

Feasibility Study for the Destination Peace Valley Trail



Submitted To:
Doylestown Township, Doylestown Borough, New Britain Township,
New Britain Borough and Chalfont Borough

Prepared by:

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January 2011

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Appendix A

Appendix B

A) Introduction

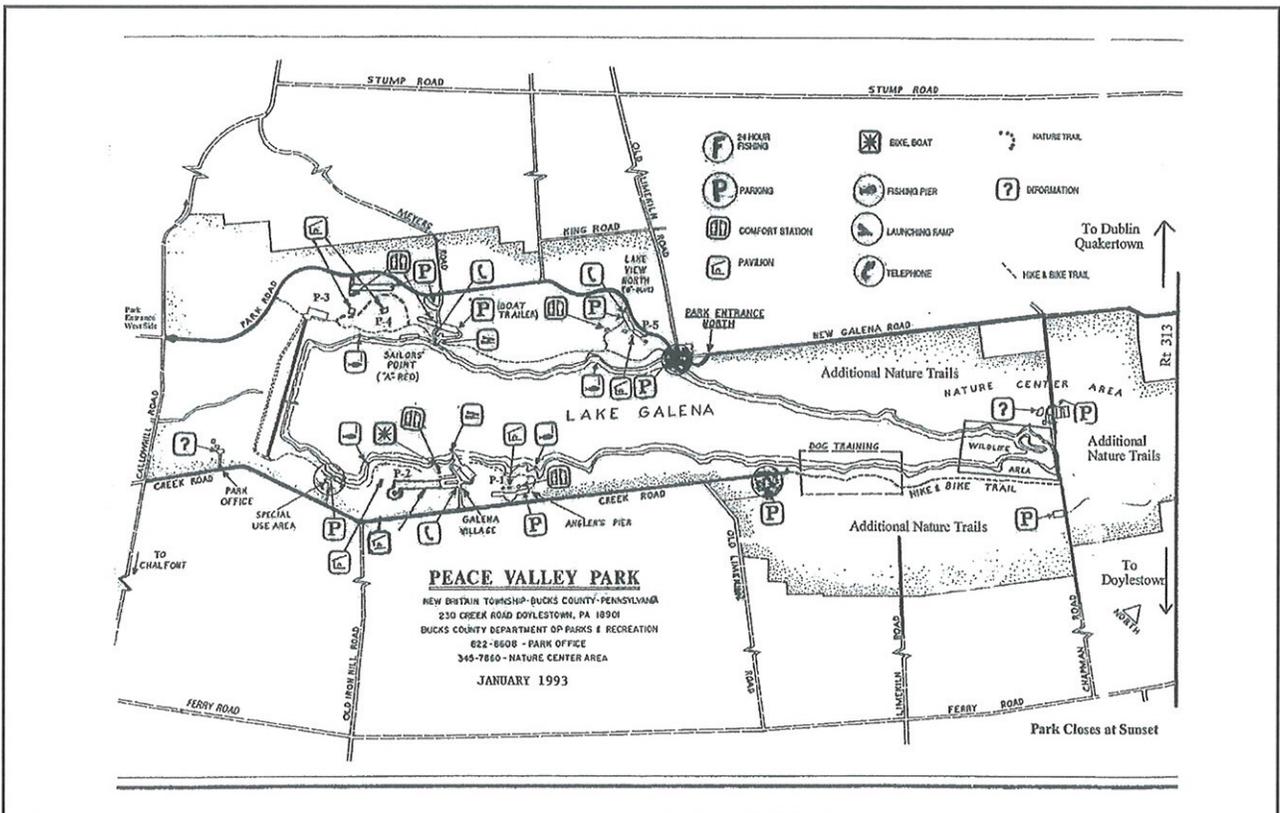
The Doylestown Community Bike and Hike committee in conjunction with New Britain Township, New Britain and Chalfont Boroughs have a goal to connect their communities to the major natural resources at Peace Valley Park through a walking and bicycling trail.

This planning study was undertaken to advance the development of the Destination Peace Valley trail which will connect the 1500 acres of bucolic, natural open space areas, Nature Center and 14 miles of nature trails at Peace Valley Park to the existing 15 mile long Doylestown Community Bike and Hike system as well as the planned Tri-municipal trail network in New Britain Township, New Britain Borough and Chalfont Borough.

The following map shows the amenities and public facilities available at Peace Valley Park:



Existing Walking/Bicycling Trail at Peace Valley Park



Map of Peace Valley Park

Two corridors were originally proposed for this study. The Trail Options proposed for the study are as follows (See Appendix A for maps of the proposed trail options):

Trail Option #1 – Old Iron Hill Link

Starting at the end of the existing shared use path on Iron Hill Road, through Pine Run Reservoir to Cover Bridge Park, crossing Pine Run Creek, to the existing shared use path on Old Iron Hill Road, crossing Ferry Road, continuing along Old Iron Hill Road, to the intersection of Creek Road and into Peace Valley Park.

Trail Option #2 - Chapman Road Link

Starting at the end of the existing shared use path on Meetinghouse Road near Sandy Ridge Road to Pine Run Road to Chapman Road, crossing Ferry Road to South Chapman Road into Peace Valley Park.

1) Study Objectives

This multi-use trail feasibility study involves the design and construction of a bicycle and pedestrian facility between the Doylestown Bike and System and Bucks County's Peace Valley Park for recreation and transportation purposes. The objectives of this study are the following:

- Determine the feasibility of constructing a trail facility in the two chosen corridors
- Develop a trail concept that takes advantage of the natural and scenic benefits of the surrounding area
- Evaluate connections to existing/proposed parks and trail facilities
- Evaluate connections to town centers, recreational areas, cultural, commercial and employment areas
- Provide recommendations for trail safety, maintenance, operations and accessibility
- Provide preliminary design and construction cost estimates for future funding
- Recommend a trail development strategy and right of way acquisition methods
- Serve as a resource to municipalities for the future grant applications and as a starting point for future preliminary engineering efforts

2) Project Scope

This multi-use trail feasibility study is being conducted through the support of the Pennsylvania Department of Conservation and Natural Resources (DCNR) Community Conservation Partnerships Program. The technical scope of work is based on DCNR's sample scope of work for rail trail feasibility studies. It was been modified slightly to better suit this effort and project area. Scope of the study involves the area between existing SR 202 to the south, SR 152 to the west, Peace Valley Park to the north and SR 313 to the east.

3) Project Partners

This effort has been directed by a steering committee made up of representatives of each municipality, Bucks County and representatives of the Doylestown Community Bike and Hike Committee. Please see Appendix B for list of participants. Residents from the affected project area have attended committee meetings on a periodic basis. Two sets of meetings have been held to move this study forward. The first is the monthly Doylestown Community Bike and Hike committee meetings. This study is a standing agenda item for each meeting. Progress on the study was discussed at each meeting. Questions, comments, and next steps were also discussed each month. The second set of meetings were study specific meetings with the managers of each municipality and the Director of the Bucks County Parks Department. Minutes from these minutes are included in Appendix B.

4) Regional Context

The Doylestown, Chalfont and New Britain areas are an interesting mix of suburban, rural and main street village areas. Doylestown is the County seat of Bucks County and the courthouse and other County offices create a great deal of business and commercial activity in the Borough of Doylestown. The Borough also is a major destination of the SEPTA Lansdale – Doylestown commuter line that extends to center city Philadelphia. Chalfont and New Britain Boroughs also have train stations on this line which are important parts of these communities as well. Chalfont and Doylestown also are main street villages that are centered on the major roadway of US Route 202. Doylestown and New Britain Townships are more rural townships that have been become popular area for residential development outside the Boroughs and along US 202 and the SEPTA rail line.

The Doylestown Community Bike and Hike Committee has been in existence for over 18 years. They have been working diligently over that period to develop a community wide system of walking and biking trails to benefit the area. Doylestown Borough and Doylestown Township together, in 1992, formed a joint committee to study the concept of developing a multi-use path that would surround the Borough. The initial plan showed a path largely in the right-of-way of the Route 202 and Route 611 Bypass.

The committee began meeting in October of 1992. The first committee meetings tackled the overall concept of the initial plan and developing a list of community resources that should be connected to the bike and hike system. The Community has been very successful working with private development projects to augment the system. In addition, they have been successfully acquired several grants from PennDOT to make major additions to the system. In 2005, the following formal bike and hike map was created through a grant from DVRPC.



Doylestown has a network of 16 miles of completed trails and sidepaths for use by bicyclists and pedestrians. The Doylestown Community Bike and Hike System will continue the effort to develop the proposed additional trails as grants and donations permit.

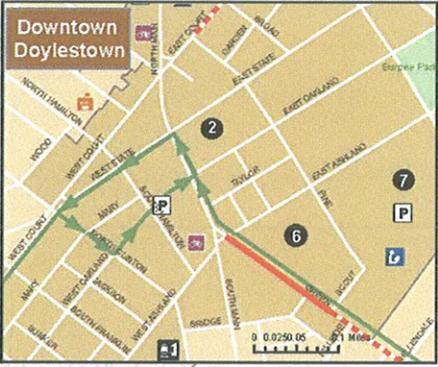
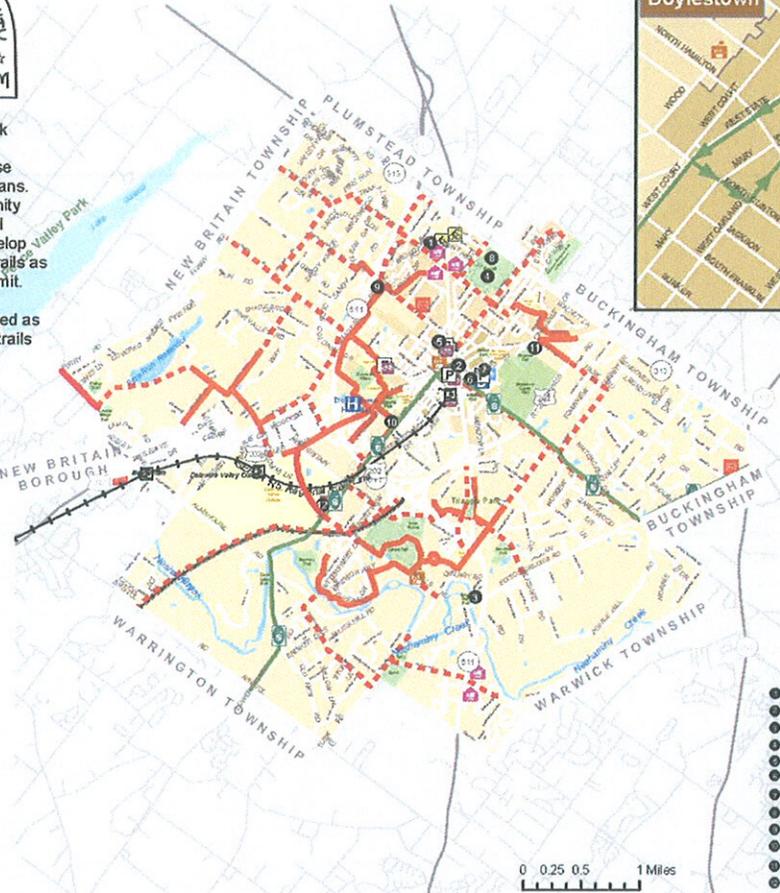
Existing trails are presented as solid red lines, proposed trails as dashed red lines.

Map updated November 7th, 2008

— Existing Trail
 - - - Proposed Trail

LEGEND

- NS Station
- NS
- Bicycle Parking - Existing
- Bicycle Parking - Proposed
- Bike Shop
- County Courthouse
- Doylestown Hospital
- Library
- Municipal Building/Police Station
- PA State Bicycle Route
- Post Office
- Shopping Center
- Vehicle Parking
- Proposed Route 202 Dypass
- State Highways
- Roads
- Water
- Schools
- Parks
- Historic district



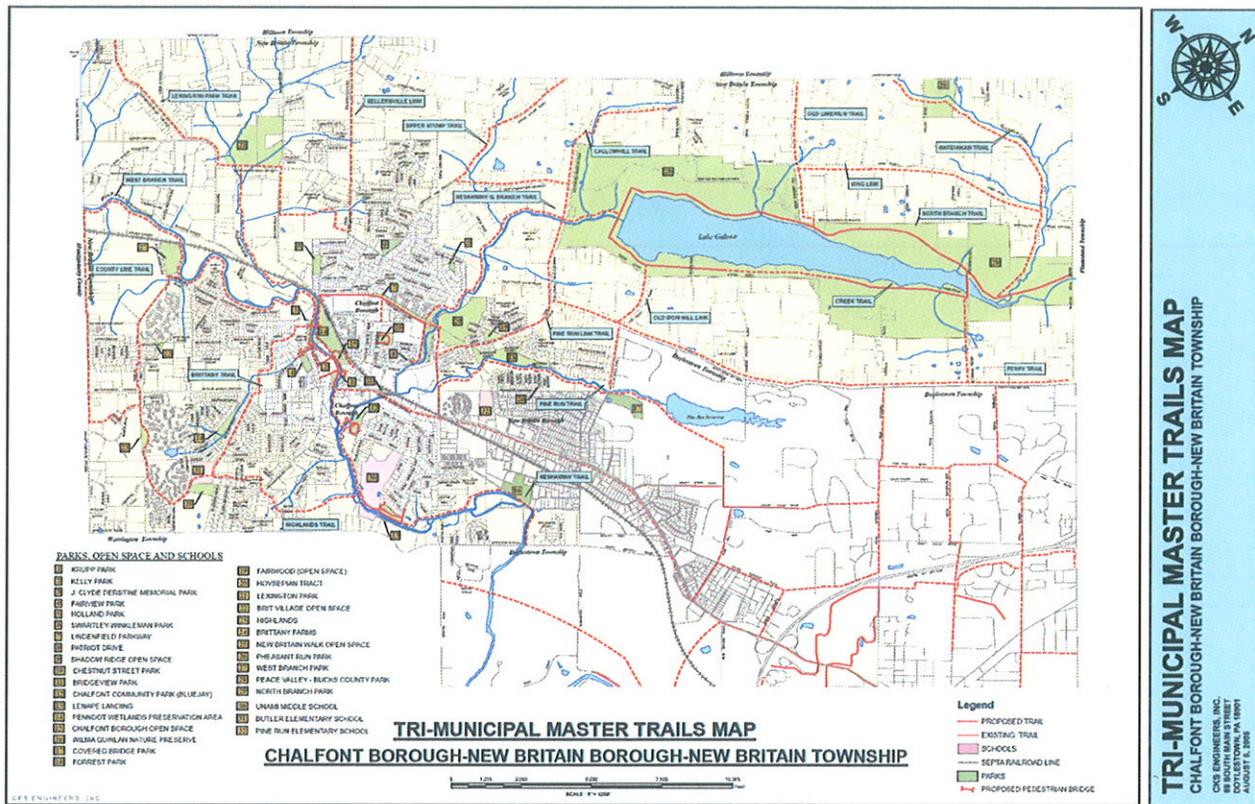
- Points of Interest**
- Aldie Mansion
 - County Theatre
 - Edison Village Park & Historic Area
 - Fonthill Museum
 - James Lorah Memorial Home
 - Mercer Museum
 - James A. Michener Museum
 - Moravian Pottery & Tile Works
 - Senior Citizen's Center
 - Y.M.C.A.
 - Fanny Chapman Pool
 - Delaware Valley College The Farm Market

0 0.25 0.5 1 Miles



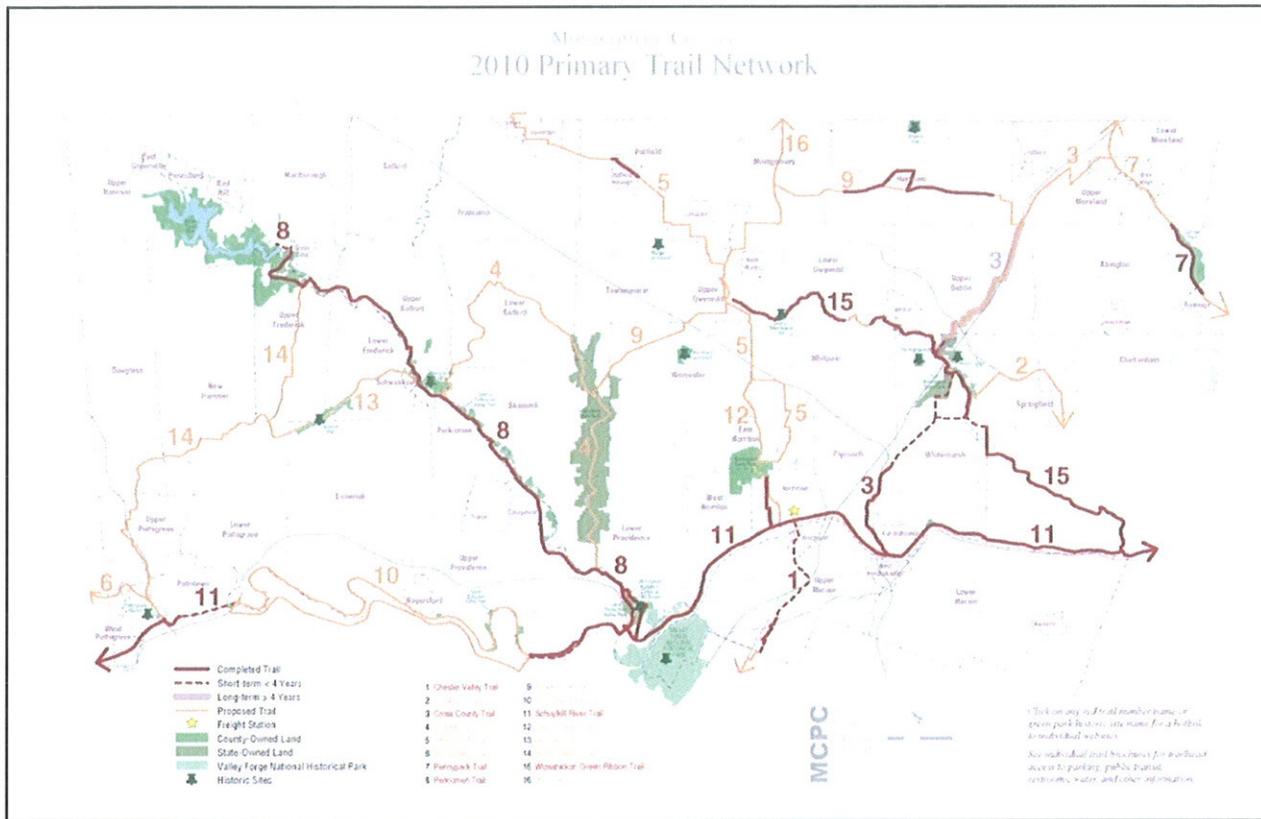
To date, the Committee has developed a system of over 15 miles of trails throughout the community.

Over the past several years, the neighboring communities of New Britain Township, New Britain Borough and Chalfont Borough have begun similar efforts to develop trail systems in their communities. A Tri-Municipal Trail Plan has been created between these communities that lay out the framework for future trail development throughout these communities and connection to the Doylestown system.



Bucks County and its constituents have all been involved with providing recreational opportunities in nature for its citizens. The passing of the recent referendum for renewal of the Bucks County Open Space fund is evidence of this fact. The development of a larger County trail system as part of this funding is anticipated to be part of the program. There is a large network of trails throughout all the municipalities that are slowly coming together. This trail would be an important linkage of trail systems. Bucks County has also recently commissioned development of a formal County wide bicycle plan that will incorporate existing and proposed bike trails.

In addition, the development of the new SR 202 Parkway by PennDOT between Montgomeryville and Doylestown includes a new independent 12' wide shared use path and a new 9 mile roadway with bike lanes. This facility will likely serve as spine trail for central Bucks County and spur the development of connector trails from the communities along the Parkway. The US 202 Parkway Trail ends close to Montgomery County's planned Powerline Trail. Montgomery County has a extensive system of over 50 miles of trails which allow access all the way to Center City Philadelphia.



5) Demand for a potential trail

The Doylestown, Chalfont and New Britain areas have shown a high level of interest and demand for walking and bicycling trails. People from an area within 1-5 miles of the potential trail are likely to use it. This could increase with the development of the 202 Parkway trail and other connectors. The activities mentioned in these previous section show the level of commitment by local governments as well as their citizens for the development of trails. The demographics of these areas also support this fact as follows:

Table C-1: Age Composition

Age Range	Doylestown Boro		Doylestown Twp		Chalfont Boro		New Britain Boro		New Britain Twp	
	#	%	#	%	#	%	#	%	#	%
Under 5 years	377	4.6	989	5.6	250	6.0	143	4.6	713	6.7
5 to 9 years	381	4.6	1,183	6.7	309	7.4	172	5.5	864	8.1
10 to 14 years	358	4.4	1,289	7.3	385	9.2	163	5.2	870	8.1
15 to 19 years	359	4.4	1,025	5.8	266	6.4	485	15.5	664	6.2
20 to 24 years	356	4.3	628	3.6	178	4.3	522	16.7	312	2.9
25 to 34 years	1,185	14.4	1,689	9.6	536	12.9	311	10.0	1,183	11.1
35 to 44 years	1,182	14.4	3,111	17.7	685	16.4	416	13.3	1,989	18.6
45 to 54 years	1,192	14.5	2,676	15.2	510	12.2	354	11.3	1,713	16.0
55 to 59 years	426	5.2	1,039	5.9	330	7.9	143	4.6	653	6.1
60 to 64 years	318	3.9	817	4.6	252	6.0	130	4.2	464	4.3
65 to 74 years	740	9.0	1,354	7.7	305	7.3	165	5.3	788	7.4
75 to 84 years	822	10.0	1,133	6.4	109	2.6	97	3.1	397	3.7
85 years & over	531	6.5	686	3.9	53	1.3	24	0.8	88	0.8
Total:	8,227	100.0	17,619	100.0	4,168	100.0	3,125	100.0	10,698	100.0
Median Age:	44.2		41.5		37.4		27.6		38.9	

Source: 2000 U.S. Census

Each of these communities has a high percentage of citizens in an age group that would likely utilize the new trail.

Table C-2: Race and Ethnicity

Race	Doylestown Boro		Doylestown Twp		Chalfont Boro		New Britain Boro		New Britain Twp	
	#	%	#	%	#	%	#	%	#	%
One race	8,175	99.4	17,506	99.4	4,129	99.1	3,096	99.1	10,623	99.3
White	7,901	96.0	16,777	95.2	4,085	98.0	2,996	95.9	10,298	96.3
Black or African American	107	1.3	457	2.6	0	0.0	64	2.0	144	1.3
American Indian and Alaska Native	9	0.1	11	0.1	0	0.0	2	0.1	13	0.1
Asian	117	1.4	221	1.3	36	0.9	25	0.8	122	1.1
Asian Indian	11	0.1	56	0.3	36	0.9	3	0.1	24	0.2
Chinese	16	0.2	56	0.3	0	0.0	14	0.4	20	0.2
Filipino	9	0.1	12	0.1	0	0.0	0	0.0	2	0.0
Japanese	0	0.0	16	0.1	0	0.0	1	0.0	4	0.0
Korean	18	0.2	35	0.2	0	0.0	3	0.1	40	0.4
Vietnamese	51	0.6	25	0.1	0	0.0	3	0.1	26	0.2
Other Asian ¹	12	0.1	21	0.1	0	0.0	1	0.0	6	0.1
Native Hawaiian and Other Pacific Islander	6	0.1	4	0.0	0	0.0	1	0.0	0	0.0
Native Hawaiian	3	0.0	4	0.0	0	0.0	1	0.0	0	0.0
Guamanian or Chamorro	1	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Samoan	1	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Other Pacific Islander ²	1	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Some other race	35	0.4	36	0.2	8	0.2	8	0.3	46	0.4
Two or more races	52	0.6	113	0.6	29	0.7	29	0.9	75	0.7
Total:	8,227	100.0	17,619	100.0	4,168	100.0	3,125	100.0	10,698	100.0

Source: 2000 U.S. Census

Table C-5: Household Composition

Age Range	Doylestown Boro		Doylestown Twp		Chalfont Boro		New Britain Boro		New Britain Twp	
	#	%	#	%	#	%	#	%	#	%
Family households (families)	1,907	48.3	4,446	74.1	1,162	77.4	670	73.5	3,033	77.9
With own children under 18 years	750	19.0	2,104	35.1	600	39.9	298	32.7	1,482	38.0
Married-couple family	1,540	39.0	4,004	66.7	866	57.7	555	60.9	2,678	68.8
With own children under 18 years	596	15.1	1,901	31.7	423	28.2	236	25.9	1,307	33.6
Female householder, no husband present	283	7.2	338	5.6	251	16.7	92	10.1	275	7.1
With own children under 18 years	116	2.9	155	2.6	145	9.7	52	5.7	132	3.4
Nonfamily households	2,045	51.7	1,553	25.9	340	22.6	242	26.5	862	22.1
Householder living alone	1,754	44.4	1,317	22.0	310	20.6	204	22.4	716	18.4

Age	Doylestown Boro		Doylestown Twp		Chalfont Boro		New Britain Boro		New Britain Twp	
	#	%	#	%	#	%	#	%	#	%
Householder 65 years and over	901	22.8	704	11.7	65	3.7	65	7.1	258	6.6
Households with individuals under 18 years	806	20.4	2,174	36.2	622	41.4	317	34.8	1,548	39.7
Households with individuals 65 years and over	1,417	35.9	1,685	28.1	324	21.6	207	22.7	893	22.9
Average household size	1.98		2.63		2.44		2.58		2.74	
Average family size	2.82		3.11		3.23		3.01		3.14	

Source: 2000 U.S. Census

Families in these communities especially those with children under 18 years old are some of the most common users of existing trails in this area. The high percentage of families in this demographic indicates a high likelihood of usage and demand for this potential trail.

Table C-6: Population Trends

Municipality	1980	1990	2000	2009	2025
Doylestown Boro			8,227	8,138	
Doylestown Twp			17,619	18,719	
Chalfont Boro			3,900	4,172	
New Britain Boro			3,125	2,276	
New Britain Twp			10,698	11,022	
Total					

Source: http://factfinder.census.gov/servlet/GCTTable?_bm=y&-geo_id=04000US42&-_box_head_nbr=GCT-T1&-ds_name=PEP_2009_EST&-_lang=en&-format=ST-9&-_sse=on

Population growth continues to occur in both Doylestown and New Britain Townships which points to additional individuals interest in trails.

6) Profile of Potential Users and Usage Estimates:

The profile of potential trail users are most likely to be walkers and bicyclists. The initial usage is anticipated to range from approximately 25 to 50 users per day with larger amounts of usage on the weekends. Future usage is estimated to range from approximately 50 to 100 users per day. The majority of the usage is anticipated to occur in the spring, summer and fall. It is estimated that approximately 80% of the usage will occur in these months with 20% of the usage in the winter months.

7) Compatibility with Adjacent Land Uses:

Both potential trail routes are compatible with the adjacent land uses. Both routes border primarily residential areas with a handful of agricultural parcels. Coordination with the adjacent property owners

would be conducted to address any concerns. The use of landscaping, fencing or other treatments would be considered as needed to make the trail compatible with the nearby uses.

8) Determination of Feasibility

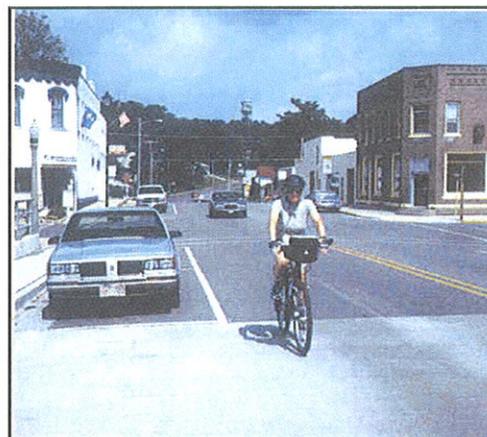
Based on the numerous field views conducted, feedback from the steering committee, feedback from residents and the general public, the information gathered to date, the construction of trail option #1 along Old Iron Hill Road appears feasible. Construction of a combination of off road and on-road improvements make trail option #2 along South Chapman Road feasible as well. However, option #2 will require several more right of way acquisitions than option #1. The existing steep grades on Chapman Road and the lack of a signalized crossing at the Chapman Road / Ferry Road intersection make Option #2 slightly less desirable than Option #1.

B) Inventory and Analysis

1) Design Methodology

Based on recommendations of the Municipalities and Bucks County, analysis of aerial photography, land uses and previous complete bike and hike plans, the preferred alignment of the trail corridors was defined. Field views were conducted to determine the major terrain features, adjacent property uses and environmental issues that would affect the construction of this trail facility. Once the alignments were narrowed down, the corridors were evaluated to determine the most appropriate trail facility and most feasible approach for its construction. According to AASHTO's Guide for the Development of Bicycle Facilities, there are 4 different types of bicycle facilities. The selection of the facility should be based on factors such as the ability of the users, specific corridor conditions, and facility cost. The different types are the following:

Shared Roadway (No Bikeway Designation): This facility represents the majority of existing bicycle travel in the United States. Some street systems provide efficient bicycle travel and



Shared Roadway Bicycle Facility



Signed Shared Roadway
Bicycle Facility

do not require the use of additional signing and striping. In other instances, it would be inappropriate to designate a certain route a bikeway because the roadways are not suitable for bicycling. In some cases, such as residential areas, the bicycle demand is not high enough to warrant a bikeway designation. Rural highways that are used for intercity and recreational travel should only be designated as a bikeway where there is a need for enhanced continuity with other bicycle routes.

Signed Shared Roadway: This facility is designated by bike route signs along existing roadway and has two purposes. One purpose is to provide continuity to other bicycle facilities, such as bike lanes.



Example of Bike Lanes

Another purpose is to designate preferred routes through high-demand corridors. These routes are implied to be more advantageous than alternate routes to bicyclists. Therefore, responsible agencies should ensure that these routes are adequate and well maintained for the needs of bicyclists. Signing also makes drivers aware of the presence of bicyclists.

Bicycle Lane: This facility's purpose is to enhance conditions for bicyclists on the streets through the use of appropriate pavement markings and signing. Bike lanes are used in areas where there is both a high bicycle demand and distinct needs that can be served by using them. Bike lanes delineate the right-of-way for bicyclists and motorists, separating the traffic and increasing the capacity of highways with mixed traffic. Bike lanes also provide an adequate area for bicyclists where there is insufficient space on the roadway for comfortable riding. For effective bike lanes, bicycle-safe drainage inlet grates should be used, pavement surfaces should be smooth, and traffic signals should be responsive to bicyclists. Regular maintenance should be a top priority to ensure potholes, broken glass, debris, or other impediments do not interfere with the bicyclists.

Shared Use Path: This facility consists of any independent trail on a separate alignment specifically designed for pedestrians and bicyclists. Shared use paths (SUP) are often constructed along rivers, ocean fronts, canals, utility rights-of-way, former or active railroad rights-of-way, within college campuses, within and between parks, or as part of a planned development. Shared use paths offer opportunities not provided by road systems, such as recreation or a direct commute. A shared use path is designed with the safety of all users in mind. This includes bicyclists, joggers, pedestrians, dog walkers, people with baby strollers, people with disabilities, roller bladers, etc.



Example of Shared Use Path

It is important that the proposed facility does not encourage or require bicyclists or motorists to operate in a manner that is different from the rules of the road. The needs of both bicyclists and motorists must be considered in the selection of the facility. Continuity of the overall system should be taken into consideration in the selection of the facility. Alternating segments of shared use path and bike lanes may result in street crossings at the end of the segments or wrong-way bicycle travel beyond the limits of the path due to the inconvenience of crossing the street. Sidewalks should be used in limited circumstances, such as along bridges or in areas of sporadic bicycle use. Any considerable difference in height between the sidewalk and roadway should be protected by a suitable barrier.

Bicycle/Pedestrian Bridges and Crossings: Crossings of waterways, roadways and other obstacles can be some of the most difficult and costly portions of a trail project due to design, permitting and construction issues. Crossings of waterways can be complicated by the need for various types of permits from state Departments of Environmental Protection or other agencies. These permits can vary from a minor application showing a sketch of the crossing to permits that required in-depth hydraulic



Example of Independent Trail Bridge

models, reports and coordination with the Federal Emergency Management Agency (FEMA) to determine flood plain impacts.

The following are several methods that are typically used on trail projects for waterway crossings:

- Ford
- Low flow pipe culverts
- Metal/concrete box or arch culvert
- Pre-fabricated bridge (various materials)
- Custom designed bridge

Each type of structure has advantages and disadvantages as well as different levels of construction costs. The following is a brief overview of each type.

A ford is defined as a trail crossing of a stream using the existing streambed or clean rock added to the streambed.

- Suitable for very small and shallow creeks and streams
- Utilizes simple design
- Side slopes approaching ford must be stabilized
- No fill is placed in the stream
- Cost ranges to \$0 to \$50/Cubic Yard for stone

Low flow pipes are a series of parallel pipes within the stream banks that are covered with fill material and allow the water of the stream to pass through.

- Suitable for small creeks and streams
- Utilizes simple design
- Side slopes approaching the crossing must be stabilized
- Fill is placed within the limits of the stream and flooding issues have to be considered
- Cost ranges from approximately \$150/ft of pipe plus approximately \$25-50/cy for soil or rock fill material

Culverts constructed of metal or concrete can be another effective crossing alternative. The culverts can be in the shape of a square, rectangular box or arch.

- Suitable for small to medium size waterways
- Pre-engineered and prefabricated structures are available
- Waterway opening can be maintained
- Cost ranges from \$500-1000/ linear foot and higher depending on size and span length

Prefabricated bridges have become more popular and more readily available for trail applications. They can be manufactured from various materials including weathering steel, aluminum, laminated wood and some lightweight plastics.

- Suitable for small to very large spans
- Pre-engineered/prefabricated structures are available. Foundations are required.
- Waterway opening can be maintained

- Can be used to minimize impacts to adjacent wetlands and sensitive streambank areas
- Cost can range from \$500-2000/linear foot and higher depending on width, number of spans and span length

Some special situations may require the need for a custom designed bridge. These types of structures usually are constructed of steel or concrete beams with concrete decks.

- Typically built for very long spans
- Waterway openings can be maintained
- Can be very costly

The above trail facility and structure types were considered in this initial feasibility study. The recommendations in the following section are based on a limited examination of the project area and a comprehensive evaluation of the most appropriate bicycle and pedestrian trail facility will be completed during final design.

2) Corridor Analysis

The following is a detailed review of each of the proposed trail options. In addition to the two main routes proposed, during the study the committee requested the review of several additional roadway corridors to ensure no better options were available. The following chart shows the legal right of way of the roadways involved in this study:

Road Name / Number	Right of Way Width
Limekiln Road (T-339) / SR 4007	33'
Meeting House (T-335)	33'
SR 1006 (Ferry Road)	33'
Kelley Avenue (T-340) – Covered Bridge to Ferry Rd.	33'
Kelley Avenue (T-340) – New Britain Borough Line to Lampost Drive	33'
Kelley Avenue (T-340) – (Lamppost Dr.) T-422 to New Britain Borough Line	46'
Chapman Road (T-358) - Pine Hill Circle to Ferry Road	46'
Chapman Road (T-358) - Pine Hill Circle to Pine Run (SR 4007)	33'
Rickert's Road (T-356)	33'
Iron Hill Road (T-346) – SR 1006 to cul-de-sac	33'

i) Trail Option #1 – Old Ironhill Road Link

This trail options starts at the end of the existing bike and hike path on Old Iron Hill Road near the entrance to Pine Run Reservoir. The 8’-10’ shared use path (SUP) will extend along the same side of the road and adjacent farm field up to the entrance to Pine Run Reservoir. The SUP could utilize the existing break in the fence line to connect to existing maintenance road that encircles Pine Run Reservoir. There is a small gravel area that is regularly used by people to park while visiting the Reservoir. Expansion of this area to more formal trailhead parking area would be a valuable amenity for the trail system.

Pine Run Reservoir is a flood control area that was constructed in 1973. The Pine Run Reservoir includes a 39-acre flood-control lake and approximately 74 acres of adjoining lands owned and maintained by the Bucks County Department of Parks and Recreation (BCP). The Reservoir is listed as a Priority Four site in the Natural Areas Inventory of Bucks County and as a birding hotspot in the publication Birds of Bucks County. A meadow restoration pilot project was initiated in 2004 with a grant from the National Fish & Wildlife Foundation. The project has included planting a 10-acre demonstration site with native warm season grasses to replace the non-native cold



End of existing path on Old Ironhill Road



Entrance to Pine Run Reservoir



View of existing maintenance road

season grass fields and to educate the public about the benefits of native vegetation and reduced mowing schedules for water quality and wildlife habitat. Tall meadow grasses will discourage use of the area by resident Canada Geese and act as an effective filter of stormwater run-off.

The proposed trail option would follow the existing gravel maintenance road along the berm of the reservoir. Fencing and or dense landscaping is recommended along the trail to encourage trail users to stay on the trail and away from the sensitive meadow restoration areas. Appropriate signage will be added as well to the trail to encourage proper usage. The trail alignment will follow the existing

gravel maintenance road up to the gradual sloped area near the spillway of the reservoir.

This sloped area leads to a footpath through the woods to the north end of the soccer field adjacent to Covered Bridge Park. These footpaths appear to be nature trails maintained by local scout groups or the New Britain Civic Association. The existing footpath through the woods is fairly close to Pine Run Creek and also has some existing wet areas. These wet areas appear to be small intermittent waterways that occur during rainfall events. The area will likely have to be investigated for wetlands during future stages of planning and design. To avoid these wet areas, it may



View of Pine Run Reservoir looking toward Covered Bridge Park.



Existing footpath to Covered Bridge Park.

be feasible to utilize the existing foot path that leads to the south side of the soccer field.

Lighting, and the youth summer recreation program. The proposed alignment will then continue through the park to an existing footpath that leads to an area approximately 75' upstream of the historic covered bridge on Keeley Avenue. This bridge is known as the "Pine Valley Covered Bridge Bucks County Bridge #86." At this location, we propose to install an independent bridge to cross Pine Run Creek. The existing covered bridge is very narrow and there have been some bicycle crashes on the bridge that may be due to the rough, wooden deck of the structure. New Britain Borough has installed signs that direct bicyclists to "Walk Bicycles Across Bridge." Currently the existing covered bridge is signed for one way traffic at a time. Based on

These foot paths lead to the main section of Covered Bridge Park. Covered Bridge Park is owned and maintained by the New Britain Civic Association. According to the association's website, the New Britain Civic Association, formed in 1953, is a non-profit, non-political organization which, since 1957, has owned and operated the 14 acre Covered Bridge Park on Keeley Avenue. Though the park has become the major focus of the Association in recent years, and it is still a very important focus of our organization, it also sponsors other community activities such as hosting astronomical events, Christmas Tree



Pine Run Creek near the existing covered bridge



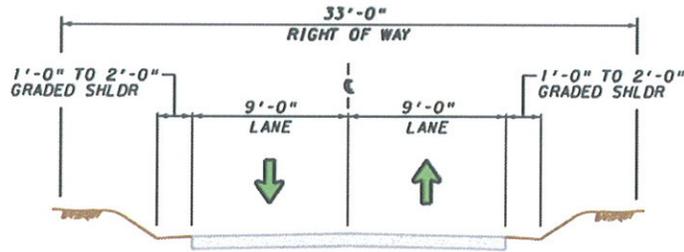
Existing Bike & Hike Trail on Old Ironhill Road

these conditions and the recommendations of the study committee, a separate trail bridge is proposed. A prefabricated steel truss with a span of approximately 50'-75' is envisioned for this location. (See Appendix B for a cost estimate.) Once across the bridge, the trail will connect to the existing shared use path near Longwood Circle. This path was constructed by Doylestown Township a few years ago. The existing path ends at Ferry Road at the existing traffic signal. The existing signal already includes pedestrian push buttons and crosswalks which allow safe crossings for trail users.

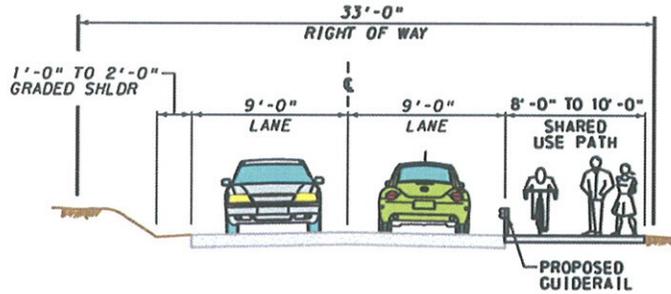
The section of Old Iron Hill Road north of Ferry Road presents some opportunities and challenges for this trail segment. The roadway is fairly narrow with the pavement measuring approximately 16' wide with 1'-2' wide gravel shoulders. At some locations, roadside ditches line the edges of the roadway. Road right of way is typically 33' feet wide. However, through our research and discussions with the property owners, the right of way on the east side of the road for the first two properties is 30' from the centerline of the roadway. See Appendix B for a copy of the right of way plan for this area. This additional right of way creates the opportunity for potential improvements on this side of the roadway. Several different options were proposed to provide bicycle and pedestrian access along Old Iron Hill Road. The graphic below shows the range of options presented and discussed:



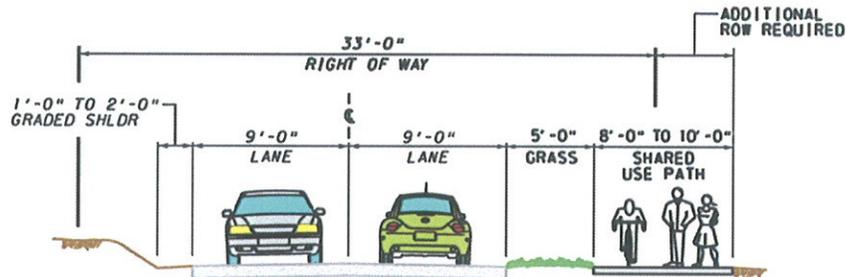
Field View with residents on Old Ironhill Road



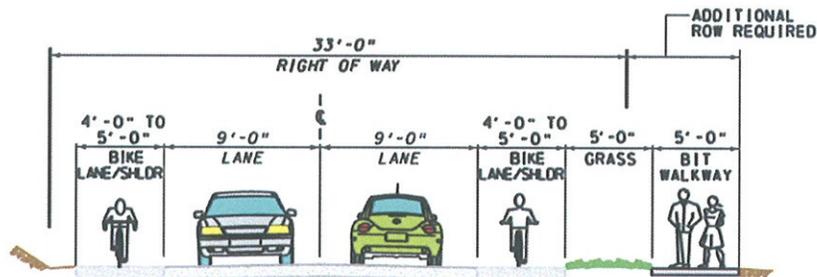
OLD IRON HILL ROAD - EXISTING SECTION



OPTION 1 - OLD IRON HILL ROAD - PROPOSED SECTION



OPTION 2 - OLD IRON HILL ROAD - PROPOSED SECTION



OPTION 3 - OLD IRON HILL ROAD - PROPOSED SECTION

Bike & Hike Options on Old Ironhill Road

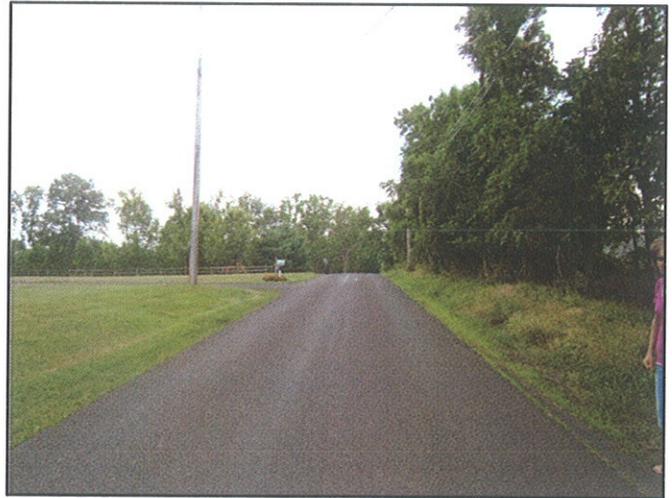
As a result of feedback from our public meeting that was held in June 2010 and a follow up field view meeting with many of the residents of Old Ironhill Road, option 3 was the preferred alternative. The design of the trail will be customized to meet the needs of the individual property owners. The modifications are as follows:

Property Owner/Address	Requested Trail Design
Marciano – (206 Ferry Road)	Trail at roadway elevation and small retaining wall or slope up to the existing fence line. A new landscape buffer would be installed on the road side of the fence for privacy. Existing vegetation can be removed as long as new landscape buffer is installed.
Showalter Property (393 Old Ironhill Rd.)	Meandering walkway with plantings / street trees at property line. Flattening of the slope slightly would be required.
London Property – (415 Old Ironhill Rd.)	Walkway acceptable through the wooded area near the roadway. Larger trees should be avoided
Blumberg Property (396 Old Ironhill Rd)	Walkway acceptable through the wooded area near the roadway. Larger trees should be avoided
Barba Properties (419 & 425 Old Ironhill Rd.)	Trail at roadway elevation and small retaining wall or slope up to the existing ground elevation . A new landscape buffer would be installed for privacy. Majority of existing vegetation can be removed. A few large trees should be avoided.
436 Old Ironhill Road	Cut slopes make area tight. Potential to widen west side of the roadway and shift center line to the west to create 4’ shoulder on east side. Grade flatter on west side of the roadway. Potential to have walkway on west side. Crossover of walkway to west side should be considered possibly prior to 425 Old Ironhill Rd.

The preferred option would include widening the existing shoulders of the roadway to a minimum of 4’ wide on each side to allow for travel by bicycles. The shoulder widening would require installation of drainage pipes in areas of road side ditches. The wider shoulders and improved drainage would also contribute to enhanced roadway safety. In addition to the shoulder widening, a 5’ bituminous sidewalk would be constructed to allow for enhanced pedestrian access. The 5’ width would meet PennDOT’s current ADA requirements. The alignment of the sidewalk could meander through the trees and lawn areas of the adjacent properties creating a pleasant walking environment for the residents that connect them directly to Peace Valley Park. This typical section would provide the scale of improvements that the residents would like for their neighborhood.

Traffic calming was one element that the residents would like to see incorporated into the design as well. They were concerned the existing motor vehicle travel speeds and the potential for these speeds to rise with the wider shoulders. The posted speed limit is 25 mph. Speed studies by New Britain Township indicate that a large majority of the vehicles travel at 35 mph or higher. 85 percentile speeds range from 33 mph to 37 mph. Traffic volumes on the roadway range from approximately 325 to 490 vehicles per day. See Appendix B for more information.

The existing topography seems to lend itself to a crossing over of the trail from the east side to the west side prior to 425 Ironhill Road. This mid block crossing could incorporate a speed table that could be serve as major traffic calming feature for the roadway.



View of Old Ironhill Road, looking north

ii) Trail Option #2 - Chapman Road Link

This trail option would start at the existing shared use path on Meetinghouse road near the intersection with Sandy Ridge Road. Meetinghouse Road is a residential street with numerous single family homes. The shared use path would continue along the west side of Meetinghouse Road to the intersection with Pine Run Road within the front yards of these homes. Trail easements or acquisitions on approximately 8 homes and 2 grass lots would be required to construct the path at this location.



Aerial view of Meetinghouse Road

It is anticipated that the shared use path would cross over Pine Run Road and run parallel to the north side of the roadway. Easements would be required from 4 additional residential properties in this area before the shared use path enters a large farm field area adjacent to Pine Run Creek. The trail would follow Pine Run Road until the intersection with Chapman Road.



Aerial view of Pine Run Road and Chapman Road

The existing pavement width of Chapman Road varies from approximately 22' to approximately 27'.

Due to the high banks and roadside ditches on both sides of the roadway as well as very the steep grade, a shared use path would be difficult and costly to construct along this roadway. The grade of the roadway is very steep for a long distance. Road signs indicate that the grade is 12% which is very steep for bicyclists. The AASHTO Bike Guide indicates that grades greater than 5% are undesirable because they make ascents difficult and descents cause bicyclist to exceed speeds at which they are comfortable or competent. The AASHTO guide indicates that grades over 11% are not recommended for lengths more than 50'.

Chapman Road has a grade of over 11% for several hundred feet and grades of over 5% for close to 1000'. However, this roadway does present the shortest distance between Doylestown Borough and Peace Valley Park. Based on recommendations of the study committee, we are recommending that roadway be striped with white edge lines to provide space for bicyclists that choose this route. We recommend that 10' travel lanes be provided which will allow 2' to 3.5' shoulders on each side of the roadway for bicyclists.



Grade sign on Chapman Road



Aerial view of Ferry Road and Chapman Road

The trail will continue up Chapman Road to Ferry Road. Since no traffic signal is present at this location, appropriate warning signs and pavement markings will be required for a mid-block crossing. Since Ferry Road is under the jurisdiction of PennDOT, PennDOT will have to review and approve the crossing. A side path

along the north side of Ferry Road will lead to South Chapman Road. South Chapman road is a dead end street that ends at Peace Valley Park. This roadway has low travel volumes which would allow for a shared roadway scenario for the trail. The roadway condition is fair to poor. Improvements such as a bituminous overlay are recommended to facilitate construction of the trail. There is a large gravel parking area near the end of South Chapman Road that would serve an excellent amenity for the trail as well as the park.



Aerial view of South Chapman Road and existing parking area.

3) Preliminary Cost Estimate

The preliminary cost estimate, shown on the following pages, has been developed to give the project stakeholders an idea of the relative cost of the different sections of the project, to aid in future grant applications and planning for the project. Since this project is in the planning stages, many assumptions have been made in determining this cost estimate. The major assumptions are as follows:

- Shared use path sections of the trail will be constructed of bituminous concrete pavement following previously approved PENNDOT designs
- Existing paved roadways used for the trail will not have modifications to the existing pavement. Only signing, pavement markings and other features required for the trail are included.
- Structure spans for large waterway crossings and other field viewed locations will be approximated from available information. Other minor waterway crossings will be assumed to be pipe crossings.
- This cost estimate does not include right of way cost, design costs, construction inspection cost or construction management costs.

A 15% contingency has been added for changes in material cost and unforeseen items.

**Destination Peace Valley Trail
Preliminary Construction Cost Estimate - Option #1
Old Ironhill Road Link**

Mile Marker (mi)	Trail Feature	Description	Length (mi)	Length (ft)	Width (ft)	Quantity	Unit	Cost/Unit	Total Cost
Destination Peace Valley: This proposed approximately 2 mile multi-use trail facility connecting the existing trail at Ironhill Road through Pine Run									
Section 1: MM 0.00 to MM 0.70 - Existing path on Ironhill Road through Pine Run Reservoir to Covered Bridge Park. A fence will									
0.0 - 0.70	10' Paved Shared Use Path	6" Subbase, 3" Bit. Base Course, 1" Wearing Course	0.7	3696	10	4106.67	SY	\$20.00	\$82,133.33
		Excavation - Class 1				1140.74	CY	\$15.00	\$17,111.04
	Fence	Split Rail Fence both sides between the trail and lake/park	1.2	6336		6336	LF	\$12.00	\$76,032.00
	Signing	Trail, warning, destination, regulatory signs				1	LS	\$2,000.00	\$2,000.00
								subtotal	\$177,276.38
Section 2: MM 0.70 to MM 1.00 - Covered Bridge Park to New pedestrian bridge.									
0.70 - 1.0	10' Paved Shared Use Path (SUP)	6" Subbase, 3" Bit. Base Course, 1" Wearing Course	0.3	1584	10	1760.00	SY	\$20.00	\$35,200.00
		Excavation - Class 1				488.89	CY	\$15.00	\$7,333.30
	Structure #1	New pedestrian bridge over Pine Run				1	LS	\$150,000.00	\$150,000.00
	Fence	Safety fencing between trail and creek	0.1	528		528	LF	\$12.00	\$6,336.00
	Drainage Improvements	Pipes to address low areas and intermittent streams				1	LS	\$20,000.00	\$20,000.00
	Signing	Trail, warning, destination, regulatory signs				1	LS	\$1,000.00	\$1,000.00
								subtotal	\$219,869.30
Section 3: MM 1.00 to MM 1.06 - New pedestrian bridge to existing path on Old Ironhill Road. The trail would connect to Existing									
1.0-1.06	10' Paved Shared Use Path (SUP)	Place 6" subbase and geotextile.	0.1	528	10	586.67	SY	\$6.00	\$3,520.00
		Excavation - Class 1				162.96	CY	\$15.00	\$2,444.43
	Improvements at water pit					1.00	LS	\$15,000.00	\$15,000.00
	Signing	trail, destination, warning and regulatory signs				1.00	LS	\$1,000.00	\$1,000.00
								subtotal	\$21,964.43
Section 4: MM 1.50 to MM 1.90 - Old Ironhill Rd - Ferry Road to Creek Road.									
1.50-1.90	5' Paved Sidewalk	8" Subbase, 3" Bit. Base Course, 1" Wearing Course	0.4	2112	5	1173.33	SY	\$20.00	\$23,466.67
		Excavation - Class 1				325.92	CY	\$15.00	\$4,888.87
	Shoulder Widening -Both sides (10' total width)	8" Subbase, 6" Bit. Base Course, 1.5" Wearing Course	0.4	2112	10	2346.67	SY	\$45.00	\$105,600.00
		Excavation - Class 1				977.78	CY	\$15.00	\$14,666.67
	Traffic Signal Modifications (Ferry Road)	Realign pavement markings, add crosswalks, add addition push buttons				1.00	LS	\$25,000.00	\$25,000.00

	Speed Table					1.00	LS	\$10,000.00	\$10,000.00
	Retaining Wall/Barriers					1.00	LS	\$75,000.00	\$75,000.00
	Drainage	pipes and inlets to replace roadside ditches (10 inlets, 1000 LF pipe)				1.00	LS	\$170,000.00	\$170,000.00
	Signing/Pavement Markings	trail, destination, warning and regulatory signs				1.00	LS	\$5,000.00	\$5,000.00
								subtotal	\$433,622.20
Section 5: MM 1.90 to MM 2.00 - Creek Road to existing trail at Peace Valley Park.									
1.90- 2.00	10' Paved Shared Use Path (SUP)	8" Subbase, 3" Bit. Base Course, 1" Wearing Course	0.2	1056	5	586.67	SY	\$20.00	\$11,733.33
		Excavation - Class 1				162.96	CY	\$15.00	\$2,444.43
4.1- 7.75	Signing	trail, destination, warning and regulatory signs				1.00	LS	\$5,000.00	\$5,000.00
								subtotal	\$19,177.77
Additional Costs									
	Clearing and Grubbing					1	LS	\$75,000.00	\$75,000.00
	E&S Controls					1	LS	\$100,000.00	\$100,000.00
	Traffic Control					1	LS	\$100,000.00	\$100,000.00
	Seeding and Landscaping					1	LS	\$75,000.00	\$75,000.00
								Subtotal	\$1,221,910.09
	Mobilization (5%)					1	LS	\$61,095.50	\$61,095.50
	Contingency (15%)					1	LS	\$192,450.84	\$192,450.84
								Grand Total	\$1,475,456.43

**Note: This cost estimate does not include right of way costs, design costs, construction inspection

**Destination Peace Valley Trail
Preliminary Construction Cost Estimate - Option #2
Chapman Road Link**

Mile Marker (mi)	Trail Feature	Description	Length (mi)	Length (ft)	Width (ft)	Quantity	Unit	Cost/Unit	Total Cost
Destination Peace Valley: This proposed approximately 2.1 mile multi-use trail facility connecting Meetinghouse Road to Pine Run Road to Chapman Road to									
Section 1: MM 0.00 to MM 0.50 - Meeting House Road -Existing trail to Pine Run Road.									
0.0 - 0.50	10' Paved Shared Use Path	Parallel to Roadway- 6" Subbase, 3" Bit. Base Course, 1" Wearing Course	0.5	2640	10	2933.33	SY	\$20.00	\$58,666.67
		Excavation - Class 1				814.81	CY	\$15.00	\$12,222.17
	Pavement Markings	Crosswalk				1	LS	\$1,000.00	\$1,000.00
	Signing	Trail, warning, destination, regulatory signs				1	LS	\$1,000.00	\$1,000.00
									subtotal
									\$72,888.84
Section 2: MM 0.50 to MM 0.80 - Pine Run Road- Meetinghouse Rd to Chapman Road									
0.50 - 0.80	10' Paved Shared Use Path (SUP)	6" Subbase, 3" Bit. Base Course, 1" Wearing Course	0.3	1584	10	1760.00	SY	\$20.00	\$35,200.00
		Excavation - Class 1				488.89	CY	\$15.00	\$7,333.30
1.00	Drainage Improvements					1	LS	\$5,000.00	\$5,000.00
	Signing	Trail, warning, destination, regulatory signs				1	LS	\$1,000.00	\$1,000.00
									subtotal
									\$48,533.30
Section 3: MM 0.80 to MM 1.30 - Bike friendly shoulders along Chapman Road from Pine Run Road to Ferry Road.									
0.80-1.30			0.5	2640					\$0.00
	Pavement Markings/Signs	"Share the Road", trail, destination, warning and regulatory signs				1.00	LS	\$5,000.00	\$5,000.00
									subtotal
									\$5,000.00
Section 4: MM 1.30 to MM 1.46 - Path along Ferry Road from Chapman Road to South Chapman Road.									
1.30-1.46	10' Paved Shared Use Path (SUP)	6" Subbase, 3" Bit. Base Course, 1" Wearing Course	0.3	1584	10	1760.00	SY	\$20.00	\$35,200.00
		Excavation - Class 1				488.89	CY	\$15.00	\$7,333.30
	Signing	Trail, warning, destination, regulatory signs				1.00	LS	\$1,000.00	\$1,000.00
									subtotal
									\$43,533.30
Section 5: MM 1.46 to MM 2.10 - S. Chapman Road to existing trail at Peace Valley Park.									
1.46- 2.10	Share the Road	1" Overlay	0.64	3379	10	3754.67	SY	\$8.00	\$30,037.33
	Signing/Pavement Markings	"Share the Road", trail, destination, warning and regulatory signs				1.00	LS	\$5,000.00	\$5,000.00
									subtotal
									\$35,037.33
Additional Costs									
	Clearing and Grubbing					1	LS	\$50,000.00	\$50,000.00
	E&S Controls					1	LS	\$75,000.00	\$75,000.00
	Traffic Control					1	LS	\$25,000.00	\$25,000.00
	Seeding and Landscaping					1	LS	\$75,000.00	\$75,000.00
									Subtotal
									\$429,992.78
	Mobilization (5%)					1	LS	\$21,499.64	\$21,499.64
	Contingency (15%)					1	LS	\$67,723.86	\$67,723.86
									Grand Total
									\$519,216.28

**Note: This cost estimate does not include right of way costs, design costs, construction inspection or

4) Comparison of Route Alternatives

The study committee made a comparison of the various routes evaluated as part of this study. The following chart shows the various routes, advantages and disadvantages of the routes, relative cost, number of property acquisitions that may be involved as well as new road crossings with the proposed trail. The general consensus of the study committee was that trail option #1 was the most feasible option for construction. This option connected the most park /open space resources, existing trails as well as has the fewest property impacts and has safety advantages over the other options.

Baker

**DESTINATION PEACE VALLEY TRAIL
COMPARISON OF ROUTE ALTERNATIVES**

Trail Option #	Route Description	Approx. Length of New Trail Required	Advantages	Disadvantages	Relative Cost
1	Ironhill Road to Pine Run Reservoir to Covered Bridge Park to existing trail on Old Ironhill Road	1.4 miles	<ul style="list-style-type: none"> - Connects existing trails - Uses existing traffic signal for safe crossing of Ferry Road - Connects existing public land/parks 	<ul style="list-style-type: none"> - Requires new pedestrian bridge (60') - Requires widening/reconstruction along approx. 0.5 mi of Old Ironhill Road 	Medium to High
2	Meeting House Rd to Pine Run Road to Chapman Road to Ferry Road to South Chapman Road	2.1 miles	<ul style="list-style-type: none"> - South Chapman is low volume road (dead end road) - Portion of South Chapman road closed, available for trail - Access to existing parking area - Existing bridge over Pine Run wide enough for trail 	<ul style="list-style-type: none"> - Steep grade on Chapman Rd - Limited ROW - Unsignalized crossing of Ferry Road - Trail along Ferry Road (PennDOT) - South Chapman Road is narrow and in poor condition 	Medium
3	Meetinghouse Rd. to Pine Run to Rickert's Road to Ferry Road to South Chapman Road	2.0 miles	<ul style="list-style-type: none"> - Slightly shorter than Option 2 - Roadway has less homes 	<ul style="list-style-type: none"> - Steep grade - Existing one lane road bridge built in 1910. May require separate trail bridge. - Unsignalized Crossing(s) of Ferry Road - Trail along Ferry Road (PennDOT) 	Medium to High
4	Meetinghouse Rd. to Pine Run to Limekiln Road	2.2 miles	<ul style="list-style-type: none"> - Existing signal at Ferry and Limekiln Road provides safe crossing - Existing bridge over Pine Run wide enough for trail 	<ul style="list-style-type: none"> - Limekiln (Pine Run to Ferry Road) steep, narrow road - Limited ROW 	Medium
5	Ironhill Road to Ferry Road to Cheese Factory Road	1.4 miles	<ul style="list-style-type: none"> - Connects to existing trail - Connects Pine Run Reservoir and Lake Galena 	<ul style="list-style-type: none"> - Unsignalized crossing of Ferry Road - Large Elevation difference at Cheese Factory / Ferry Rd - Requires new bridge across Pine Run Reservoir (200') - Potential Impacts to Czestochowa Shrine property 	High

C) Implementation Strategies

1) Recommended Construction Phasing:

Typically, it is not feasible to construct a large trail project like this one in one construction effort. Design issues, right of way acquisition, permitting as well as funding limitations usually result in projects being divided into smaller sections. The following is a recommended list of sections listed in order of priority:

1. Trail Option 1: Iron Hill Road through Pine Run Reservoir to Covered Bridge Park (including bridge and connection to existing trail at Longwood Circle)
2. Trail Option 2: Pavement marking improvements on Chapman Road (Pine Run Road to Ferry Road)
3. Trail Option 1 – Old Ironhill Road – Ferry Road to Creek Road
4. Trail Option 2 - Side path along Ferry Road to South Chapman Road. Overlay of South Chapman Road
5. Trail Option 2 – Shared use path from Meetinghouse Road to Chapman Road

These sections were also developed to have logical beginning and ending points, manageable construction lengths and based on potential trail usage.

2) Acquisition Techniques:

It is often challenging to acquire the necessary right of way, easements and other agreements needed to construct long, linear projects like this one since the corridor can affect numerous individual property owners. However, the following well established methods are available to obtain the land needed for the project:

1. **Easements:** One of the least costly and most effective methods for acquiring the legal permission for the trail to cross a property is through a permanent easement agreement. This easement agreement would be a legal document that modifies the property owner's deed to allow the use of a portion of their property for the construction of the trail and permanent use of the area by trail users. A sample easement agreement successfully used by Montgomery County in the Philadelphia area on several previous trail projects is included in Appendix B. Typically, the County or other agency would be responsible for maintenance and liability issues related to the trail within the easement.
2. **Lease Agreement:** This type of document is similar to an easement except that a specific time frame is stipulated in the agreement for use of the area for the trail. Some private property owners may have long range plans for their properties and may not want to have a permanent easement attached to their deed. However, these agreements are usually formed for relatively

long time periods such as 10-20 years or more, are typically renewable and can function just as well as permanent easements.

3. **Fee Simple Purchase:** Another more costly alternative and potentially time consuming method is the outright purchase of portions of property from owners. If easements or other agreements can not be formed, the County can negotiate a land purchase from a property owner for the trail. This process can often be complicated by disagreements over property appraisals, questions of property ownership, the need for right of way plans and modifications to deeds. However, this process is commonly used on transportation projects and could be used for trail projects as well.

With any type of project, there is always some initial apprehension felt by affected property owners about how the project will impact them. However, once they find out the details, that initial feeling usually subsides. The following are some selling points and or mitigation measures that can be suggested to adjacent property owners as benefits to them as a result of the trail project:

- Road improvements and long range maintenance of the roadway by others
- Drainage improvements along the roadway and long range maintenance
- Other infrastructure or utility improvements
- Fencing and or landscape screening along the trail

3) Maintenance and Operation Plan

Similar to any other recreation or transportation facility, periodic and regular maintenance of the trail corridor will be required. The costs associated with these activities should be incorporated into the long range budget of the municipalities. The following is a list of the key maintenance activities and the anticipated effort involved:

- Trail Surface (Paved) – repaving every 10-12 years
- Trail Surface (Crushed Stone) – regrading annually / periodic repairs from storms
- Bridges – inspected every two years by a certified professional
- Drainage structures- cleaned annually
- Mowing of trailside areas- minimum of 4 times / year
- Tree Trimming – annually
- Litter Pickup/Trash Collection – biweekly and as needed
- Signage/Gates/Bollards – repair/replace as required

Based on our experience and data from other existing trails, annual maintenance costs range from approximately \$1000-\$5000 per mile. Once the trail is open, future budgets should be based on actual costs from the first few years of operation.

Research on existing trail facilities has shown that safety, vandalism and liability have not been significant problems. However, certain basic measures should be taken to safeguard against potential issues. The following is a brief list of recommendations for the safe and efficient operation of the trail:

- Design the trail according to accepted engineering standards such as AASHTO and PENNDOT
- Provide measures to allow regular patrolling by law enforcement and access by emergency vehicles

- Provide regular safety inspections and maintenance
- Provide emergency contact numbers and information at trails kiosks and on trail maps
- Provide trail rules at kiosks and on trail maps
- Provide appropriate warning signs along the trail

It is anticipated that these trails will be maintained by the municipalities where they are located.

4) **Funding Options:**

Finding the funding for the design and construction of these types of projects can be a challenge, but the following is a list of possible funding sources for this project:

- PENNDOT – Transportation Enhancement Program
- PENNDOT – Safe Routes to Schools Program
- PENNDOT – Surface Transportation Program
- Robert Wood Johnson Foundation
- William Penn Foundation
- National Parks Service – Trails Assistance Program
- PA Department of Conservation and Natural Resources – Keystone Grant Program and Recreational Trails Program
- Conservation Foundation: American Greenways Dupont Award
- Dodge Foundation
- County, City, Borough and Township funds
- Private sponsorships, local fund raisers, etc.
- Bucks County Open Space fund

D) **Recommendations for Peace Valley Park**

In the many discussions regarding this potential project, some additional recommendations have been made to improve the existing shared use path at Peace Valley Park. The following recommendations were made:

- Widen the existing 8'-10' wide shared use path to 12'-14' wide. The extensive popularity of this path has led to this recommendation. The huge numbers of users as well as the wide variety of users have resulted in numerous conflicts and stories of near miss incidents.
- Recommend the installation of signage and an education program for rules of the trail at Peace Valley park. Educational kiosks and/or handouts at critical entry points and parking areas have been suggested.
- The issues with bikers riding too fast for the conditions and number of users has been raised. The concept of implementing a speed limit for the path as been mentioned. Enforcement of this speed limit may be a challenge.
- Add more pavement legends and signs to encourage the rules of the trail and safer operations. Improvements to the existing signs were also suggested.

The stakeholder group suggested that funding for these improvements may be available from the following sources:

- Bucks County Bicycle Club
- New Britain Twp Open Space Fund
- Bucks County Open Space Fund
- Bucks County Parks and Recreation funding
- DCNR funding

E) Public Participation Process

The public has ample opportunity to be involved with this study including participation at the following meetings:

- Public Monthly Doylestown Community Bike and Hike Meetings
- Public Meeting for this trail study - June 10, 2010
- Neighborhood meetings

Information regarding the study has been posted on the Township websites for public review. Contact information for staff working on the study has been given to the public as well for direct input. Minutes from these meetings as well as the internal study committee meetings are included in Appendix B. Copies of the correspondence received are also included in Appendix B.

Appendix A

1. **Project Area Map**
2. **Photo Maps**