

# **New Britain Borough Community Bike and Hike Path Master Plan**



COUNCIL DRAFT

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# New Britain Borough Community Bike and Hike Master Plan

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## Introduction

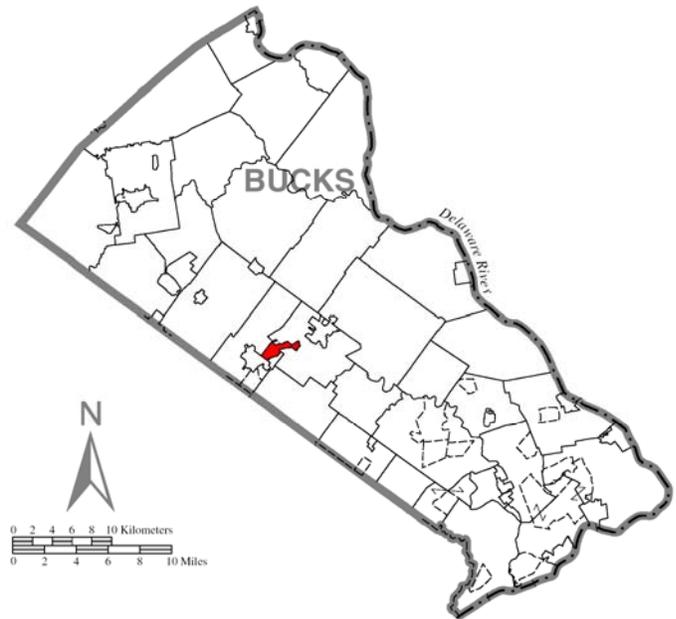
Bike and Hike Trails (a.k.a Greenways) are being developed throughout the state as a means of linking communities. The New Britain Borough Council has recognized the need for a Bike & Hike System Master Plan for the Borough in the NBB Open Space Plan (April 2001). To that end they have approved a voluntary resident committee, with the goal of planning recreational trails within New Britain Borough. These Greenways promote the benefits of sustainable transportation alternatives and community wellness and involvement. New Britain will be aligning with the plans being developed regionally by adjoining municipalities and the Pennsylvania Department of Transportation to accomplish these goals and create a safe and functional system.

## Community Background

New Britain Borough is located approximately 30 miles northeast of Philadelphia, centrally located in Bucks County, PA. New Britain Borough contains a total land area of 1.3 square miles. New Britain Borough is adjoined by Chalfont Borough to the southwest, Doylestown Township to the east-southeast, and New Britain Township to the north. New Britain Borough is bisected by a major thoroughfare, Butler Pike or Pennsylvania Route 202 and a Septa regional rail line.

This map depicts the specific location of New Britain Borough within Bucks County, Pennsylvania.

According to the 2000 U.S. census, the total population of New Britain Borough is 3,125 people. The Borough is largely a residential suburb containing limited rural area. The Borough contains some commercial property and light industrial zoning, several churches, a school, and public parkland. The median age of the population was 28 years with 32.7 percent of the population under the age of 18. Average household size was recorded at 2.58 persons per household with a median income of \$60,029.00.



# Chapter One Introduction

## Benefits of Greenway Trails

Having trails and Greenways provide many economic, social, and health benefits for Borough Residents. Economic benefits include increased real estate and property values for those located near the trails. Social benefits of trails include providing additional locations for community interaction and improving the quality of life. Greenways and trails are an opportunity to better the community's general health and well being through regular physical exercise. Obesity, depression, and diabetes are chronic diseases directly related to limited physical inactivity associated with an unhealthy lifestyle. Society is seeing these problems extend to our children. When complete, a Greenway offers a no-cost, enjoyable way to access activities, such as A-Day at Delaware Valley College, a visit to Kid's castle, or a trip into Doylestown.

Likewise, the parking lot at the New Britain Train Station is nearly full during the week. Commuting to the station by bicycle saves money, and will improve transit availability.

### GREENWAY BENEFITS

- Residents health and well-being
- Recreational opportunities
- Alternative transportation routes
- Increased property values
- Community interaction
- Community safety from roadway diversion

Greenways-related facilities provide the opportunity for physical activity, leading to better health, less illness, and a better quality of life.

## Purpose, Goals and Objectives

New Britain Borough's surrounding municipalities have been working on establishing a bike and hike trail system. As our borough is one of a number of small-size locales, a trail system that links our communities to the greater region is a major reason for New Britain borough to participate in a regional plan. This plan will attempt to link with existing and planned paths from neighboring communities. This effort is underway through several grants to study and create comprehensive plans within the community.

**Non-linked sidewalks and trails are minimally used**

## Borough and Regional Trail Plan Overview

New Britain Borough is fortunate in that the housing density is fairly high, meaning a larger number of potential users for the greenways. The Borough has a number of destinations within its boundaries, and is situated in a region with a great many more attractive, accessible destinations. Skilled bikers can sustain a speed of over 15 miles per hour for a long time. Family bikers can easily sustain a speed of 7-8 miles for an hour or so, and with a break, make the return trip.

Starting from the New Britain Train Station, the planned path system would provide access to the following regional destinations:

Kid's Castle(Central Park)	Delaware Valley College	Doylestown Hospital
Lake Galena	CB West High School	New Britain Baptist Church
Covered Bridge Park	Unami Jr. Middle School	Lenape Valley
North Branch Park	I Lenape Middle School	Presbyterian Church
Wilma Quinlin Nature Preserve	Pine Run Elementary	Route 202 Bypass Trail
	North Branch Park	Stores and shopping

By increasing your distance just a little, The Shrine of Czestochowa, and the Culinary and Cultural areas of Doylestown are in range. Everyone living in the Borough of New Britain will be within a ten minute bike ride to the train station. It is an attractive vision.

**How to do it**

A project such as this will require years to complete, bit by bit. The majority of Greenways funding is through grants and municipal funding. We will do some sections with grants, some in conjunction with planned road work; other sections may use builder's offsets. Limited Borough funds will be used. The Borough is prudent with residents' tax dollars, which will not change with the approval of the Bike & Hike Master Plan.

**Preliminary Trail Design**

Costs and design are intertwined. As we are starting out, smaller is better. Since we are aware that the land will be here when we are gone, we will look to obtain a right of way consistent with the AASHTP guidelines of at least 14 feet (14'). This will allow a ten foot path with two foot verges sometime in the future. For now, the trails can be a class one path, six feet wide, with a reasonable verge from the street. Some areas where maintenance access is difficult may have to be wider. This is the width of the trails at Lake Galena and Delaware Valley College.

Most of the streets in the Borough have fifty foot (50') right of ways, typically 23-30 feet of pavement, and the balance a "working edge." In most cases, this enables the trails to be on the existing easement.

**"A good trail"**

Motorists prefer direct routes with a minimum of sharp turns and intersections. They should be clearly marked with destination signs. Most important, they should go to places people want to get to.

If you are peddling a bicycle, or hiking, you too want direct routes with long, straight runs, a minimum of turns and few intersections. It is nerve wracking to be walking on the edge of a road and have motorized traffic zooming by just a couple of feet away. It is very important to have safe Greenways. A good Greenway avoids heavily traveled roads and is separated from automobiles through barriers or markings. Ideally, paths are located on dedicated ground. The main exception is very low traffic streets, where marking out the pavement may be adequate.

It is not the purpose of the Bike & Hike Committee to do a detailed design for the various paths proposed. The Greenway parallel to RT 202 is the most important one. Much of

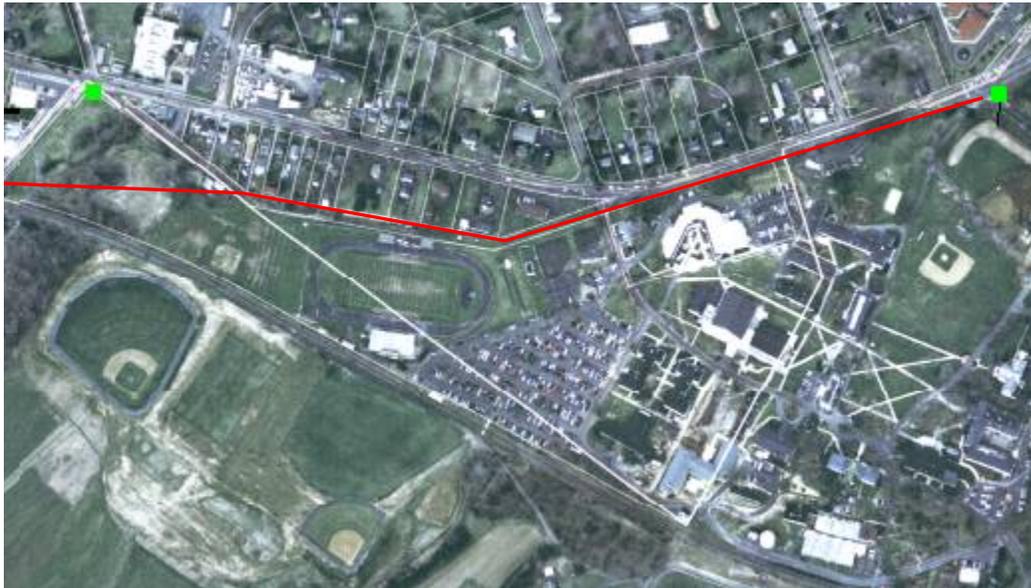
the greenway trails in the municipalities surrounding us were built with combinations of grants, additions to roadwork planned for other reasons, developers, donated "in kind" services, and funds from the local government.

## Chapter Two Proposed Trails

### MAIN TRUNK TRAIL New Britain Road to Bristol Road

#### SECTION 1, New Britain Road to South Shady Retreat/Upper State Road

This section would start by connecting with the existing Doylestown Borough-Doylestown Township trail, which runs along Rt. 202, and turns east on New Britain Road, and then through Delaware Valley College Property to South Shady Retreat / Lower State Road. This section connects two of the street lights on Route 202, thereby encouraging safe crossing at these points.



#### Recommended Route

The most sensible and obvious route is located on the Delaware Valley College lands, along Route 202, hewing close to the Delaware Valley College Athletic fields, and down the existing alley behind the Duck Deli, to Upper State Road/South Shady Retreat Road. There are several advantages. It avoids crossing Route 202, it impacts a single land owner, it is a direct route, the area is attractive, and it is reasonably level. There is an existing gravel path on part this route which affords a contiguous route of travel.



## Rejected Routes

Alternate routes would be to follow the north side of 202. Business and multiple side streets and driveways make for a congested path, close to the most heavily traveled road in the Borough.

Following secondary streets on the north side of 202 is problematic because they are not on a grid pattern

- The Trail would have to cross 202, probably more than once.

The side streets tend to be on roughly 45 degree angles from 202, making the trail about 40% longer than a direct route. The side streets are narrow, without sidewalks, so numerous properties would be impacted. The area has steep slopes.

## SECTION 2 South Shady Retreat/Upper State Road to Beulah Road



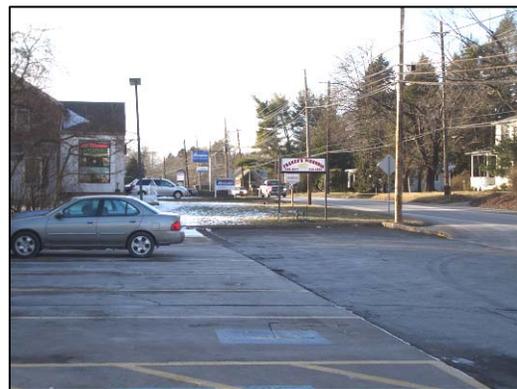
### Recommended Route

Along the large right-of-way of the Septa rail line tracks is a convenient and direct route. Between South Shady Retreat and Beulah Road, the south side of the tracks is wide and flat, ideal for a bike path. The land on the north side is adjacent to Delaware valley Concrete.

### Rejected route

Running the path directly down the south side of Route 202 would destroy the parking vital to businesses in this block. The photo shows the 7-11 parking lot. Clearly no room for a path.

The north side of 202, as mentioned in the earlier section would mean crossing numerous property lines, driveways, and secondary streets. Nevertheless, portions of this route are feasible as feeders to the main trunk line. Refer to section 5 for details on the feeders, or spurs of the main trunk line.



The committee also considered following South Shady Retreat/Upper State Road to Almshouse, but this is a high traffic road, not contained within New Britain Borough, and not a very direct route. There are no sidewalks along this road, nor any breakdown lane.

The path would impact homes from one end to the other. The houses do have a fair set back, so there is a reasonable amount of room.

### SECTION 3 Beulah Road to Tamenend Avenue



#### Recommended Route

The north side of the Septa regional rail line is the most practical and direct route. The north side of the tracks is ideal. The land slopes down to Cook's Run, so the path would not be visible from houses on the South side. On the north side, the land is wooded, sloping down to the stream, and then upward quite a distance to the homes fronting on

Route 202. For the most part, adjacent dwellings are buffered by trees, so bikers and walkers will not be particularly intrusive. A long wooded stretch with a small creek crossing would be an aesthetically-pleasing portion of the trail.



The route is reasonably clear, but for two

areas. On the corner of Beulah Road and the tracks is an unused siding and former Coal loading bin now used as a building shown in the adjacent picture. This area would have to be bridged. Further down near the New Britain Train station, Cooks Run crosses under the rail road tracks, and the path would need to span Cook's run at



this point. An unnamed stream comes in through this area as well. There is a significant downgrade from the rail line to where much of the trail would be ideally placed. The picture above shows the railroad bridge over Cooks run.

An undeveloped lot between Woodland Land and the tracks would make a nice access point for the residents of Woodland Lane. The path would reach Tamenend Ave / Almshouse Road on the North side of the tracks at New Britain Station of the R5 Septa route.

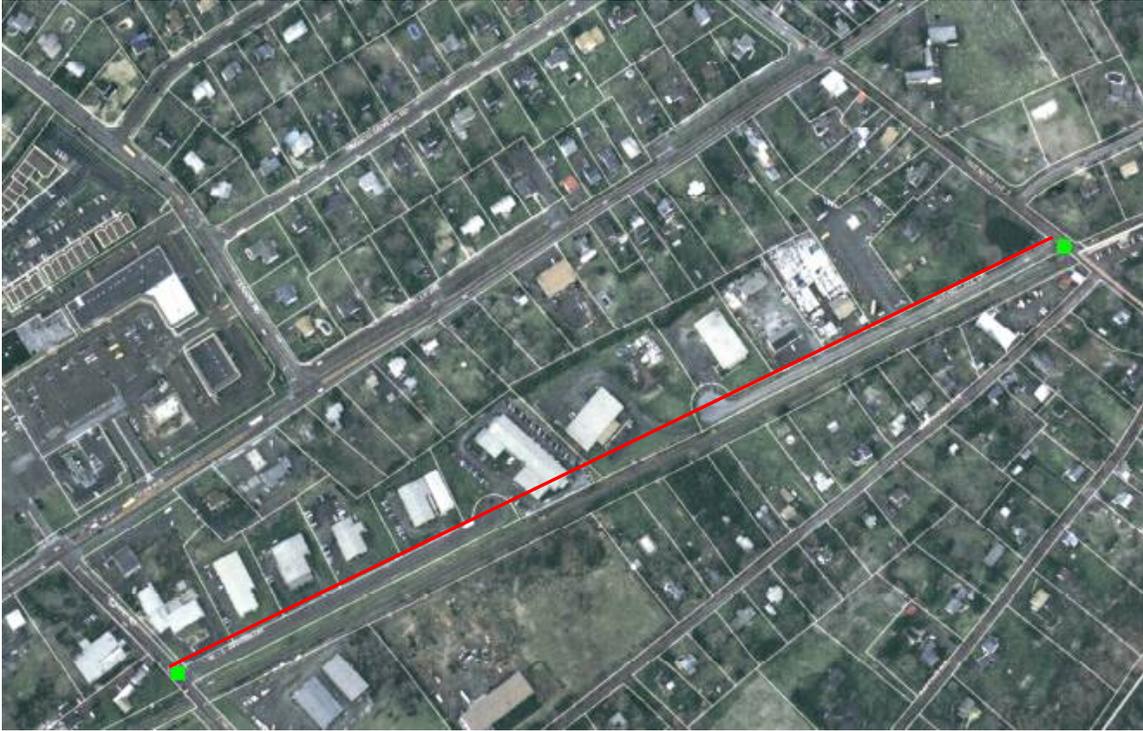
### **Rejected Routes**

Following Route 202 is possible. The stone building on the corner of Beulah and route 202 is the biggest obstacle. The path would have to either hug the curb, removing a five foot high bank from two sides of the building, or skirt the back of the property following Cook's Run. The path would then follow on the shoulder of Route 202 until Woodland Lane. Woodland Lane is a two lane residential street with little road shoulder. Other than Woodland Lane, this route has little charm, and is convoluted.



Another alternate route is Beulah Road. It could also be used to travel south to Almshouse. Traffic is light, compared with Route 202, but the road is narrow without shoulders. The path would have to go on the edge of the right of way, co-located with roadway. At Almshouse, it would either have to cross to Beulah cemetery, and continue across house lots to the Railroad tracks, or follow along the north side of Almshouse across residential lots.

## SECTION 4 Tamenend Avenue to Sand Road



### Recommended Route

The trail would continue directly across Tamenend onto Spring Lake Drive, and further onto Britain Drive. These streets are adjoining no outlet cul-de sac terminations. Britain Drive ends on Sand Road. These two streets are very lightly traveled and are used mainly by employees and occasional deliveries to the industrial properties. The path could be co-located on existing road by widening the road by perhaps three feet and marking it with paint lines. A connector trail would be created to bridge between the cul-de-sacs on flat, open ground.

### Rejected Routes

Mathews Avenue/Sand Road would be adequate, except the path would have to cross numerous properties, many without much set back from the street. Should Mathews ever become one way for vehicles, it would be grounds to reconsider this route.

The other alternate is following route 202. The south side of 202 is heavily developed, including parking lots that abut 202. It could be done, but it is not a direct route, and the number of stake holders makes it difficult. It should be considered as a spur.

## SECTION 5 Spurs

### A Commercial Greenway: Tamenend Avenue to the Chalfont Line



Figure 1

The north side of 202 is a most probable route. Many of the houses in the Historic District which front on 202 leave little room for a path. However, the north side of 202, from Tamenend Avenue to the Chalfont Boro line is an important commercial corridor. In all, the path would only cross four residential properties. Starting from Tamenend, it would travel down the service road islands. Between the two roads are four house lots that would need to be crossed. From that point, the rest of the way crosses a shopping center grassy set back, church, school and a few businesses. In fact the latter portion from Pine run to Chalfont and Unami Middle School is already funded, and will be built under the Federal Safe Routes to School Program.

#### **Alternate Route**

From Sand Road to the Bristol Rd intersection is a long straight route following the railroad tracks. Placing the trail on the South side of the tracks gives potential trail access to the high density housing along Bristol road if we add a spur a spur through the old Cayuga Pipe property.

#### **Rejected Routes**

The south side of 202 has fewer consumer businesses, numerous drives and parking lots, and many more residences. The residences would be better served by a sidewalk to act as a feeder to the Greenway

## Smaller Spurs

### Covered Bridge Park: Walker's Bridge

To get to Lake Galena, the path will need to cross Pine Run Creek, far enough upstream so as not to affect the views of the covered bridge. The Tri-Municipality Bike and Hike Committee will be studying available options to continue the existing Bike and Hike Path to reach Peace Valley Park. A large property-owner in the borough may donate a right-of-way to allow access.

Doylestown Township is evaluating continuing the existing trail from Iron Hill Road, across the Flood control property behind the park, and continuing through Covered Bridge Park. The crossing of Pine Run Creek may be across the earthen dam above the park. Should the results of the study and committee efforts make this a reality; a New Britain Borough spur will be pursued.

### Riparian Spur

A short path from Keeley Avenue, along the south side of Pine Run Creek, would connect with Mohawk Rd giving access to Covered Bridge Park and Lake Galena to the North. The path would cross two private properties. The area is wooded, properties are larger, and usage on this portion would be mostly local.



### Rejected routes

Keeley Avenue is a direct access to the Covered Bridge Park. It is a busy street lined with houses, and difficult to fit a path along.

### South Tamenend Avenue Spur



A short spur running from the New Britain train station up the hill to R202 would traverse one private property, and the land belonging to the New Britain Baptist church. A path would offer resident train commuters a safer and neater access to the rail station without driving.

### Sand Road Spur



A short spur from the trail up Sand road to the traffic light at Route 202 would connect the main trunk road with the Route 202 businesses, and allow safe crossing of Route 202 at the existing light.

### Woodland Road Spur



A short spur to connect Woodland Road to the Main Trunk trail will probably be the shortest spur. The status of this lot is yet undetermined.

### Iron Hill Road Spur



There is an existing trail on the north side of Shady Retreat road which ends as the Borough line. In the Borough, Iron Hill Road has narrow concrete drainage on both edges, and no curbs or sidewalks. This should be connected to the main trunk trail at the light crossing Route 202. Unfortunately the ground is uneven, and a number of large trees are growing on the street right of way. An engineering study needs to be done, but this committee estimates that the south side of the street looks more feasible. It is a nice straight run to one of the few traffic lights on Route 202.

#### Rejected Routes

An alternate route is from North Shady Retreat to Vaux Drive. This requires a dog leg on Shady Retreat and another dog leg across Foundations to get to the light at New Britain Road and 202.

## **Chapter Three: Sidewalks**

In the old days, the desirable amenities of villages and towns were paved roads, curbs, sidewalks, and street lighting. Of these, roads (\$84,500/year) and street lighting (\$50,000/year) are accepted as Boro responsibilities, on the grounds that everybody uses the roads. Sidewalks and Curbs are maintained by the property owners on the grounds that they only benefit people in the immediate vicinity. Greenways, like streets, are intended to benefit everyone, and will be accepted as a Boro responsibility.

As a policy, the Boro should require sidewalks along at least one side of secondary roads. Where the proposed sidewalk will likely see more bike traffic, then the larger Greenway is preferred.

Since sidewalks are installed and maintained at the cost of the land owner, they are installed as part of a subdivision/expansion of a property..

## **Chapter Four: What is a Bike and Hike Trail?**

Everybody is familiar with sidewalks. In our borough, they are typically made of poured in place concrete, four feet wide, set back from the street about six feet. The set back is important because it provides distance from cars, and insures the snow plows do not block the sidewalk. Sidewalks (and curbs) are paid for and maintained by the land owner. They have to shovel them when it snows, and replace them when they crack. Home owners accept them as an amenity, where children and adults can safely walk without fear of being hit by cars. An added benefit is neatness in a neighborhood. They define a boundary between the street and the yard. As a result, curbs and sidewalks are a desirable attribute in a neighborhood. Even better is when they connect to places people want to go. The opportunity to walk to shopping and an elementary school is a selling point for real estate ads. Bicycles are usually prohibited, although the law is not always enforced, especially for the younger children. They are especially suited to higher density housing and local foot traffic.

Bike and hike trails are designed for heavier traffic. Neighborhood streets and sidewalks feed into the B&H trails. They are designed to allow non motorized traffic to travel some distances. They resemble roads more than sidewalks.

Bike and Hike paths are paid for and maintained by the municipality. Likewise the legal liability is largely off the land owner's shoulders.<sup>1</sup> While they can be made of packed dirt, gravel, cement, or asphalt, we are suggesting asphalt as the paving of choice because of its low cost and ease of maintenance. Sidewalks are typically 48" wide, but because of the heavier use, B&H paths have a paved width of six to eight feet, with eight foot the preferred width. Setbacks are ideally 2 to 10 feet from the highway.

### **Maintenance**

This is a difficult cost to quantify, in that it can vary based upon unknowns. For example, a trail built to PennDOT standards is very durable. A skimming of asphalt on a poorly prepared base is cheap, but not likely to last long.

Ann Toole, with Toole Recreation Planning gave \$1,000-\$1,500 per year per mile for maintenance.

It is assumed that keeping the trails picked up will be similar to keeping the Parks within the Boro picked up, mostly volunteers. Where the trail passes merchants (the 7-11 and possibly the New Britain Inn come to mind), they may be interested in access to the trail, and in exchange, maintaining a trash can on the trail.

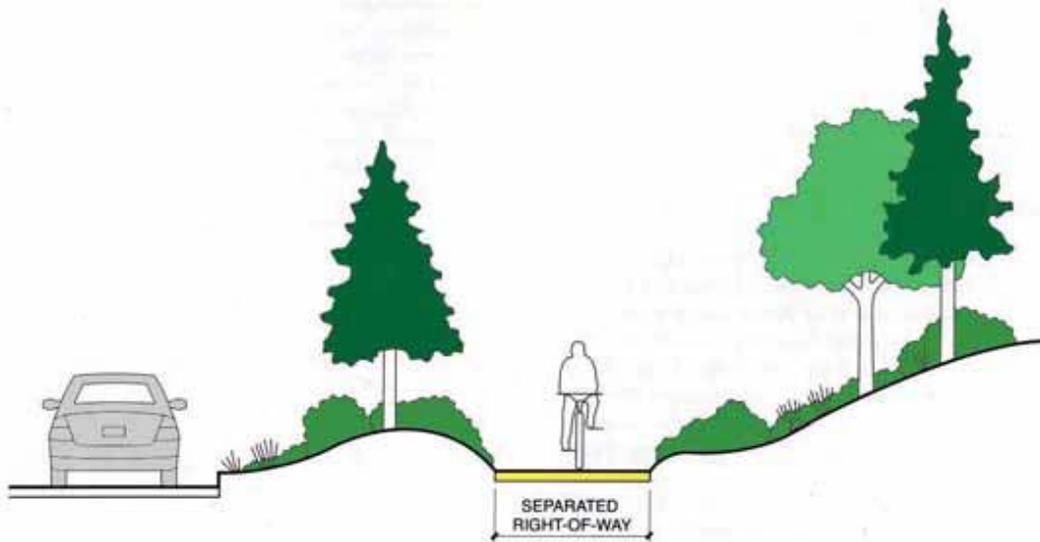
Snow removal is at the discretion of the Borough.

### **Trail Types – Bikeway Classifications**

The following are nationally recognized bikeway classifications as per the American Association of State Highway Transportation Officials (AASHTO). These classifications are specific to bicycle transportation routes and do not include other pedestrian facilities such as sidewalks and off-road hiking trails which are described later in this chapter.

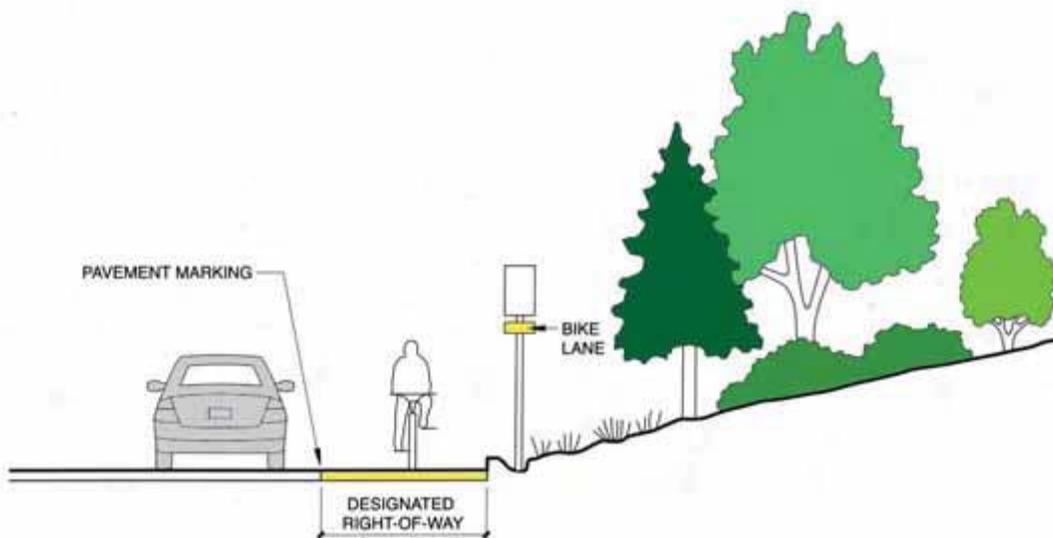
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<sup>1</sup> See the appendix for a summary of Pennsylvania law on this topic.



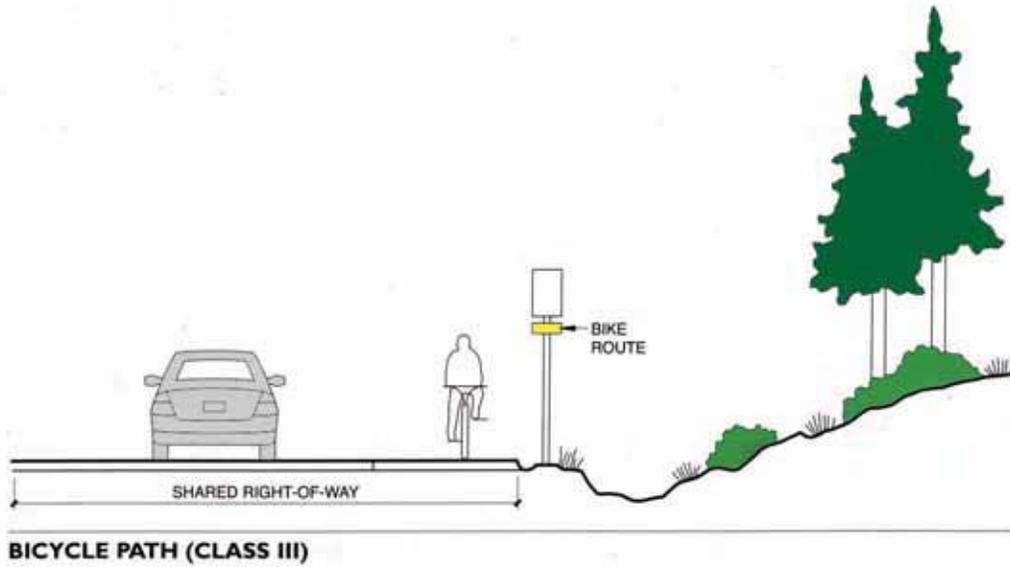
**BICYCLE PATH (CLASS I)**

*Class 1 Bikeways* are completely separated from the roadway. They are also known as 'off road trails', 'greenways', 'shared use paths', and/or 'multi-use paths'. Examples where the committee is recommending a trail such as this is along Route 202 by Delaware Valley College, and continuing parallel to the Railroad tracks from Shady Retreat road to Almshouse.



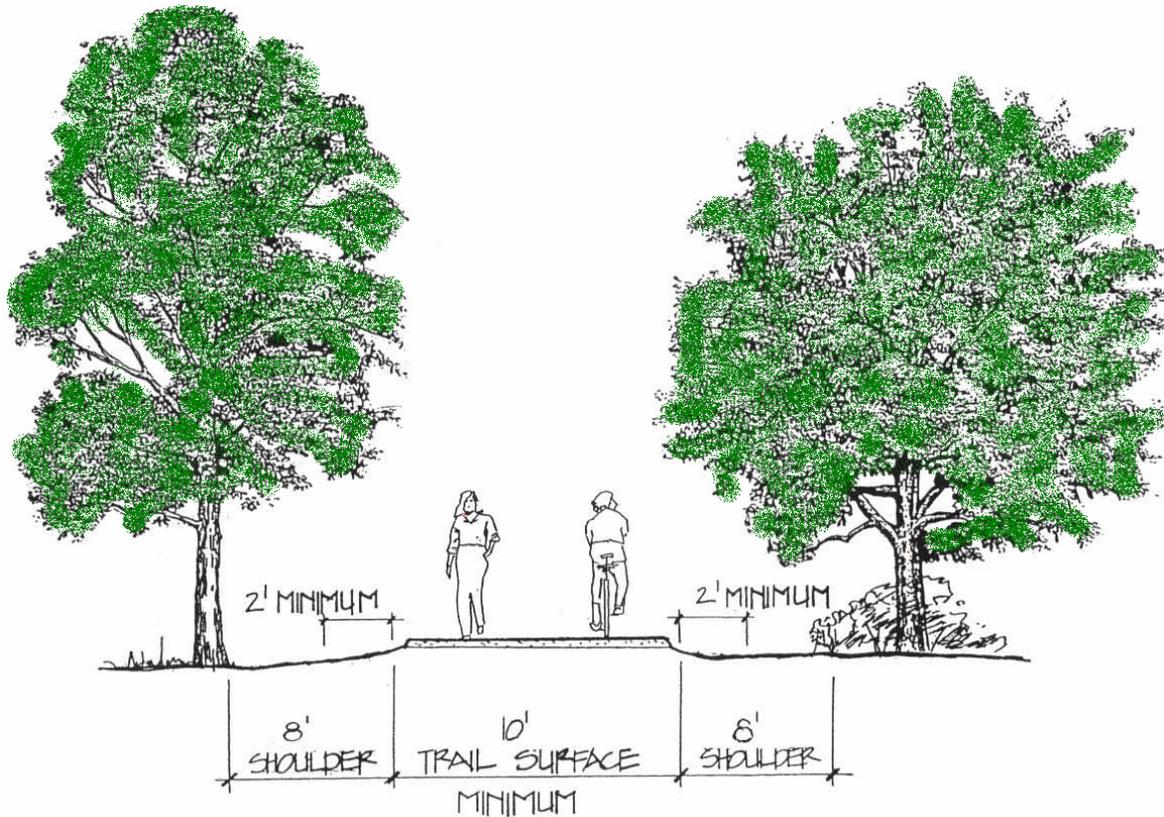
**BICYCLE PATH (CLASS II)**

*Class 2 Bikeways* are designated bicycle lanes within a roadway for exclusive use of the Cyclist and contains special pavement markings and signage. Bike lanes are one-way in the direction of motor vehicle traffic. The common standard width for a bike lane is five (5) feet.



*Class 3 Bikeways* are also known as 'Bike Routes'. These offer no special accommodations for the cyclist within the road right-of-way. Signs are used to define the route with the cyclist sharing the roadway with vehicular traffic. (Source: AASHTO - Guide For Development of Bicycle Facilities)

**Multi-Use Trail (Off Road)**

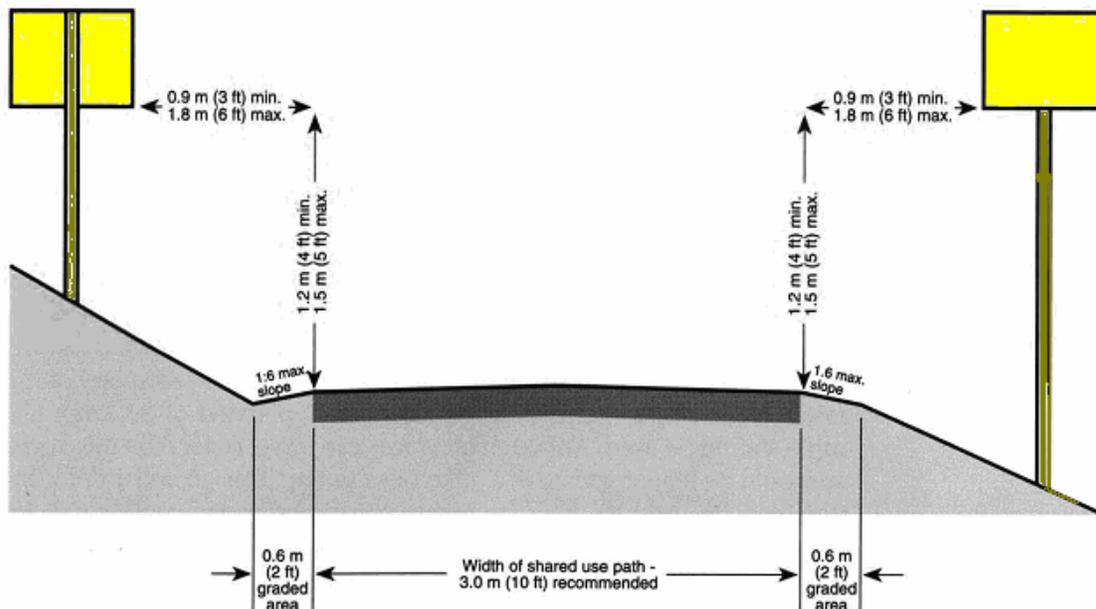


## Multi Use Trail (off-Road)

The trail type that provides for the largest population or users is a multi-use Trail, also known as Class 1 Bikeways (as described above). The following paragraphs provide a nationally recognized definition of a Multi-Use Trail and its typical design criteria.

The American Association of State Highway and Transportation Officials (AASHTO) defines a Multi-Use Trail or Shared Use Path as: a bikeway physically separated from motorized vehicular traffic by an open space or barrier and either within the highway right-of-way or within an independent right-of-way. Shared use paths may also be used by pedestrians, skaters, wheelchair users, joggers, and other non-motorized users.

As the definition suggests, this trail type provides for a variety of trail users, depending on the trail surface paving and available right-of-way width. Another general trait of multi-use trails is universal accessibility for those with disabilities. This is due to gentle slopes, adequate widths, and smooth surfaces. Parking areas for multi-use trail segments should provide facility access in accordance with the Federal Americans with Disabilities Act (ADA) guidelines to provide for trail users with disabilities. Both the Rails-to-Trails Conservancy (RTC) and AASHTO recommend a multiuse trail to be ten feet wide with the minimum width for a two-way trail eight feet (8'), and for a one-way trail five feet (5'). Depending on the user volume, wider widths may be reasonable. An additional two foot shoulder is recommended to provide clearance from trees, poles, walls and other lateral obstructions. Site conditions may warrant additional safety measures such as fencing and increased shoulder widths.



## **Chapter 5 Ways and Means**

### **Planning, Costs, and Funding**

Planning comes before Funding

Regional planning is about the future. The future is not just ten or twenty years, but judging what the region's needs will be twenty five, fifty or one hundred years into the future. It sometimes takes 25 to 50 years to build a new highway such as the Route 202 bypass. Planning tries to envision the future, and ensure provisions are made for infrastructure, utilities such as power water and sewerage, land use, and transportation. Roads need to connect to other roads, sidewalks to other sidewalks, and so forth. Planning is also about the big picture. The bypass needed to have a continuous path crossing many municipalities, and two counties. The benefit from these projects extends beyond the municipalities where the road will be built, and as a consequence, the funding for these projects has to come from collective funds, not just the municipalities.

Greenway planning is an example of regional planning, with trails connecting municipalities together, and necessarily requiring both local and regional planning. This document is New Britain Borough's contribution to that planning effort.

### **Funding**

The assumption some people make is that since nearly all municipal improvements are paid for from taxes, that the Borough must raise that money within its borders. This is true for many things, but County, State and Federal money goes to a lot of capital improvements, particularly transportation. These grants sometimes require matching funds, sometimes not. For example: Chalfont and New Britain Boroughs were awarded a \$1,183,139 grant with no matching funds (100% paid for out of federal funds) to install sidewalks, crosswalks and curbing along route 202 to Unami and Pine Run elementary school. The money came from the Federal Safe Routes to School Program, and Pennsylvania Community Transportation Initiative.

The Pennsylvania Department of Transportation is well known for construction of roads and highways, but they also fund rail and trail programs. Doylestown Township is connecting Central Park (Kids Castle) with Down Town Doylestown. In running the trail through the Del Val Campus, the railroad was in the way, and the old bridge was too narrow to accommodate the trail. In the spring of 2009, PennDOT completed ~ \$1,000,000 railroad underpass on the Delaware Valley College. The path itself was built with Township workers, and paid for by Doylestown Township funds.

Another way these things get accomplished is when a road is being built, or improved, such as Progress Drive, which connects Route 202 to South Shady Retreat road, by Doylestown Hospital. The major rebuilding was an opportunity to add a bike and hike trail at minimal additional cost, as the planning, engineering, and construction was taking place anyway.

### **Land Acquisition**

Much of the right of ways used for the trails shares existing right of ways owned by the Borough, Septa, Bucks County Sewer and Water Authority, and institutions. Some easements will be donated as part of a development plan, some by generous donation, some purchased, and hopefully none by eminent domain. Bucks County open space grants are difficult for the Boro to use because little land remains open for acquisition. Easements and right of ways for trails is one of the allowed uses of the funds.

## **New Britain Boroughs Resources**

It is likely that few residents have asked to see the New Britain Boro Budget. In summery, the major taxes paid in 2008 were:

- Earned income \$340,000 or \$109 per person
  - Real Estate \$324,000 or \$103 per person
  - 33 other sources \$569,000 (mostly fees for this and that)
- Total \$1,223,000

As an estimate, about half of the income comes from households, and half from business and the state. In the year 2000, there were 3,125 persons residing in about 1200 households. As the Boro has little space for new growth, these numbers are probably not much different today.

These are fairly large number, and it is useful to restate them as so many dollars per person. This probably overstates the cost because it does not take into account business taxes.

In terms of spending, nearly all of this money is allocated to maintaining the infrastructure (i.e. roads) and paying for community services (i.e. police) the recreation budget item primarily consists of the summer program at the Covered Bridge Park, which cost \$42,225 in 2008. The program earned \$27,100 in attendance fees and received \$22,875 from taxes (a subsidy of \$7.32 per resident of the Boro). The result is that out of a total budget of \$1,223,000, approximately \$23,000 goes toward recreation, about 2% of the budget.

There will be some money the Boro must put up as matching funds. This will be a new budget item. One suggestion is raising the recreation allotment from 2% to 5% (\$10/person) would make \$36,700 available as a source of matching funds to begin building the trail system in the Boro, and in the future take care of maintenance costs. The funds need not necessarily be new taxes, but could be made available through re juggling existing expenses.

## **Land Use, Topography & Hydrology**

For the most part, the Borough of New Britain is largely built out. Most of the unused or underutilized land is along existing right of ways and/ adjoining Pine Run and Cook's Run.

Topography posed only minor obstacles to greenways. The slopes in the Borough are moderate, especially were the proposed paths are located.

## **Key Issues, Opportunities, and Constraints**

Both Route 202 and the railroad line pose significant barriers to the Greenway. The Railroad can only be crossed at the underpass on Del Val campus, and at street intersections. Route 202 is a very heavily traveled road, and preferably would be

crossed at traffic lights. The nightmare crossing is at confluence of Bristol Road, Route 202, the Railroad, and the proposed Greenway.

Penndot has had this intersection on their to do list, and at some point will improve this intersection. The Greenway will be one more consideration for them to take up.

From the College to Bristol road, the opportunity is to use SEPTA's and the Bucks County Sewer Authority's right of ways for the arterial spine is very attractive. It would require a fence between the trail and the Septa line, a stream crossing at Cook's run, but it is an ideal route. It is straight, no unreasonable grade changes, and few if any driveways to cross. It will be expensive to build, guestimating based upon the December 11 2008 copy of the CKS estimate for the Twin streams Park trail project in Chalfont: Probably on the order of \$700,000. A daunting sum to raise by bake sales, but considering it is the key stone between Doylestown and Chalfont/New Britain, a necessary segment for integrating the region. Plus, Penn DOT prefers to fund a few large projects, rather than a scattering of smaller ones.

**Action list:**

- First Priority Establish the Sidewalk / Greenway Municipal Plan
- Work on the Main Trunk Road, a ten foot wide, approximately two mile trail from Del Val to Bristol Rd. This is similar to what Chalfont received full funding for in 2009. based upon the December 11 2008 copy of CKS estimate for the Twin streams Park trail project in Chalfont:

10' wide Bituminous Trail 3,720 SY @ \$50/SY	\$185,000
10' wide by 90 foot pedestrian bridge over Cooks Run,	\$120,000
Concrete Bridge Abutments	\$26,000
Drainage improvements	\$30,000
Fencing signage and site work	\$40,000
	Sub total \$401,000
	Contingencies (10%) <u>\$ 40,000</u>
Total construction	\$441,000
Surveying, engineering and coordination with Penndot	\$57,000
Environmental clearance (20% of design)	\$17,000
Construction Management and inspection (15%) of construction	\$66,000
Total Project cost, excluding ROW and Easements	\$581,000

Considering what the Boro has done in the past, this is a daunting project. However, Both Doylestown Township and Chalfont-New Britain did and even larger project just this past year. Knowing it is possible, is makes it easier to do.

**Bibliography:**

Data Collection

The Committee compiled information found in this report from many sources. Among them are:

American Association of State Highway and Transportation Officials (AASHTO) have a very useful website. <http://www.transportation.org/>

Federal Safe Routes to School Infrastructure Application V2008.3 Chalfont Borough S.R.  
292 Safe Routs to School

Geographic Information System, GIS base map information was obtained from Bucks County.

The Greenway and Trails Network Master Plan for Hatfield Township and Borough report provided a good template, used curtsy of Hatfield Borough.

Pennsylvania Community Transportation Initiative Smart Transportation Project Application prepared by Chalfont Borough in 2008, for \$1,183,139.25

Pennsylvania Land Trust Association, [www.conserveland.org](http://www.conserveland.org) Trail Easement Agreement & Commentary

Pennsylvania's Recreational Use of Land and Water Act

Rails to Trails Conservancy (RTC) [www.railstotrails.org](http://www.railstotrails.org) is another public resource