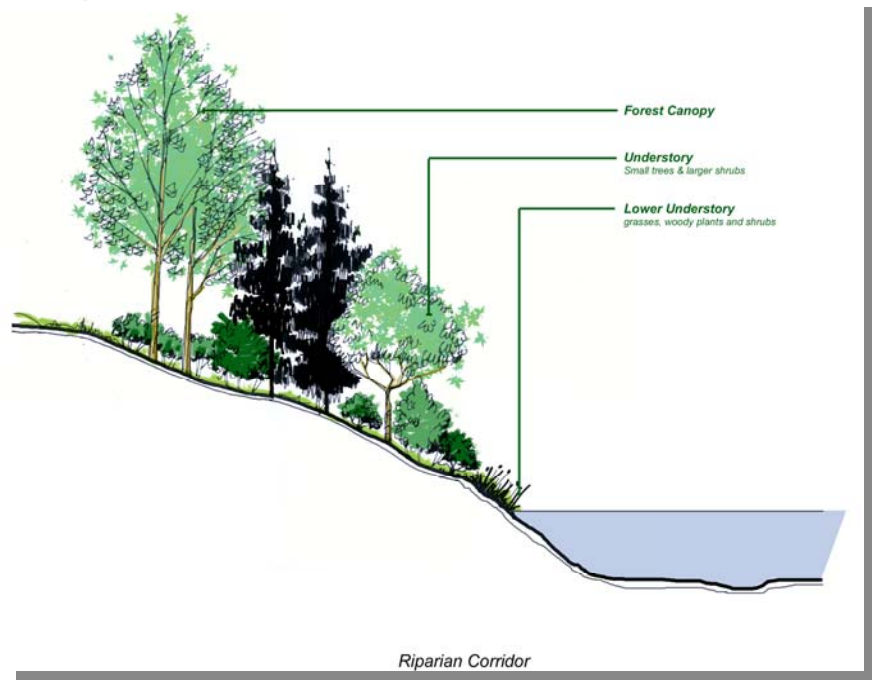
- TSF – Trout Stocking: Maintenance of stocked trout from February 15 to July 31 and maintenance and propagation of fish species and additional flora and fauna which are indigenous to a warm water habitat.
- MF – Migratory Fishes: Passage, maintenance and propagation of anadromous and catadromous fishes and other fishes which ascend to flowing waters to complete their life cycle.
- WWF – Warm Water Fishes: Maintenance and propagation of fish species and additional flora and fauna which are indigenous to a warm water habitat.

Riparian Buffer Corridors

Critical to healthy streams and rivers are riparian buffer corridors, the vegetated land contiguous to the stream banks and riverbanks which protects the watercourse and promotes water quality. Riparian corridors provide ecological benefits which include:

- Stabilize Stream Banks – Deep-rooted vegetation binds the soil along stream banks, stabilizing the banks and preventing erosion during periods of high runoff.
- Improve Water Quality – Vegetation along streams traps and treats sediment, nutrients, and pollutants before they enter the stream or groundwater.
- Enhance Wildlife Habitats – Trees, shrubs, and grasses along streams provide habitat, shelter, and travel corridors for many aquatic and land species.
- Reduce Flooding and Sedimentation – Vegetation retains stormwater runoff longer, improves infiltration, and filters sediment from flowing downstream during floods.
- Keep Streams Cooler and Healthier – Shade from riparian buffers cools the stream waters, increasing the food, oxygen, and habitat for aquatic life.
- Enhance Scenery – Vegetation along streams adds beauty and diversity to the landscape.

There are miles of streams in the three municipalities that that could benefit from enhanced and protected riparian corridors. In addition to the benefits listed above, studies show that riparian buffers have a positive impact on property values.¹ Anglers as well, know the value of shaded streams which provides quality fishing habitat. Streams with forested riparian buffers are as much as 10 degrees cooler than streams through meadows which, is an important habitat consideration for native brook trout which require water temperatures below 68 degrees to survive.²



Wetlands

Most of the streams in the three municipalities have wetlands located along the steam corridors. Wetlands are areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetland are identified by unique soils (hydric soils), by plants adapted to life in wet environments (hydrophytic vegetation), and by the presence of water (hydrology) during the growing season.

¹ Schuler, T.R., Site Planning for Urban Steam Protection. Center for Watershed Protection, Ellicott City, MD 1995.

² Montgomery County Planning Commission, Benefits of Riparian Corridor Conservation, Montgomery County, PA.

Wetlands should be protected for their numerous ecological benefits including filtering pollutants from stormwater run-off, groundwater recharge, wildlife habitat, flood and sediment control, and stormwater management. They are essential to maintaining a sound ecosystem. Wetlands shown on the Tri-Municipal Trail & Greenways Plan – Trail Plan are GIS data illustrating National Wetlands Inventory (NWI) wetlands. NWI wetlands mapping provides generalized locations for wetlands and should not be used for regulatory or jurisdictional wetland identification.

Floodplains

Floodplains are lands contiguous to stream corridors that are subject to flooding. The 100-year floodplain is the base that the Federal Insurance Administration uses for purposes of floodplain management measurement. The 100-year floodplain is the level of flood waters expected to be equaled or exceeded every 100 years on average, or in other words, a flood of a magnitude that has a one-percent chance of happening in any year. Each of the named streams and most of the smaller tributaries in the municipalities have designated floodplains.



Floodplain areas should be included within the limits of designated greenways and protected for the ecological benefits they provide. Floodplains provide areas for groundwater infiltration and riparian buffer vegetation which stabilize stream banks and filters sediment. Additionally, floodplains provide a natural reservoir for runoff and carry flood waters and should not be developed or built upon with structures that could diminish the carrying capacity of the floodplain.

Water Bodies

Lake Galena, a man-made lake created by damming the North Branch Neshaminy Creek, is located in New Britain Township. The lake is approximately 365 acres and three miles long in size and enjoyed for recreational



boating and fishing as part of Bucks County Peace Valley Park.

A second impoundment on Bucks County lands is the Pine Run Reservoir, located just outside of the study area in Doylestown Township. This reservoir was created by damming Pine Run for flood control and is not open to public use. Additionally, there are several small ponds on private lands throughout the communities.

Land Resources

Topography

The topography of the municipalities varies from shallow sloping lands in the northwest portion of New Britain Township to the steep slopes along the Neshaminy Creek in southern New Britain Township. The highest elevation in the study area is near the intersection of Upper Church Road and Upper States Road (elevation 640' +/-) and the lowest elevation is along the Neshaminy Creek (elevation 220' +/-) where it flows into Doylestown Township. The land on the north and south sides of Lake Galena are some of the more steeply sloped in the study area with slopes ranging from 5-percent to 20-percent. Along the Neshaminy Creek, east of PA Route 152 are steep slopes what range to 40-percent.

Slopes over 15 percent are considered steep sloping areas and are prone to erosion and are difficult to build upon. If eroded, these slopes can produce significant erosion and sediment pollution that flows into waterways, degrading the health and quality of streams. Wooded cover protects steep areas by stabilizing soils with root systems and slowing runoff to maximize infiltration and groundwater recharge.

Woodlands

Central Bucks was predominately farmland and woodland prior to the influx of suburban development and woodlands are now limited to scattered woodlots and steep slope areas along stream corridors. Small woodlands are scattered along the slopes surrounding Lake Galena and along the steep slopes of the Neshaminy Creek in southern New Britain Township.

Protecting the wooded areas is important from a scenic perspective as well as from a natural resource protection perspective. Woodlands provide diversity to the landscape and whatever the season, provide visual interest and beauty. Woodlands stabilize slopes; provide habitat for shelter, nesting, and food for wildlife; protect groundwater by protecting headwaters and filtering stormwater runoff; and improve air quality and sequester large amounts of carbon dioxide from the atmosphere every year. Woodlands provide critical habitat for many interior forest birds and habitat loss and fragmentation are cited by the Audubon Society as one of the most serious threats facing birds in Pennsylvania.

Pennsylvania Department of Conservation and Natural Resources has launched TreeVitalize, a public-private partnership to increase public awareness of the importance of community trees. The five-county region including and surrounding Philadelphia was found to have suffered a loss of 8% of heavy tree cover (-34,000 acres) in only 15 years. A reduction in tree canopy cover translates to an increase in storm water runoff, an increase in energy costs, and a loss of air quality.³



³ <http://www.treevitalize.net/aboutus.aspx>, accessed 10/12/10.

Natural Areas Inventory

The Heritage Conservancy completed the Natural Areas Inventory for Bucks County in 1999. The inventories document the unique plants, animals, natural ecological communities, and other important natural resources in the County. The inventory includes mapping, discussion of important natural resources within the Counties, and prioritization of resources for protection. There are four priority inventory sites in the project study area as identified in the chart below.

Natural Resource - Location	Description	Notable Features
Neshaminy Creek – Route 202 to Bristol Road, New Britain Township and Chalfont Borough	Extensive north-facing forested slopes along the south side of a broad forested floodplain with numerous back channels and seasonally flooded wetlands on the north side	Rich hemlock – mesic hardwood forest Sugar maple – basswood forest Sycamore – river birch – box-elder floodplain forest Spatterdock – water lily – pondweed aquatic bed
Peace Valley Park, New Britain Township	Lake Galena contains a population of redbelly turtles. Because of the numbers and diversity of waterfowl present through the year, the Nature Center area at the east end of the lake has been designated by the National Audubon Society as an Important Bird Area. Most of the land surrounding the lake is successional forest and old fields. Two populations of a stat endangered plant are present.	Audubon Society Important Bird Area Red oak – mixed hardwood forest Bottom land oak – mixed hardwood palustrine forest Sugar maple – basswood forest Grass-leaved rush (<i>Juncus biflorus</i>) Redbelly turtle (<i>Pseudemys rubriventris</i>)
Forest Park woods and pond, Chalfont Borough, New Britain Borough, New Britain Township	The site includes a small manmade pond which contains a population of a rare plant, Capitate spike-rush, possibly introduced in sand that appears to have been brought to the site. Most of the site is covered in approximately 25 acres of mature and successional forest extending from the Pine Run Elementary School to Pine Run.	Pond Pine Run Bottomland oak – mixed hardwood forest Capitate spike-rush (<i>Eleocharis olivacea</i>)
Pine Run Reservoir, Doylestown Township (just east of the study area)	The lake is surrounded by disturbed old fields that are mowed several times a year, thickets dominated by Multiflora rose (<i>Rosa multiflora</i>) an invasive species, and forest ranging from highly disturbed to one tract of fairly intact mature forest.	Successional old fields Red oak – mixed hardwood forest Smartweed dodder (<i>Cuscuta polygonorum</i>)

A PNDI (Pennsylvania Natural Diversity Inventory) record search was completed to identify any threatened and endangered and/or special concern species and resources within the project area. PA Department of Conservation and Natural Resources listed six species as *Special Concern Species*, one species as *Threatened*, and two species as *Endangered*. The PA Game Commission listed one species as Threatened. The PA Fish and Boat Commission listed one species as Threatened. The PNDI search is an initial indication of presence of a species of conservation concern. Further site specific review is necessary to identify potential impacts.

Man-Made Resources

Transportation Network

Three main transportation corridors bisect the three municipality study area: US Route 202/Butler Avenue, PA Route 152/Limekiln Pike/Main Street (Chalfont Borough), and the SEPTA Lansdale/Doylestown Regional Rail Line. These roads and rail line are major corridors that act as barriers to safe bicycle and pedestrian transportation in the project area. Additional roadways with significant traffic include County Line Road, Upper State Road, PA Route 313/Swamp Road, and Ferry Road.

Route 202 Parkway

The east-west transportation options will change shortly with the completion of the US Route 202 Parkway project. This limited access highway initiative will provide a regional link between Doylestown Route 611 and Route 202 interchange and Route 63, Welsh Road in Montgomery County. The Parkway, when completed, will reduce the traffic volume on Butler Avenue through the three municipalities. Pedestrian and bicycle accommodations are part of the proposed improvements associated with the highway, including a parallel trail. Although the trail is located south of the three municipalities, it will be a major east-west trail in the region and connections to the Parkway trail will facilitate connections to destinations throughout the Central Bucks and eastern Montgomery County region. Parkway pedestrian and bicycle facilities in close proximity to the project area include:

- A 12-foot wide trail will be constructed parallel to the Parkway creating an 8.4 mile east-west off-road trail. Between the Bristol Road intersection and the intersection with Lower State Road the trail is on the north side of the Parkway. From the Bristol Road intersection west to County Line Road and beyond, the trail is on the south side of the Parkway.
- A trailhead north of the Parkway/Bristol Road intersection including a parking area and access trails to a signalized intersection.
- The intersection of Limekiln Pike and the Parkway will be signalized with crosswalks to promote safe pedestrian and bicycle crossing.
- Detweiler Road, which intersects with Upper State Road, is converted to a dead-end road with accommodations for emergency access and trail access to the Parkway trail.
- The intersection with County Line Road will be signalized.

SEPTA Lansdale/Doylestown Regional Rail Line

The SEPTA Lansdale/Doylestown Regional Rail Line traverses the three municipalities with a route that enters New Britain Township at Walnut Street and extends parallel to Walnut Street, Railroad Avenue, and Sunset Avenue to the center of Chalfont Borough. The rail corridor crosses under Main Street, Route 152 and continues east somewhat parallel to Butler Avenue, crossing from the north side to the south side at an at-grade crossing at the intersection of Butler Avenue and Bristol Road. The trail corridor continues east through lands of Delaware Valley College and eventually to its eastern terminus in Doylestown Borough. There are four train stations in the project area: Delaware Valley College (on campus south of New Britain Road), New Britain (east of Tamenend Avenue South), Chalfont (on Sunset Avenue west of Route 152), and Link Belt (intersection of County Line Road and Walnut Street, in Hatfield Township, Montgomery County). The Chalfont and New Britain Stations provide parking for bicycles as well as cars.

SEPTA has worked with other municipalities to develop bike trails within its right-of-ways. SEPTA leases lands for a bike trail for a nominal amount with the understanding that the trail would be a conditional use pending potential use of the rail corridor. SEPTA requires a ten foot fence to separate the rail corridor from the bike trail. Trail maintenance would be by the municipality. SEPTA's right-of-way is



typically 50-foot wide and in the study area significant portions are in cut or fill, limiting its potential to accommodate an adjacent trail corridor. SEPTA provided copies of the Val Maps for the rail corridor in the study area. These maps were developed in the early 1900's when the rail corridor was developed. Although much of the information on the maps is dated like adjoining property owners and roads, the maps do generally show where the rail line is in cut and fill, locations of bridges, and the location of at-grade drive/farm crossings. This information informed the suggested trail routes that are parallel or cross the SEPTA right-of-way.

Utilities / Infrastructure

Easements and rights-of-way for public utilities cross through a significant portion of the three municipalities. Although these easements and rights-of-way are for the specific infrastructure, they were reviewed for their potential to expand the trail system if additional rights of use can be obtained.

Texas Eastern Pipeline

Texas Eastern Pipeline has a natural gas line right-of-way that traverses the project area. The right-of-way extends as a straight line from the northwest corner of New Britain Township just north of



Trewigtown Road through the three municipalities to a point just north of the Keeley Avenue intersection with Sioux Road in New Britain Borough. This right-of-way is typically clear of vegetation. Texas Eastern Pipeline does not own the land so any use of the right-of-way for trails would require working with Texas Eastern Pipeline and the property owners. Texas Eastern has allowed trails within their right-of-ways in some instances and do make provisions for trails crossing their right-of-way. Trail must cross at 90-degrees where possible and can never run on top of pipeline. The right-of-way typically measures 25-foot from either side of the pipe and throughout the study area, two pipelines are located approximately 25-feet apart.

Public Sewer

A significant portion of the three municipalities are connected to public sewer. New Britain Township and Chalfont Borough are served by the Chalfont-New Britain Township Joint Sewage Authority. New Britain Borough is served by the Bucks County Water & Sewer Authority. Sewer interceptor lines run parallel to the major stream corridors in the three municipalities and include: West Branch Inceptor, Neshaminy Creek North Branch Interceptor, Pine Run Interceptor, Neshaminy Creek Interceptor, and the Cooks Run Interceptor. These major sewer lines are located in easements on both public and private property. These easements are for the sewer line and maintenance of the line and not for public access. The recent replacement of the West Branch Interceptor included developing a trail within the clearing for the new sewer line on Chalfont Borough lands. Trails are typically compatible with sewer lines as they provide a maintained route along the corridor that provides convenient access for sewer line monitoring and maintenance.

Overhead Electric

There is a major overhead electric right-of-way that crosses the northeast corner of New Britain Township. The right-of-way contains large electrical transmission towers and overhead electric lines.

Historic and Cultural Resources

Historic and cultural resources are important resources of a community. Where possible, trails should link to these resources to provide convenient access. The following table lists the historic district and historic buildings in the three municipalities.



Historic Resource	Historic Resource Description
Chalfont Historic District	Historic Significance: Architecture – classical revival, gothic revival. District roughly bounded by Chestnut Street, Park Avenue, Main Street, Butler Avenue, and Sunset Avenue.
James, Morgan Homestead	Historic Significance: Architecture – federal. Location: on Ferry Road in New Britain Township
Pine Valley Covered Bridge	Historic Significance: Event, Architecture/Engineering. Location: across Pine Run connects Keeley Ave., New Britain Borough and Old Ironhill Road, New Britain Twp.
New Britain Baptist Church Cemetery	The Cemetery is the resting place for soldiers of the Colonial Wars, the Revolutionary War, The War of 1812, the Civil War, and World Wars I and II. Legend has it that there are also some Indian graves scattered throughout the cemetery. The oldest readable marker in the cemetery is dated August 14, 1748.

Trails

There are several existing trails in the project area that form the initial segments of a comprehensive trail system. These trails vary from narrow bituminous walking trails to trails designed for multi-users.

New Britain Township

New Britain Township has developed trails in several of its parks and open space for recreation purposes.

New Britain Township Parks	Trail Description
North Branch Park	Trail extends throughout the park site. A bridge connects park trails to the Lindenfield Parkway.
West Branch Park	Existing trails and proposed trails extend throughout the park.
Highlands Park	Existing trail encircles the park property.
Forest Park Open Space	A small trail extends from Forest Park Drive, crosses Pine Run with a pedestrian bridge, and connects to Cayuga Circle.
Lexington Park	Natural resource park with land along Reading Creek.

Chalfont Borough

Chalfont Borough has seized the opportunity of developing trails within the municipal-owned parks and open spaces over the years resulting in a network of existing and planned trails that extend along portions of the West Branch Neshaminy Creek and Neshaminy Creek.

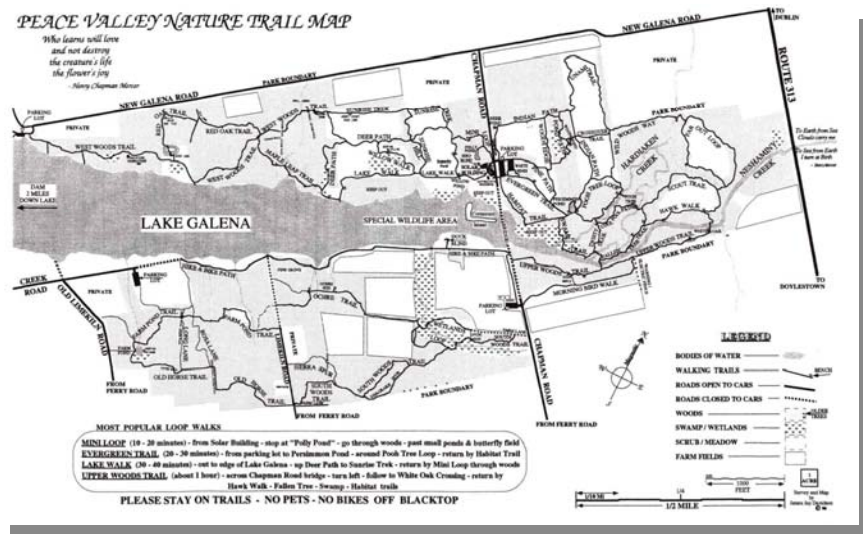
Chalfont Borough Parks	Trail Description
Twin Streams Park	Proposed trail extends from Butler Avenue, through the park to connect to a proposed trail in Blue Jay Park via a pedestrian bridge across North Branch Neshaminy Creek.
Blue Jay Park	Proposed trail extends from the Cardinal Road access to the proposed pedestrian bridge crossing the North Branch Neshaminy Creek
Krupp Park	Existing narrow trail extends to pedestrian bridge across the West Branch Neshaminy Creek to connect to trails in Kelly Park. The bridge is not accessible.
Kelly Park	Existing narrow trail extends from Oak Avenue through the park to Butler Avenue and to the pedestrian bridge over the West Branch Neshaminy Creek to access Kelly Park.
J. Clyde Derstine Memorial Park	Paved trail extends from Oak Avenue to Fairview Park and along the sewer line to Skyline Drive.
Lenape Landing	Trail along the Neshaminy Creek with access at Landing Way and Forest Drive.
Chestnut Street Park	Trail within park.
Fairview Park	Open space with paved walking trail along southwest boundary and connects to trail in J. Clyde Derstine Memorial Park.
Lindenfield Parkway	Sidewalk through Parkway island on pipeline right-of-way. A bridge extend the trail across the North Branch Neshaminy Creek to connect to trails in North Branch Park.

New Britain Borough

Currently New Britain Borough has no developed trails. Informal grass trails are mowed at Wilma Quinian Nature Preserve and there are nature trails in Covered Bridge Park. A New Britain Borough Community Bike and Hike Path Committee has recently finalized the New Britain Borough Community Bike and Hike Path Master Plan which proposes trail connections throughout the Borough. The recommendations of the Master Plan have been incorporated into this Tri-Municipal Trail & Greenway Plan.

Bucks County

Bucks County has an extensive network of trails at Peace Valley Park, located in New Britain Township. Multi-use trails surround the parks dominant feature,

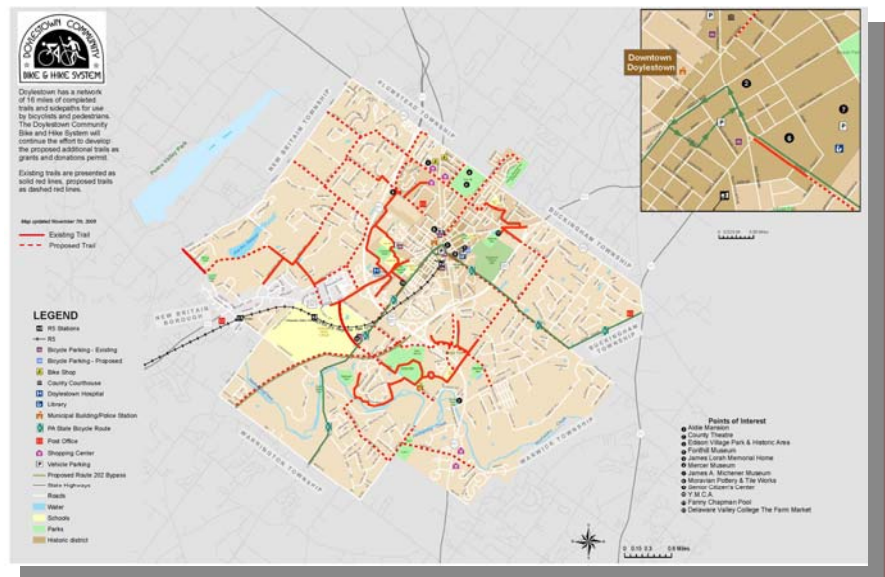


Lake Galena, on three sides, with a missing trail link on the south side between the parking area east of Old Limekiln Road and the parking area west of Cheesefactory Road. Extensive nature trails are located at the eastern end of the park near the Nature Center.

Surrounding Municipalities

Existing and proposed trails in surrounding municipalities were researched to identify opportunities for potential links that would expand the Tri-Municipal Trail system regionally beyond the borders to the three municipalities.

- Doylestown Borough & Township – These communities have worked jointly since 1992 to develop a multi-use trail system. The Doylestown Community Bike & Hike System trails currently extend throughout the two



municipalities and additional trail links are planned for the future. Currently there are five trails that end at the Doylestown Township border with either New Britain Borough or Township. The Doylestown Community Bike & Hike initiative goes beyond trail development and includes education of pedestrians, bicyclists, and motorists and preparation of grants for funding trail planning and development projects. The Doylestown Community Bike & Hike System links to regional destinations including Delaware Valley College, Doylestown Hospital, and Central Park.

- Warrington Township – The Parkway (Route 202) trail traverses the northwest portion of the municipality, just southeast of Upper States Road, the border with New Britain Township. No other trails in Warrington Township are proposed to link to the Parkway or New Britain Township based on the Conceptual Trails Master Plan map.
- Plumstead Township – Plumstead Township has no existing or planned trails in the vicinity of New Britain Township.
- Hilltown Township – Hilltown Township does not have existing trails in the proximity of New Britain Township. The Hilltown Township Open Space Plan identified three future trail links to Peace Valley Park: via Meyers Road, Old Limekiln Road, and the overhead electric right-of-way.
- Hatfield Township, Montgomery County – Hatfield Township does not have any trails near the New Britain Township border.
- Montgomery Township, Montgomery County – Montgomery Township does not have any trails near the New Britain Township border. The Parkway extends into Montgomery Township from Warrington Township, near the southwest portion of New Britain Township.

Parks and Open Space

There are municipal parks and protected open space in each of the three municipalities of the study area. The parks are important destinations to consider when developing a trail system.

Chalfont Borough Parks	Description
Twin Streams Park	Undeveloped open space located at the confluence of the West Branch Neshaminy and North Branch Neshaminy Creeks. The park is currently being master planned.
Blue Jay Park	Existing park with playground, basketball court and open space along the North Branch Neshaminy Creek and Neshaminy Creek.
Krupp Park	Passive park behind the municipal office along the West Branch Neshaminy Creek.
Kelly Park	Passive park opposite Krupp Park along the West Branch Neshaminy Creek.
J. Clyde Derstine Memorial Park	Passive open space with access from Skyline Drive and Oak Avenue.
Lenape Landing	Passive park along the Neshaminy Creek.
Chestnut Street Park	Active park with playground and athletic field.
Lindenfield Parkway	Boulevard open space at Lindenfield Parkway.
Holland Park	Open space parcel.
Swartley-Winkleman Park	Active park with athletic fields, concession stand, and parking.
Patriot Drive	Open space along North Branch Neshaminy Creek.

New Britain Township Parks	Description
North Branch Park	Active park with athletic fields, playground equipment, basketball courts, and walking trail along North Branch Neshaminy Creek.
West Branch Park	Active park with athletic fields and playground along the West Branch Neshaminy Creek. Additional park area proposed for athletic fields on west side of Schoolhouse Road.
Highlands Park	Active park with playground, basketball courts, and small athletic field.
Forest Park Open Space	Open space with playground area.
New Britain Walk Open Space	Open space with trail adjacent to Butler Elementary School.
Pheasant Run Playground	Playground located in Fairwoods development.

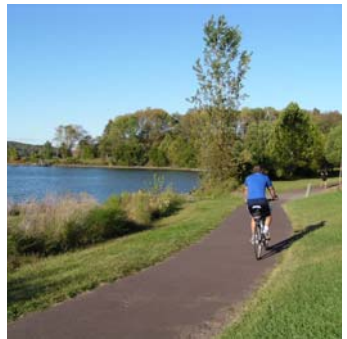
New Britain Borough Parks	Description
Covered Bridge Park	Community park with active and passive areas located along Pine Run. Facilities include pond, playground equipment, pavilion, grills, and open field.
Wilma Quinian Nature Preserve	Nature preserve for passive enjoyment of the natural setting along the Neshaminy Creek

Schools

Schools are important destination within a trail network. Providing opportunities for children to safely walk to school via trails and sidewalks has a direct correlation with their fitness and wellness and lessens transportation costs. There appears to be an anecdotal relationship between the decline in the number of children walking to school with the obesity rates in children. The following schools are located within or near the project area.



Schools	Description – Linkage Opportunity
Butler Elementary School	Located adjacent to the New Britain Walk Open Space parcel.
Pine Run Elementary School	Located adjacent to Forest Park Open Space parcel. Safe Routes to Schools project improvements along Route 202 – Butler Avenue to improve sidewalk accessibility to the school.
Unami Middle School	Located along the Neshaminy Creek and adjacent to Blue Jay Park and Lenape Landing.
Plumstead Christian School	Private school located across Callowhill Road from Peace Valley Park.
St Judes Roman Catholic School	Private school located along Route 202 – Butler Avenue
Delaware Valley College	Private college located in New Britain Borough and Doylestown Township. The SEPTA Lansdale/Doylestown Regional Rail Line traverses the campus.



Chapter 4

Tri-Municipal Master Trail & Greenway Plan

Creating a network of green corridors throughout a municipality is one effective means of protecting the character and landscape setting of a community. Greenways and trails provide an array of direct and indirect benefits that add to the quality of life of both a place and region. Protection of green corridors and open spaces provides numerous economic, social, transportation, recreation, environmental, education, and ecological benefits as identified below.

Benefits of Trails and Greenways

Social Benefits

- Increase quality of life.
- Provide access to historically and culturally significant features in our communities.
- Help to preserve the character and aesthetic appeal of a place or landscape.
- Improve health and wellness of greenway and trail recreation users.
- Provide significant new public places which can help to connect people and communities.
- Provide opportunities to reconnect with the natural environment and urban fabric of our communities.
- Heighten sensitivity to the natural environment by providing for interaction between people and nature.



Transportation Benefits

- Promote non-motorized transportation.
- Provide emergency access via trails to undeveloped areas.



- Provide safe alternative transportation routes for pedestrians and bicyclists which will lessen dependence on automobiles.
- Reduce roadway congestion through redistribution of users to alternative transportation routes.

Ecological Benefits

- Preserve and protect vital wildlife, plant, and aquatic habitats.
- Promote plant and animal species diversity.
- Improve air quality and reduce noise.
- Store and convey floodwaters.
- Protect natural areas.
- Connect fragmented landscapes.
- Clean up abandoned corridors.
- Provide corridors for wildlife migration and movement.
- Reduce stormwater damage and promote flood mitigation within protected floodplains.
- Serve as a filtering zone; wetlands absorb pollutants and nutrients and slow surface run-off.



Recreation Benefits

- Serve as sites for passive pursuits such as picnicking, fishing, and enjoying nature.
- Provide areas to jog, walk, bike, ride horses, and canoe.
- Connect existing and planned trails.
- Encourage ecotourism.
- Provide landscapes for environmental education.



- Provide connections between parks and other protected lands.

Economic Benefits

- Increase nearby property values.
- Precipitate new and expanded businesses related to greenway and trail use. New businesses will provide employment opportunities and revenues.
- Create tourist destinations which will generate expenditures on food, services, and lodging.
- Reduce damage and financial loss from flooding by providing buffer areas along stream and river corridors.

Input from citizens gathered throughout the planning process echoed many of the benefits listed above in their discussions of greenway and trail opportunities. The Tri-Municipal Trail & Greenway Plan explored opportunities to create trails and designate greenways in the three municipalities to harness these benefits and connect the communities.

Organizing Elements of the Trail & Greenway Plan

The 2001 Pennsylvania Greenways – An Action Plan for Creating Connections proposes that Pennsylvania will be connected by a state-wide network of greenways that will ultimately take the form of "hubs and spokes." The "hubs" of this network are the destinations and the "spokes" are the greenways and trail corridors connecting these destinations with the places where we live. The following hubs and spokes have been identified in the Tri-Municipal study area:

Hubs

Transportation

- Septa Station - Delaware Valley College
- Septa Station – New Britain
- Septa Station - Chalfont Borough
- Septa Station – Link Belt
- 202 Parkway Trailhead – Bristol Road

Schools

- Unami Middle School
- Butler Elementary School
- Pine Run Elementary School
- St Judes Roman Catholic School – 323 West Butler Avenue
- Plumstead Christian School – 753 New Galena Road
- Delaware Valley College

Recreation

- Peace Valley Park – Lake Galena
- Municipal Parks
- Lenape Valley Swim Club
- Central Park/Kids Castle – Doylestown Township
- Philadelphia Athletic Club

Commercial - Employment

- Village Square Shopping Center – Butler Avenue and County Line Road
- Chalfont Square Shopping Center – Rt. 202 and Moyer Road
- Chalfont Village Shopping Center
- Gingerbread Square Shops
- Byers’ Choice, Ltd.
- Highpoint Business Campus
- New Britain Business Park
- Delaware Valley College Farm Market

Other Destinations

- National Shrine of Our Lady of Czestochowa
- Peace Valley Winery
- Doylestown Hospital
- Pine Valley Covered Bridge
- Churches
- Restaurants

Spokes

- Existing trails
- Stream corridors
- Texas Eastern Gas rights-of-way
- Sanitary sewer easements
- Utility rights-of-way
- Railroad corridors
- Road rights-of-ways
- Sidewalks

Barriers

There are several barriers to greenway and trail development in the study area. The very resources that promote greenway potential also influenced land use and development patterns, resulting in barriers to connectivity. Although the SEPTA regional rail line conceptually presents an opportunity for connections along its right-of-way, the rail corridor creates a significant physical barrier to connections. The rail line traverses the three municipalities with a small percentage of the corridor at



a grade similar to the surrounding land. Most of the corridor in the study area is either in cut (below surrounding grade) or in fill (above surrounding grade) which divides the landscape and limits connectivity.

The two major transportation routes; Route 202 – Butler Avenue and Route 152 – Limekiln Pike form physical barriers that limit connections. The narrowness of Route 152 south of Route 202 is a limiting factor for trail accommodations. Additionally, the many streams form both barriers and connection opportunities. The Neshaminy Creek south of Twin Streams Park is contained within steep slopes on the western side of the stream corridor. These steep slopes, coupled with private ownership of surrounding parcels limits trail connections from the residential areas west of South Limekiln Pike.

One of the main functions of greenways, as trails for people movement, can be accomplished in spite of significant barriers through engineering solutions. Bridges can be built to connect a trail across a roadway or stream. Crosswalks and signalized intersections allow pedestrians and cyclists to cross busy roadways. The natural functions of greenways are not as adaptable. Greenways as wildlife corridors and preserves for habitat protection are limited by the presence of transportation routes that bisect and interrupt the continuity of the corridor.

The Tri-Municipal Trail & Greenway Plan has two components; trails and greenways. While these concepts are interconnected, and often share the same corridor, this planning project evaluates the opportunities and constraints of greenways and trails as separate entities.

Greenways

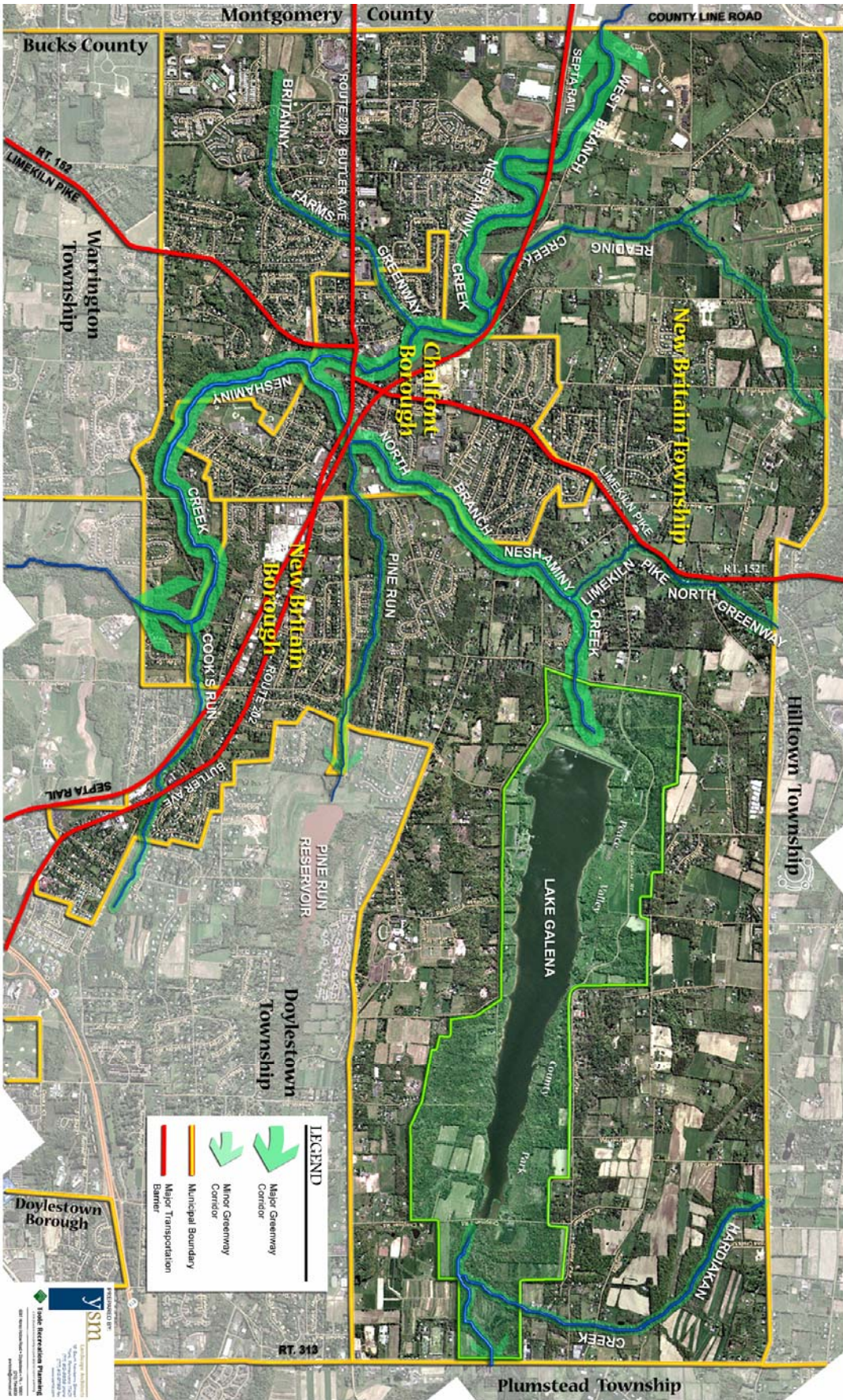
The greenway component of the Tri-Municipal Trail & Greenway Plan is the natural resource-based element that includes natural linear features. The geography of the three municipalities provides the basis of the Greenway Plan with the dominant stream corridors as the organizing landscape feature. The stream corridors form the “spokes” of the Tri-Municipal Greenway system. Three major greenway corridors have been identified with six minor greenways connecting to the major greenways. The greenways are illustrated on the Greenway Plan on page 6.

Major Greenways

- **West Branch Neshaminy Creek Greenway** – The West Branch Neshaminy Creek joins with the North Branch in Chalfont Borough. West Branch Park, Kelly Park, Krupp Park, Clyde Derstine Memorial Park, and Twin Streams Park have frontage on this greenway.
- **North Branch Neshaminy Creek Greenway** – North Branch Neshaminy Creek flows from the eastern portion of New Britain Township to join with the West Branch Neshaminy Creek in Chalfont Borough. Approximately three miles of this greenway corridor is encompassed in Lake Galena within Peace Valley County Park. North Branch Park has frontage along this greenway.
- **Neshaminy Creek Greenway** - The Neshaminy Creek Greenway includes frontage on Blue Jay Park, Lenape Lane Park, and Wilma Quinlan Nature Preserve.

Minor Greenways

- **Pine Run Greenway** – Pine Run Greenway extends from Pine Run Reservoir in Doylestown Township to the confluence with North Branch Neshaminy Creek. Covered Bridge Park has frontage on Pine Run Greenway.
- **Hardiakan Creek Greenway** – Hardiakan Creek Greenway follows the stream which flows through parcels protected as New Britain Township open space and Bucks County agriculture preservation land. This greenway connects with the North Branch Neshaminy Creek Greenway.



Tri-Municipal Master Trail & Greenway Plan ~ Greenway Plan

Chalfont Borough, New Britain Borough, and New Britain Township, Bucks County, PA

October 2010

- **Reading Creek Greenway** – The Reading Creek Greenway extends north through New Britain Township from the streams confluence with the West Branch Neshaminy Creek. Lexington Park is located along this greenway.
- **Cooks Run Greenway** – Cooks Run Greenway parallels the SEPTA rail line in New Britain Township and joins with the Neshaminy Creek Greenway.
- **Brittany Farms Greenway** – The Brittany Farms Greenway follows the small tributary that flows through the Brittany Farms neighborhood and Brittany Farms Open Space in New Britain Township to join the West Branch Neshaminy Creek in Chalfont Borough.
- **Limekiln Pike North Greenway** – The Limekiln Pike North Greenway follows the unnamed tributary flowing from Hilltown Township south to the North Branch Neshaminy Creek. The tributary flows along a portion of Limekiln Pike in New Britain Township.

These nine greenways function primarily to protect natural area and resources. Preservation and protection of these greenway corridors has long been a goal of the three municipalities as evidenced by the public land holdings in the form of parks and open space parcels located in the greenway corridors. Each community has one or more park sites located along the greenways as well as open space parcels. While public ownership is one way to protect the greenways and their underlying resources, few municipalities



have the financial resources or the opportunity to acquire all of the land along a natural corridor. A full pallet of protection strategies is typically used to protect natural areas to include acquisition, easements, and land use regulations. Appendix C outlines open space protection strategies.

An effective strategy for promoting sound land use and conservation of important resources and natural areas is adoption of land use regulations. Zoning ordinances, subdivision and land development ordinances, and other specific ordinances are tools that manage growth and land use at the local level. Ordinance provisions that prohibit development on steep slopes and floodplains, require Best Management Practices for the management of stormwater runoff or Conservation by Design development, and setbacks and buffers from wetlands and sensitive resources will protect lands within designated greenways.

Landowner driven options for protecting open space and natural resources include selling or donating land to a conservation organization for protection or granting conservation easements. Landowners can also participate in a resource conservation program such as TreeVitalize which provides a rebate discount for homeowners that plant trees on private property.

It will take the cooperative efforts and long-term commitment of landowners, municipalities, the county, and land conservation organizations to fully protect the nine greenways identified in the three municipalities. The existing protected open space parcels and park site are the building blocks of a continuous network of protected green corridors. Protecting contiguous lands along the major greenway corridors is recommended as the highest priority for conservation. The rationale for starting with contiguous lands is based on the conservation principles stated by the International Union for Conservation of Nature – 1980 World Conservation Strategy which suggests that connected natural systems are ecologically more sustainable and important than unconnected systems. “If all else is equal, large reserves are better than small reserves; a single large reserve is better than several small ones of equivalent total area; reserves close together are better than reserves that are far apart; rounded reserves are better than long, thin ones; reserves clustered compactly are better than reserves in a line; and reserves that are connected by corridors are better than unconnected reserves.”¹

Trails Users

Trails are an essential part of a healthy community. Trails provide citizens opportunities to travel between destinations without a motor vehicle, taking us to places we may not have access to otherwise. Trails provide opportunities for physical activity and promote a healthy lifestyle. Using trails can be a solitary experience allowing us to get away from the hustle and bustle of our hectic lives or a social activity where we spend time with friends and neighbors. Trails make our communities more livable. The trails in



combination with existing sidewalks will enhance the safety and convenience of walking in the three municipalities.

The residents of Chalfont Borough, New Britain Borough, and New Britain Township will be the primary users of the Tri-Municipal trail network. It is anticipated that residents from adjacent and nearby municipalities will use the trails to reach popular destinations in the three communities. Connections to the Doylestown Community Bike & Hike System and the Parkway trail will link the system regionally and extend the user base of the Tri-Municipal trail system.

It is anticipated that the trails will be used during all four seasons of the year by a variety of users to include walkers, hikers, joggers, bicyclists, commuters, persons with disabilities, anglers, birders, nature enthusiasts, paddlers, and cross-country skiers. It is anticipated that the primarily recreational use will be for leisure and exercise. The majority of the use will occur during non-winter months. Motorized

¹ Mark A. Benedict and Edward T. McMahon, *Green Infrastructure, Linking Landscapes and Communities* (Washington: Island Press, 2006), p.110.

vehicles will not be permitted on the trail except for maintenance, emergency, and security purposes. The trail must meet the requirements of the Americans with Disabilities Act (ADA) and the American Association of State Highway Transportation Officials (AASHTO) for its entire length. Trail users and user criteria are identified on the following pages:

Pedestrians/Persons w/ Disabilities



Travel Speed – 3 to 7 miles per hour

Vertical Clearance – 8 feet

Sight and Stopping Distance – 50 feet

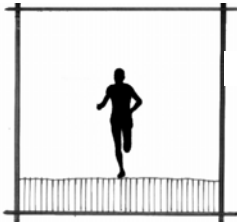
ADA Requirements – Maximum 5% grade (1:20) w/o handrail, maximum 8% grade (1:12) w/ handrail

Trail Width – 5 feet minimum

Trail Surface Preference – Compacted aggregate (pedestrians), bituminous (persons w/ disabilities)

Trail Support Facilities – Restrooms, benches, drinking fountains, picnic tables, signs.

Joggers/Runners



Travel Speed – 6 to 8 miles per hour

Vertical Clearance – 8 feet

Sight and Stopping Distance – 50 feet

Trail Width – 5 feet minimum

Trail Surface Preference – Compacted aggregate

Trail Support Facilities – Restrooms, benches, drinking fountains, picnic tables, signs.

Bicyclists



Travel Speed – 18 - 22 miles per hour (recreational), 30+ (competitive riders)

Vertical Clearance – 10 feet

Sight and Stopping Distance – 150 feet

Trail Width – 10 feet w/ 2-foot shoulders (8 feet minimum)

Trail Surface Preference – Compacted aggregate or bituminous

Trail Support Facilities – Restrooms, benches, drinking fountains, picnic tables, telephones, bike racks/lockers, signs.

Cross-Country Skiers



Travel Speed –2 to 8 miles per hour

Vertical Clearance –8 feet above average snow level

Sight and Stopping Distance –50 feet

Trail Width –7 feet

Trail Support Facilities – Restrooms, benches, drinking fountains, picnic tables, telephones, shelter, signs.

In-Line Skaters



Travel Speed – 10 - 17 miles per hour

Vertical Clearance – 8 feet

Sight and Stopping Distance – 100 feet

Trail Width – 12 feet w/ 2.5-foot shoulders

Trail Surface Preference – Bituminous

Trail Support Facilities – Restrooms, benches, drinking fountains, picnic tables, telephones, signs.

Paddlers



Travel Speed –2 to 3 miles per hour

Vertical Clearance –5 feet

Minimum Water Depth – 8 inches to 1 foot

Support Facilities – Restrooms, benches, drinking fountains, picnic tables, telephones, shelter, signs, parking with adequate turn-around for trailers and roof-top unloading, stabilized launch areas.

Anglers



Vertical Clearance – 7 feet

Area Clearance - 6 feet of unobstructed shoreline between water edge and obstacle, minimum 8 foot wide pier

ADA Access Requirements – Maximum 5% grade (1:20) w/o handrail, maximum 8% grade (1:12) w/ handrail

Support Facilities – Restrooms, benches, drinking fountains, picnic tables, parking areas, stream access trails, signs.

Tri-Municipal Trail Plan

Chalfont Borough, New Britain Borough, and New Britain Township share a vision of a network of non-motorized accessways connecting community destinations. Assessing the opportunities and developing strategies for achieving this vision was a major component of this planning project. Extensive field work, outreach to key stakeholders, and research was undertaken to develop a plan to connect the communities with trails. The planning process for identifying a trail network included the following:

- Inventory of existing and proposed trails in the three communities and surrounding municipalities.
- Research into planned trail initiatives.
- Identification of trail opportunities and limitations.
- Identification and research into existing linear resources that may promote trail development.
- Field work to view existing trails, linear resources, barriers to connectivity, destinations, and other resources.
- Development of a preliminary trail connection plan and review by the project study committee.
- Additional field work, research, and refinement of the trail plan.
- Public presentation of the trail plan and public input.
- Finalized trail plan.

Trail Inventory and Destinations

Trails exist in each of the three communities, primarily in parks as identified in Chapter 3. Significant recent efforts have been made by the municipalities to connect the park trails to create a continuous network of trails and improve the safety of walking and bicycling in the communities. Recent initiatives include:

- **Chalfont Borough and New Britain Township Lindenfield Parkway-North Branch Park Connection** – New pedestrian bridge across North Branch Neshaminy Creek, crosswalk, and trail connectors to connect the walkway in Lindenfield Parkway with the trails in North Branch Park.
- **Chalfont Borough West Branch Inceptor Project** – New trail and two pedestrian bridges as part of the West Branch Inceptor Replacement project. Trail extends from the end of Oak Street to the cul-de-sac on Skyline Drive. Pedestrian bridges cross an unnamed tributary to West Branch Neshaminy Creek in two locations that provide for trail extensions into Fairview Park.
- **Chalfont Borough Safe Routes to School Project** – Chalfont Borough received funding to develop enhancements that improve the safety of students walking to Pine Run Elementary School and Unami Middle School. Improvements include new sidewalks and crosswalks.

These projects are important components toward achieving the vision for the communities.

While a comprehensive trail network is the overall goal of the Tri-Municipal Trails & Greenway Plan, specific destinations were identified as important to the overall function of the network. These destinations included:

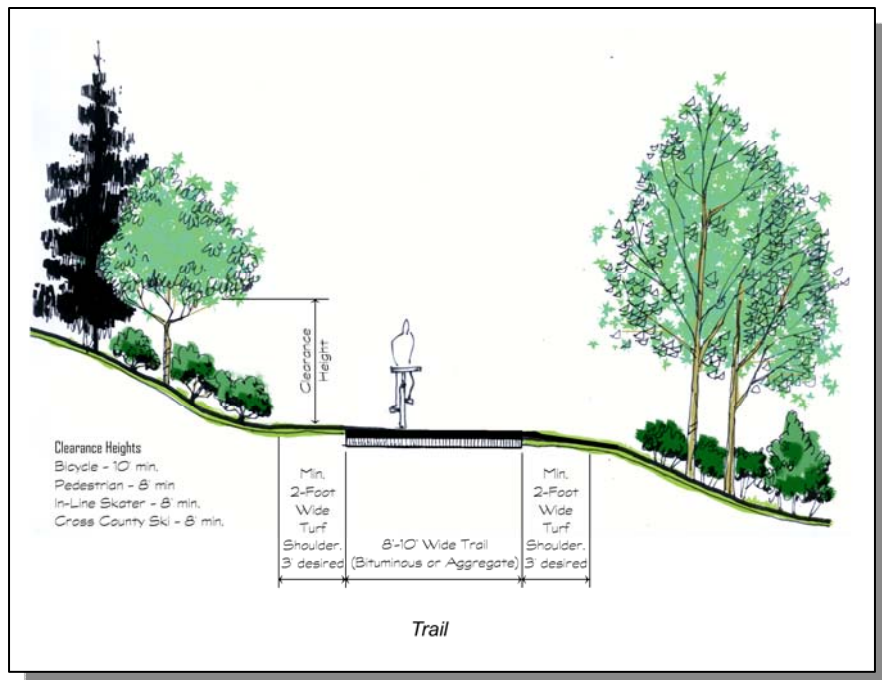
- **Peace Valley County Park** – Peace Valley County Park and Lake Galena were cited over and over by people of all affiliations as a primary destination for the trail network. The park is a popular location for trail activities and visitors would like to be able to reach the park by bicycle.

- **Municipal Parks** – Connect the municipal parks with trails to provide safe travel for children and extend the existing trails.
- **Schools** – Provide facilities for safe, convenient travel by students to the schools.
- **SEPTA Rail Stations** – Provide bicycle and pedestrian facilities to connect residential areas to the SEPTA Rail Stations. These connections were viewed as important to reduce vehicle trips in the municipalities. Additionally, the New Britain Rail Station was noted to have limited parking available and convenient bicycle connections will lessen the demand for vehicle parking.
- **Doylestown Community Bike & Hike System** – The existing trails of the Doylestown Community Bike & Hike System are well known in the three municipalities and linking to this system was viewed as important. The Doylestown Community Bike & Hike trails currently link to Doylestown Hospital, Delaware Valley College, and Central Park, all cited as important destinations for users of the Tri-Municipal Trail system.
- **The Parkway Trail** – The area is anticipating the nearing completion of the Route 202 Parkway which will have a separate trail for the entire 8.4-mile length. Linking to the Parkway trail is important to expand the local trail system regionally. The closest trailhead planned for the Parkway is at the intersection with Bristol Road, just south of New Britain Township in Warrington Township.
- **Places of Employment and Commercial and Civic Destinations** – The shops and shopping centers, churches, business parks, and other employment centers are locations that should be connected with the trail system to promote alternative transportation options.

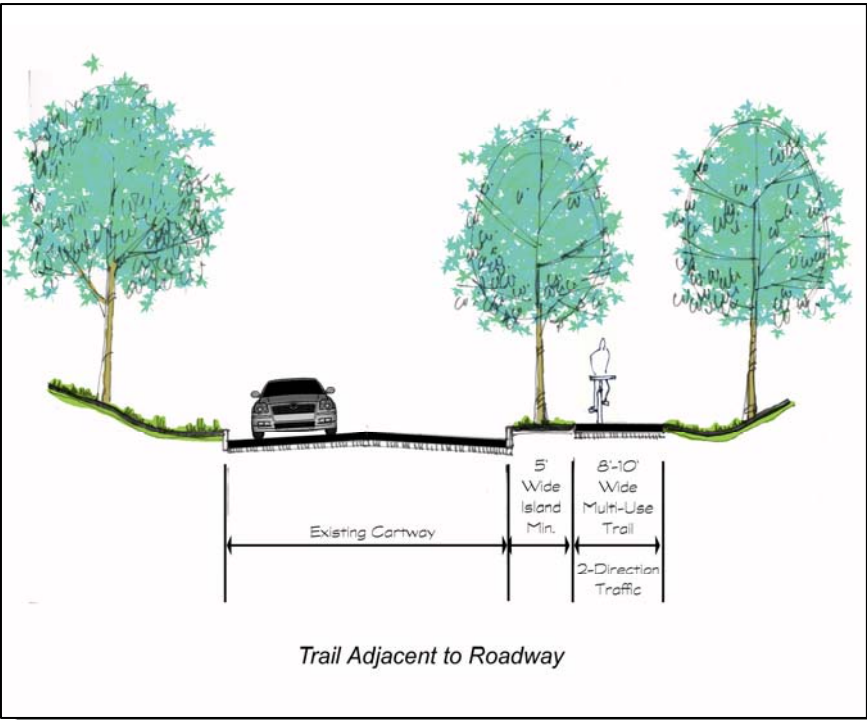
Trail Network Components

Because the three communities are significantly developed with residential and commercial land uses and transportation networks, one strategy for developing non-motorized accessways can not achieve the goal of connecting the communities. The proposed network is composed of a variety of trails with different configurations, bike lanes, boardwalks, and sidewalks. The following components are included in the Tri-Municipal Trail Plan.

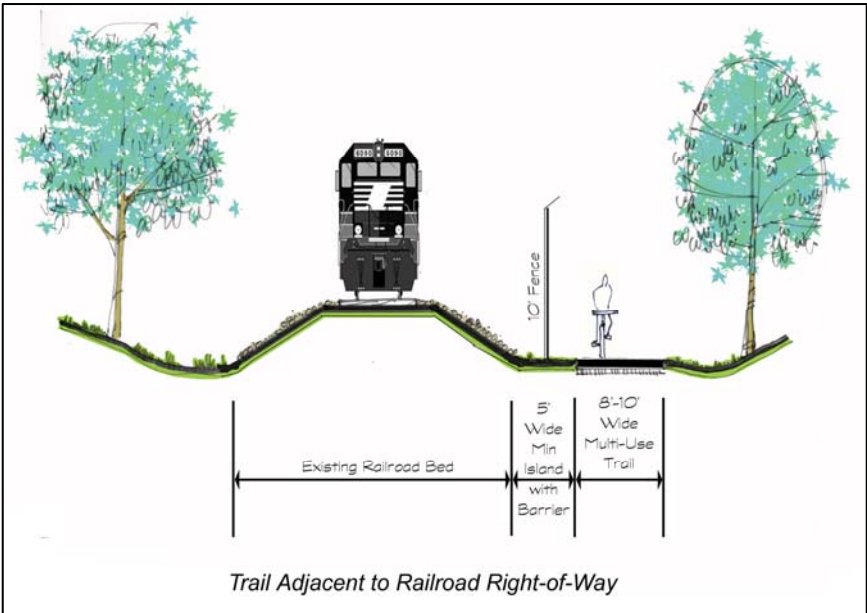
- **Trails** – Pedestrian and bicycle trails are paths separate from roadways. They may follow a stream corridor or a utility right-of-way or run cross-country following no physical feature at all. Because trails are typically outside of public rights-of-ways, access easement will be required where trails are not on public land.



- **Trails Adjacent to Roadway** – Trails adjacent to roadways may be located within the road right-of-way. A grass strip of at least 5-feet wide should separate the trail from the roadway. Trails adjacent to roadways are suggested along roads that do not have adjoining sidewalks and have the physical area to develop a separate trail.



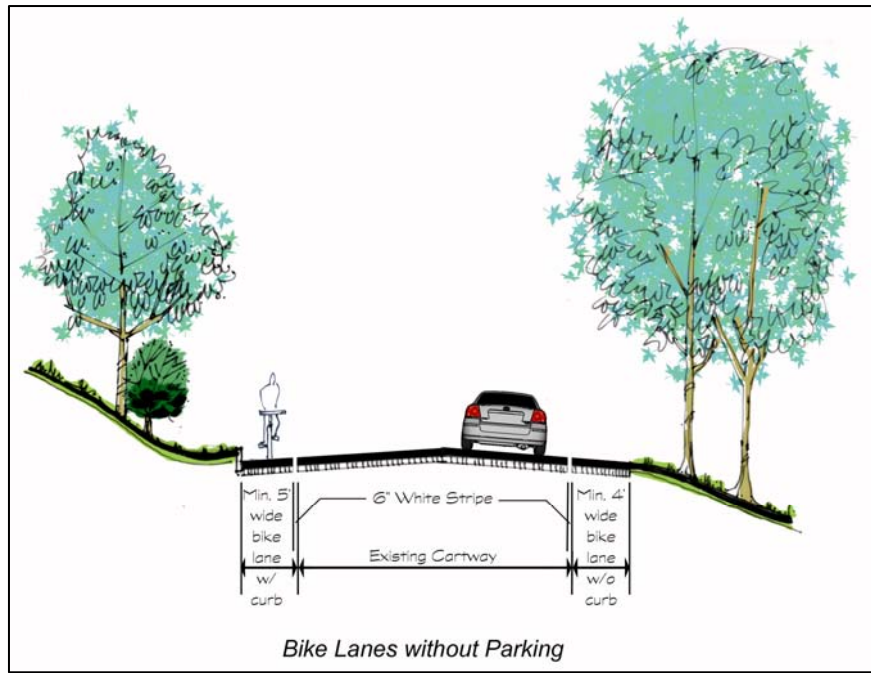
- **Trails Adjacent to Railroad** – The SEPTA right-of-way traverses the project area and there are portions of the right-of-way that are suggested for a parallel trail. Further investigation of the proposed locations along the right-of-way will be necessary to verify that there is sufficient level land, (outside of any fill area or cut in grade)



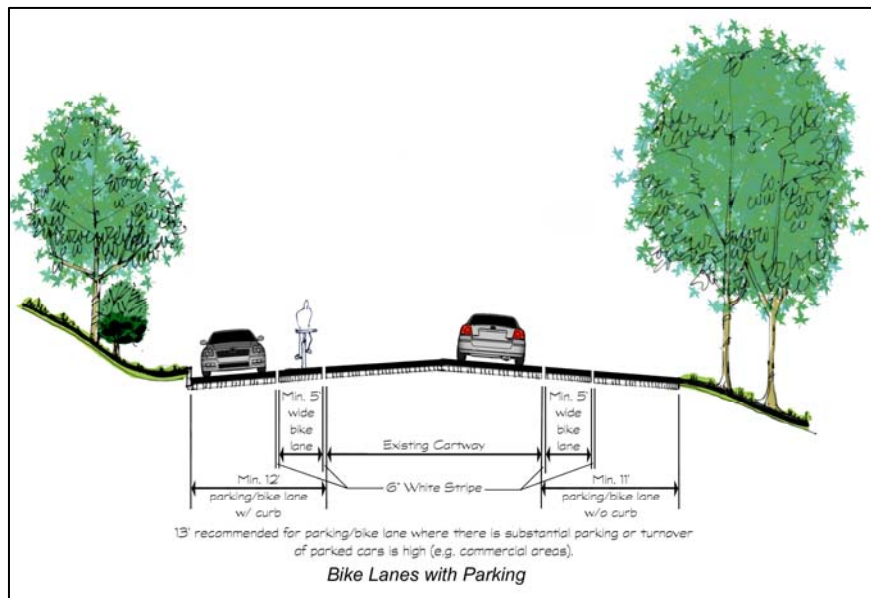
to accommodate a trail. If a trail can be accommodated, a physical barrier (fence or wall) of 10' height must be place to separate the trail from the active rail corridor.

- **Bike Lanes without Parking** – Throughout the communities are residential streets developed at sufficient width to allow the development of bike lanes within the cartway adjacent to the travel lanes. Bike lanes should be developed on both sides of a two-way street, separated from the vehicular cartway by a 6" white stripe. Bike lanes carry bike traffic in the same direction as the adjacent vehicular traffic. The recommended width of a bike lane is 4' on streets without curb or gutter and 5' from the face of a curb. The *American Association of State Highway and*

Transportation Officials (AASHTO) Guide for the Development of Bicycle Facilities should be referenced when designing on-road bicycle facilities. Bike lanes provide a travel route for bicycles but do not provide accommodations for pedestrians. In residential and commercial areas where sidewalks exist, bike lanes can expand the network by providing a dedicated location for bicyclists. Where sidewalks are not provided a separate multi-use trail is preferred to accommodate both pedestrians and bicyclists. Bike lanes effectively narrow a street and provide a traffic calming effect as motorists typically drive slower on narrower cartways.



- Bike Lanes with Parking** – Parking is permitted on most of the residential streets in the municipalities. To expand the connectivity of the trail network for cyclists, bike lanes could be developed between the parking aisle and the vehicle cartway on streets with parking where the physical space exists. The sketch above shows the dimensions provided in the AASHTO guidelines for bike lanes on streets with on-street parking.

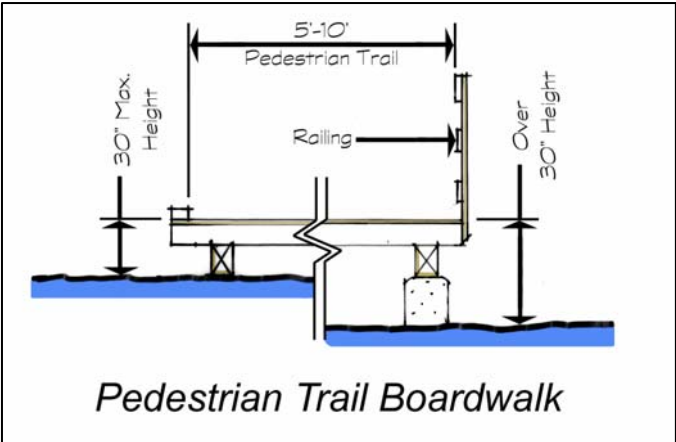
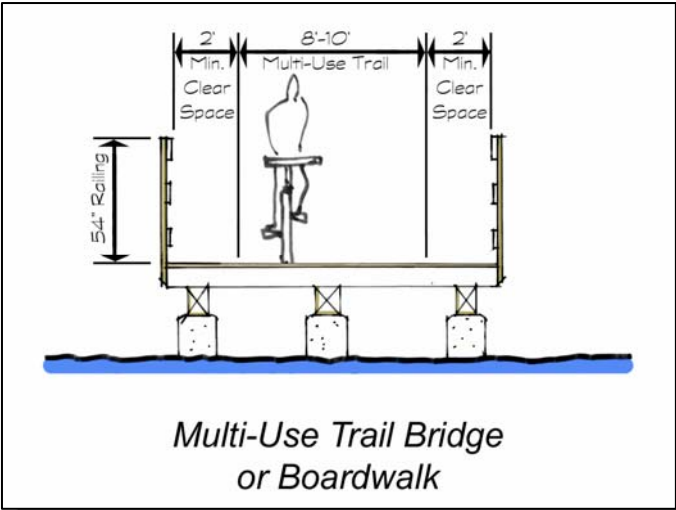


There is an inherent danger associated with bike travel in the “door zone” of parked cars and the topic of bike lanes on streets that allow on-street parking is controversial, with diverse views that relate to safety. Car doors opening into bike lanes present a significant safety concern for

cyclists. When cyclists encounter a door opening in their path of travel they must either stop short or swerve into the vehicle travel lane to avoid the open door. Cyclists have been injured and killed by trying to avoid an open car door or hitting an open door. The possibility of a door zone related crash is highest in locations with high parking turnover, such as a main street or in commercial districts. In the Tri-Municipal area, on-street bike lanes are proposed for residential streets and are not proposed for the commercial destination where on-street parking is permitted or town centers of the communities. Residential streets present less of a hazard associated with door zone accidents, but do not eliminate the hazard entirely. Various techniques have been experimented with in communities to reduce door zone accidents such as wider bike lanes, pavement markings and warning signs, and in some communities shared lane pavement marking are used.

Further study of parking frequency should be conducted on roadways where bike lanes are suggested to define if bike lanes are appropriate and the type of additional safety measures that should be implemented. Additional study should also investigate roadway width, linkages to other segments of the trail system, if stormwater inlets have bicycle grates, pavement markings commonly used in the region, and other factors that affect safety.

- Bridges and Boardwalks** – Portions of the trail network follow the stream corridors and encounter the need to cross streams, drainage channels, and wetlands. Where culverts cannot carry the trail, bridges and boardwalks should be used. For multi-use trails with bicycle use, bridges and boardwalks should include extra width or shy distance of two- feet on both sides of the structure. Due to the higher center of gravity for cyclists, a 54- inch high railing is recommended. Where bicycles are not used, a low curb may suffice to delineate the edge of the structure where the height above the surface being crossed is less than 30-inches. Where the height of the bridge or boardwalk exceeds 30-inches, a 42- inch railing is required. The clear space on either side of the travel corridor is not required on bridges and trails that are used only by pedestrians.



Trail Tread

Where separate trails are proposed as the system component they should be developed to accommodate multiple users to include those identified on pages 4-9 and 4-10. These multiple users have differing trail requirements as identified, and to meet their needs, an eight to 10-foot wide trail is proposed. Because the trail will be incorporated into the built fabric of the communities, there may be

areas where a narrower width is needed to traverse around an obstacle. Areas of narrow trail should be minimized as possible. Bituminous trail surface is proposed for the system. Bituminous trail is compatible with the majority of users and the built context of the communities and is the material used in adjoining communities. Most importantly, bituminous material is more compatible with trails developed in flood prone areas where aggregate material will wash away with flood events. The trail should be developed to allow travel by maintenance, emergency, and security vehicles and must meet the requirements of the ADA.

Trail Network

The Trail Plan map provided at the end of this chapter illustrates the proposed Tri-Municipal Trail network. The trail network spans throughout the three communities with the majority of the proposed trails in the more developed portions of the communities. Trails traverse parkland, open space parcels, home-owner association lands, and private property. Trails follow streams, roadways, the SEPTA regional rail line, utility rights-of-way, and property lines.

Ideally, the trail network would provide full connection throughout the three communities and link to trails in neighboring communities. The system would provide a connection from the sidewalk in front of a residents' home, to a trail within their neighborhood. Unfortunately the barriers to connectivity and the developed nature of the area prohibit full connections. There are areas of the municipalities that do not have trails suggested. These un-served areas are primarily the rural northeast and north-central portions of New Britain Township. The South Limekiln Pike corridor bounded by the Neshaminy Creek on the east and Brittany Farms development on the west is also an area where topography and land configuration limited connectivity.

Additionally, it would also be ideal if the entire network could be accomplished all on public or semi-public lands. To maximize connectivity and achieve some of the highly desirable connections such as linkage to Peace Valley Park, it is necessary to cross lands not held by a public entity. Where the trail plan suggests crossing private property, it will be necessary to work directly with the landowners to secure access easements.

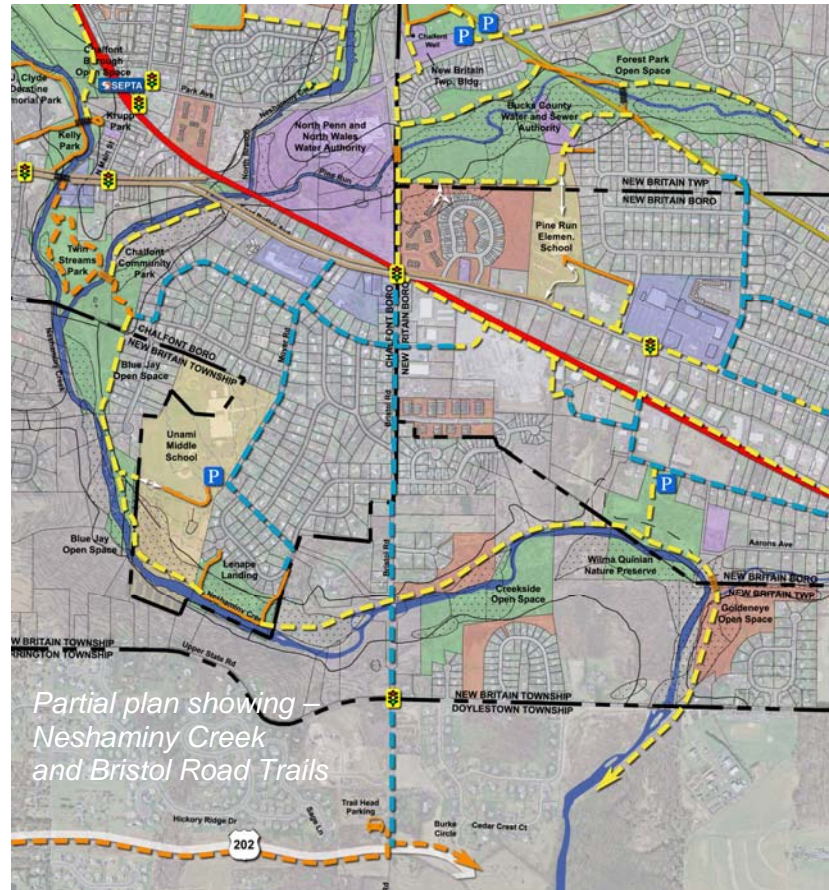
The Tri-Municipal Trail Plan presents a concept for how connectivity and trails could be achieved in the three municipalities. This plan was completed using generalized information from GIS data about the physical conditions of the municipalities. Topographic surveys, wetlands delineations, floodplain limits, and other critical information will be needed to inform decisions on the final trail routes. Transportation engineers, landscape architects, and others will need to work together to analyze site-specific opportunities and constraints to define the final trail routes. Where routes are suggested on private lands, the cooperation of land owners will be necessary. Easement should be sought from *willing* landowners and if opposition to trail easements is encountered, work-around routes should be sought. Further discussion of implementation of the Tri-Municipal Trail Plan is provided in Chapters 5 and 6.

Description of Key Trail System Segments

The Trail Plan map illustrates the extent, location, and variety of trail proposed for the three communities. The Trail Plan proposes trail segments that range from a short spur to connect to a destination to a continuous segment that links two destinations. The system is not linear, having a start point and an end point, but rather utilizes linear physical features to expand throughout the municipalities. The Trail Plan map identifies the type of trail and key features such as bridges/boardwalks and stop lights. Key trail segments are described on the following pages:

Chalfont Borough, New Britain Borough, and New Britain Township

- Neshaminy Creek Trail – Chalfont Town Center to Upper State Road** – A 2.4-mile trail is proposed along the north and east side of the stream corridor. This trail segment connects three parks, the Wilma Quinian Nature Preserve, and municipal and home-owner association open space. The trail will be comprised of off-road multi-purpose trail and possibly boardwalk sections across wetlands areas. The challenge will be to minimize wetland crossings and locate the trail out of the 100 year floodplain. The Chalfont-New Britain Township Joint Sewage Authority has a sewer line that runs the length of this corridor



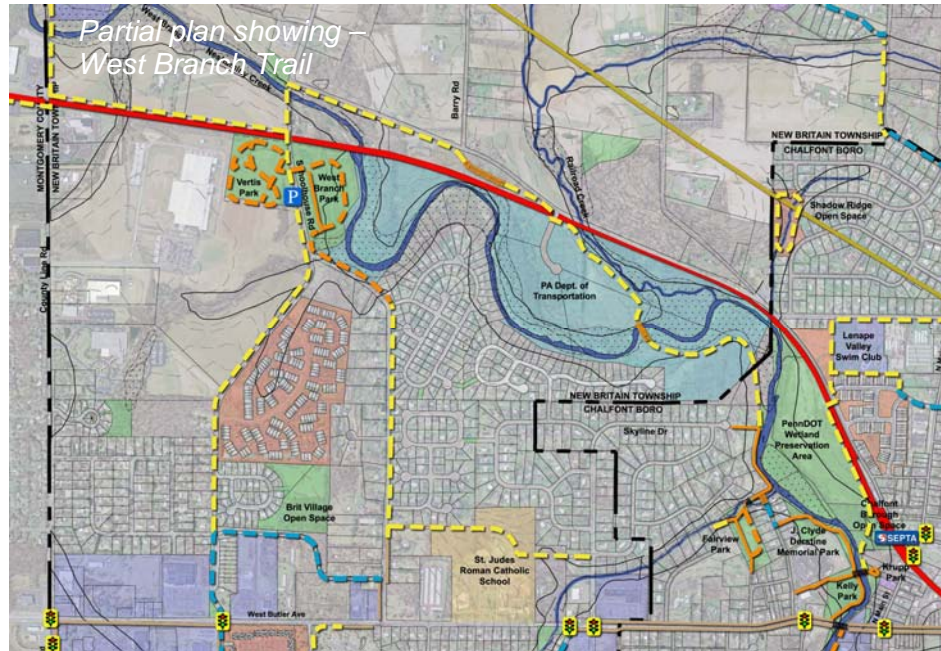
- At the northern end, the trail will connect to a new bridge planned for the Route 202 Butler Avenue crossing of the West Branch Neshaminy Creek which will have pedestrian accommodations and tie to the Borough sidewalk system. At the southern end there is potential to extend the trail into Doylestown Township by developing a safe crossing of Upper State Road and crossing to the Chalfont-New Britain Township Wastewater Treatment Plant property. Extending the trail south along the Neshaminy Creek will connect with the Route 202 Parkway trail which is on the north side of the Parkway at the stream crossing.
- Bristol Road Trail – Park Avenue to the Parkway** – South of Butler Avenue, Bristol Road is an important regional roadway which extends into Warrington Township and beyond. It is also an important trail link because a trailhead is located at the intersection of Bristol Road and the Parkway where accommodations are planned to connect from the trailhead parking area to the Parkway trail. A bike lane is proposed between Butler Avenue and the Parkway. North of Butler Avenue the right-of-way for Bristol Road exists between Butler and Park Avenues but the road has not been developed. Safety accommodations will be required to facilitate the pedestrian and bicycle crossing of Butler Avenue, Bristol Road, and the SEPTA regional rail line that all intersect at this point. A trail is proposed adjacent to the east side of the future north extension of Bristol Road which will extend to the trail pilot project which is described below. Bridge and/or boardwalk will be needed to cross the wetlands and Pine Run in this area of the trail. The trail pilot project will extend Bristol Road Trail to Park Avenue and North Branch Park.

Three important trails intersect with the Bristol Road Trail, the Neshaminy Creek Trail, the SEPTA Trail, and the Pilot Project Trail connecting North Park and Covered Bridge Park.

Chalfont Borough and New Britain Township

- West Branch Trail – Butler Avenue to County Line Road** – This 1.2 mile trail builds upon the recent work of Chalfont Borough that extended a trail from Oak Street to Skyline Drive. South of Oak Street existing trails traverse Chalfont open space and Kelly Park which connect to Butler Avenue. These existing trails are developed as narrow walking trails and should be widened to a minimum of 8-feet to accommodate multiple users. North of Skyline Drive the trail is proposed to extend along the West Branch Neshaminy Creek corridor through lands of the Pennsylvania Department of Transportation.

The trail crosses the stream at a point that provides the minimum width of stream and wetland crossing and allows an easy connection to the Railroad Creek corridor. The trail extends to the SEPTA right-of-way and crosses the right-of-way at



an existing at-grade un-improved drive/farm crossing. The trail crosses to the north side of the SEPTA line and continues off-road parallel to south side of Railroad Avenue. Grading will be required to extend the trail north as it approaches the bend in the West Branch Neshaminy Creek and boardwalk section will be needed to cross wetlands associated with the stream. As the trail rises from the creek corridor near the Barry Road intersection it will cross along the frontage of two private properties where access easements will be necessary to extend the trail to Schoolhouse Road. The trail corridor crosses to the west side of Schoolhouse Road at the Railroad Avenue intersection, crosses the stream on the existing bridge and extends as an off-road trail to the Walnut Road – Schoolhouse Road intersection. At this intersection Schoolhouse Road Trail connects to West Branch Trail, providing a link to West Branch Park. West Branch Trail extends west, off-road along the north side of Walnut Road, to County Line Road, crossing three private parcels which will require access easements. At the intersection of Walnut Road and County Line Road, the trail could extend west into Hatfield Township, connecting to the SEPTA Link Belt station or north along County Line Road to the New Britain Business Park.

Chalfont Borough

- **Moyer Road Trail** - Moyer Road extends from Butler Avenue to Unami Middle School, making it an important link in the trail system. Moyer Road has a 40' wide cartway measured from face of curb to face of curb. This width is excessive for travel lanes alone and probably contributes to speeds that exceed the posted limit. Field view of the street found that on-street parking was not a typical occurrence. Bike lanes may be appropriate on Moyer Road, but additional study will be required to define the desired width of the travel cartway, the frequency of on-street parking, and the volume of traffic on the roadway. If bike lanes are incorporated into the street, they should be placed on both sides of the street for travel parallel to vehicle travel lane.

Pavement markings typically define bike lane locations and alert motorists of bicyclists. Bike lanes are often marked with 6" white line to define the bike lane and a bike symbol or the words "bike lane" and a directional arrow. Some communities have experimented with shared lane markings which uses a special pavement marking installed on streets popular with bicyclists but too narrow for conventional bike lanes that denotes where a bicyclist should ride. The symbol is called a sharrow for shared lane and arrow, and is used without a striped lane marking. The sharrow is intended to indicate where bicyclists should ride to avoid traveling within the door zone of parked cars. It also alerts motorists to share the road with bicyclists and conveys that the street is a preferred bike route.



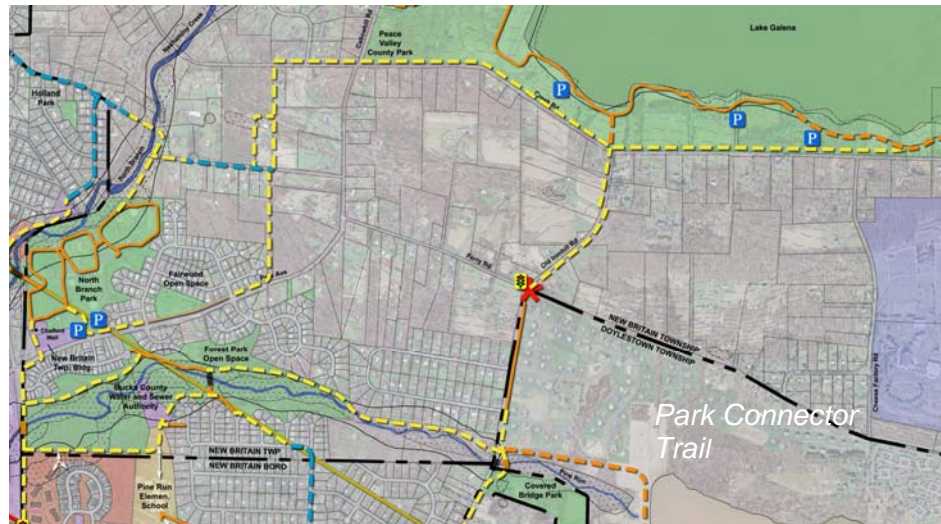
New Britain Borough

- SEPTA Trail – Delaware Valley College to Bristol Road** – The proposed trail corridor aligns with the recommendations of the New Britain Borough Community Bike and Hike Path Master Plan. The committee who completed this study did extensive field work to define the preferred corridor and work of this plan further examined the route. The route is parallel to the SEPTA rail line, crossing from the north to south sides at road crossings. A bridge will be needed to cross Cooks Run and a physical barrier will be required by SEPTA where the trail is located in its right-of-way. The trail connects to the Bristol Road Trail on the western end and links to South Shady Retreat Road which extends east to connect to the Doylestown Community Bike & Hike System.

New Britain Township

- Park Connector Trail - North Branch Park to Peace Valley Park** – Two optional routes are suggested to connect these two public recreation areas. The more eastern route uses a portion of the Trail Pilot Project described below, connecting to Old Ironhill Road. The connection continues north, parallel to Old Ironhill Road on the Doylestown Community Bike & Hike path to the signalized intersection with Ferry Road. The last link of the trail has been preliminary defined by the **Destination Peace Valley** plan as crossing the intersection on the east side of Old Ironhill Road and continuing on the shoulder, or off-road as possible, to the crest of the hill where the trail will cross to the west side of the road and continue to the intersection with Creek Road and the county park property.

The northern route to Peace Valley Park from North Branch Park extends either along sidewalks and road frontage along Park Avenue or along North Branch Neshaminy Creek. The creek route



turns to the east on Peace Valley Road, a low volume dead end road. The Park Avenue route turns north at the property line at the eastern side of the Fairwood subdivision and continues north to Peace Valley Road. Both routes join together and continue north along property lines to Creek Road where the trail extends on the north side to the road eastward to Callowhill Road. The trail crosses Callowhill Road and extends into Peace Valley Park, off-road, parallel to Creek Road. A separate trail is proposed parallel to Creek Road which extends into the county park to merge with the existing trail between the third and fourth parking area on the south side of Lake Galena. Completion of the northern route described above and the last link of the eastern route will require numerous access easements from private land owners.

- Highland Drive Trail** - Highland Drive is located in the southwest portion of New Britain Township between the Brittany Farms and the Highlands developments. The road is developed at 30-foot wide with curbs on both sides. Residential properties do not front on the road, but

rather have access to Highland Drive from residential streets. Open space on the east side of the roadway provides an off-road area to develop a multi-use trail adjacent to the street right-of-way. This trail would provide an important, safe link to Butler Elementary School for the many children that live in the two adjacent subdivisions.



- **Schoolhouse Road Trail** – Schoolhouse Road Trail extends from Walnut Road to Upper States Road and connects West Branch Park, Highland Park, the Philadelphia Sports Club, New Britain Village Square Shopping Center, High Point Business Campus, and home owner association open space of several developments. Schoolhouse Road is heavily traveled and used as a cut through from Upper State Road north to Butler Avenue, so on-road bike lanes are minimized as possible. South of Butler Avenue, the trail is located primarily on public or home owner association lands. North of Butler Avenue, the trail traverses frontage of residential lots and industrial land. Easements will be required to cross residential, industrial, and home owner association lands.



Trail Pilot Project

A sound way to build support and momentum for the Tri-Municipal Trail is the implementation of a pilot project. The recent trail initiatives in Chalfont Borough and the bridge connection to North Branch Park have created excitement in the communities for trails and connections. Extending the trail and connecting to important destinations will build upon this excitement and momentum. The suggested pilot project extends a trail from North Branch Park to the Doylestown Community Bike & Hike System trail on Sandy Ridge Road. A spur trail connects to the Doylestown Community Bike & Hike System trail on Old Ironhill Road. The pilot project will connect two parks: North Branch Park and Covered Bridge Park, plus the playground area in the Forest Park Open Space. The parks will function as trailheads for the trail, allowing residents outside the immediate neighborhoods to park their vehicles in these parks and use the trail. The route will connect to four existing trail segments: the trails in North Branch Park, the trail in the Forest Park Open Space, and afore mentioned Doylestown Community Bike & Hike trails. The pilot project proposes 2.5-miles of new trail. When the exiting linkages are considered the overall length of trail from Lindenfield Parkway in Chalfont Borough to the trail eastern terminus of the Sandy Ridge Road trail in Doylestown Township is approximately 4.4-miles. The following components and considerations are incorporated into the pilot project and are described from west to east. A map depicting the Trail Pilot Project is on page 4-25.



Forest Park Open Space Trail – Looking East

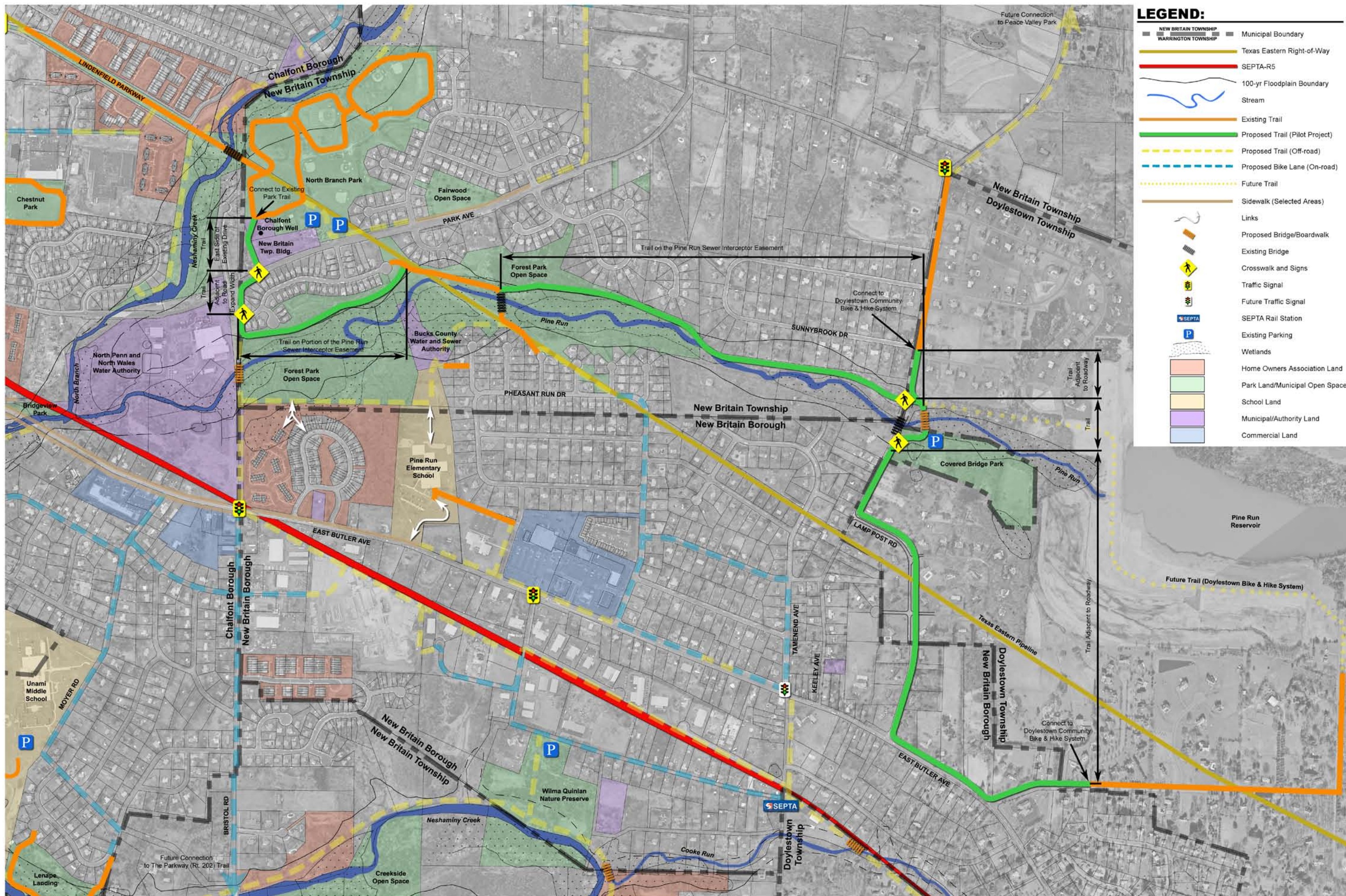
- **North Branch Park to Forest Park Open Space Bridge** – The trail extends from the existing trail encircling the athletic fields in the southwest corner of the park, through the hedgerow to the Chalfont Borough Well property. The trail extends off-road, parallel to the east side of the well property driveway to Park Avenue. A crosswalk, signs, and other safety measures should be located to facilitate safe crossing of Park Avenue. The trail will use the existing sidewalk along Park Avenue heading west and turning south at the Bristol Road

Extension. These sidewalks should be widened to accommodate multi-uses and adjacent trees branches trimmed to 10' height. The sidewalk ends at Forest Park Drive and a crosswalk should direct trail users to the south side of Forest Park Drive where the trail extends along the Bristol Road Extension to the dead end and turns east into the Forest Park Open Space. The trail should be located outside of the wetlands and floodplain as possible and extend to join the existing trail that extends from the Forest Park Drive cul-de-sac to the pedestrian bridge across Pine Run. This trail is developed at a narrow width and should be widened to 8-10-feet.

- Forest Park Open Space Bridge to Covered Bridge Park** – The proposed trail extends from the existing pedestrian bridge across Pine Run to Old Ironhill Road on the north side of Pine Run. The trail location should align with the Chalfont-New Britain Township Joint Sewage Authority Pine Run Interceptor easement and north of the wetlands and floodplain, as possible. A crosswalk is proposed to guide trail users to the east side of Old Ironhill Road where they can choose to go north to the Doylestown Community Bike & Hike trail or south to a new pedestrian/bicycle bridge that crosses Pine Run. The crossing should be located to provide safe sight distance to view vehicles traveling north through the covered bridge. The possibility of placing a traffic signal to control vehicle travel through the one-lane covered bridge and promote safe crossing of Old Ironhill Road should be investigated. Use of the existing covered bridge for the trail is not recommended due to the narrow width of the bridge, volume of traffic, dark interior, and change of surface material. The new pedestrian/bicycle bridge will span Pine Run and connect to Covered Bridge Park.



- **Covered Bridge Park to Shady Ridge Road Trail** – The proposed trail traverses the western end of Covered Bridge Park, crossing the entrance drive with a crosswalk and extending as a multi-use trail adjacent to the east side of Keeley Avenue. The trail turns east onto Lamp Post Road as a separate multi-use trail and continues on the north and east side of Lamp Post Road until it intersects with East Butler Avenue. The trail is located on the north side of East Butler Avenue and continues to the east, turning east onto the north side of Shady Ridge Road where it joins with the Doylestown Community Bike & Hike trail. This segment of the pilot project trail is located parallel to public roads. Where the width of the road right-of-way is too narrow to include the trail, access easements will be required from property owners. Grading and vegetation removal will be required to incorporate the trail along these roadways which will require the cooperation of adjacent property owners.



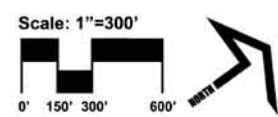
LEGEND:

- NEW BRITAIN TOWNSHIP
- WARRINGTON TOWNSHIP
- Municipal Boundary
- Texas Eastern Right-of-Way
- SEPTA-R5
- 100-yr Floodplain Boundary
- Stream
- Existing Trail
- Proposed Trail (Pilot Project)
- Proposed Trail (Off-road)
- Proposed Bike Lane (On-road)
- Future Trail
- Sidewalk (Selected Areas)
- Links
- Proposed Bridge/Boardwalk
- Existing Bridge
- Crosswalk and Signs
- Traffic Signal
- Future Traffic Signal
- SEPTA Rail Station
- Existing Parking
- Wetlands
- Home Owners Association Land
- Park Land/Municipal Open Space
- School Land
- Municipal/Authority Land
- Commercial Land

Tri-Municipal Master Trail & Greenway Plan ~ Trail Pilot Project

Chalfont Borough, New Britain Borough, and New Britain Township, Bucks County, PA

October 2010



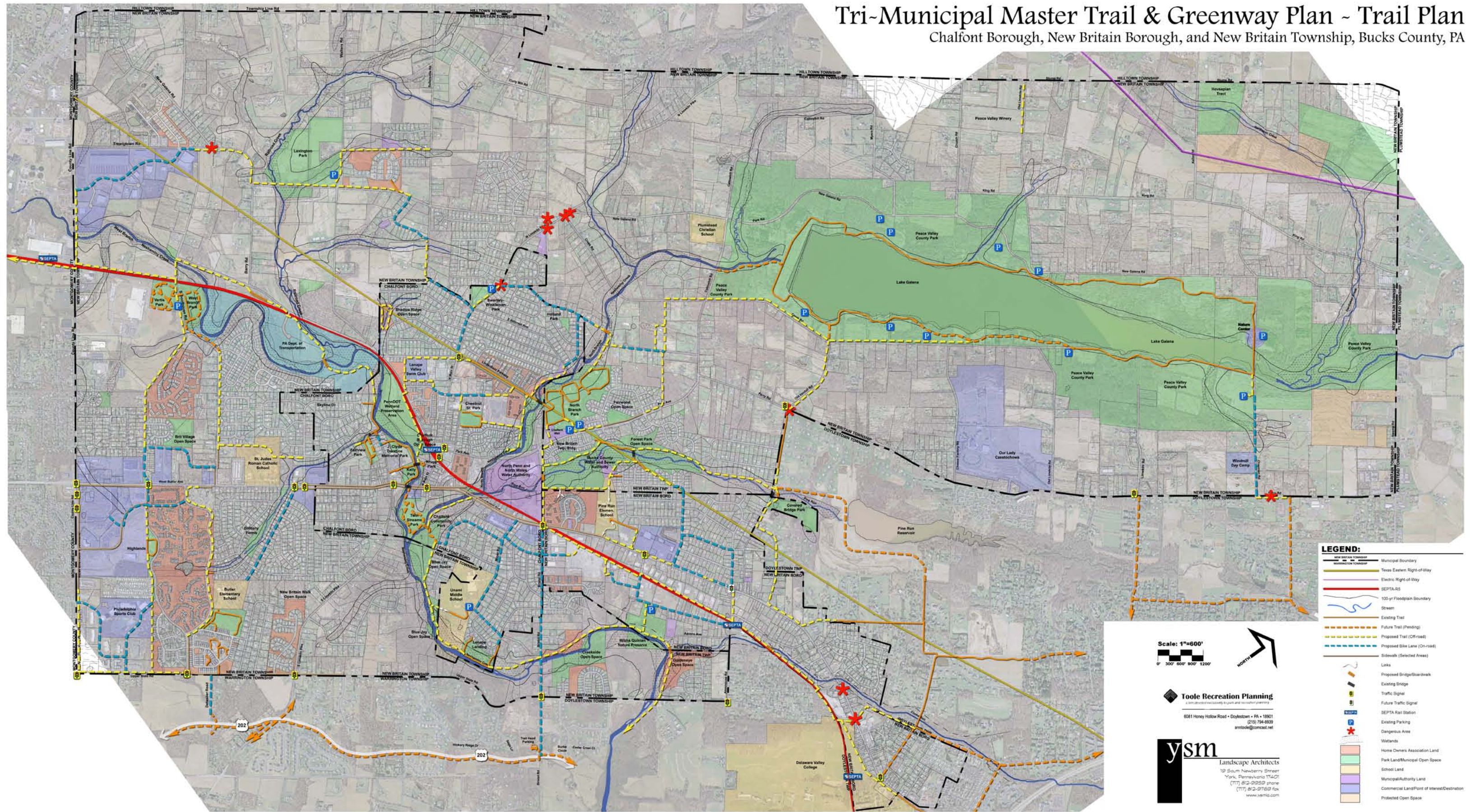
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Tri-Municipal Master Trail & Greenway Plan ~ Trail Plan

Chalfont Borough, New Britain Borough, and New Britain Township, Bucks County, PA



LEGEND:

	Municipal Boundary
	Texas Eastern Right-of-Way
	Electric Right-of-Way
	SEPTA-AS
	100-yr Floodplain Boundary
	Stream
	Existing Trail
	Future Trail (Pending)
	Proposed Trail (Off-road)
	Proposed Bike Lane (On-road)
	Sidewalk (Selected Areas)
	Links
	Proposed Bridge/Boardwalk
	Traffic Signal
	Future Traffic Signal
	SEPTA Rail Station
	Existing Parking
	Dangerous Area
	Wetlands
	Home Owners Association Land
	Park Land/Municipal Open Space
	School Land
	Municipal/Authority Land
	Commercial Land/Point of Interest/Destination
	Protected Open Space

Scale: 1"=600'
 0' 300' 600' 900' 1200'



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Chapter 5

Cost & Implementation Analysis

Implementation

Achieving the vision of the Tri-Municipal Master Trail & Greenway Plan will require significant coordination, capital expenditures, and dedication of municipal staff and others. As with most government investment in conservation and recreation facilities, the investment in trails and greenways typically occurs in phases over many years.

There are many challenges defined by this plan and not everything can be accomplished at once. The implementation plan has been designed to provide the three municipalities of the Tri-Municipal Master Trail & Greenway Plan with a guide to move ahead with the incremental development of trails and conservation of greenways.

Implementation Action Steps

Some or all of the following actions may be necessary to implement the trail and greenway plans.

Greenway Plan

There are several tracts for conservation of greenway corridors: through municipal ordinances and land use regulations, through ownership or control, and through landowner initiatives. The following generalized approaches should be considered as conservation and protection of greenways and open space is pursued in the municipalities.

Land Use Regulations

Action steps for the implementation of land use regulations generally include:

- Assign a municipal staff point person to lead the effort to review the existing ordinances and define open space and resource protect deficiencies. This person would typically be the zoning officer or planner. An alternative approach is to hire a consultant to do a conservation audit of the ordinances.
- Identify deficiencies and enhancement provisions within existing regulations. Consideration should be given to conservation and/or protection of steep slope area, areas of high water table, flood prone area, floodplains, wetlands, riparian corridors, PNDI sites, and other resource areas. Provisions such as cluster zoning, limited development and conservation subdivisions, traditional neighborhood development, and an official map should be evaluated and considered if not currently implemented.

Mandatory dedication ordinances should be amended to include provisions for the dedication of both open space and trail corridors for the development of recreation facilities.

- Research conservation and protection strategies and ordinance provisions that promote the protection of open space that can be incorporated into local ordinances such as required buffer areas, setbacks, etc.
- Make recommendations to the municipal planning commission for their consideration and action on incorporating land use regulations and ordinance provisions into existing ordinances.

Ownership or Control of Conservation Lands

Conservation of open space and greenway corridors can be achieved through ownership and the three municipalities have significant land holdings along the designated greenway corridors.

Unfortunately it is not typically feasible or practical for a municipality to own all of the land worthy of protection in a municipality. Working with willing landowners to protect land through conservation easements is a popular approach to conservation while the land remains in private ownership. Another approach is to work with landowners to see if there is interest in transferring ownership of conservation lands to the municipality or conservation organization. Appendix C outlines bargain sale, donation/gift, purchase of development rights, and other acquisition strategies. Whether pursuing acquisition of a tract or conservation easements, the following steps should be considered:

Easements Defined

An easement is a portion of the ownership rights of a property that is transferred to another individual or entity. Real estate is comprised of land, improvements, and rights, referred to as the “bundle of rights”. These rights include *the right of possession* (the property is owned by whomever holds title); *the right of control* (within the laws, the owner controls the use of the property); *the right of exclusion* (others can be excluded from using or entering the property); *the right of enjoyment* (the owner can enjoy the use of the property in any legal manner); and *the right of disposition* (the title holder can sell, rent or transfer ownership or use of the property at will). The full ownership of real estate can be sold in full or in pieces and various rights can be subdivided or sold separately. The subdivision of rights is known as an easement. Typically, an easement permits the use of the property without transferring the ownership of the property. Easements are for a specific purpose.

Conservation Easement is a restriction that limits the future use of a property to preservation, conservation, or wildlife habitat.

Access Easement allows, or prohibits, access over a piece of property that is not owned by the person needing access.

Source: Introduction to Easements and the Valuation of Easements, Richard Mario Leslie, AMI

- The municipality should assign the task of exploring acquisition and easement to staff, board, or appointed committee.
- Define priority areas of the proposed greenway network for protection and conservation. Appendix D provides a criteria matrix for ranking land acquisition. This criterion is provided as an example of potential considerations and should be customized to align with the priorities of the municipality. Parcels/areas within designated greenways should be ranked based on defined criteria.
- Share the priority areas with local and regional conservation organizations, adjacent municipalities, Bucks County, Bucks County Conservation District, and others to coordinate conservation initiatives and priorities.
- Develop a strategy for approaching landowners about acquisition or the purchase of easements. Conservation organizations like the Pennsylvania Land Trust Association have valuable tools and resources to assist municipalities work with land owners on conservation easements (www.conserveland.org), including a step by step guide to conservation easements and sample easement agreements

Landowner Initiatives

There are numerous ways for landowners to conserve their land and the different options have various financial and tax implications. Outreach and education of landowners is important to explain the conservation objectives of the municipality and provide helpful information for landowners to understand and consider their conservation options. Landowner conservation initiatives include:

- Donation of land, donation with a life estate, or bequest donation through a will or living trust.
- Bargain sale which may provide tax benefits.
- Conservation easement.
- Work with a municipality or land conservation organization to execute an option to buy the land or right of first refusal.
- Undertaking limited development or conservation subdivision where a portion of the land remains as open space.

Trail Plan

The location of the trail segment will dictate, in part, the process for implementation. Trails on public lands will bypass the ownership or easement action steps but will still require funding, engineering, and construction. Trails that cross private lands will require permission through granting of access easements for the development and use of the trail by the public. Bike lanes may be able to be implemented as part of roadway improvements. The following outlines typical implementation steps for municipal trail development. The physical conditions, constraints, and adjacent and underlying land ownership of the trail segment will further determine the action steps to develop the trail for public use.

- Define and prioritize trail segments for development. Consider developing criteria to guide the prioritization process.
- Seek grants for trail development.
- Complete deed research, boundary and topographic survey, wetlands delineation, and PNDI search, Phase 1 archeological study, as necessary, for the trail corridor segment(s).
- Develop a trail design or implementation master plan for the trail segment. This plan was developed using GIS and generalized mapping information. The design or implementation master plan will translate the findings and recommendations of this plan into a detailed proposal based on accurate physical features and conditions for the proposed trail locations.
- Develop land development plans for submission and review by the municipalities affected by the trail, as required.
- Develop construction documents that detail and engineer the trail improvements and associated amenities. Engineering may include structural design of bridges, culverts, railings, and pavements; traffic studies; and detailed crossing improvements. Prepare a project manual including technical and bidding specifications.
- Prior to construction, the project must obtain approvals from the various governing agencies. The following is a listing of typical approvals for a development of this nature but may not be all-inclusive.
 - Municipal approval for land development plans within the affected municipalities, if required.
 - Bucks County Conservation District approval for erosion and sedimentation control plans and NPDES Permit.
 - Pennsylvania Department of Transportation approval for any work within a PennDOT right-of-way.

- Pennsylvania Department of Environmental Protection/US Army Corp. of Engineers approval for any work within the waters of the Commonwealth including delineated wetlands and stream encroachments and crossings.
- Pennsylvania One Call. Pennsylvania law requires three working days notice for construction phase and ten working days in design stage.
- Approval from public utilities impacted by the trail.
- SEPTA approval for any work within the SEPTA right-of-way.

Each of the above permits and approval are typically involved and will require advance planning to facilitate the process. Adequate preparation and review time should be allotted.

- Upon approval of all required approvals and permits and completion of the trail construction documents, the project should be publicly bid for construction.

Conservation and Access Easement Costs

Conservation and trail easements will be required to fully implement the Tri-Municipal Trail & Greenway Plan. To identify the cost of easement in the project area, appraisers familiar with the area were contacted. As is typical with valuation of land, the unique characteristics of a particular parcel or tract dictate its value. Consideration such as size, adjacent land use, location/neighborhood, potential for subdivision, presence of environmental features such as floodplain or wetlands that restrict development all affect the value of easements. Easements on land that is separate and outside of high use areas of a property may have a lesser value than easements near a residential structure. Conservation easements may be less expensive than access easements as a certain degree of privacy is lost when access easements are granted allowing public use of private land. Qualified appraisers in the Doylestown area were contacted to discuss easement valuation. Appraisers stated that cost of easements can range from negligible to as high as the value of the development potential of the land. One appraiser noted a range of \$5,000 to \$14,000 per acre for easements in the region in the 2009 – 2010 time period. But this range was provided with the caveat that there are many factors to consider when valuing easements and each site must be looked at on an individual basis. Bucks County and municipal codes require two appraisals for easement valuation. The communities should work with the Heritage Conservancy on easement acquisition to benefit from their previous experience and knowledge of easement acquisition and valuation.

Trail Development Costs

The development of the Tri-Municipal Trail system will be an investment in recreation opportunities and transportation options for residents of the three municipalities. These opportunities will require the considerable investment of capital resources. To guide the development of the trail, generalized cost estimates are provided based on a typical trail segment. The estimated costs are based on an average of actual costs from similar trail development projects. Costs are provided on a per unit basis to provide general information for projecting costs.

All costs provided in this plan are estimates based on the findings of this planning project and knowledge of trail and associated facility development. No topographic or planimetric surveys were completed as part of the planning project and as such, detailed grading studies and site engineering design have not been completed. Trail development is expected to occur in phases over several years. As trail segments are developed, consideration should be given to escalation costs over the base cost

provided herein. Unique items such as stream crossings, bridges/culvert replacement, traffic signal upgrades, etc. are not included as costs must be defined on a specific case basis.

The cost of developing the trail and its amenities can be off-set by a variety of means to include utilizing municipal crews; using volunteer labor for generalized tasks; partnering with municipal, agency, and/or other work forces for in-kind services; acquiring materials through donations or government funded programs; and obtaining development funds through grants. Doylestown Township developed the Bike and Hike System with municipal work forces. The Tri-Municipal partners could explore working together or with adjoining municipalities to develop the trail system.

Trail Development Costs		
Item	Assumptions	Estimated Unit Cost
Trail tread development	One mile of 10' wide trail with 2' wide shoulders <ul style="list-style-type: none"> ▪ Clear and grub shoulders ▪ Fine grade and compact subgrade ▪ Furnish and install pavement <ul style="list-style-type: none"> - Aggregate (rural areas) - Bituminous (urban areas) ▪ Re-establish drainage swales and facilities ▪ Erosion and sedimentation control facilities ▪ Signage ▪ Typical road crossing improvements ▪ Site amenities (benches, bicycle racks, traffic control gates, bollards, etc.) ▪ Fine grading, seeding, and landscape restoration ▪ Bond mobilization and layout 	\$95,000 ± per mile in rural area \$175,000 ± per mile in urban areas
10' high barrier	10' high chain link fence, black vinyl coated, with 2' wide aggregate ground surface beneath fence.	\$5,000 per 100 linear feet
Crosswalk	Painted crosswalk on typical 33' wide cartway. Decorative crosswalk on typical 33' wide cartway	\$1,000 per crosswalk \$4,000 per crosswalk
Boardwalk	Boardwalk structure, decking, railings, installation at 12' wide.	\$6,600 per 10 linear feet
Bike Lanes	Pavement striping.	\$5,750 per mile
Bike Lane Symbol	Pavement stencil.	\$250
Professional fees	Design and engineering fees	\$12,000 - \$24,000 per mile
Construction observation	Field view and administer the construction contract at strategic intervals of construction	\$12,000 - \$18,000 per mile



Chapter 6

Strategic Operations & Management Plan

The operations and management component of the Tri-Municipal Trail & Greenway Plan provides baseline information for organizing, funding, and undertaking tasks that need to be undertaken by the participating municipalities and/or their partners. To develop a strategic plan for operating and maintaining the trail and greenway system once developed, the planning team contacted each municipality to hold work sessions on operations and management with municipal managers, appointed and elected officials, community volunteers and public works and parks employees. The team also consulted with the neighboring Doylestown Borough and Doylestown Township Community Bike & Hike System caretakers to generate comparative information that could help the Tri-Municipal partners gain insight into the 18-year experience of those involved with the Bike & Hike System. This plan recommends a series of work items and tasks that need to be completed in order to maintain the trail as a safe, clean, and attractive community asset. The following section addresses municipal organization and functions, collaboration, liability concerns and protection, design and maintenance as a risk management tool, trail management, estimated maintenance costs, trail benefits, what to do next, and funding sources.

The Municipalities of the Tri-Municipal Trail & Greenway

Table 1 presents the population and trail length for Chalfont Borough, New Britain Borough and New Britain Township. The total area population is 18,057, with 3,900 in Chalfont Borough, 3,125 in New Britain Borough and 11,032 in New Britain Township.

Municipality	Population	Trail Length		
		Bike Lane	Off-Road	Total
Chalfont Borough	3,900	3.39	3.26	6.65
New Britain Borough	3,125	2.0	3.75	5.75
New Britain Township	11,032	4.48	16.32	20.8
TOTAL	18,057	9.87	23.33	33.2

Tri-Municipal Trail & Greenway Organization, Management and Maintenance

Managing the Tri-Municipal Trail & Greenway includes all activities undertaken to plan, direct, undertake, and evaluate trail maintenance, programming, funding, advertising, and visitor services. The challenge with the Tri-Municipal Trail & Greenway is that three municipalities are involved along with multiple municipal management systems, numerous municipal departments and advisory boards; a complex scenario. This scenario is not unusual as most trails across the state are multi-jurisdictional crossing municipal boundaries for broad regional use that the citizens desire. The more specifics on the planning, operations, and management of the Tri-Municipal Trail & Greenway that can be determined and negotiated ahead of time the smoother, more harmonious, and successful the operation will be. Two factors ameliorate the potential disconnect among multiple jurisdictions trying to work together in joint projects: one, the three municipalities already have a history of success in working together on projects and, two, the adjoining Bike and Hike System has demonstrated success through the collaboration of Doylestown Township and Doylestown Borough that has extended to involvement with other communities including Chalfont Borough, New Britain Borough, New Britain Township, Warrington Township, and Buckingham Township.

Municipal Collaboration Success

Chalfont Borough, New Britain Borough, and New Britain Township have a successful history in collaborating in a variety of public service endeavors. In addition to the Tri-Municipal Trail & Greenway Plan, examples of collaboration include: the Central Bucks School District; the 202 Parkway project; Butler Avenue Revitalization Study; the Fire Company and the EMS with volunteers from the three municipalities; Joint Sewer Authority; and the Lenape Valley Recreation Council. New Britain Borough and New Britain Township cooperate on snow plowing.

The municipalities participate in the Doylestown Hike and Bike Committee meetings along with other townships in the area that are interested in planning and implementing regional bicycle pathways that connect to the Bike and Hike System and beyond to other destinations in the Delaware Valley via bicycling. They also contributed funding to a study lead by Doylestown Township in exploring potential ways to connect Doylestown to Peace Valley Park via bicycle. The successful history of working together on important public projects can serve as the foundation for further partnering on a regional bicycle network. The fact that all three municipalities joined forces to undertake the feasibility study for the Tri-Municipal Trail & Greenway Plan bodes well for future collaborative efforts with path and greenway management through future development over time.

Individual Management with Joint Efforts

Each one of the municipalities generally operates individually and autonomously in the management and maintenance of municipal facilities. It is important to note that they also help each other out where possible. There is a sense among the three jurisdictions of reaching across borders to support each other where possible. Since the level of resources available varies among the three communities, working together makes sense and people feel that it is fair, equitable, and beneficial to the citizens through excellent public service. Collaboration has moved beyond a *good idea* to an *expected way of management*. Projects across the state that are competitive for grant funding and public support are those that feature multi-municipal and public/private sector partnerships.

Chalfont Borough operates with a Borough Manager, a Public Works Department, and elected and appointed officials that have been actively involved in trail planning and creation.

New Britain Borough has a Borough Manager and a small staff that takes care of the roads and parks. A strong volunteer committee developed the Community Bike and Hike Path Master Plan completely through civic efforts and the support of Borough Council.

New Britain Township is the largest of the three jurisdictions in terms of staffing and resources. The Township has a Township Manager, a part-time Parks and Recreation Coordinator, and a Public Works Department with dedicated park maintenance staff.

Organizational Structure

At present, the Study Committee for this feasibility is providing an organizational structure for the Tri-Municipal Trail & Greenway as yet undeveloped. Any questions about the trail would now go to the respective municipality in which the trail segment is located. Chalfont Borough and New Britain Township have undergone numerous management changes since this project was originally proposed. At present Chalfont Borough is serving as the project administrator for the Tri-Municipal Trail & Greenway project, specifically, the Chalfont Borough Manager. This configuration of leadership should evolve upon adoption of this plan as about two thirds of the Tri-Municipal Trail & Greenway is in New Britain Township. In successful multi-municipal efforts in parks, recreation, and trails, the point person is usually housed where the majority of the physical system lies. Providing a single point of contact and

telephone number on signage and materials is an effective public service because it provides citizens with a direct link without having to be routed through numerous entities to reach the correct contact

The Organization and Operations

At a time when municipalities are looking to balance austere revenues with increasing demands and public expectations, administrators need to juggle many demands (often increasing) with limited funding. In order to provide safe, clean, and ready to use trails, sufficient resources must be available. This can be through a mix public and private support as well as partnerships and volunteerism. Chalfont Borough and New Britain Township have staff and equipment dedicated to public facility maintenance. They are concerned about adding a new maintenance responsibility of the trail and greenway network as it is phased in given the workload they currently carry out. New Britain Borough has the lowest level of resources available and limited staff capacity. Based upon work sessions with the municipal representatives, it appears that each municipality will provide for maintenance within each jurisdiction. New Britain Borough expressed a desire to explore the potential for them to support trail operations and maintenance by working within the Tri-Municipal partnership through some fair and equitable contribution to obtain assistance in trail maintenance from another partner. They do recognize the need to support their own way but are challenged with limited staff for ongoing maintenance.

A formal organizational structure needs to be established to define relationships regarding pathway operations. The purpose of the organization would be to define roles and responsibilities along with their respective relationships. This could include the individual care and maintenance of the pathway within each municipality with a goal established of making it as seamless as possible to achieve a unified appearance as the Tri-Municipal Trail & Greenway. That way the trail visitor has an excellent experience of using a premiere public facility throughout the length of the trail.

The formal organization will provide an easily understandable structure for people both within and outside of the organization to communicate about the Tri-Municipal Trail. Ideally the identification of a single point of contact would enable the public to easily and conveniently make contact with the organization about the trail. It is essential that the Tri-Municipal Trail & Greenway designate the responsibility for trail maintenance to identified employees. Unless a specific person(s) is designated, it is likely that no one will actually assume the responsibility for trail management functions or that the responsibilities would be so dispersed that major responsibilities and tasks to protect the property and keep visitors safe would fall through the cracks. An example would be when a storm occurs, who will go out to look at the trail to check for damage and then oversee the repair work to make sure that it conforms to the trail design and construction?

The Study Committee could be re-constituted as the Tri-Municipal Trail & Greenway Committee or Board. An intergovernmental agreement could formalize the structure, membership appointments, roles, responsibilities, operating guidelines, and contributions.

Undertaking Trail Maintenance

Maintenance includes practices to make the pathway safe, clean, and attractive including the removal of all debris, trash, litter, undesirable and unsafe structures, vegetation, and other foreign matter. Trail heads, points of public access, rest areas, and other activity areas shall be maintained in a clean and usable condition at all times. The primary concern for maintenance is first and foremost public safety. Nearly equal in concern is the desire to maintain this pathway as a continuous, even, and clean surface. This is very important along a corridor traversing three jurisdictions all with the responsibility yet varying resources and capacity for trail maintenance. All trail facilities should be maintained in a safe and usable

manner during hours of operation from dawn to dusk. Rough edges, severe bumps or depressions, cracked or uneven pavement, gullies, rills, and damaged tread surface shall be repaired immediately.

Property and Vegetation Management

Controlling growth of vegetation is essential to maintaining clear and open lines of sight along the trail, at intersections with roadways and driveways, and along roadways. Right-of-way and property that are deemed to be part of the Tri-Municipal Trail & Greenway will be maintained in a way that promotes safety and security for trail users and adjacent property owners and that preserves the aesthetic beauty of the area. Vegetation within the trail corridor will be managed to:

- Promote safety.
- Preserve the unique aesthetic values of the landscape and communities of the Tri-Municipal Trail & Greenway.
- Buffer private land owners from trail visitors.
- Provide wildlife habitat.
- Enhance water quality.

Vegetation is usually cleared three feet along the trail although Chalfont Borough expressed concern that three feet is not enough and they would prefer 10 feet. If the Borough has the means to do this and/or volunteers to assist, the organization should discuss the standard that they want to set for vegetation care which could range somewhere between three and ten feet. Some trails use four feet as the standard.

Estimated Maintenance Cost of Tri-Municipal Trail & Greenway

Trail maintenance is conducted in a variety of ways the most common of which is government ownership with a mix of maintenance by municipal workers and volunteers. Close to home examples often provide insight due to cost of living, purchasing, labor and other values being similar right within the area. Interviews with Doylestown Township and Doylestown Borough provided some insight as to the current maintenance practices on the Bike and Hike System.

Doylestown Township has most of the trail length with about 16 miles. Trail maintenance of the off-road trail is the responsibility of the Park Maintenance staff. While specific information about workload and cost tracking is not available, the staff provided information about the nature and extent of the work undertaken in maintenance of the Bike and Hike System. The estimated cost of labor, equipment, and supplies is about \$1,000 per mile. Tasks include:

- Tree Trimming: 40-60 hour annually.
- Grass Mowing: contracted out at price of \$5,000 annually.
- Snowplowing: two to six hours per storm depending on amount of snowfall.
- Sealing cracks: 32 hour annually.
- Split rail fence repair: 32 hours annually.
- Inspection and miscellaneous maintenance tasks.

Doylestown Borough mows the trail shoulder and removes litter along the Bike & Hike System within the Borough with about two miles of trail. The estimated cost of labor and equipment is about \$2,550 or \$1,275 per mile.

The Rail Trail Conservancy conducts research into trails development and maintenance. The Conservancy regards \$1,200 per mile as the minimum investment required in trail maintenance.

Both the Township and the Borough have reported very little litter or vandalism. Because the Township and the Borough operate with dedicated staff and without a workload cost tracking system and the trails are maintained well, it is probably the case that the municipal workers provide an additional level of effort to maintenance on the Bike & Hike System that is not accounted for in the maintenance cost estimates. For example park maintenance staff inspects the trails on a regular basis but does not count that as part of the trail maintenance price. The most challenging aspect of trail maintenance has been the repair of the split rail fence mainly near Delaware Valley College.

With some trail segments about 18 years old; resurfacing is becoming needed in Doylestown Township. Estimates developed by the staff suggest a capital improvement cost for re-surfacing of \$250,000 to \$300,000. Re-surfacing is a normal part of the cyclic maintenance of an asphalt trail. In contrast to the Doylestown Bike & Hike System which is paved off-road trails. The Tri-Municipal Trail will be a combination of off-road and bike lanes.

**Table 2
Maintenance Program for Tri-Municipal Trail**

Task	Frequency
Trail pavement marking replacement	One to two years. We are proposing no markings on off-road trails both for cost and aesthetic reasons. Should trail traffic conditions become heavy with user conflicts, this policy could be re-evaluated as warranted.
On-Street pavement marking replacement	One to two years. Municipal staff reports that certain higher traffic areas require annual line painting. Costs range from eight cents per linear foot and one hour of labor and equipment per mile or paint to 35 cents per liner foot for contracted line painting.
Pavement sealing/potholes	5 – 15 years
Sign replacement/repair	1- 3 years
Clean drainage system	Annually
Pavement sweeping	Monthly. The municipalities now sweep streets twice annually.
Shoulder mowing	Monthly
Plowing	Municipalities expect to establish a “No Plowing” policy. However, the .26-mile of state road requires plowing, which could be done in conjunction with regular snow removal on state roadway.
Litter pick up and removal	As needed. Municipalities within the area report little or no trash on trails. Trash that does appear is usually near a primary location where a business might sell products that result in trash. Carry in–Carry out is a trash policy that has worked well elsewhere including in Plumstead Twp.
Inspect crossings, bridges& abutments, boardwalks.	Annual inspection and after major storms. Regular, formal inspection of bicycle lanes. Four bridges and several sections of boardwalk are proposed for the Tri-Municipal Trail.
Furniture maintenance	Annually
Tree pruning for vertical clearance	Annually
Fallen tree removal	As needed on off-road trail
Fencing maintenance	Annually
Natural resource management program	To be developed and implemented

Strategic Operations and Management

Since many factors influence the cost of managing trails, the estimate of potential costs itemized herein is based on trail industry averages using contract labor, materials, and industry practices along with information generated about current maintenance practices and costs of Chalfont Borough, New Britain Borough, and New Britain Township. Long-term maintenance of the Tri-Municipal Trail and Greenway will require an annual source of funding phased in over time as segments are developed. **Tables 3** and 4 present the maintenance cost estimate per mile of trail in the Tri-Municipal Trail.

Task	Estimated Annual Cost Per Mile
Maintenance of trail surface (30 x/year) sweeping and plowing	\$3,000
Drainage maintenance (6 x/year)	\$500
Pavement, symbol and signage markings	\$1,000
Inspections: bridges, crossings, abutments	\$400
Minor repairs to trail furniture/safety features	\$500
Maintenance supplies	\$500
Equipment fuel and repairs	\$1,500
TOTAL	\$7,400

Task	Estimated Annual Cost Per Mile
Maintenance of trail surface	\$300
Drainage maintenance (4 x/year)	\$400
Weed control and vegetation management (8x/year)	\$400
Mowing of 3-ft grass safe zone (20x/year)	\$800
Inspections	\$300
Minor repairs to trail furniture/safety features	\$100
Maintenance supplies	\$200
Equipment fuel and repairs	\$500
TOTAL	\$3,000

Table 5 presents the estimated annual trail maintenance cost by municipality. It is important to note that the estimates are for the entire 33.2-mile system, which will be phased in over time. Just as trail development will be phased in, so will maintenance costs. For budgeting purposes, the municipalities can use \$3,000 per mile for off-road maintenance estimates and \$7,400 per mile on-road. Many trail systems mitigate maintenance costs through volunteers.

Municipality	Bike Lane Mileage Estimated Cost	Off-Road Trail Mileage Estimated Cost	Total Estimated Cost
Chalfont Borough	\$25,086	\$9,780	\$34,866
New Britain Borough	14,800	11,250	26,050
New Britain Township	33,152	48,960	108,162
TOTAL	\$73,038	\$69,990	\$169,078

Maintenance on PennDOT Roads

A .26-mile bicycle lane in Chalfont Borough is on North Limekiln Pike, a PennDOT road. To obtain PennDOT's permission to install a bicycle lane here, Chalfont Borough must obtain a BOP (Bicycle Occupancy Permit). As part of the BOP, Chalfont Borough must assume the maintenance of this portion of the road, which includes a level of maintenance to PennDOT standards, including snow removal and regular painting of the pavement markings. The municipality will not receive liquid fuels money for this segment of the road. This policy has been a deterrent to the development of bicycle lanes and several organizations in southeastern Pennsylvania are trying to pursue a change in PennDOT policy in this matter.

Volunteers: Important for Trail Maintenance Cost Reduction and Improved Security

The use of volunteers will benefit the trail by reducing on-going costs, improving trail conditions, providing events and programs, and enhancing security. Trail users and volunteers provide security for the trail, alert trail managers about conditions; alert police when something suspicious is occurring and deter undesirable use. Volunteers perform tasks such as mowing, vegetation control and pruning, litter removal, programming and events. Examples include:

- **Lower Merion Trail Truck** - Lower Merion Township obtained a grant to purchase and stock the "Trail Truck". The Trail Truck contains the equipment and supplies necessary for trail maintenance. Volunteers maintain the trails and a volunteer drives the truck to the volunteer maintenance site so that the volunteers can use the equipment and supplies in the truck. The use of volunteers substantially reduces trail maintenance costs.
- **York County Trail Ambassadors** - York County has a cadre of 45 volunteers who are trained as trail ambassadors with First Aid, Bicycle Repair, Customer Service experience, and knowledge about the trail system and its rules and regulations. The program is so popular and prestigious that there is always a waiting list of people who want to become ambassadors.
- **Trolley Trail** – The York Hanover Trolley Trail has a waiting list of 12 individuals, families, and community groups signed up to adopt segments of the Trolley Trail as it is developed.

However, volunteers are not free. They require recruiting, management, training, supervision, and recognition. Unless a volunteer manager for the volunteer program can be secured, this responsibility must fall to a designated staff person. In all three examples of trail volunteerism listed above, a person(s) was in charge of developing the concept and implementing the programs to generate the volunteers. Strong consideration should be given to a Tri-Municipal Trail volunteer program so that the three communities can maximize limited resources in overseeing volunteers – do this once instead of three times! Sources of volunteers include trail users, bicycle clubs, scouts, high school community service projects, service clubs, businesses, neighborhoods, and families. The criminal justice system is a source of community service workers for trail maintenance.

Safety and Security

Providing for the health, safety, and welfare of the trail visitors has been a major component of planning for the Tri-Municipal Trail & Greenway from the outset. Each municipality has concerns about exposure to liability and protection of trail user, property, and adjoining landowners.

Each municipality has a police department. A regional police force was considered recently but did not move forward. New Britain Township has a Bike Patrol Unit. The officers are specially trained in the operation of police mountain bicycles as a patrol tactic. Such tactics allow for police presence in an area

not easily accessible to patrol vehicles or when circumstances call for a stealthier response. Bike officers patrol residential developments, local parks, shopping centers, and industrial centers.

The Police should be involved in bicycle path development and management throughout its development over time. Ideally, the safety program would be unified along the length of the pathways and consist of well-defined safety and security policies; pathway management, law enforcement, and emergency procedures; and a system that offers timely response to the residents and visitors for issues or problems related to safety and security. Important components of the safety and security program should include:

1. Institution of user rules and regulations,
2. Development and implementation of a regular maintenance programs,
3. Establishment of an ongoing inspection system with reports on conditions and resolution of issues,
4. Preparation of a bicycle pathway safety manual,
5. Development of emergency procedures both for bicycle pathway conditions and visitors in need of help,
6. Preparation of a safety checklist for the pathways,
7. Preparation of a pathway-user response form,
8. A system for accident reporting and analysis,
9. Site and facility development and review,
10. Public educational and information programs,
11. Employee training programs for safety and emergency response,
12. Regular evaluation of program objectives, and
13. Development of a risk management plan as shown below and establishment of a safety committee and/or coordinator.

Liability Concerns and Protection¹

Liability about bicycle pathways is a concern of many individuals and organizations ranging from the private landowner all the way up to the Commonwealth of Pennsylvania. While concerns about liability are understandable, real-world experience shows that neither public nor private landowners have suffered from trail development. In fact, the Doylestown Community Bike & Hike System provides a close-to-home example of how bicycle trails benefit the community.

Adjacent landowners are not at risk as long as they abstain from “willful and wanton misconduct” against trespassers such as recklessly or intentionally creating a hazard. Trail managers minimize liability exposure provided they design and manage the trail in a responsible manner and do not charge for trail access. The Rails to Trails Conservancy has published a primer on liability related to rail trails that provides useful information on this topic. It can be downloaded on the Internet by logging onto the following WEB site: http://www.railstotrails.org/resources/documents/resource_docs/tgc_liability.pdf.

¹ Morris, Hugh. (2000). A Primer on Trail-Related Liability Issues & Risk Management Techniques. Washington, D.C: Rails to Trails Conservancy. p 6-9.

PRPS (Pennsylvania Recreation and Park Society) is the lead agency in Pennsylvania dedicated to training and information dissemination about park and recreation related issues. PRPS provides current information about training programs, information, publications, and contacts regarding trails and liability. Organizations such as PRPS, the Department of Conservation and Natural Resources, the Pennsylvania Rail Trail Conservancy, and the Pennsylvania Association of Land Trusts are constantly working on addressing trail issues especially liability in order to establish trails while making them safe, enjoyable, and with minimal exposure to liability to trail and property owners. These are good sources of information on current endeavors on liability. A number of protective measures are already in place and discussed below.

Sample Trail Rules and Regulations

1. **Be Courteous:** All trail users, including bicyclists, joggers, and walkers should be respectful of other users regardless of their mode of travel, speed or level of skill. Respect the privacy of adjacent landowners.
2. **Keep Right:** Always stay to the right as you use the trail or stay in the lane that has been designated for your user group. The exception to this rule occurs when you need to pass another user.
3. **Pass on the Left:** Pass others going in your direction on their left. Look ahead and behind to make sure that your lane is clear before you pull out and around the other user. Pass with ample separation. Do not move back to the right until you have safely gained distance and speed on the other user.
4. **Give Audible Signal When Passing:** All users should give a clear warning signal before passing. This signal may be produced by voice, bell, or soft horn. Voice signals might include "Passing on the Left!" or "Cyclist on the left!" Always be courteous when providing the audible signal -- profanity is unwarranted and unappreciated.
5. **Be Predictable:** Travel in a consistent and predictable manner. Always look behind before changing position on the trail regardless of your mode of travel.
6. **Control Your Bicycle:** Inattention, even for a second, can cause disaster —always stay alert! Maintain a safe and legal speed at all times.
7. **Don't Block the Trail:** When in a group, including your pets, use no more than half the trail so as not to block the flow of other users. If users approach your group from both directions, form a single line or stop and move to the far right edge of the trail to allow safe passage by these users.
8. **Yield When Entering or Crossing Trails:** When entering or crossing a trail at uncontrolled intersections, yield to traffic already using the other trail.
9. **Use Lights:** When using the trail during periods of low visibility each cyclist should be equipped with proper lights. Cyclists should have a white light that is visible from 500 feet to the front, and a red or amber light that is visible from 500 feet to the rear. Other trail users should use white lights (bright flashlights) visible 250 feet to the front, and wear light or reflective clothing.
10. **Don't Use this Trail Under the Influence of Alcohol or Drugs:** It is illegal to use this trail if you have consumed alcohol in excess of the statutory limits, or if you have consumed illegal drugs. Persons who use a prescribed medication should check with their doctor or pharmacist to ensure that it will not impair their ability to safely operate a bicycle.
11. **Clean Up Your Litter:** Please keep this trail clean and neat for other users to enjoy. Do not leave glass, paper, cans, or other debris on or near the trail. Please clean up after your pets. Pack out what you bring in, and remember always to recycle your trash.
12. **Keep Pets on Leashes:** All pets must be kept on a secure and tethered leash. Failure to do so will result in fines and possible detention of the pet.
13. **Use the Buddy System:** Always use the trail system with a friend!
14. **Vegetation Removal:** It is illegal to remove vegetation of any type, size, or species from the trail. Please contact (Designate a Name, Phone Number and E-mail Address) should you have concerns about noxious weeds, poisonous vegetation, dying or dead vegetation or other concerns about vegetation growth in the trail.
15. **Share the Trail!** Always exercise due care and caution when using the trail!

Trail Managers and Private Landowners²

Two primary categories of people have liability concerns presented by a trail: the trail managing and owning entity (typically a public entity) and private landowners. Private landowners can be divided into two categories, those who have provided an easement for a trail over their land and those who own land adjacent to a trail corridor.

Private landowners may have some concerns about their liability should a trail user stray onto their land and become injured. Where an easement is granted, the concern may be over injuries both on the granted right-of-way as well as injuries that may occur on land under their control that is adjacent to the trail. Where the landowner has no ownership interest in the trail, the landowner will only be concerned with injury to trail users wandering onto their property and getting hurt or perhaps a tree from their property falling onto the trail.

In general, people owning land adjacent to a bicycle pathway—whether the pathway is an easement granted by them or is held by separate title—foresee that people using the trail may be endangered by a condition on their land. Potential hazards such as a pond, a ditch, or a dead tree may cause the landowner to worry about liability for a resulting injury. The landowner may reduce their liability by taking the following actions

- Work with pathway designers to have the path located away from hazards that cannot be corrected.
- Make it clear that pathway users are not invited onto the adjoining land. This can be aided by having the pathway designer develop signs, vegetative screening, or fencing.
- If a hazardous condition does exist near the pathway, signs should be developed to warn path users of the hazard if it cannot be mitigated.

Of particular concern to adjacent landowners are attractions to children that may be dangerous, such as a pond. Many states recognize that children may trespass to explore an attractive nuisance. These states require a legal responsibility to children, even as trespassers, that is greater than the duty of care owed to adults. If a landowner provides an easement for a public-use bicycle pathway, the easement contract should specify that the managing agency will carry liability insurance, will design the path to recognized standards, and will develop and carry out a maintenance plan. The landowner may also request that an indemnification agreement be created in their favor.

Abutting property owners frequently express concern about their liability to trail users. In general, their liability, if any, is limited and is defined by their own actions in relation to the trail. If an abutting property owner possesses no interest in the trail, then he or she does not have any right or obligation to warn trail users about defects in the trail unless the landowner creates a dangerous condition on the trail by his own act or omission. In that event, the abutting landowner would be responsible for his own acts or omissions that caused the injury to a third party using the trail, just as the operator of one car is responsible to the operator of another for an accident he caused on a public street.

Limiting Liability

Three legal precepts, either alone or in combination, define and in many cases limit liability for injury resulting from trail use. They include:

- **Duty of Care** speaks to the responsibility that a landowner (private or public) has to anyone on his or her land.

² Ibid. p 3.

- **Recreational Use of Land and Water Act** provides protection to private landowners and some public landowners who allow public free access to land for recreational purposes.
- **Liability Insurance**, for all private and public parties, provides the final line of defense. Trail owners can also find much protection through risk management.

Duty of Care³

Tort law, with regard to finding fault for an incident that occurs in a particular location, is concerned with the “class” of person who sustained the injury and the legal duty of care owed to a person in that class. The legal duty of care that a landowner owes a member of the general public is generally divided into four categories. A landowner’s responsibility for injuries depends on the status of the injured person. A landowner owes increasingly greater duties of care (i.e.; is more at risk) if the injured person is a “trespasser,” a “licensee,” an “invitee,” or a “child.”

Trespasser - a person on land without the land- owners permission, whether intentionally or by mistaken belief that they are on public land. Trespassers are due the least duty of care and therefore pose the lowest level of liability risk. The landowner is generally not responsible for unsafe conditions. The landowner can only be held liable for deliberate or reckless misconduct, such as putting up a trip wire. Adjacent landowners are unlikely to be held liable for injuries sustained by trespassers on their property.

Licensee - a person on land with the owner’s permission but only for the visitor’s benefit. This situation creates a slightly higher liability for the landowner. For example, a person who is permitted to hunt on a farm without paying a fee, if there were no Recreational Use of Land and Water Act, would be classified as a licensee. If the landowner charged a fee, the hunter would probably be classified as an invitee. Again, the landowner is not responsible for discovering unsafe conditions; however the landowner must provide warning of known unsafe conditions.

Invitee - a person on the owner’s land with the owner’s permission, expressly or implied, for the owner’s benefit, such as a paying customer. This is the highest level of responsibility and therefore carries the highest level of liability. The owner is responsible for unknown dangers that should have been discovered. Put a different way, the landowner has a duty to:

1. Inspect the property and facilities to discover hidden dangers;
2. Remove the hidden dangers or warn the user of their presence;
3. Keep the property and facilities in reasonably safe repair; and
4. Anticipate foreseeable activities by users and take precautions to protect users from foreseeable dangers.

The landowner does not ensure the invitee’s safety, but must exercise reasonable care to prevent injury. Generally, the landowner is not liable for injuries caused by known, open, or obvious dangers where there has been an appropriate warning. For example, customers using an ice rink open to the public for a fee would be invitees.

Child - even if trespassing, some states accord children a higher level of protection. The concept of “attractive nuisance” is particularly relevant to children. Landforms such as ponds can be attractive to children who, unaware of potential danger, may be injured if they explore such items.

³ Morris, Hugh. (2000). A Primer on Trail-Related Liability Issues & Risk Management Techniques. Washington, D.C: Rails to Trails Conservancy. p 6-9.

Pennsylvania Recreational Use of Land and Water Act

This state statute, as shown on page 6-13, provides protection to landowners who allow the public to use their land for recreational purposes at no charge. The theory behind these statutes is that if landowners are protected from liability they would be more likely to open up their land for public recreational use and that, in turn, would reduce state expenditures to provide such areas. To recover damages, an injured person must prove “willful and wanton misconduct” on the part of the landowner, essentially the same duty of care owed to a trespasser. However, if the landowner is charging a fee for access to the property, the protection offered by the recreational use statute is lost.

The Recreational Use of Land and Water Act (RULWA) limits the duty of care a landowner would otherwise owe to a recreational licensee to keep his or her premises safe for use. It also limits a landowner’s duty to warn of dangerous conditions provided such failure to warn is not considered grossly negligent, willful, wanton, or reckless. The result of the statute is to limit landowner liability for injuries experienced by people partaking in recreational activities on their land. The existence of a RULWA may also have the effect of reducing insurance premiums for landowners whose lands are used for recreation.

This law does not prevent somebody from suing a trail manager/owner or a private property owner who has made his or her land available to the public for recreational use, it only means the suit will not advance in court if certain conditions hold true. Thus, the trail manager/owner may incur costs to defend him or her. Such costs are the principal reason for purchasing liability insurance. At this time, PALTA (Pennsylvania Land Trust Alliance) is working on a project that would establish a pool of funding to be used to defend landowners who have provided easements for the public use of their land. Consideration could be extended to property owners providing trail easements. If the landowner were to be found not liable, then this pool would cover their litigation costs. However, if the landowner were to be found liable then the fund would not pay their legal costs. If this pool were to come to fruition, it would be one more important step in protecting landowners who provide easements for use of their property.

Under lease arrangements between a public agency and a private landowner, land can be provided for public recreation while the public agency agrees to defend and protect the private landowner. The private landowner may still be sued but the public agency holds the landowner harmless, taking responsibilities for the cost of defending a lawsuit and any resulting judgments. The municipalities of the Tri-Municipal area along with neighboring Doylestown, Bucks County and other municipalities and organizations could consider working together to contact PALTA to determine if there is anyway to support PALTA’s efforts on innovative ways of addressing liability concerns and supporting landowners who are willing to provide easements for public recreational access to their land. The mechanism for this could be to adopt a supporting position for this and have a point organization take the lead such as the Bucks County Planning Commission or the Parks and Recreation Department.

Liability Insurance

Liability Insurance protects property owners from liability claims. Because RULWA is in place, such lawsuits do not go far because of the immunity to the landowner. In some instances, owners of the trail or trail easement cover the liability costs of the landowner for the trail. Such funds are often generated through private fund-raising efforts if it is a private non-profit organization. In most cases, the liability insurance is covered by the property owner.

Pennsylvania's Recreational Use of Land and Water Act



INTRODUCTION

Pennsylvania has a law that limits the legal liability of landowners who make their land available to the public for free recreation. The purpose of the law is to supplement the availability of publicly owned parks and forests by encouraging landowners to allow hikers, fishermen and other recreational users onto their properties. The Recreational Use of Land and Water Act ("RULWA"), found in Purdon's Pennsylvania Statutes, title 68, sections 477-1 et seq., creates that incentive by limiting the traditional duty of care that landowners owe to entrants upon their land. **So long as no entrance or use fee is charged, the Act provides that landowners owe no duty of care to keep their land safe for recreational users and have no duty to warn of dangerous conditions.** Excepted out of this liability limitation are instances where landowners willfully or maliciously fail to guard or warn of dangerous conditions. That is, the law immunizes landowners only from claims of negligence. Every other state in the nation has similar legislation.

PEOPLE COVERED BY THE ACT

The "owners" of land protected by the Act include public and private fee title holders as well as lessees (hunt clubs, e.g.) and other persons or organizations "in control of the premises." Holders of conservation easements and trail easements are protected under RULWA if they exercise sufficient control over the land to be subject to liability as a "possessor." (See *Stanton v. Lackawanna Energy Ltd.* (Pa. Supreme Ct. 2005)(RULWA immunizes power company from negligence claim where bike rider collided with gate that company had erected within the 70-foot wide easement over mostly undeveloped land it held for power transmission)).

LAND COVERED BY THE ACT

Although on its face RULWA applies to all recreational "land"—improved and unimproved, large and small, rural and urban—in the last 15 years or so, Pennsylvania courts have tended to read the Act narrowly, claiming that the legislature intended it to apply only to large land holdings for outdoor recreational use.

Courts weigh several factors to decide whether the land where the injury occurred has been so altered from its natural state that it is no longer "land" within the meaning of the Act. In order of importance:

(1) Extent of Improvements – The more developed the property the less likely it is to receive protection under RULWA, because

recreational users may more reasonably expect it to be adequately monitored and maintained;

(2) Size of the Land – Larger properties are harder to maintain and so are more likely to receive recreational immunity;

(3) Location of the Land – The more rural the property the more likely it will receive protection under the Act, because it is more difficult and expensive for the owner to monitor and maintain;

(4) Openness – Open property is more likely to receive protection than enclosed property; and

(5) Use of the Land – Property is more likely to receive protection if the owner uses it exclusively for recreational, rather than business, purposes.

SITE IMPROVEMENTS

The following cases focus on the nature and extent of site improvements that might negate RULWA immunity:

- The state Supreme Court ruled that the Act was not intended to apply to swimming pools, whether indoor (*Rivera v. Philadelphia Theological Seminary* (Pa. Supreme Ct. 1986)) or outdoor (*City of Philadelphia v. Duda* (Pa. Supreme Ct. 1991)).
- RULWA immunity does not cover injuries sustained on basketball courts, which are "completely improved" recreational facilities (*Walsh v. City of Philadelphia* (Pa. Supreme Ct. 1991)).
- Playgrounds are too "developed" to qualify for immunity (*DiMino v. Borough of Pottstown* (Pa. Commonwealth Ct. 1991)).
- Playing fields generally are held not to be "land" within the protection of the Act (*Brown v. Tunkhannock Twp.* (Pa. Commonwealth Ct. 1995) (baseball field); *Scifert v. Downingtown Area School District* (Pa. Commonwealth Ct. 1992)(lacrosse field); *Lewis v. Drexel University* (Pa. Superior Ct. 2001, unreported)(football field); but see *Wilkinson v. Conoy Twp.* (Pa. Commonwealth Ct. 1996)(softball field is "land" under RULWA)).

Design and Maintenance as Risk Management Tool

Even with the preceding forms of protection described, the best defense a municipality has is sound policy and practice for trail maintenance and usage. Developing a comprehensive management and operations plan is the best defense against an injury-related lawsuit.

Trails that are properly designed and maintained go a long way to ward off any potential liability. If adhered to in the Tri-Municipal Trail & Greenway design, the AASHTO, PennDOT, and MUTCD general design guidelines can provide protection by showing that conventional standards were used in designing and building the trail. Trails that are designed in accordance with recognized standards or “best practices” might be able to take advantage of any design immunities under state law. Within the spectrum of public facilities, trails are quite safe, often less risky than roads, swimming pools, and playgrounds.

A comprehensive maintenance management plan should provide for regular maintenance and inspection. These procedures should be spelled out in detail in a Tri-Municipal Trail & Greenway Management Handbook and a record should be kept of each inspection including what was discovered and any corrective action taken. The trail manager must be designated and should attempt to ward off or eliminate any hazardous situations before an injury occurs. Private landowners that provide public easements for a trail should ensure that such management plans are in place and used to reduce their own liability. During trail design and development:

- Develop an inventory of potential hazards along the trail,
- Create a list of users (cyclists, strollers, walkers, runners etc.), that will be permitted on the trail and the risks associated with each,
- Identify all applicable laws,
- Design and locate the trail such that obvious dangers are avoided. Warnings of potential hazards should be provided, and mitigated to the extent possible,
- Trail design and construction should be completed by persons who are knowledgeable about design guidelines, such as those listed in AASHTO, PennDOT, and MUTCD documents, and
- Trail regulations should be posted and enforced.

Once segments of the Tri-Municipal Trail are open for use:

- Conduct regular inspections of the trail by a qualified person who has the expertise to identify hazardous conditions and maintenance problems.
- Correct maintenance problems quickly and document the work. Where a problem cannot be promptly corrected, erect warnings to trail users.
- Develop procedures for handling medical emergencies. Document any occurrence of medical emergencies and the procedures used.
- Maintain records of all inspections, what was found, and what was done about it. Include photographs that are helpful in illustrating the conditions and resolutions.
- These risk management techniques will not only help to ensure that hazardous conditions are identified and corrected in a timely manner, thereby averting injury to trail users, but will also serve to protect the trail owner and managing organization from liability. Showing that the agency had been acting in a responsible manner can serve as an excellent defense in the event that a lawsuit develops

Use of Volunteers for Trail Work

Trail managers often use volunteers for routine trail maintenance or even for trail construction. What happens if the volunteer is injured while performing trail-related work? What happens if an action taken by a volunteer leads to an injury of a trail user? First, make sure that the insurance of Chalfont Borough, New Britain Borough, and New Britain Township covers volunteer workers. Second, the person(s) who are designated as the trail manager(s) should be protected from any user injury created by an act of a volunteer provided the act is not one of willful or reckless misconduct. The Federal Volunteer Protection Act of 1997 protects the volunteer worker. This act protects volunteers of nonprofit organizations or governmental entities. The Act states that such volunteers are not liable for harm caused by their acts of commission or omission provided the acts are in good faith.

Bicycle Friendly Communities

A Bicycle Friendly Community welcomes cyclists by providing safe accommodation for cycling and encouraging people to bike for transportation and recreation. The League of American Bicyclists has established the prestigious Bicycle Friendly Community program that provides incentives, hands-on assistance, and award recognition for communities that actively support bicycling. Currently, Philadelphia is the only city in Pennsylvania to garner this designation. Doylestown received an honorable mention in 2009 and is working hard to capture the designation in the future. The five categories local and national reviewers use in evaluating a municipality's potential for this designation include:

- Education: Does the community have systems in place to train children and adult cyclists?
- Engineering: Are bicyclists included in the municipal transportation plan?
- Enforcement: Do police officers understand and enforce bicyclists' rights and responsibilities?
- Encouragement: Does the community participate in Bike Month, offer bike rodeos, host community bike rides, or otherwise encourage cycling?
- Evaluation: Does the community have methods in place to ensure their bicyclist programs are making a difference?

Further information can be obtained on the WEB site: www.bikeleague.org/programs.

Education

The issue of educating both cyclists and motorists was a major interest that emerged throughout the planning process. Educational initiatives should be considered on a regional basis beyond the Tri-Municipal partnership alone. Since the three municipalities have a total of one part-time Recreation Coordinator, staffing is not in place to undertake extensive educational efforts. Over the years, the Doylestown Bike & Hike Committee, which does involve Tri-Municipal representatives as participants, has undertaken some educational programs which includes a fourth grade curriculum for bicycling in the Central Bucks School District. The Bucks County Bicycle Task Force is addressing safety in creative ways such as promoting bicycle safety and obtaining helmets to donate to children and youth. The Task Force operated a booth at the Univest Race as a way to promote safe cycling. The Bucks County Parks and Recreation Department has offered some LCI taught course in the past. Several LCI (League Certified Instructors of the League of American Bicyclists) live in the area that could be tapped to assist in developing educational programs. Educational materials focus on safe behaviors, rules, and responsibilities. Information may include important bicycle and pedestrian laws, bulleted keys for safe bicycle and pedestrian travel, helmet requirements, safe motor vehicle operation around bicyclists and pedestrians, and general facility rules and regulations. Safety information is often available for download

from national pedestrian advocacy organizations, such as the Pedestrian and Bicycle Information Center website, www.pedbikeinfo.org and www.walkinginfo.org. Because of the many resources in the area and the major need to cycling safety especially with regard to motorists, there should be larger regional bicycle education developed with the Tri-Municipal partners participating as part of the larger effort. Some suggestions were made such as targeting certain age groups such as the fourth graders in Central Bucks School District and 16 year olds as part of driver education would be help to zero in on specific audiences that would over time have a major impact.

Motorist Education - Equally important as bicyclist education is motorist education. Many motorists do not recognize the simple fact that a bicycle is considered a vehicle by Pennsylvania state law. This is a major problem in Pennsylvania including in the Central Bucks area where motorist behavior was repeatedly mentioned as an issue throughout the public participation process for this plan. Budget cuts in Pennsylvania have resulted in the elimination of the Bicycle Pedestrian Coordinator position in PennDOT central headquarters. Now each region has a part-time bicycle coordinator. The municipalities should continue to relay to the state senator and representatives about the need for assistance in making this area (and Pennsylvania overall) pedestrian and bicycle friendly, in part, through Penn DOT support.

The implementation of Pennsylvania's 2007 Bicycle and Pedestrian Plan is crucial in supporting the Tri-Municipal efforts. PennDOT's website, 'bike safe' is devoted to bicycles, bicyclists' rights and responsibilities, and how motorists and bicyclists should behave. (Resource: <http://www.dot.state.pa.us/BIKE/WEB/index.htm>).

Encouragement

Programs and events are ways of getting people more involved in cycling as well as increasing awareness about rights and responsibilities of cycling. Incorporating bicycle safety into existing programs such as summer recreation programs would be beneficial. The New Britain Bicycle Patrol would be an interesting way to do outreach in the community. Generating partnerships with "captive audiences" such as youth sports organizations, scouts, and so on would be venues for offering bicycle programs. Once again, encouragement through programs and activities should be part of a larger regional effort in which the Tri-Municipal partners would participate.

What to Do Next

1. Reconstitute the Tri-Municipal Trail Study Committee. Create a mission for the organization along with roles, responsibilities, and an annual work program. Identify a meeting schedule and locations for the next fiscal year. Develop an annual report of accomplishments and challenges. The Committee should include representation from each municipality, one from the New Britain Borough Community Bike & Hike Master Plan Committee, a liaison who would participate in the Doylestown Community Bike & Hike System meetings and initiatives, and ideally elected officials. The committee should represent a mix of the range of cyclists including beginners, recreational riders, and on-road cyclists.
2. Work on the pilot project. Strive to address the segments with the most likelihood of success. Develop trail master plans for identified segments.
3. Determine who will own, monitor, and manage the easements for the Tri-Municipal Trail & Greenway. Different entities may be responsible for each aspect of trail easements. For example a government entity could own the easements while a community organization could monitor

- and manage the easements. Involving the Heritage Conservancy in the easements may be of assistance to the municipalities.
4. Continue to work within the larger Bucks County region on bicycling related projects, programs, education, and outreach. Continue to participate in the Doylestown Community Bike & Hike Committee. Participate in the Bucks County Bicycle Plan process.
 5. Continue to work with property owners in securing easements for rights-of-way where needed.
 6. Apply for grants to fund master planning and trail construction.
 7. Identify a list of trail management and operational issues, procedures and policies that should be worked out before any segment of the trail is open. This includes the development of an organizational structure for trail management and operations, addressing a potential intergovernmental agreement, and the development of a maintenance plan to provide a seamless uniform appearance to the trail. For phase of pathway development that includes the - 0.26 - mile segment of bicycle lane on a state road in Chalfont Borough, pursue the BOP (Bicycle Occupancy Permit). Continue to follow this as a policy issue through coordination with the Bucks County Planning Commission.
 8. Consider establishing an Intergovernmental Agreement for the Tri-Municipal Trail. The formality of an agreement could provide an enduring method of protecting the trail over time and through changes in administration and staffing. Under the IOG, the three municipalities could designate the items they want to cooperate on and do jointly as well as items they would undertake individually. An IOG is not a requirement of working together just as Doylestown Township and Doylestown Borough work together without a formal agreement with each municipality taking care of their respective trail segments. This would be the document in which to outline tasks, roles responsibilities, and level of support that each jurisdiction would contribute.
 9. Since trail and greenway maintenance and management will be a function with increasing demand on the maintenance forces, the municipalities could consider getting some support for the development of a maintenance management plan for the system. PADCNR offers a Peer Study grant of \$10,000 with a \$1,000 match requirement to develop plans and solutions to specific parks and recreation issues which would include trail and greenway maintenance and management as well as intergovernmental collaboration. Work out if the maintenance and management structure will be one centralized organization with the partners contributing a fair and equitable share or if the agreement will have each municipality operating on its own. This is a major point for discussion. No matter the final outcome, one trail manager or single point of contact for the organization should be established. Funding formulas could be based upon the length of trail segment in the jurisdiction, or per capita fee, or on the cost of performing the task, or combinations of ways. At present, there is some inter-municipal assistance such as in snow plowing. There has also been exploration of using inter-municipal staff sharing based upon reimbursing the respective municipality the cost of performing the job.
 10. Plan events and activities on the trail corridor. Strive to have one major signature event for the Tri-Municipal Trail & Greenway annually. Have a few seasonal events to get people using and aware of the trail. These could be planned and operated by the Tri-Municipal Trail & Greenway Committee. The municipalities have offered some events like walk to school day in conjunction with the safe routes to school programs.

11. Develop a natural resources management plan for the Greenways in the Tri-Municipal area. Secure the assistance of the Bucks County Conservation District in developing this plan. Include natural resource management as a component of a Peer Study should the municipalities decide to move ahead with one.
12. Consider setting aside annually, two to four percent of the capital cost of the trail as it is phased in for the cyclic repair and replacement of trail surface, signage, furnishings and other facilities. The annual set aside would be placed in a capital reserve fund.

Funding

The following section offers a description of funding sources that can be used to support the acquisition of land and development of the Tri-Municipal Trail & Greenway. The sources are organized and defined by local, state, and federal resources and agencies.

Taxation Options

The following taxation options are presented with the understanding that their use in the current economic conditions is unlikely.

Local Sources

Chalfont Borough, New Britain Borough, and New Britain Township have in place a number of local resources required to finance a community trails and greenways program. It is important that a local, dedicated source of revenue be established and utilized to attract state and federal funding. Below are listed other possible sources of local revenue for the trails and greenways program.

Property Tax - Property taxes are assessments charged to real property owners based on a percentage (millage rate) of the assessed property value. These taxes generally support a significant portion of stakeholders or municipality's non-public enterprise activities. However, the revenues from property taxes can also be used for public enterprise projects and to pay debt service on general obligation bonds issued to finance open space system acquisitions. Because communities are limited in the total level of the millage rate, use of property taxes to fund trails and greenways could limit the stakeholders or a municipality's ability to raise funds for other activities. Property taxes can provide a steady stream of financing while broadly distributing the tax burden. In other parts of the country, this mechanism has been popular with voters as long as the increase is restricted to parks and open space with trails as a major component. Note, other public agencies compete vigorously for these funds, and taxpayers are generally concerned about high property tax rates.

Earned Income Tax - The Earned Income Tax is levied only on residents' earned income (such as wages, salaries, or other reimbursements for work). Unearned income, such as interest, dividends, pensions, and social security are exempt from the tax. Unlike the federal or state income taxes, the earned income tax allows no exemptions or standard deductions. A jurisdiction can collect earned income tax from non-residents who work in the jurisdiction but do not pay an earned income tax in their "home" jurisdiction. The maximum levy is 1 percent of earned income. If both the municipality and school district levy the earned income tax, both must share the one percent.

Act 153 of 1996 - Pennsylvania municipalities have added a percentage of the Earned Income Tax for open space purposes. The municipalities generally put the question of adding to the Earned income tax generally one-quarter to one-half of one percent on a voter referendum. Generally these have been passing in Pennsylvania. Amending the Pennsylvania Conservation and Land Development Act,

Act 153 provides certain types of local government units with a valuable financing tool as many municipalities seek the means to preserve open space in their communities. The Act allows cities, boroughs, towns and townships, as well as certain cooperative governmental units, to impose one of two taxes in addition to the taxing limitations set forth elsewhere to finance certain types of open space initiatives. By ordinance, qualifying local government units may impose either (a) a tax on real property not exceeding the millage authorized by voter referendum, in addition to the statutory rate limits on real estate taxes in the relevant municipal code, or (b) an earned income tax on residents of that local government unit not exceeding the rate authorized by referendum, in addition to the earned income tax rate limit found in the Local Tax Enabling Act. The Act requires that revenue from either of the two authorized tax levies be used to retire indebtedness incurred in purchasing "interests in real property" or in making additional acquisitions of real property to secure an "open space benefit" under either the Conservation and Land Development Act or the Agricultural Area Security Law. The terms "interest in real property" and "open space benefits" are defined broadly in the Act and allow municipalities' significant flexibility to achieve their land preservation goals in the manner best suited to their specific needs.

Realty Transfer Tax - The realty transfer tax is a tax on the sale of real estate. The maximum levy is 1 percent of the sales price. If both the municipality and school district levy this tax, both must share the 1 percent.

Amusement Tax - The amusement tax is a tax on the privilege of engaging in an amusement. It is tax levied on the admissions prices to places of amusement, entertainment, and recreation. Amusements can include such things as craft shows, bowling alleys, golf courses, ski facilities, or county fairs. The amusement tax is considered a tax on patrons, even though it is collected from the operators of the amusement.

Mechanical Devices Tax - The mechanical devices tax is a tax on coin-operated machines of amusement, such as jukeboxes, pinball machines, video games, and pool tables. The tax rate is set as a percentage of the price to activate the machine.

Personal Property Tax - The personal property tax is similar to the real property and occupation taxes, in that it is levied on the value of property owned by residents. The property it taxes is intangible personal property, such as mortgages, other interest bearing obligations and accounts, public loans, and corporate stocks. The personal property tax has sometimes been called an honesty tax because the only way a county knows the value of a taxpayer's personal property is if that taxpayer is honest enough to report it.

Hotel Tax - The hotel occupancy tax, imposed at the same rate as sales and use tax, applies to room rental charges for periods of less than 30 days by the same person. The purpose of the hotel tax is to increase tourism and economic development in Pennsylvania. The tax supports advertising, development of publications related to tourism, capital and program projects to attract tourists, and in some counties open space conservation, trails and recreation facility improvements. Bucks County supports projects to increase tourism through its hotel tax.

Bonds and Loans - can be used to finance capital improvements. The cost of the improvements is borrowed through the issuance of bonds or a loan and the costs of repayment are spread into the future for current and future beneficiaries to bear. However, financing charges are accrued and voter approval is usually required. There must be a source of funding (for the payment of the resulting debt service on the loan or bonds) tied to the issuance of a bond or loan. A number of bond options are listed below. Since bonds rely on the support of the voting population, an education and awareness program should be implemented prior to any vote.

- **Revenue Bonds** - Revenue bonds are bonds that are secured by a pledge of the revenues from a certain local government activity. The entity issuing bonds, pledges to generate sufficient revenue annually to cover the program's operating costs, plus meet the annual debt service requirements (principal and interest payment). Revenue bonds are not constrained by the debt ceilings of general obligation bonds, but they are generally more expensive than general obligation bonds.
- **General Obligation Bonds** - Local governments generally are able to issue general obligation (G.O.) bonds that are secured by the full faith and credit of the entity. In this case, the local government issuing the bonds pledges to raise its property taxes, or use any other sources of revenue, to generate sufficient revenues to make the debt service payments on the bonds. A general obligation pledge is stronger than a revenue pledge, and thus may carry a lower interest rate than a revenue bond. Frequently, when local governments issue G.O. bonds for public enterprise improvements, the public enterprise will make the debt service payments on the G.O. bonds with revenues generated through the public enterprise's rates and charges. However, if those rate revenues are insufficient to make the debt payment, the local government is obligated to raise taxes or use other sources of revenue to make the payments. G.O. bonds distribute the costs of open space acquisition and make funds available for immediate purchases. Voter approval is required.
- **Special Assessment Bonds** - Special assessment bonds are secured by a lien on property that benefits by the improvements funded with the special assessment bond proceeds. Debt service payments on these bonds are funded through annual assessments to the property owners in the assessment area.
- **Mandatory Dedication of Parkland and Trails** - The Mandatory Dedication of parkland is traditionally applied to development in suburban areas. However, it can also be applied to redevelopment projects. For example the redevelopment of a brownfields site in Plymouth Township Montgomery County into the Metroplex, which can be viewed from the Pennsylvania Turnpike, generated over one million dollars through the fee-in-lieu of parkland dedication provision Mandatory Dedication of Parkland Act. If suitable parkland is not available the developer may offer a fee-in lieu of dedication under the provisions of the Mandatory Dedication of Parkland Ordinance under the Pennsylvania Municipalities Code. Municipalities can also require the mandatory dedication of trails. The fee-in-lieu of dedication alternative allows the community to purchase land worthy of protection rather than accept marginal land that meets the quantitative requirements of a developer dedication but falls a bit short of qualitative interests.

Other Local Options

Local Park, Open Space and Trail Sponsors - A sponsorship program for trail amenities allows smaller donations to be received from both individuals and businesses. Cash donations could be placed into a trust fund to be accessed for certain construction or acquisition projects associated with the greenways and open space system. Some recognition of the donors is appropriate and can be accomplished through the placement of a plaque, the naming of a trail segment, and/or special recognition at an opening ceremony. Types of gifts other than cash could include donations of services, equipment, labor, or reduced costs for supplies.

Volunteer Work - It is expected that many citizens will be excited about the development of a trail and greenway system. Individual volunteers from the community can be brought together with groups of volunteers from church groups, civic groups, scout troops, cycling clubs and

environmental groups to work on greenway development on special community workdays. Volunteers can also be used for fund-raising, maintenance, security, programming, and other support activities.

Commonwealth of Pennsylvania Funding Sources

The Commonwealth's current economic state and change in the Governorship come January 2011 that leaves many state funding programs in flux. Growing Greener, a major funding program for conservation, parks, trails, and the like has committed its last bond money. The program is gathering momentum for re-enactment as Renew Growing Greener. However, there is a long way to go until the outcome of this effort is realized. Historically, Pennsylvania has offered an array of state funding programs to support parks, recreation, trail, and greenways. The following programs are listed as placemakers to alert the reader of programs that have been in place and need to be re-authorized or re-constituted and funded in some format when the dust has settled on the economy and change in political leadership.

PennDOT - PennDOT's primary means of funding greenways projects is through the Transportation Enhancements Program that is part of SAFETEA-LU. Greenways projects with a tie to transportation, historic preservation, bicycle/pedestrian improvements, or environmental quality are eligible candidates for Transportation Enhancements funding.

The Community Conservation Partnership Program - The Commonwealth of Pennsylvania makes available grant moneys to municipal governments through this program to support greenway and park planning, design and development. Applications for these grants are due in April of each year, and a 50 percent match is required from the local project sponsor. The amount of maximum award varies with the requested activity. Planning grants are typically awarded \$50,000 or less. Land acquisition and construction grants range from \$150,000 to \$200,000. Small community grants are also available through this program for municipalities with populations less than 5,000. These grants can support up to 100 percent of material costs and professional design fees for recreational facilities.

Rails-to-Trails Grants - The Rails-to-Trails Grants provide 50% funding for the planning, acquisition or development of rail-trail corridors. Eligible applicants include municipalities and nonprofit organizations established to preserve and protect available abandoned railroad corridors for use as trails or future rail service.

Urban and Community Forestry Grants - 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 Recreational Trails Program (DCNR) - National Recreation Trails Fund Act (NRTFA) or Symms Act Grants. This source of funding is a subset of TEA-21, and is administered by DCNR. Funds from this program can be used for the acquisition of land and the construction of trail tread and trail facilities.

DCED (Department of Community and Economic Development) Funding - 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 supports local initiatives aimed at improving a community's quality of life and improving business conditions.

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% match and priority is given to projects with regional participation.

Small Communities Planning Assistance - This grant is awarded to municipalities having a population of 10,000 people or less. The grant offers a no-match funding source that can be used to support neighborhood revitalization, economic development, community conservation and housing plans. Regardless of the project type, the grantee must demonstrate the project benefits low to moderate-income residents.

Communities of Opportunity Program - This program provides funding to prepare communities to be competitive in attracting, expanding, and maintaining businesses and providing affordable housing. The program is open to municipalities, redevelopment and housing authorities, and nonprofit housing corporations. The program does not require a local match.

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% of each grant must be used for activities or projects that benefit low to moderate-income people.

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% match. A business district action plan must be completed for eligibility in this program. The program had a \$2.5 million allotment for 1999-2000.

Elm Street Program - This program was created to bolster the older historic neighborhoods located within walking distance from revitalized Main Streets. Along with the physical changes they make to the properties, these grants also help create a positive image for the community.

PHMC - Pennsylvania Historic and Museum Commission - The Commission grants helped to support museums, historical organizations, and county historical societies.

Keystone Historic Preservation Grants - Local governments and non-profit groups could apply for this grant that may be used for preservation, rehabilitation, and restoration of historic properties, buildings, structures, sites, or objects.

Certified Local Government Grants - Federal funding program limited to certified Local Governments for purposes of cultural resource surveys, technical and planning assistance, educational and interpretive programs, and national register nominations. The program includes a 40% local match that can be made with in-kind services, cash, or Community Development Block Grants.

DEP Growing Greener - Growing Greener is the largest single investment of state funds in Pennsylvania's history. Growing Greener directed nearly \$650 million over five years to the Environmental Stewardship Fund. Growing Greener funds were used for farmland-preservation projects; preserving open space; cleanup of abandoned mines, watershed planning; recreational trails and parks; and help communities address land use concerns. Eligible applicants include non-profit groups, counties, and municipalities. Since the last bond funds have been committed, an effort to Renew Growing Greener has been launched.

Stormwater Planning and Management Grants - This program provides grants to counties and municipalities for preparation of stormwater management plans and stormwater ordinances. The program requires a 25% local match that can come in the form of in-kind services or cash. While greenways are not specifically funded by the project, they are excellent elements of a stormwater management system. This program was part of the Growing Greener Initiative.

Nonpoint Source Management Section 319 Grants - Section 319 grant funding comes from the federal Clean Water Act. The grants are available to local governments and nonprofit groups for watershed assessments, watershed restoration projects, and projects of statewide importance. The grant requires a 60% local match and 25% of the construction costs of practices implemented on private land must come from non-federal sources.

Environmental Fund for Pennsylvania - This fund is available to environmental, conservation, and recreation organizations for projects that improve the quality of life for Pennsylvania communities.

Environmental Education Grants - This program uses a 5% set aside of the pollution fines and penalties collected in the Commonwealth each year for environmental education in Pennsylvania. There are eight different grant tracks with grants ranging from \$1,000 to \$20,000, most requiring a 20% match. Public and private schools, non-profit conservation/education organizations and county conservation districts may apply for the grants.

Land Recycling Grants Program - Land Recycling Grants Program provides grants and low interest loans for environmental assessments and remediation. The program is designed to foster the cleanup of environmental contamination at industrial sites and remediate the land to a productive use.

Federal Funding Sources

Most federal programs provide block grants directly to states through funding formulas. For example, if a Pennsylvania community wants funding to support a transportation initiative, they would contact the PennDOT and not the US Department of Transportation to obtain a grant.

Surface Transportation Act (SAFETEA LU) (Accessed through PENNDOT) - For the past two decades, the Surface Transportation Act has been the largest single source of funding for the development of bicycle, pedestrian, trail and greenway projects. Prior to 1990, the nation, as a whole, spent approximately \$25 million on building community-based bicycle and pedestrian projects, with the vast majority of this money spent in one state. Since the passage of ISTEA, funding has been increased dramatically for bicycle, pedestrian and greenway projects, with total spending north of \$5 billion. Many programs within SAFETEA-LU deserve mention. The authorizing legislation is complicated and robust. The following provides a summary of how this federal funding can be used to support the Tri-Municipal Trail and Greenway. All of the funding within these programs would be accessed through the PennDOT.

- **Surface Transportation Program (STP)** - This is the largest single program within the legislation from a funding point of view. Of particular interest to greenway enthusiasts, 10 percent of the

funding within this program is set aside for Transportation Enhancements (TE) activities. Historically, a little more than half of the TE funds have been used nationally to support bicycle/pedestrian/trail projects.

- **Congestion Mitigation and Air Quality (CMAQ)** - About five percent of these funds have been used to support bicycle/pedestrian/trail projects.
- **Highway Safety Improvement Program (HSIP)** - Historically, bicycle and pedestrian projects have accounted for one percent of this program, or about \$50 million under SAFETEA-LU. Some of the eligible uses of these funds would include traffic calming, bicycle and pedestrian safety improvements, and installation of crossing signs. This is not a huge source of funding, but one that could be used to fund elements of a project.
- **Recreational Trails Program (RTP)** - The Recreational Trails Program is specifically set up to fund both motorized and non-motorized trail development. At least 30% of these funds must be spent on non-motorized trails, or \$110 million.
- **Scenic Byways** - The National Scenic Byway program has not traditionally been a good source of funding for bicycle/pedestrian/trail projects. Historically only 2 percent of these funds have been used to support bicycle and pedestrian improvements. Applications are only accepted by PENNDOT from established scenic byways groups, but historically, byways groups have advanced proposals in partnership with other organizations — including cultural heritage tourism groups — in support of the byways' goals.
- **Safe Routes to School Program (SR2S)** - This is an excellent program to increase funding for access to the outdoors for children. The SR2S Program was established in August 2005 as part of the most recent federal transportation re-authorization legislation--SAFETEA-LU. This law provides multi-year funding for the surface transportation programs that guide spending of federal gas tax revenue. Section 1404 of this legislation provides funding (for the first time) for PENNDOT to create and administer SR2S programs, which allow communities to compete for funding for local SR2S projects.
- **High Priority Projects** - Under SAFETEA-LU more than 5,091 transportation projects were earmarked by Congress for development, with a total value in excess of \$3 billion.

Land and Water Conservation Fund (LWCF) - The Land and Water Conservation Fund is the largest source of federal money for park, wildlife, and open space land acquisition. The program's funding comes primarily from offshore oil and gas drilling receipts, with an authorized expenditure of \$900 million each year. The program has been fully funded for 2011 for the first time in decades. The program provides up to 50 percent of the cost of a project, with the balance of the funds paid by states or municipalities. These funds can be used for outdoor recreation projects, including acquisition, renovation, and development.

Environmental Protection Agency (EPA) - The EPA funds a program that enables communities to clean up polluted properties. Funding for these programs is available directly from the EPA and is administered in the form of grants to localities.

Community Block Development Grant Program (HUD-CBDG) - 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. Administered by the Department of Local Affairs, Community Development Block Grants can be spent on a wide variety of projects, including property acquisition, public or private building rehabilitation, construction of public works, public services, planning

activities, assistance to nonprofit organizations and assistance to private, for-profit entities to carry out economic development. At least 70 percent of the funds must go to benefit low and moderate-income populations. The funds must go to a local government unit for disbursement. A detailed citizen participation plan is required.

Economic Development Administration - Funding is available through this federal program in the form of several different grants. Two grants that may be applicable to cultural heritage tourism are the Economic Adjustment Assistance Grant (which helps communities develop comprehensive redevelopment efforts that could include cultural heritage tourism programs) and the Planning Program Grant (which helps planning organizations create comprehensive development strategies). Only governmental units are eligible.

National Trust for Historic Preservation - This endowment funds 14 different grants. The Preservation Funds Matching Grants and Intervention Funds assist nonprofit and public agencies with planning and educational projects or preservation emergencies, respectively. The Johanna Favrot Fund for Historic Preservation provides matching grants for nonprofit and public organizations whose projects contribute to preservation and/or recapturing an authentic sense of place.

National Endowment for the Arts - The National Endowment for the Arts organizes its grants around artistic disciplines and fields such as “folk and traditional arts,” “local arts agencies,” “state and regional” and “museums.” Within these categories, the applicable grants are listed. The grants provide funding for artistic endeavors, interpretation, marketing and planning. Not-for-profit 501(c)(3) organizations and units of state or local government, or a recognized tribal community are eligible. An organization must have a three-year history of programming prior to the application deadline.

National Endowment For The Humanities - The National Endowment for the Humanities is a federal program that issues grants to fund high-quality humanities projects. Some grant categories that may be well suited to cultural heritage tourism are: grants to preserve and create access to humanities collections, interpreting America’s historic places implementation and planning grants, museums and historical organizations implementation grants and preservation and access research and development projects grants. The grants go to organizations such as museums, libraries, archives, colleges, universities, public television, radio stations and to individual scholars. Matches are required and can consist of cash, in-kind gifts or donated services.

Preserve America - The Preserve America grants program funds “activities related to heritage tourism and innovative approaches to the use of historic properties as educational and economic assets.” Its five categories are: research and documentation, interpretation and education, planning, marketing, and training. The grant does not fund “bricks and mortar” rehabilitation or restoration. This grant is available to State Historic Preservation Officers (SHPOs), Tribal Historic Preservation Officers (THPOs), designated Preserve America communities and Certified Local Governments (CLGs) applying for designation as Preserve America Communities. Grants require a dollar-for-dollar nonfederal match in the form of cash or donated services.

Small Business Administration - Many cultural heritage tourism businesses are small businesses. The Small Business Administration (SBA) does not itself loan money, but guarantees loans from banks or from specially chosen small business investment companies. These loans can be used for business expenses ranging from start-up costs to real estate purchases. Eligible companies must be defined as “small” by the SBA.

U.S. Fish & Wildlife Service - The U.S. Fish & Wildlife Service has a long list of grant programs that benefit the conservation or restoration of habitats. These include grants for private landowners to assist in protecting endangered species, grants to restore the sport fish population and grants for habitat conservation planning and land acquisition. The amount, matching requirements and eligibility for each grant vary.

Private Foundations/Philanthropic Sources

William Penn Foundation - The William Penn Foundation's mission is to improve the quality of life in the Greater Philadelphia region through efforts that foster rich cultural expression, strengthen children's futures, and deepen connections to nature and community. In partnership with others, the Foundation works to advance a vital, just, and caring community. The Foundation works to improve the quality of life in the Greater Philadelphia region by advancing dynamic and diverse communities that provide meaningful opportunity. In 2009, the Foundation awarded 246 grants for \$47.3 million.

American Greenways Eastman Kodak Awards - The Conservation Fund's American Greenways Program has teamed with the Eastman Kodak 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, and building trails. Grants cannot be used for academic research, institutional support, lobbying or political activities.

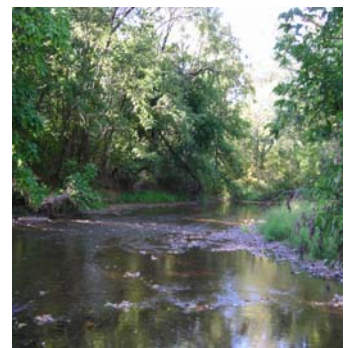


Appendix A

Demographic Profile

Demographic Profile					
	Bucks County	Chalfont Borough	New Britain Borough	New Britain Township	Pennsylvania
Population Statistics					
2000 Population	597,635	3,900	3,125	10,698	12,281,054
- Under 5	38,288	293	143	713	727,804
- 5-19	128,592	899	820	2,398	2,532,780
- 20-44	211,603	1,517	1,249	3,484	4,254,648
- 45-64	145,058	854	627	2,830	2,836,657
- 65+	74,094	337	286	1,273	1,919,165
1990 Population	541,174	3,069	2,174	9,099	11,881,643
Population Growth 1990-2000 *	-10.4%	+27.1%	+43.7%	+17.6%	3.3%
Gender	Male – 49.1% Female – 50.9%	Male – 49.2% Female – 50.8%	Male – 47.3% Female – 52.7%	Male – 48.8% Female - 51.2%	Male – 48.3% Female – 51.7%
Race/Ethnicity	92.5% White 2.3% Hispanic 3.3% African American	96.6% White 1.2% Hispanic 1.1% African American	95.9% White 1.6% Hispanic 2.0% African American	96.3% White 1.3% Hispanic 1.3% African American	98.8% White 3.2% Hispanic 10.0% African American
Median Age	37.7	35.8	27.6	38.9	38.0
Household and Housing Statistics					
Family Households	160,946 or 73.6%	1,039 or 75.2%	670 or 73.5%	3,033 or 77.9%	3,208,388 or 67.2%
Persons Per Household Average	2.69 persons	2.67 persons	2.58 persons	2.74 persons	2.48 persons
Owner Occupied	77.4%	83.2%	87.6%	90.6%	71.3%
Housing Units	218,725	1,404	930	3,969	5,249,750
Median House Value	\$163,200	\$174,100	\$150,900	\$182,600	\$97,000
Socio-Economic Characteristics					
Median Household Income	\$59,727	\$63,491	\$60,029	\$71,194	\$40,106
Per Capita Income	\$27,430	\$26,248	\$20,877	\$28,923	\$20,880
Employment (top 3 categories by %)	-Management, professional, related occupations – 38.4% -Sales and office – 29.7% -Manufacturing – 15.5%	-Management, professional, related occupations – 44.3% -Sales and office – 28.3% -Manufacturing – 17.9%	-Management, professional, related occupations – 36.7% -Sales and office – 28.9% -Education, Health, social service– 28.3%	-Management, professional, related occupations – 49.3% -Sales and office – 26.8% -Education, health and social services 23.8%	-Management, professional, related occupations – 32.6% -Sales, office – 27.0% -Education, health, social service- 21.9%

* US Census 1990, 2000



Appendix B

Tri-Municipal Trail & Greenway Plan
Public Open House Survey

Overview

During a public open house, participants had the opportunity to answer a questionnaire regarding bicycling in the Tri-Municipal area. Twenty people completed the survey. The following information depicts the opinions of the participants in the meeting. Although not a statistically reliable and valid survey, it does provide information on the opinions of those who attended the public open house.

Summary Findings

All of those who answered the survey either ride bicycles now (85%) or are interested in bicycling (15%). About 65% ride on a combination of roads and trails. Slightly more (40%) bicycle on trails compared with roads (35%). Only one in ten bicycle close to home. More than one in three drive to where they want to bicycle. Three out of four respondents bicycle for fun and fitness. A most important finding was that 40 percent want to be able to bicycle as transportation in the future. Respondents indicated that the following were the most important benefits of trails:

- Exercise – 90%
- Connectivity to surrounding - 80%
- Recreation – 75%
- Transportation – 55%
- Environmental Conservation – 50%

The major impediments to bicycling were traffic (50%), unsafe street crossings (45%) and personal safety concerns (40%). Lack of interconnections and an overall structure for a bicycling system were written in as blocks to bicycling.

Off road bicycle trails were listed as a priority over on-road bicycle trails by a margin of two to one. All of the respondents listed off-road bicycle trails as a priority while only 50 percent listed on-road bicycle lanes as a priority. About 90 percent indicated that off-road bicycle trails were a high priority.

A greenway and trail network is very important to the respondents. Seventy-five percent (75%) said it was very important while 25 percent said it was somewhat important. No one responded that it was not important or that they did not want it. About 75 percent said they'd be very likely to use the trail system with 35 percent being somewhat likely. One person indicated they'd like to use the trail system to walk.

Community connections were important to those interested in bicycling. Peace Valley Park/Lake Galena is an important destination. Connecting town centers, residential areas, school, parks, neighborhoods and getting to Doylestown Borough were listed as important. The respondents had a regional view of connections beyond the Tri-Municipal area.

Results by Question

1. How often do you bicycle now? (Circle one.)

- a. 10% Daily
- b. 55% Few times per week
- c. 20% Few times per month
- d. 0% Few times per year
- e. 15% Never, but would like to
- f. 0% Never, not interested

2. Where do you ride your bicycle? (Circle all that apply.)

- a. 35% On-road
- b. 65% Some road and trails
- c. 40% Trails
- d. 10% Close to my home
- e. 35% Drive to where I want to cycle

3. For what purposes do you cycle most often or for what purposes would you use bicycle pathways in the future? (Circle one response for each purpose.)

	Now	In the future	Not interested
a. Fitness	75%	35%	0%
b. Fun	75%	35%	0%
c. Socializing	30%	15%	10%
d. Transportation to a destination	35%	40%	5%

4. What are the most important benefits of trails? (Circle all that apply.)

- a. 75% Recreation
- b. 55% Transportation
- c. 90% Exercise
- d. 45% Community building
- e. 80% Connectivity to surrounding area
- f. 50% Environmental conservation
- g. 20% Tourism
- h. 5% Education

5. What are the biggest factors that discourage trail use? (Circle all that apply.)

- a. 20% Lack of Information about trails
- b. 45% Unsafe street crossings
- c. 50% Traffic
- d. 5% Lack of interest
- e. 10% Lack of time
- f. 40% Personal safety concerns
- g. 25% Lack of destinations
- h. Other: Lack of lighting, Lack of trails, Being run over by high speed cyclists, Trails don't interconnect, Lack of overall structure/system connecting not just destinations but also length between destinations.

6. What concerns do you have about bicycle trails in Chalfont, New Britain Borough and New Britain Township? (Circle all that apply.)

- a. 30% Private property rights
- b. 5% Potential loss of privacy
- c. 10% Potential crime
- d. 15% Personal safety
- e. 0% Property safety
- f. 10% Trail visitor behavior
- g. Other: 25% - None; Safety of road trails; Cost; and 15% indicated they want more trails.

7. What do you think the priority for bicycle pathway improvements should be? Circle one response for each.

	High Priority	Medium Priority	Low Priority
a. On road bicycle lanes	30%	20%	15%
b. Share the road	20%	25%	10%
c. Off road bicycle trails	90%	10%	0%
d. Balance of all	35%	0%	5%

8. How important to you is the goal of creating a greenway and trail network here? (Circle one.)

- a. 75% Very Important
- b. 25% Somewhat Important
- c. 0% Not Important
- d. 0% Do not want it

9. How likely would you be to use a bicycle pathway system in your community? (Circle one.)

- a. 75% Very Likely
- b. 25% Somewhat Likely - One written comment: I would use it to walk.
- c. 0% Not Likely
- d. 0% Will not use it

10. Are there specific destinations in your community that you believe should be connected by trails? (Please print your answer below.)

Peace Valley Park to Butler ES Peace Valley – Pine Run Reservoir	Widen path to Kelly Park from Oak Ave.	Schools
North Branch Park to Keller Park	Sandy Ridge through Covered Bridge Park	NBB into Doylestown Borough where I work
Parks, downtown, neighborhoods	Cedar Hill Road is terrible to ride on – paths to connect across 202 and get to Butler/Unami.	Community centers to residential and cultural and recreation destinations.
Shopping, places of worship, banks and schools	All parks and town centers	New Britain Trail Station

11. What municipality do you live in?

- New Britain Township – 3
- Chalfont Borough – 5
- New Britain Borough – 9
- Warrington Township– 1
- Doylestown- 1
- Unknown – 6



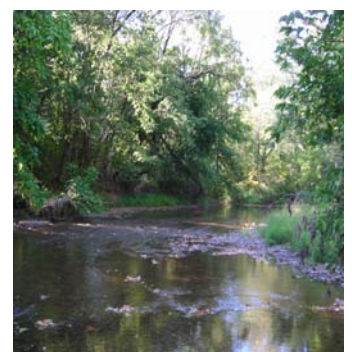
Appendix C

Open Space Protection Strategies

Open Space Protection		
Open Space Protection Strategy	Strategy Explanation	Advantage/Disadvantage
<i>Acquisition or Donation</i>		
Acquisition	Acquisition of land for the sole purpose of greenway/trail development	One of the most effective methods of permanently protecting open space. It is also the most costly and contingent upon an agency or organization to manage and maintain the land.
Donations/Gifts	Donation of land to an agency or non-profit organization	Provides permanent protection without public expenditure. May provide tax benefits to the donor if the donation is for preservation or conservation.
Bargain Sale	Land is purchased at less than its appraised market value.	Difference in purchase and fair market value is considered a charitable gift for tax purposes.
Option to Buy	An agreement with a property owner to purchase or have the right of first refusal to purchase land.	Secures the rights for future purchase but does not set price or determine when or if property would be sold.
Purchase of Development Rights	To provide a landowner the monetary difference between the value of land when fully developed with uses allowed by rights verses the value of the same parcel remaining undeveloped as open space.	For landowner lowers taxes on land. Cost to purchase development rights may be high.
Purchase of Resource Protection Rights	To purchase the rights from a landowner to protect and manage specific resources.	Cost to purchase resource protection rights may be high.
Purchase & Resale	Purchase land by party desiring to restrict its future use and resold only under conditions or restrictive deed conditions.	Party that originally purchased the land for the sole purpose of restricting its use is relieved of continuing ownership and maintenance responsibilities. Land remains on tax roles.
Condemnation	Condemnation is the act of eminent domain or taking of private property for public purposes.	Tool for acquisition. May be costly and reflect negatively on the greenway initiative. Use as last resort for protection.
<i>Easements</i>		
Conservation Easements	A legally enforceable agreement between a landowner and an agency or non-profit organization which places restriction on the use of or activities on a specific property which aligns with conservation objectives.	Less expensive than acquisition of land. The landowner retains rights not surrendered in the easement agreement and the easement provisions are valid and enforceable in perpetuity. Public access may be restricted. Method for enforcement needed.
Public Access Easement	An easement that provides the general public the right to access to or through a privately owned land for a defined purpose such as hiking, walking, and biking. Specific activities such as hunting and motorized vehicle use may be prohibited.	Less expensive than acquisition of land. The landowner retains rights not surrendered in the easement agreement and the easement provisions are valid and enforceable in perpetuity.

Open Space Protection Strategies

<i>Land Use Regulations</i>		
Open Space Protection Strategy	Strategy Explanation	Advantage/Disadvantage
Overlay Zone	A zone that is overlaid on an existing zone which adds regulation governing the use of a property. This technique is typically used to protect floodplains, woodlands, and steep slopes. Overlay zones can be designated for specific resources or areas to provide additional environmental protection. Riparian buffers, wetlands, and unique natural areas are resources that could be protected with an overlay zone.	Enforced by local government. Allows targeted protection of natural resources.
Cluster Zoning	Cluster zoning promotes the clustering of development and maximizing open space on a tract of land. Ordinance provisions should promote the preservation of sensitive natural resources such as stream corridors, wetlands and hedgerows, contiguous open space, and buffering.	Can reduce construction and infrastructure costs. Must work with developer to ensure that open space is useful as a greenway and linked to other protected open space.
Transfer of Development Rights	Property owners can sell development rights to developers for use in targeted areas. Open space is preserved by deed restrictions on properties that no longer carry development rights.	Allows development to be directed to specific areas.
Mandatory Dedication	Dedication of land from developers for park and recreational purposes. Municipalities must adopt a recreation plan that supports the dedication standards contained in the subdivision and land development ordinance.	Dedicates open space where development is occurring. Fee in lieu of provisions allows fee for land based on fair market value to be used for purchase of land in targeted areas.
Open Space Subdivisions	Open space subdivisions promote preservation of open space through the identification of natural resources and development designs that preserve these resources and significant open space.	Retain the density of the tract being developed. Must work with developer to ensure that open space is useful as a greenway and linked to other protected open space.
<i>Other Methods</i>		
Official Map	A municipality may map existing and proposed features such as parks, greenways, trails, and easements, and through this designation reserve public land. If a plan for subdivision or development of mapped land is presented, the municipality may withhold approval for a period of one year, giving the municipality the option to purchase or condemn the property.	The official map does not protect land for greenways but merely reserves land for purchase by the municipality.
Deed Restriction	Restrictions as part of the deed that limit in some way the use of a piece of land. Examples include removing vegetation, requiring a portion of a tract to remain undeveloped, buffer, etc.	Features protected in perpetuity.



Appendix D

Land Acquisition Criteria

Criteria for Ranking Land Acquisition

Tract Name/Number:		Tract Category:			
Size of Tract:		Municipality:			
	Unique 6	Significant 4	Average 2	Insignificant/NA 0	Undesirable -2
Location					
Infill to Park or Protected Land	Completely surrounded	Surrounded on 3 sides	Surrounded on 2 sides		
Proximity to Park, School, or Protected Land	Necessary to use existing lands	Potential link to other lands	Desirable to expand		
Enhances Resource Protection	Critical for habitat/ resource protection	Provides additional land of significant habitat/ resource	Provides buffer for habitat/ resource	Not sufficient acreage	
Extends Designated Greenway		Yes		No	
Important to Watershed Protection		Yes		No	
Improves Park or Trail Safety	Necessary to improve safety	Enhances safety		No	
Compatible with County Plans		Yes		No	Incompatible with county plans
Compatible with Regional Plans		Yes		No	Incompatible with regional plans
Compatible with Municipal Plans		Yes		No	Incompatible with municipal plans
Has Necessary Access			Yes		No
Undesirable Restrictions or Features					-2 for each restriction
Recreation Potential					
Active Recreation (ballfield, playground)		High	Medium	Low	
Passive Recreation (picnic area, trail extension)		High	Medium	Low	
Access to Water-based recreation		High	Medium	Low	
Environmental Education		High	Medium	Low	

Land Acquisition Criteria

Criteria for Ranking Land Acquisition					
	Unique 6	Significant 4	Average 2	Insignificant Or NA 0	Undesirable -2
Conservation and Area Attributes					
Plants		State listed species present	Desirable native species		
Animals		State listed species present	Important wildlife habitat		
Wetlands	>15 acres	14-5 acres	4-1 acres	1<	
Riparian Habitat	High quality	Medium quality	Low quality		
Water Quality	High quality	Medium quality	Low quality		
Geologic Features	High quality	Medium quality	Low quality		
Cultural/ Historic Features	Listed/eligible National Historic Register	Potential National Historic Register	Historic Legacy Property		
Forest	High potential for regeneration	Medium potential for regeneration		Low potential for regeneration	
Agricultural Production		CRP land or agricultural security lands	Prime agriculture soils		
Scenic Landscape Character		High	Medium	Low	
Unique Natural Features	Yes			No	
Educational Value	High	Medium		Low	
Unusual Conservation Interest	National	State	Regional		
Considerations					
Reasonable Purchase Price	Donation	Bargain/Under Market	Reasonable		Excessive
Timeliness of Acquisition	Present development plans	Proposed development w/in 12 months	For sale – no plans		
Existing Structures		Usable, desirable	None	Usable, unnecessary	Must be removed at high cost
Zoning			Existing district is compatible with proposed use		Existing District is not compatible with proposed use