Feasibility Study for Lower Merion Township

TOWNSHIP-WIDE PEDESTRIAN AND BICYCLE NETWORK

Prepared for:
Township of Lower Merion
75 East Lancaster Avenue
Ardmore, PA 19003

Prepared by:
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215-545-1076

In association with:
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December 2004
Feasibility Study for the Lower Merion Township-Wide Pedestrian and Bicycle Network
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I. Executive Summary

A. General Objectives of this Study

• To gather information and input for the potential path/bike/trail system that will link parks, natural areas and the Schuylkill River with neighborhoods, business districts, schools and adjacent municipalities. This includes accommodations for multiple forms of transportation; walking, running, biking, horseback riding.

• Present to the Public and Township Officials initial findings of legal feasibility, usage feasibility, and location feasibility and gather comments.

• Report on final study results and develop a conceptual Pedestrian Network, Bicycle Network and Greenway Trail Plan.

B. Background

Inventory and Analysis
A field survey and GIS data inventory of the existing on and off-road path network was conducted analyzing road width's and benches (areas where sidewalks can physically exist), and Natural and Built features (see drawings in Appendix A: Bicycle and Pedestrian Path System Draft Plan).

Public Participation
Based on township study committee recommendations, community outreach, questionnaires, meetings with significant landowners and organizations, the study has identified desired routes on a Master Plan for the Township Wide Network.

Resident and Business Survey (results compiled: ~ 300/800 responses)
• Recreation Preferred Activity followed by Walk/Bike to Town Centers and Natural Areas
• 46% say it not easy to walk and bike in Township
• 68% want access to the Schuylkill River
• 58% will use new connections
• Paths should be Increased/Improved
• Access to Natural Areas and Community Places should be Increased
• Safety/risk of Accident is top concern
• 50% willing to support capital expenditure to Increase Recreation and Access
• Only 8% have no interest in study
• Points of Interest and Routes to travel were identified

C. Master Plan

<table>
<thead>
<tr>
<th>MASTER PLAN RECOMMENDATIONS</th>
<th>Please see Master Plan Drawings in Section VI: Appendix A</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAP KEY</td>
<td>Shows Township-Wide Network for Pedestrians and Bicycles</td>
</tr>
<tr>
<td>BIKEMAP</td>
<td>Shows Recommended On-Road Bike Routes and Bike Lanes</td>
</tr>
<tr>
<td>PEDMAP</td>
<td>Shows Proposed Side-of-Road and Off-Road Pedestrian Network</td>
</tr>
<tr>
<td>TRAIL</td>
<td>Shows Proposed Schuylkill River Trail West (both Soft and Hard Surfaced)</td>
</tr>
<tr>
<td>PED impl (IMPLEMENTATION)</td>
<td>Shows Side-of-Road and Off-Road Pedestrian Network to be Implemented (includes difficult physical conditions)</td>
</tr>
</tbody>
</table>
Summary of Recommendations

- Create “Share the Road” Bike Routes and Routes that Parallel High Traffic Volume Rds (i.e. Lancaster Ave, Montgomery Ave, City Ave, and Conshohocken State Rd)
- Stripe Bike Lanes where possible
- Create New Sidewalks (soft surface) / New Sidewalks (hard surface) consistent with Township character
- Formalize portions of Bridlewild Trail Network
- Link together Schuylkill River Trail West (a soft surface and multi-use trail)
- Implement Signage and Information Systems
- Link Network to Adjacent Municipalities and Schuylkill River Trail
- Review potential funding sources including Montgomery County Open Space Funds, PA DCNR, and Federal Transportation Enhancement Funds

Overall Mileage

When compiled, the selected routes of each network consist of the following distances:

- **Bicycle Network**: 46.25 miles of bike routes where 6.75 miles of that are bike lanes which have approximately 165 major network crossings.
- **Pedestrian Network**: 68 miles of pedestrian routes with approximately 275 major pedestrian crossings and 25 major mid-block crossings; and
- **Greenway Network**: 10.75 miles of greenway trail along the western banks of the Schuylkill River, named for purpose of this study the Schuylkill River Trail West, where 4.25 miles of that is a hard surfaced Multi-Use Trail.

D. Implementation

This report is the first planning step towards the realization of the township-wide ped/bike network for Lower Merion. This feasibility report attempts to estimate the cost and prioritize key routes/projects at an overall planning level. The Township can make the most of this report by seeing it as a “menu” of items and segments of routes for the Township to choose projects for implementation. The following table illustrates the total existing or necessary construction mileage of each facility type of network segments:

<table>
<thead>
<tr>
<th>Existing Network Mileage</th>
<th>Proposed Network Mileage</th>
<th>Pedestrian</th>
<th>Bicycle</th>
</tr>
</thead>
<tbody>
<tr>
<td>On Neighborhood Street</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trail</td>
<td>8.42</td>
<td>7.68</td>
<td>32.70</td>
</tr>
<tr>
<td>Sidewalk</td>
<td>2.65</td>
<td>2.40</td>
<td>11.59</td>
</tr>
<tr>
<td>Multi-Use Trail (ProBk/Bike)</td>
<td>5.20</td>
<td>5.20</td>
<td>11.59</td>
</tr>
<tr>
<td>Trail/Sidewalk (Earned)</td>
<td></td>
<td>7.42</td>
<td>34.14</td>
</tr>
<tr>
<td>Sidewalk</td>
<td></td>
<td>6.62</td>
<td></td>
</tr>
<tr>
<td>Sidepath (Gravel or Asphalt)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sidewalk</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Special Design Consideration (i.e. Difficult to Implement)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bikelanes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>On-Road Bike Route</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Pedestrian Network Implementation

PEDimpl – Master Plan Recommended Routes: Pedestrian Routes to be Implemented – Shows only the segments of the pedestrian network that are required to be implemented. This plan is important for singling out particular projects that need to be constructed in order to complete the entire network (please refer to: Section VI: Appendix A: Master Plans F).

- The entire pedestrian network will utilize 49 miles of Lower Merion’s existing network. These routes are not located on the plan.
- The entire pedestrian network will only need to construct 23 miles of trail and sidewalks/sidewalks as located on the plan.
- The entire pedestrian network can be completed if 7.5 miles of special design considerations are solved as located on the plan.

Bicycle Network Implementation

- The entire Bicycle Network will need to implement 6.75 miles of Bicycle Routes and 34 miles of On-road Routes.
E. Summary of Opinion of Probable Cost
## Lower Merion Township-Wide Pedestrian and Bicycle Network Feasibility Study

### SUMMARY COST TABLE

**Prep’ed by Campbell Thomas & Co  -  1504 South Street - Philadelphia PA 19146-1636  -  Tel:215-545-1076   - Fax 215-545-8397**

**Date: December 2004**

<table>
<thead>
<tr>
<th>Route ID #</th>
<th>Route Name</th>
<th>Reach of Route</th>
<th>Units</th>
<th>Subtotal</th>
<th>$1,000</th>
<th>$5,000</th>
<th>$1,000</th>
<th>Subtotal</th>
<th>Reach</th>
<th>Subtotal</th>
<th>TOTALS</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Schuylkill River Trail West - From Schuylkill River Trail (Fairmount Park, Manayunk) to West Conshohocken</td>
<td>8305</td>
<td>20953</td>
<td>0</td>
<td>14044</td>
<td>7953</td>
<td>3065</td>
<td>0</td>
<td>1322</td>
<td>LF</td>
<td>$1,493,541</td>
<td>$112,000</td>
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<tr>
<td>B</td>
<td>Public Footpath to Gladwyne/Bryn Mawr - From Rt. 100 Bryn Mawr Station to Rolling Hill Park</td>
<td>1625</td>
<td>1457</td>
<td>6473</td>
<td>0</td>
<td>0</td>
<td>10091</td>
<td>2004</td>
<td>1611</td>
<td>LF</td>
<td>$309,020</td>
<td>$31,000</td>
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<tr>
<td>C</td>
<td>Bicyclist’s City Avenue - From Schuylkill River Trail (Fairmount Park, Manayunk) to Rt 100 Pennfield Station</td>
<td>6241</td>
<td>22941</td>
<td>LF</td>
<td>$110,863</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>D</td>
<td>Spring Mill Bike Route</td>
<td>12758</td>
<td>3282</td>
<td>LF</td>
<td>$108,628</td>
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</table>

### PEDESTRIAN ROUTE SAMPLE IMPLEMENTATION

**TOTAL SAMPLE IMPLEMENTATIONS** $4,190,000

**TOTAL SAMPLE IMPLEMENTATION LENGTH 23.46 miles**

### PEDESTRIAN NETWORK SEGMENTS

**100-148**

<table>
<thead>
<tr>
<th>Route ID #</th>
<th>Route Name</th>
<th>Reach of Route</th>
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<th>Subtotal</th>
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<th>$5,000</th>
<th>$1,000</th>
<th>Subtotal</th>
<th>Reach</th>
<th>Subtotal</th>
<th>TOTALS</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Schuylkill River Trail West - From Schuylkill River Trail (Fairmount Park, Manayunk) to West Conshohocken</td>
<td>34609</td>
<td>18202</td>
<td>166881</td>
<td>0</td>
<td>5245</td>
<td>14509</td>
<td>61416</td>
<td>36327</td>
<td>LF</td>
<td>$5,752,714</td>
<td>$246,000</td>
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**TOTAL PEDESTRIAN NETWORK LENGTH 63.73 miles**

### BICYCLE ROUTE SAMPLE IMPLEMENTATION

**C**

<table>
<thead>
<tr>
<th>Route Name</th>
<th>Reach of Route</th>
<th>Units</th>
<th>Subtotal</th>
<th>$1,000</th>
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<th>Reach</th>
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<th>TOTALS</th>
<th>Comments</th>
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<tbody>
<tr>
<td>D</td>
<td>Spring Mill Bike Route</td>
<td>22257</td>
<td>177376</td>
<td>LF</td>
<td>$1,089,840</td>
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**TOTAL BICYCLE NETWORK LENGTH 37.73 miles**

### BICYCLE NETWORK SEGMENTS

**200-250**

<table>
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<th>Route ID #</th>
<th>Route Name</th>
<th>Reach of Route</th>
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<th>$5,000</th>
<th>$1,000</th>
<th>Subtotal</th>
<th>Reach</th>
<th>Subtotal</th>
<th>TOTALS</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Schuylkill River Trail West - From Schuylkill River Trail (Fairmount Park, Manayunk) to West Conshohocken</td>
<td>17452</td>
<td>16379</td>
<td>0</td>
<td>1373</td>
<td>996</td>
<td>1115</td>
<td>0</td>
<td>1307</td>
<td>LF</td>
<td>$2,036,540</td>
<td></td>
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</table>

**TOTAL BICYCLE NETWORK SEGMENTS** $2,323,000

**TOTAL SAMPLE IMPLEMENTATIONS** $4,190,000

**TOTAL NETWORK SEGMENTS $7,219,000**

### SAMPLE DESIGN AND ENGINEERING FEES

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<th>Notes</th>
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<tr>
<td>Preliminary Design/Engineering</td>
<td>$1,732,000</td>
<td>60% of Total Design</td>
</tr>
<tr>
<td>Final Design/Engineering</td>
<td>$866,000</td>
<td>30% of Total Design</td>
</tr>
<tr>
<td>Construction Phase Services by Design Professional</td>
<td>$289,000</td>
<td>10% of Total Design</td>
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**TOTAL DESIGN $2,887,000**

**22% of Total Construction**

**TOTAL DESIGN and CONSTRUCTION $16,007,000**

**TOTAL OPINION OF PROBABLE COSTS**

<table>
<thead>
<tr>
<th>Type of Service</th>
<th>Subtotal</th>
<th>Notes</th>
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</thead>
<tbody>
<tr>
<td>Total Construction</td>
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</tr>
<tr>
<td>Total Design and Engineering</td>
<td>$2,887,000</td>
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</table>

**TOTAL $16,007,000**

### GENERAL NOTES:

1. Costs are estimated for construction only. Any right-of-way and/or easement acquisition costs are additional.
2. Off-street parking is assumed to occur within a 25'-0" right-of-way.
3. Off-street parking is planned to include bicycle parking.
4. Cost have been included for mobilization, demobilization, traffic control, and pollution control.
5. Costs have been inflated to 2006 Dollars.
6. Contingency is included for design and construction.
7. Total costs have been rounded to the nearest $1000.
8. Contingency is included for design and construction.
9. Proposed sidewalk network includes costs for nuke construction only and is for planning purposes only. ADA, sidewalks, curb and gutter, streetlights, traffic signalization, etc. are not included.

**TOTAL DESIGN and CONSTRUCTION $16,007,000**
II. Introduction

A. Project Scope

Can you pleasantly walk or easily find your way around your neighborhood on a bicycle? Do you have enough room to walk, or a safe place to bicycle along your roads? Do you need sidewalks or a safe bike route that would allow you to get to your preferred destinations? These are some of the important questions suburban municipalities are asking their citizens today. As many Township, State and Interstate roadways were built or modified with the safety and comfort of motor vehicles in the forefront, many of these roadways remain hazardous and uncomfortable for pedestrian and bicycle use.

The result of this study envisions Lower Merion Township as a truly walkable, hikeable, and cycleable place to live and work where each residence, business or institution is within close proximity to a sensitively designed, safe, easy-to-use, and well-maintained pedestrian and bicycle route leading to destinations across, and creating loops within, the Township. When implemented, the recommendations of this study will provide passage choice for the people who live, work and travel on the roadways, public transit and trails of Lower Merion Township. This study permits Lower Merion Township to expand the capacity of the township’s roadways and trail network to serve everyone, including motorists, pedestrians, bicycles and other users by accommodating all modes of travel. The goal of this expanded network is to improve the safety, convenience, accessibility and efficiency of the township’s transportation system, to link together a network of open spaces, and to make it possible for everyone to easily partake in recreation activities in their own ‘back yard’.

The Township of Lower Merion is essentially a matured, largely built-out suburban municipality that consists of two fundamental types of development:

1) the first ring suburb of traditional transit-orientated development known as the ‘Main Line’ of the historic Pennsylvania R.R. Schuylkill Division (today the SEPTA R5 and R6 lines), and

2) the more bucolic rolling hill ‘Estates’ of Rosemont, Gladwyne, Penn Valley, and the Mill Creek Valley.

For the most part the character of the ‘Main Line’ developed as traditional village centers along commuter rail lines with a fully integrated pedestrian/rail network. Nevertheless, within the ‘Estates’, as the lands near the Schuylkill River Valley, the major roadways turn to narrow two-way lanes that lack sidewalks altogether. Instead, a ‘members only’, pedestrian and equestrian path system called the Bridlewild Trails meanders through the hillsides and connects places of interest. Significant physical gaps and barriers exist in the pedestrian network between these two types of development, much of which is on private property. Many walkers and joggers within the township feel uncomfortable walking around the township and are unable to access the riverfront, parks and other desired destinations.

All over the Township cyclists can share the roads with vehicles but must do so with a “fend for yourself” mentality as the winding roads are typically narrow and unsigned for cyclist’s safety. Throughout the ‘Estates’ many roadways lead the rider to challenging down hills and climbs. The major transportation spines, commercial and destination roadways of the ‘Main Line’ - such as City Ave, Lancaster Ave, and Montgomery Ave - are so highly trafficked by automobiles and have such narrow lane widths, that many cyclists feel uncomfortable and unsafe traveling and sharing the road with vehicular traffic, especially during peak traffic hours.

This study develops a plan for a safe walking network of sidewalks and soft surfaced paths, which will link parks, natural areas and the Schuylkill River with neighborhoods, business districts, schools and adjacent municipalities where possible. It routes cyclists away from steep climbs, suggests parallel roads to hazardous thoroughfares, and recommends way-finding signage, “share the road” signage, and striping of bike lanes, where possible, to improve safety. Working with the support of the public’s input and within the existing physical conditions of the township, this study presents Lower Merion with a potentially easy to use, and expanded, yet integrated transportation network.
Such an expanded network is essential for our schoolchildren, our graying population, the health-conscious, and the disabled, who cannot or do not choose to drive. Without safe access for all modes of transportation, transportation networks act more as a barrier to the physically challenged than a service. Additionally, our land-use and transportation choices have a direct relation to the physical activity and public health of our communities. For example, in 1985, the obesity rate of Pennsylvania was of little concern for our adults, but within fifteen years, by the year 2000, over 20% of our state’s adults were overweight by 30 lbs of body mass or more. This increase in obesity follows the increase of automobile trips taken across the nation; the more automobile trips the less physical activities we partake. As of the second half of the 21st century, the growth of many suburban communities has focused on the transportation choice of the motor vehicle, leaving behind many gaps and physical barriers to contiguous walkways and bikeways, which, if balanced, would encourage physical activity. The inclusion of such a “green infrastructure” linking tracts of open space and town centers, offers the Township enhanced quality of life, sense of well being, recreation opportunity, and lifestyle amenities that may even enhance township property values.

B. Project Partners

This project was jointly funded by the Community Conservation Partnerships Program administered by the Pennsylvania Department of Conservation and Natural Resources (DCNR), Bureau of Recreation and Conservation (Bureau) and the Community Development Block Grant Program administered by Housing and Urban Development (HUD). The Township of Lower Merion, under the direction of the Department of Parks and Recreation, secured necessary funding to augment the secured grant funds for the study.

Through a competitive process the Township of Lower Merion, Montgomery County, retained Campbell Thomas & Company Architects to perform the consulting work. Campbell Thomas & Co. is an environmentally and community oriented firm of architects and planners with an award winning record in “green” transportation, community planning and revitalization, accessibility, historic preservation and practical design and construction. The firm was founded in 1976 by architects Robert P. Thomas and James C. Campbell who originally met through volunteer work on a variety of transportation, preservation and conservation projects. The firm’s mission has focused on developing projects that are socially, environmentally, and technology innovative and important such as this Township-wide Pedestrian and Bicycle feasibility study.

C. Context

1. Regional Context

Schuylkill River Trail and Heritage Park – Lower Merion Township’s entire northern boundary is the Schuylkill River, and thus the Township is an integral part of the Schuylkill River Heritage Corridor, which extends 110 miles from the confluence with the Delaware River in Philadelphia all the way to Schuylkill County. This entire stretch of River is paralleled by the Schuylkill River Trail – but on the side opposite from Lower Merion. This study addresses proposed links to the Trail, including a proposed Schuylkill River West Side Trail, and a pedestrian/bicycle bridge across the Schuylkill from Lower Merion to the Schuylkill River Trail

Fairmount Park System – Along with the Schuylkill River Trail, other parts of the Fairmount Park System, such as the Wissahickon Trail, the Manayunk Canal Towpath, and West Park, come very close to Lower Merion Township. Trails in these parts of Fairmount Park give access to Northwest Philadelphia (Germantown, Mt. Airy and Chestnut Hill), the Schuylkill River Communities of Shawmont, Manayunk, Wissahickon and East Falls, and
to West Philadelphia and Center City. This study addresses improved (or reopened) links from Lower Merion to these parts of Fairmount Park.

Cobbs Creek / Darby Creek Watershed – Lower Merion Township’s southeastern corner is close to tributaries of Cobbs Creek, which in turn flows into Darby Creek at John Heinz National Wildlife Refuge, before emptying into the Delaware River at Essington. Work is underway on the Cobbs Creek Trail in Philadelphia and Delaware Counties. This study addresses proposed links to this Cobbs Creek Trail System as well.

2. Local Context

Development Patterns – In general the older suburban areas built along the former Pennsylvania Railroad lines (now the R5 and R6 Regional Rail Lines) have numerous sidewalks, but not many areas suitable for off-road trail development. Conversely, the steep areas generally closer to the Schuylkill River which have seen newer, more auto-oriented development after World War II have fewer sidewalks, but some opportunities for trail development, as well as retention and protection of the Bridlewild Trail System.

Open Space – Of the municipalities in Montgomery County, Lower Merion Township has the highest acreage of parkland, with over 40 parcels, including neighborhood parks, arboretums, botanical gardens, wildlife preserves, and community and recreation centers. Of the over 668 acres of public open space 71% of the Township’s parkland is dedicated to open space and resource conservation. However, as is the case with many matured suburban municipalities, pedestrian access and contiguous links between Lower Merion’s park and open space parcels remains fragmented.

Links to Immediately Adjacent Municipalities – The Philadelphia Bicycle Network has four sets of bike lanes which reach Lower Merion at City Avenue. This study gives recommendations for extending this system into the Township. As noted in the previous section, improved hiker access is possible to Cobbs Creek Park and Fairmount Park in Philadelphia. No off-road trails are proposed to link with the adjacent townships of Haverford, Radnor and Upper Merion, but this study address possible sidewalk and bike route connections to these communities. The proposed Schuylkill River West Side Trail would link to the Schuylkill River Trail through West Conshohocken Borough and Manayunk in Philadelphia.

D. Goals and Objectives

1. General Objectives of this Study

- To gather information and public input for a potential path/bike/trail system that will link parks, natural areas and the Schuylkill River with neighborhoods, business districts, schools and adjacent municipalities. This includes accommodations for multiple forms of transportation; walking, running, biking, horseback riding.
- To provide an assessment of existing natural and man-made site features, opportunities and constraints, potential links to neighborhoods, communities, and public lands within the township.
- To determine an appropriate location for the pedestrian and bicycle network that considers the results of the assessment of the local physical environment, historic and cultural resources, and adjoining properties.
- To present initial findings of legal feasibility, usage feasibility, and location feasibility; gather comments and describe methods of easement and/or property acquisition.
- To establish recommendations for future steps toward planning and design, engineering and construction of the township-wide network.
- To provide probable costs for future construction and investigate potential funding sources.
- To present initial strategies for Implementation and Priorities of Development.

2. To increase the Quality of Life throughout Lower Merion Township

In preparing this study, the consultants and Township staff were told repeatedly that “living in Lower Merion is perfect, except that it’s so difficult to walk and bicycle to many places.” Creating these elements of a “green” transportation network will improve life for the Township’s residents by

- Making local travel a quiet, peaceful, un-congested experience, that is no less pleasant or practical than choosing to drive
• Making it possible to safely travel under one’s “own steam,” and to increase opportunities to exercise while performing necessary as well as pleasure travel

• Making it possible for Township residents to safely and enjoyably reach the regional trail system, particularly the Schuylkill River Trail

• Considerably improving walking and bicycling opportunities for all, and particularly for those who are too young or old to drive, and anyone who chooses not to drive some or all of the time.

E. Benefits

Overall, creating a complete walking, bicycling and equestrian system in Lower Merion will increase the quality of life as noted in the previous section. In addition, and more specifically, such a system will

• Help to reduce congestion on the Township’s roads

• Encourage residents, workers and visitors to exercise while making trips to shop, to school, to visit and the like. Such an increase in physical activity will increase the health of the population, and reduce stress as well.

• Increase the “sociability” of Lower Merion, by increasing the incidental contact between neighbors and friends who pass each other on sidepaths and trails.

F. Characteristics and Projected Uses

TOWNSHIP CHARACTER

Lower Merion Township’s character is one built from its legacy of natural resources and transit orientated development. Originally, four historic mills made the most of the Township’s natural creeks and rolling valleys, creating jobs and activity along its waterways. The creeks linked the Township’s industry to the Schuylkill River flowing the mill products onward to the Philadelphia markets. In 1734, the Township had a population of fifty-four people; eventually, the mill activity pressured the development of roadways and path systems linking the Mills to local inns and taverns in this rural and wooded setting. When the Pennsylvania RR was established in the 1830’s, the Township expanded and developed into distinct town centers at transit stops along the “Main Line” and along Lancaster Avenue. These communities urbanized based on design principles that fully integrated pedestrian and commuter rail services. Meanwhile, the beautiful wooded creek valleys attracted people who wanted to retreat from the city to the clean air, and who inhabited large estates accessed by horse, and buggy trails.

Today, the Township is primarily residential interspersed with major hospitals, places for higher education, distinct business districts, and the highest acreage of dedicated open space and parkland of any Montgomery County municipality. Much of this historic character remains and it is not surprising that the 58,000 residents take pride in retaining their local community identities and natural character. However, many of the Township’s 23,000 households were developed as a result of the suburban subdivision boom of the 1980’s that consumed and subdivided the lands of many estates and open spaces. As the Township and its population boomed once again, little attention was paid to an overall design basis that would link the township centers and natural lands in a safe and walk-able way. Many physical gaps remain today.

PHOTO SUMMARY – Trails / Sidepaths / Benches / Sidewalks / Bikelanes

The following is an annotated photographic summary of typical conditions and characteristics found around the township. It is organized from the most natural of character to the most urban of character:
Location: Schuylkill River Heritage Corridor

Characteristics: Since the 1970's, the once ignored "Hidden River" has experienced a revival with many adaptive re-use projects and local interest in trails and greenways.

Relevance: The river is a major natural feature and recreational destination seemingly cut off from township residents due to the construction of the I-76 Schuylkill Expressway. Today, township residents desire a re-connection to the waterfront and the Schuylkill River Trail across the river.

Location: Schuylkill River Trail – West Side

Characteristics: Unknown to many residents, this off-road trail runs along the riverfront between the river and I-76. In the 70’s Harry Olsen laid the groundwork for a trail with a sub-base of broken concrete slabs and large boulders located where river levels could signal washout.

Relevance: A multi-use trail along the riverbanks could connect pedestrians and cyclists to Manayunk.

Location: River Road

Characteristics: This is the last remaining segment of this rural riverside road since the construction of I-76; it links vehicles from Hollow Rd, Mill Creek Rd and Waverly Rd to Flat Rock Park.

Relevance: A multi-use trail for pedestrian and cyclists could be developed thru Flat Rock Park. The users could then share River Road from Mill Creek Rd to Waverly Rd, giving the Township recreational access to the Schuylkill River.
**Location:**

**Dovecote - Mill Creek Road - Bridlewild Trail**

**Characteristics:**
Historic remnants, such as this dovecote nesting compartment, tell the story of Lower Merion’s rich heritage and become trail way-finding devices.

**Relevance:**
This structure signifies entrance to a recently completed trail. The trail now runs along the western hillside of Mill Creek Valley Park. The existing Bridlewild Trail System provides the basis for major off-road walking and equestrian trails.

**Location:**

**Historic Penn Valley Gateway Signage – McGlenaghan Mill Rd**

**Characteristics:**
Such historic signs give unique identity to the Penn Valley area of the Township.

**Relevance:**
A way-finding signage system for the ped/bike network should evoke such a character for the township. Similarly, TEA21 monies have recently established modern gateway signage for each of the township’s business districts.

**Location:**

**David-Gwinn Trail – East Side of Waverly Road, North of Youngsford Road**

**Characteristics:**
This section of the Bridlewild Trails clearly demarcates the trail and maintains a rustic split-wood fence to separate the users from private properties in a sensitive manner.

**Relevance:**
Key segments of the Bridlewild Trail could be formalized and opened to the public. Likewise, entrance signage at trail connections could read “Public Footpath to Mill Creek”.

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Location: **Earthen Path – Saunders Woods/Henry Lane Park at Sawmill Creek**

**Characteristics:**
Earthen footpaths exist in many of the natural areas of the township.

**Relevance:**
When connected to a full sidewalk/path system on the roads, a continuously interesting recreational walk could link Bryn Mawr to Gladwyne and the Schuylkill River.

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Location: **Soft Surface Path - Merion Botanical Park**

**Characteristics:**
This neighborhood nature park maintains a more rustic/natural feel in an urban setting with its soft surface gravel paths.

**Relevance:**
Rather than developing the entire pedestrian network in hard-edged concrete sidewalks, this permeable path illustrates the potential of developing portions of the network with a context sensitive intention.

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Location: **Asphalt Path - Penn Road**

**Characteristics:**
This heavily trodden footpath meanders along hedgerows that provide screening for privacy.

**Relevance:**
This is another example of a context sensitive application. In order to keep users shoes clean and for ease of snow removal, the owners decided to pave the path with asphalt.
Location: 
Quiet Neighborhood Street – Arthur’s Round Table

Characteristics: 
This development loop, fashioned on the English Village, exemplifies a type of quiet neighborhood street that has a low volume of automobile traffic. Such quiet streets, where parents feel that it is safe for their children to play or ride a bike, exist throughout the township.

Relevance: 
In this study, such streets, which do not connect with another thru-street or allow vehicles to pass thru the neighborhood, are assumed to be safe for all uses and have been evaluated “pedestrian and bicycle friendly”.

Location: 
Walking “Bench” – Highland Avenue

Characteristics: 
This walking “bench”, or area of right-of-way land, between the street edge and a property line are often used by walkers and joggers township-wide when sidewalks do not exist.

Relevance: 
These physical areas, clear of physiographic elements and major structures, provide the basis for recommending potential sidewalks/sidewalks.

Location: 
Where the Sidewalk Ends – Spring Mill Rd

Characteristics: 
Piecemeal development has left many residential developments throughout the Township with sidewalks on their periphery that lead to “nowhere”.

Relevance: 
These sidewalks, although they do not currently connect neighborhoods to each other, have typically been developed because a right-of-way, or “bench”, does exist that could potentially lead a sidewalk “somewhere.”
Location: **Landscaped Walk - Sycamore Avenue**

Characteristics: To save older growth trees this resident has turned a sidewalk into a meandering landscape feature in their front yard.

Relevance: This application can be used in areas where difficult topography or interfering natural/manmade elements will not easily allow for a new roadside pathway and where the property owner is amenable to a path traversing the land.

Location: **Notched Sidewalk for Trees – Merion Avenue**

Characteristics: Many conditions around the township have narrow “benches” where existing obstructions, such as trees, can conflict with the creation of a new path and produce “pinch points”.

Relevance: In re-establishing the walkability of the township – just like restoring a historic building – many instances will exist where exceptions to conventional construction standards will need to be evaluated.

Location: **Tight Bench Near Train Station – East Wynnewood Rd**

Characteristics: In this highly trafficked and complex urban setting, a segment of engineered “bench” remains undeveloped along the edge of the Wynnewood Station because it is narrow and uncomfortable for pedestrian use. The design forces users to cross the busy street or veer thru the station’s parking lot.

Relevance: In high speed and traffic volume areas sidewalks should be located away from the edge of the road to buffer pedestrians from roadway traffic.
Location: **Wide Curb Lanes – 51st Street**

Characteristics:
Many arterial streets, such as this township connection in neighboring Philadelphia, have wide shoulders that encourage sharing the road and increase comfort between motorist and cyclists.

Relevance:
Although bicycles legally share the road with vehicles, perceived comfort depends on motor vehicle speed, volume and width of road surfaces. Roadways around the township that are a minimum of 28 feet wide are candidates for bike lanes.

Location: **On-Sidewalk Bike Route – Montgomery Avenue**

Characteristics:
Intended, in the 1970’s, to link students to education facilities along Montgomery Ave, this is one of the few bike routes signed within the township.

Relevance:
By today’s standards, this route is confusing and presents users with varying situational conflicts. Instead, this important corridor should sign a parallel bike route utilizing safer roads that links users back to important destinations.

Location: **Bikelanes End – Bryn Mawr and City Avenue**

Characteristics:
The Philadelphia Bicycle Network in West Philly is a highly developed transportation system with four bike lane connections dead ending at City Ave, the townships boarder.

Relevance:
Bike lanes are important to define and identify cycling locations. Many miles of road throughout the township can and should develop cost effective bike lanes.
Location:  
**Pedestrian Crossing to Nowhere – New Gulph Road**

Characteristics:  
Educational institutions, such as Bryn Mawr College, see the importance of creating safe pedestrian access to their campus. Unfortunately, this crossing was developed with the hope of future township sidewalk.

Relevance:  
Due to terminating sidewalks and availability of “benches”, mid-block crossings are part of the network. These should be developed on streets with low traffic volumes, frequent gaps, good sight distances, sufficient landings and refuge islands where necessary.

Location:  
**Schuylkill River Crossing – Georgia Pacific Bridge to Wissahickon**

Characteristics:  
Currently the only potential existing Schuylkill River ped/bike crossing for the Township (other than Green Lane) is this privately owned bridge, which has a pedestrian walkway that is well separated from the roadway.

Relevance:  
With improvements, this bridge could connect pedestrians and cyclists to the Schuylkill River Trail and the nearby Wissahickon Trail.

Location:  
**New River Bridge Example – Ionia, USA**

Characteristics:  
This typical box truss bridge is designed for pedestrian and bicycle use. To gain waterway clearance this bridge connects to grade with ramps.

Relevance:  
A new bridge, landing on multi-municipal parklands, could connect Lower Merion residents to the Schuylkill River Trail/Greenway and provide much-desired recreational loops along the scenic Schuylkill River.
PROJECTED USES

A complete walking, bicycling and equestrian system of trails and paths will encourage such activities as

- Bicycling for pleasure, and travel to local destinations
- Walking for pleasure, and travel to local destinations
- Riding for pleasure, and in some areas, such as Gladwyne, travel to local destinations
- Linking with trains and busses: the complete trail system will connect with major bus, trolley and train routes such as the Norristown High Speed Line, and Regional Rail Lines R5 and R6, all of which carry regular bicycle during off-peak hours, and collapsible bicycles at all time.

G. Determination of Feasibility

The master plan that follows is an assembly of complex ideas and recommendations that determine a feasible township-wide network of pedestrian and bicycle routes for a variety of generalized socio-political, economic, and physical conditions. In reality, the proposed network will be put together piece by piece over time. The true formula for determining the feasibility of each piece is a measure of three primary factors – Public Support, Financing and Constructability. It is important when determining the feasibility of each specific project shown in the master plan, to weigh and balance these three factors and for the township to not stray too far from the objectives and projects recommended in this master plan. This will ensure a focused effort and keep the long term goals of this study within feasible reach.

The Public Support Factor – Given adequate public support over time, the township will be able to garner funding to accomplish the significant goals and visions of this master plan, and with continued public support will continue to provide interesting future enhancements that will add to the quality of life of the residents and visitors of Lower Merion. In planning the network, this feasibility study determines a realistic demand and potential for such a network at the “larger township-wide planning scale” and prepares the Township for the next phases of preliminary design that includes landowner coordination, planning, and engineering that result in preparation of construction plans.

Specific and “smaller scale” projects and segments of the master plan have not yet been evaluated for localized demand or public support. It is important not to overlook the importance of communicating and coordinating with landowners before they see a master plan project proposed thru or on their property. Proceeding in this diplomatic way will suggest a sensitive design and implementation approach that listens to the demands, needs and considerations of the various landowners. As the network will most certainly be developed piecemeal, piece by piece, it is important that those projects with the most demand and support be considered as the most feasible projects.

The Financing Factor – To assist in the determination of financial feasibility, an opinion of probable cost has been provided that outlines the primary costs associated with the construction costs associated with each segment of the Township-wide network. The overall implementation of the pedestrian and bicycle network requires three primary categories of cost – Design, Acquisition and Construction. Design and Construction cost have been estimated in the Preliminary Opinion of Cost Table (Section III, B). Acquisition costs vary and are too complex to evaluate in this level of study.

As well a list of a variety of funding sources for trails, pedestrian and bicycle connection projects has been included. The type of funding pursued for each specific project, – whether Federal, State, County or Local monies – will also determine the degree of public participation, level design documentation and amount environmental considerations necessary to meet the financing regulations. For example, a project using Federal funding will be required to meet heavier social, environmental and technical regulations than a project implemented solely with township monies. Those trails, side-paths, and bike routes running along or crossing roads under PennDOT jurisdiction will require more review and documentation than those segments on township roads. Properties on the historic register or within flood plains will also require higher degrees of review. This feasibility study has attempted to generally identify, in the Cost Table, the ownership and adjacent land jurisdiction of each ped/bike network segment to help determine financial feasibility.
The Constructability Factor – Although something looks feasible to construct, it does not mean that it is constructible. The network proposed herein was visually scouted and data was collected thru a variety of methods. The master plan was evaluated and selected, at the planning level, using the experience of local knowledge and judgment of design professionals. As specific projects are prioritized, after garnering public support and gaining financial backing, and move into preliminary design, many physical and environmental factors may be uncovered that could jeopardize the feasibility of the project or make the project just too costly to endorse and pursue.

As well, the selection of various segments of the network may well be based on whether the project has physical conditions that make it “difficult” or “easy” to implement. For instance, two projects may have similar support and financial feasibility but may have different degrees of physical restrictions. One segment may require a new bridge while the other may simply require an earthen bank to be re-graded for 150 foot length in order to allow a particular connection to be made. The project that requires the bridge may be less viable directly due the cost involved in overcoming its physical obstacle. This study has also attempted to generally identify which segments of the network will be more “difficult to implement”.
III. Recommendations

This study is organized from the conclusions and final recommendations, listed first, in reverse chronology, to the basic details of information collected, listed at the end of the study. Based on the study’s methodology (see below Section IV) and inventory and analysis findings (see below Section V), the recommendations provided here in are a culmination of months of public participation, municipal coordination, evaluation of existing roadway and pathway conditions, and review of municipal and regional documentation. The following initial selection of sidewalks, bike-routes, and trails represent a practical, accessible, logical and cost-effective network that connects and sensitively considers local neighborhoods, public and private properties.

A. Selected Routes

Planning a township-wide pedestrian and bicycle network significantly differs from the planning of a single trail or bike route. Where trails and bike routes are typically smaller pieces of linear segments that connect to a larger regional planning effort, the design or retrofit of a network - in Lower Merion’s case - must begin by designing the larger picture. Trails and networks are similar in the benefits they provide from creating neighborhood linkages to offering transportation choice, service routes and recreational amenity. However, as a full set of connections, the most important aspect of a network is its location of interchanges, connections and destinations. Second, is its ability to collect and distribute its users in a safe, effective, and continuously interesting manner. Third, especially in Lower Merion’s case, the network must plan to utilize as much of the existing infrastructure as possible - such as existing sidewalks, trails and wide roadways - to keep its implementation costs and impacts to a minimum.

This master plan of selected routes affords both pedestrian and cyclist the opportunity to travel the entire township to connect to points-of-interest and to the larger region. However, the physical conditions and criteria that enable walking and cycling activities to occur differ significantly. Bicycles typically, except in the case of multi-use paths, share the same roadway network as motor vehicles, while the most advantageous pedestrian systems separate themselves as much as possible from the roadways. Also, the range of walk-ability and range of cycle-ability differ significantly. Where a pedestrian, at 3 miles per hour, can cover about ¾ of a mile in 15 minutes; a cyclist, at 12 miles per hour, can cover a full 3 miles in fifteen minutes. This significantly alters the amount of routes necessary to make the two kinds of networks function comfortably; a pedestrian network, by nature, must be much denser and have more junctions than a bicycle network.

Design Elements

Overall, a network is a systematic design language of designed elements and the primary elements involved with selecting the routes for a pedestrian and bicycle network involves:

- Consideration of property lines, physical obstacles, and the adjacent owners acceptance and desires – whether public or private;
- Selection of the types of facilities that make up the individual bicycle and pedestrian routes – such as proposing a new sidewalk, multi-use trail, or utilizing an existing neighborhood street;
- Assessment of major bridges and structures to be used and accessed - whether to retrofit or build new;
- Considerations of prioritized routes linking certain points-of-interest that belong to other systems – such as transit stations and public schools; and the
- Development of a safety and way-finding system - typically with signage and pavement markings.

Overall Mileage

When compiled, the selected routes of each network have the following distances:

- Bicycle Network: 46.25 miles of bike routes where 6.75 miles of that are bike lanes which have approximately 165 major network crossings.
- Pedestrian Network: 68 miles of pedestrian routes with approximately 275 major pedestrian crossings and 25 major mid-block crossings; and
- Greenway Network: 10.75 miles of greenway trail along the western banks of the Schuylkill River, named for purpose of this study the Schuylkill River Trail West, where 4.25 miles of that is a hard surfaced Multi-Use Trail;
1. Master Plans

The physical locations of potential pedestrian and bicycle network routes are mapped out in the Master Plans (please refer to: Section VI: Appendix A: Master Plans B,C,D,E). The Master Plans provide the basis for the development of the Opinion of Probable Costs (see Section III: B) and the Implementation and Priorities Strategy (see Section III: C). The Master Plans are organized as follows:

- **MAPKEY** – Master Plan Recommended Routes: Township-Wide – The recommended Pedestrian, Bicycle and Trail routes are mapped out on one sheet to show the overall and overlay of linkages and connections of the proposed networks in relation to the existing systems of Town Centers, Active and Passive Parks, Open Spaces, Public Schools, Township Roadways, and Regional Rail Service.

- **BIKEMAP** – Master Plan Recommended Routes: Bicycle – Shows the recommended Bicycle Network of proposed Routes and Bike-lanes utilizing, for the most part, existing roadways. The Bicycle Network is represented in cold colors (royal blue and aqua blue).

- **PEDMAP** – Master Plan Recommended Routes: Pedestrian – Shows the recommended Pedestrian Network utilizing Existing Sidewalks, Quiet Neighborhood Streets, and Off-Road Trails and the proposed Concrete Sidewalks, Gravel or Asphalt Sidepaths, Earthen Trails/Footpaths, and “Difficult to Implement” areas of Special Design Considerations. The pedestrian network is represented in warm colors (red, pink and orange).

- **TRAIL** – Master Plan Recommended Routes: Trail – Shows the one major recommended Schuylkill River Greenway Trail alignment and an alternative alignment for both the proposed Asphalt Multi-Use Trial segments and the Earthen Trail/Footpath segments. The Greenway Trail is represented in a green color.

For purposes of this study only Township roadways that link to other “connector” streets were analyzed in detail. The Master Plans locates the following networks and their respective design elements:

**EXISTING NETWORKS**

- **TOWN CENTERS** – Existing Town Centers and Business Districts are major destination areas that are represented on the Master Plans in Bold Type.

- **ACTIVE AND PASSIVE PARKS** – Active and Passive Township Parks are major destinations that have been located per the 1996 “Lower Merion Township Park and Recreation Plan” and are represented in Light Green Areas.

- **OPEN SPACES** – Privately Owned Open Spaces, both with permanent and temporary protections, have been selected from the last updated 1995 “Open Space and Environmental Resources Protection Plan”. Not all parcels are depicted and this information needs to be updated. Privately Owned Protected Lands are represented in Dark Green Areas.

- **PUBLIC SCHOOLS** – Lower Merion Township Schools are major destinations represented in Avocado Green.

- **REGIONAL RAIL SERVICE** – The SEPTA R-5, R-6, and Rt. 100 regional rail lines are major township destinations represented in Yellow. Station stops are represented in Yellow Circled T’s.

- **NEIGHBORHOOD STREETS** – All township streets are represented by the Thin Grey Lines of the base map. Some of these streets have been observed to have “calm” or “low” traffic volumes as they typically lead to residences, dead end or hinder thru-traffic. Theses specific streets do not require the development of sidewalks/side paths or signed bicycle routes because residents can walk or bicycle in the streets as they exist and have been determined to be pedestrian and bicycle friendly. Other grey streets include thru-streets or connector streets which have not been selected as major pedestrian or bicycle routes.

- **QUIET NEIGHBORHOOD STREET CONNECTIONS** – All proposed pedestrian and bicycle routes that utilize existing township streets and are determined to be both pedestrian and bicycle friendly as is, have been represented as follows: Walk-able Pedestrian Routes = Solid Thick Red Line; Bicycle Routes = Solid Aqua Line. These streets types allow traffic to pass thru neighborhoods or connect one thru-street to another thru-street and have also been observed to have “calm” or “low” traffic volumes and they do not require the development of new sidewalks/side paths or the striping of bikelanes because
residents can walk or bicycle in the streets as they exist. Some of these streets have been included as segments in the proposed ped/bike networks.

PEDESTRIAN NETWORK

- **EXISTING SIDEWALK** – All proposed pedestrian routes utilizing township streets with existing sidewalks on at least one side of the street are represented with a Solid Thick Red Line. These sidewalks are typically of concrete construction and have been assumed to all be ADA accessible, for the purpose of this study. It has also been assumed for the purpose of this study that the all existing sidewalks provide safe pedestrian crossings at all intersections. It is understood that this may not always be the case and in some locations the existing sidewalks end mid-block, making users cross the streets without proper safety measures.

- **PROPOSED SIDEWALK/PATH** – All proposed pedestrian routes utilizing township thru-streets with a generally unobstructed “bench” area located along side of the road that could potentially receive a sidewalk or side path are represented with a Solid Thick Pink Line. A walking “bench” is the area of right-of-way land, between the street edge and the adjacent property line or fencing. It was observed that these areas are generally clear of physiographic impediments and major structures thus providing the basis for potential sidewalk/path locations on at least one side of the street.

- **EXISTING OFF-ROAD PATH** – All proposed pedestrian routes utilizing existing township off-road paths and trails that are not part of the proposed Schuylkill River Trail West, are represented in a Thick Dashed Red Line. These actively used paths are typically earthen or soft-surfaced (gravel/stone dust) paths and part of the Township park system or the Bridlewild Trail System. The majorities of lands that contain the Bridlewild Trails are in private ownership and currently are under handshake usage agreements. It should be noted that pedestrian routes outside of Lower Merion Township’s jurisdiction that make important connections to the SEPTA Rt. 100 line are also represented with thick dashed red lines.

- **PROPOSED OFF-ROAD PATH** – All proposed pedestrian routes that require new trails/off-road paths that are not part of the Township park system or the Bridlewild Trail system or the Schuylkill River System are represented in a Thick Dashed Pink Line. These paths are the “hidden” connective tissues of the network and allow for continually interesting off-road walking and equestrian paths to be formed.

- **DIFFICULT SOLUTION REQ’D FOR PEDESTRIANS** – All proposed pedestrian routes along township thru-streets that do not contain either a sidewalk or a “bench” and have been determined to have “special” design considerations or where a hard solution would be required to implement a sidewalk/path are represented in a Solid Thick Orange Line. These areas get in the way of easily implementing a sidewalk/path by containing either:
  - Physiographic Obstacles - such as steep earthen slopes, large rocks, water ways, etc.
  - Major Structure Obstructions - within the “bench” area such as stone walls, fences, trees, etc.
  - Encroaching Property Owners - whose landscaping and mailboxes, etc. have encroached into the area where a sidewalk/path could exist and whose resistance to change could prevent the implementation of the sidewalk/path.

  As these are “difficult areas” to design for, property owner issues may need resolution and major physical alterations such as earth regarding, and the construction of retaining walls or boardwalks may be required before sidewalk/path construction could occur.

- **MID-BLOCK CROSSINGS** – Necessary pedestrian mid-block crossings occur when trails and pedestrian routes do not intersect a roadway at controlled intersections. Mid-Block Crossings are represented in a Double Yellow Triangle Icon.
BICYCLE NETWORK

• **EXISTING BICYCLE LANES** – All existing thru-streets with bicycle lanes already in place are represented with a Thin Dashed Sky-Blue Line. All existing bicycle lanes are currently located outside of the Township’s boundaries in Philadelphia.

• **PROPOSED ON-STREET BICYCLE ROUTES** – All proposed bicycle routes utilizing township thru-streets and determined to be cycle-able are represented with a Thin Aqua Solid Line. The proposed bike routes were selected due to directness of route, ease of travel and perceived safety of roadways. These routes recommended to be signed as primary bicycle routes.

By Pennsylvania law, Bicycles are considered a vehicle and all roadways are usable by bicycles throughout the township, except limited access highways. Although, most roads throughout the township have been rated as bicycle friendly for “A” type cyclists, roads such as City Ave, Montgomery Ave, Lancaster Ave, and portions of Conshohocken State Road have been observed to have higher than normal vehicular traffic volumes and speeds that make cycling uncomfortable. Less experienced riders may experience varying levels of comfort on some proposed routes. It is important to note that the comfort of these proposed bike routes will fluctuate with daily variations in traffic such as rush hours. Even roads not rated as potential routes, during non-peak traffic hours, such as Montgomery Avenue, could become more comfortable for many cyclists.

• **PROPOSED BICYCLE LANES** – All proposed Bicycle Routes utilizing township thru-streets determined wide enough to receive a new bike lane stripes are represented with a Thin Dark Blue Line accompanied by a Blue Series of Numbers representing the proposed roadway lane cross section dimensions.

By dividing bicycling from automobile use with a white fog line, bike lanes significantly increase the comfort and safety for all modes of transportation. In determining the proposed lane re-striping a minimum critical width of 10'-0" has been maintained for all vehicular lanes while a minimum critical width of 4'-0" has been maintained for all bicycle lanes. It should be noted that minimum vehicular lane widths are a design consideration and should be investigated in more detail before implementation. This is because, certain roadways, such as PennDOT arterials, require wider lanes due to average daily trip (ADT) counts and percentage of truck use. It should also be noted that all potential bike lanes thru-out the township have not been included as final “Master Plan” routes, however, all roads shown on the “Draft Plan” that have the potential to receive bike lanes can be striped. This would provide cyclists with increased safety and ease of use even if the roads are outside of the proposed Township network.

SCHUYLKILL RIVER TRAIL WEST

• **PROPOSED GREENWAY TRAIL ON EXISTING TRAIL** – The proposed trail alignment that will share existing township off-road paths and trails are represented in a Thick Solid Green Line. These actively used paths are typically earthen or soft-surfaced (gravel/stone dust) paths and already part of the Township Park’s Trail System or the Bridlewild Trail System. The majorities of lands that contain the Bridlewild Trails are in private ownership and currently are under handshake usage agreements.

• **PROPOSED GREENWAY TRAIL TO BE IMPLEMENTED** – The proposed trail alignment that require new trails/off-road paths that are not part of the Township park system or the Bridlewild Trail system or the Schuylkill River System are represented in a Thick Dashed Green Line. These paths are the key missing connections which if implemented would form a continuous Township long greenway trail that is a mixture of earthen, soft-surfaced (gravel/stone dust) paths, and asphalt Multi-Use Trail. The section of trail proposed to run from Flatrock Park to Belmont Avenue, locally known as the Harry Olsen trail, exists as an unformalized but usable foot path with a significant 1.6 mile length. This segment of trail is recommended to be transformed into a hard surfaced multi-use trail.

• **PROPOSED BRIDGE and BRIDGE RENOVATIONS** – Potential areas along proposed routes within the township that will require a new bridge construction in order to connect portions of the proposed network are represented in a Thick Black Bridge Icon. Renovations to existing bridge structures to allow for safe network connections are represented in a Thick Dotted Black Bridge Icon. For more detailed recommendations see Section III, A, 2 Major Structures below.

• **EXISTING RIVER TRAIL** – The existing Schuylkill River can be used as a recreational water trail and boating the entire length of Lower Merion Township. A boat launch is located at Flat Rock Park.
Sample Location Analysis for the Schuylkill River Trail West – The following photo summary shows a possible trail alignment along Rose Glen Road. The alignment is considered feasible; however, a difficult solution is required at the base of the Rolling Hill Park driveway where, in order to keep users from walking along Rose Glen Road for a few hundred feet, a safe crossing the road will be required and a earthen path will need to be graded into a bank to elevate users to a Bridlewild Trail link and separate them from on-coming traffic.
2. Major Structures

The Township is largely cut off from the river and Schuylkill River Trail (SRT). One of the key components of this study’s recommendations is to find a way to connect the Township to the regional and Montgomery County trail networks. This will require a bicycle and pedestrian crossing of the Schuylkill River. If the township were to connect the proposed pedestrian and bicycle network to the regionally significant Schuylkill River Trail on the western banks of the Schuylkill River, township residents could gain access to a gamut of parks, recreational and greenway opportunities along the river accessed by existing Montgomery and Regional trail networks. Recreational loops could be established. Crossing the Schuylkill River will become at once the greatest obstacle to the completion of the proposed network; however, if accomplished, it will reward Lower Merion Township with the greatest increase of “quality of life”.

There are currently four crossings of the Schuylkill River and one proposed crossing that have been looked at as connections to the Schuylkill River Trail (Please use the color code described above in reference to the below figures):

The City Avenue Bridge – This bridge is part of a major interchange with a high volume of automobile traffic. Bicyclists can use this bridge to cross the river but it is not currently striped or signed for user safety. City Avenue is not recommended as a key Bicycle Route so no network connection is desired. There is one contiguous pedestrian walk on the downstream side of the downstream bridge structure which is does not have comfortable access. However, the crossing can be accessed via the overhead pedestrian bridge that crosses City Avenue near the Presidential Apartments.

Although it is possible for pedestrians to access the Schuylkill River Trail running along Kelly Drive, the experience is circuitous and not attractive to users, especially children, as one must pass under several major auto ramps/structures. As well, three un-signaled automobile slip ramps and a new path leading to and crossing Kelly Drive would have to be traversed before a pedestrian could leave the inhuman scale of the interchange. On the upstream side a difficult to find stairway from Kelly Drive on the Philadelphia side of the river leads to a pedestrian walk that also transverses slip ramps and dead ends as the bridge lands on the LMT side. There is not an easy connection to City Ave from this point. For these reasons the City Ave Bridge is not recommended as a primary connection to the Schuylkill River Trail.
**The Georgia Pacific (Pencoyd) Bridge**—This bridge was at one time a railroad structure but today it is used by Georgia Pacific freight trucks. Although posted with no-trespassing signs, many cyclist and pedestrians illegally use the bridge to cross the Schuylkill because of the existing ~3'-0" wide walkway cantilevering from the steel bridge on the downstream side. The bridge connects to public roads on both sides of the river and already has a separated walkway that is amenable to user, narrow as it is.

This bridge can easily be retrofitted to become a major network crossing of the Schuylkill River; the cantilevered walkway should be widened to its original width and the steel girders that connect to Righters Mill Road should be surfaced. The structure appears to be more than capable of carrying a multi-use trail although more detailed studies should be conducted. A new railing along one side will also need to be installed. This bridge is crucial to the success of both the pedestrian and bicycle network and the Schuylkill River Trail West’s multi-use portion as it makes a connection to the SRT and the AMC Movie Theatre Mall Parking Lot.
**Venice Island Bridge** - This active Railroad Bridge historically had a cantilevered structure which carried the mule path for the Schuylkill Navigation and Canal System. The bridge itself could once again be retrofitted to carry a multi-use path across the river on the downstream side and connect Lower Merion to the Schuylkill River Trail at the recreational Manayunk Towpath. However, the structure is too remote and does not easily connect to the overall LMT ped/bike network. Even though the SRT West nears the landing of the bridge near West Laurel Hill Cemetery and Westminster Cemetery, the trail would have to cross the railroads and I-76 before making such a connection.

Looking at the larger planning picture, one can see that it would be amenable to utilize this bridge for trail use in order to avoid the on-road section of the SRT which currently shares the road with Main Street. It is understood that Philadelphia has already retained a trail easement on the eastern banks of the Schuylkill River, south of the Pencoyd Bridge to the Kelly Drive portion of the SRT. Opening the Lower Merion Township portion of the historic towpath to multiple trail uses would avoid the unpleasant and more dangerous share the road alignment. However, there is currently heavy industrial use occurring between the Pencoyd and the Venice Island Bridge that makes it difficult to implement. For these reasons this crossing is not included in the ped/bike network at this time as a crucial connection but should be looked at in the future as uses change and the Schuylkill River Greenway and recreational nature of Venice Island develops.
The Green Lane Bridge and SEPTA Multi-arched Bridge – Two structures span the Schuylkill River from Belmont Hills and Westminster Cemetery to Manayunk at Green Lane. The first is a multi-arched multi-line railroad bridge that is currently not in use, which SEPTA intends to restore rail service to the deck sometime in the future. The historic and unique characteristics of this bridge make the idea of cantilevering a structure off of the side less desirable when one looks at the connections to grade (represented in yellow circle) especially on the Manayunk side of the river. A user would have to ascend the hills of Manayunk and navigate narrow streets to access the bridge making the bridge undesirable as a ped/bike crossing.

The best crossing would utilize the Green Lane Bridge’s upstream sidewalk as a multi-use path where bikes and pedestrians would share the sidewalk in two directions. The sidewalk is between 6 and 8 feet wide and would allow for easy connections to the SRT multi-use trail on the Manayunk side and the proposed SRT West’s multi-use portion on the Belmont Hills side. Safety measures such as a new barrier dividing ped/bike from autos should be studied. The I-76 interchange poses the highest degree of difficulty for this connection due to the extreme traffic volumes and narrowness of the sidewalk under the railroad bridge where concrete piers on either side restrict ease of use. The sidewalk can be widened under the I-76 but the feasibility of traffic counts and the pinch point should be studied in more detail. The multi-use trail should be highly visible in this area with special colors or markings and cyclist could be asked to get off their bikes.
Historic Flatrock Bridge at Domino Lane

Proposed Flat Rock Bridge – Historically the Flat Rock Turnpike Bridge spanned the river at the end of Domino Lane near Manayunk. It was a long covered bridge with stone abutments and acted as a trade route between townships. In 1833 it collapsed under the weight of two wagons carrying stone and was rebuilt. In 1850 a flood caused a bridge upriver to break free and demolished the bridge never to be rebuilt again.

Today, The Green Lane Bridge replaces the historic need for the covered bridge, however further up the river a new crossing of the Schuylkill River is possible. A new bridge with an approximately 850 foot span at the proposed location at Flat Rock Park and Shawmont Avenue, allows for a connection of the new multi-use portion of the S.R.T. West to the existing multi-use S.R.T. This links park systems, ties into a key access point and trail head of the proposed LMT ped/bike network and opens up a variety of recreational loops similar to the West River Drive/Kelly Drive loop in Philadelphia.

The existing topography and location of Shawmont Avenue enables crossings of all barriers of other locations including I-76, Norfolk Southern RR, and SEPTA tracks. There is only one driveway which needs to be spanned on the Shawmont side which is near the river level. The location utilizes public lands on both sides and could be funded as a multi-county project and add amenity to the Schuylkill River Heritage Corridor. Detailed studies should be conducted to ensure this crossing will meet Army Corps of Engineers’ regulations including waterway clearance. It was reported that one commissioner suggested looking at other options for connections such as a ped/bike ferry service. This study suggests that this service is not user friendly, unpredictable and is an operationally intensive approach. It should also be emphasized that a public workshop format was used during the study development and this process supported the idea of a non-vehicular bridge connection for recreation purposes.
3. Transit Links

The recommended township-wide network either crosses or is close proximity to transit stops along the SEPTA R5 line including Villanova, Bryn Mawr, Haverford, Ardmore, Wynnewood, Narberth, and Merion Stations, and both R6 Bala and Cynwyd Stations are within a couple of blocks of the ped/bike system. Major public transit buss routes throughout the township include the SEPTA 1, 44, 52, 65, 103, 105, 106, 115, 121 and 123 routes. Although many of the transit stops along the SEPTA Rt. 100 High Speed Line are outside of the Township boundaries, in reality many Lower Merion commuters still access the line. Thus, the ped/bike network continues outside the Township to link to the Rt100 stations. It is important for the Township to coordinate the extensions of both the pedestrian and bicycle network into the adjacent municipalities’ jurisdiction so as to maintain a contiguous and clear link for Lower Merion residents. Overall, the proximity of the clearly defined bicycle network to transit stations will encourage both bicycle travel and public transit use, especially within a 3-mile radius of the transit stations. Critical areas for pedestrian improvements include the ½ mile radius from transit stations. All intersections and mid-block crossings within this area should be given special attention and wider sidewalks, adequate lighting and shade trees should be provided to encourage a pleasant walking experience to transit stations.

Bicycle Parking

Secure bicycle parking should also be provided at all regional rail stations, but more specifically at those mentioned above and at key bus stops, i.e. Ardmore and St. Joseph’s University. If a bicycle rack is broken or parking is unsheltered, a cyclist may not be as keen to lock their bicycle and ride on transit. The Township should provide and maintain solidly constructed and sheltered bicycle racks. As a pilot program, at least one or two of the stations in the Township should be outfitted with bicycle lockers, especially where vandalism and workday or overnight/long-term travel is expected and where high volumes of commuters exist. Bicycle lockers can be rented to bike/rail commuters on a monthly basis to further ensure parking security and availability, and could become a Township revenue. Such lockers were recently installed in Philadelphia at the nearby R5 Overbrook Station.

Bicycles on Transit

The Township should formally encourage SEPTA to allow bicycles on transit vehicles that service the Township. Beyond current practices, front mounted bicycle racks can be installed on busses; ceiling hooks, fold-up-seats, and other storage areas can be used on both busses and train cars. This will ensure that cyclist will have an easy-to-use and integrated transit system. The Bicycle Coalition of Greater Philadelphia www.bicyclecoalition.org is a major advocate in the region for bicycles on transit and should be contacted when the Township pursues this avenue.
4. Safety Signage and Way Finding Systems

The implementation of safety signage and way finding systems are a basic strategy in the development and continued use of pedestrian and bicycle routes and trails.

Traffic and Safety Signage

Standard traffic and safety signage will be required throughout the Township for both the proposed pedestrian and bicycle route network and is typically the responsibility of the PennDOT and the Township or governmental body having jurisdiction. Design regulation for traffic and safety signage is a complex field and should be referenced in the FHWA’s Manual on Uniform Traffic Control Devices (MUTCD). Both MUTCD and American Association of State Highway and Transportation Officials’ (AASHTO) 1999 “Guide for the Development of Bicycle Facilities” provide the basic standards for safety and traffic controls. Traffic volumes, speeds, sightlines and other hard data studies may be required as a basis for design at some dangerous intersections and varying site conditions.

Pedestrian Network - All pedestrian network intersections will require the evaluation and design of a variety of design elements to ensure movement of vehicles and safe crossings as site conditions vary. These elements include:

- crosswalk markings,
- curb ramps,
- traffic signals,
- pedestrian signals and markings,
- pedestrian signage,
- medians and,
- refuge areas. Each individual intersection and bridge crossing will require individual attention as each segment of the network is implemented.

Bicycle Network - All bicycle network routes and intersections will require the evaluation and design of a variety of conditions and elements to ensure safe cycling and intersection crossings as site conditions vary. These conditions and elements include general signage and street markings but also the consideration of:

- long distance and connector bike route signage,
- wide curb lanes / wide shoulders,
- signage and markings for bike lanes,
- striping of bicycle lanes at intersections and transition zones,
- railroad crossings, removal of rumple strips,
- replacement/repair of irregular/slippery surface conditions,
- leveling of utility/manhole covers,
- selection of safe drainage grates,
- level bridge expansion joints,
- resurfacing of metal grate bridge decks, and
- repair of unresponsive traffic signals.

Each individual intersection and bridge crossing will require individual attention as each segment of the network is implemented. The Township may also wish to consider rating bicycle routes with varying “levels of quality”, i.e. beginner, moderate, advanced routes.

Multi-use and Off-road Trail Network - Segments of the Schuylkill River Trail West are proposed to be a hard surface multi-use trail while other segments of the SRT West are proposed to maintain an earthen or gravel foot path. Intersection design for trails includes visible crossing location, warning motorist of upcoming crossings, and informing trail users of upcoming intersections. All trail intersections will require the evaluation and design of a variety of design elements to ensure movement of vehicles and safe crossings as site conditions vary. The elements to consider include:

- trail striping such as centerline and/or lane marking,
- trail signage to alert users of potential conflicts and regulations (MUTCD hazard signage should be used where minimum clearances cannot be met),
- night lighting, and
- restricting vehicular access with bollards or trail gates while providing necessary access for emergency vehicles.

Compared to multi-use trails, off-road, or community trail systems do not require extensive signage systems, however, regulatory and warning signs may be required. Regulatory signs provide traffic control, such as stop, yield and speed limits (if used by bicycles). Warning signs such as road intersections, sharp curves, steep slopes, or wildlife areas point out potential hazards for users.
Way Finding Systems

Imagine driving your car on an interstate highway without any signs to tell you the name of the exit or junction you are nearing, or without numerical distances or arrows showing you which direction to turn from the end of the exit ramp. This is the case for many cyclists and pedestrians who try to get to a destination but who can not easily find their way without a map in hand, especially within the winding back-road character of Lower Merion Township. As recommended, fully signed pedestrian and bicycle network will provide safe and direct access from people’s homes to places they want to go on a daily basis. By signing the network, people will be aware that these are the primary roads and trails that offer the highest degree of safety, connectivity and linkages.

Arrival Identification: During this study’s public and Township review process, many ideas were presented that attempted to define a unique character for the design of the Township’s way finding system. The most important key to developing a way finding system is to define important destinations, points of interest, and interchanges then link them together. In this regard, design guidelines have already been developed for Lower Merion and are currently being implemented for the “Business District Signage Program” that depicts “Gateways” and “Vehicular Directions” to various town center destinations around the township. These unique signs are currently being installed and can be utilized in conjunction with future efforts of the ped/bike signage system as existing definitive key arrival points through the Township. Other key destinations such as Township Parks, Regional Trails, Schools, and Historic points of interest, etc., may already have or may need to develop similar arrival identification signage.

At trailheads and other major network interchanges a kiosk should be provided with a large network map and regional trail map. Brochures could also be provided to promote ease of use and education of safety. Local places to eat, shop and sleep could be identified to help promote the economic prosperity of the area. As well, bicycle parking areas and facilities should be identified and way finding signage should be located where appropriate.

Way Finding: Linking together the various points of interest can be done with directional and mileage signage. This signage does not necessarily need to conform to any set standard although review from various agencies, such as PennDOT may be necessary. Such signage should be developed to easily direct users around the network. Types of signage include: to destination signs, point of interest signage, location/structure signs, street name signs, mileage signage. These should be located at key network interchanges and an average of 1/4 mile apart on each route segment. Off-road trails are often flagged or trees are marked with bright paint to enable users to way find thru natural areas.

One idea presented was that signage for the bike/ped network could utilize and reuse the “historic green street signage” typically located at Lower Merion’s intersections. These street name signs are being replaced all over the township with new more reflective PennDOT street name signage. This street name signage, already in place at every network intersection, could be reused to retain the sense of the historic character, while, if augmented with new text such as “Public Foot Path to Ardmore – 3 mi.” they could also provide easily identifiable way-finding technique.

Artistic Input: Some cities such as Seattle, Washington, have integrated public art into their way finding systems. For instance, an oversized distinctively designed steel medallion set in the sidewalk near the streets crossings signals the change of direction on a pedestrian route. Mainline Art Center suggested that art be integrated into the walking/biking system including entrances, gateways, bridges, and especially signage. Using the skills and sensitivities of artists and designers Lower Merion could develop the ped/bike network as a strong sense of place. Mainline Art Center would be amenable to help with fundraising of such “art” signage.
B. Opinion of Probable Costs and Impacts (TABLE 1)

The following Table 1 is a statement of the probable costs of construction/implementation presented in this study. Costs for design and engineering, construction management, and contingencies have been included or added as noted in the table.

The estimated costs provided are based on time-honored practices in the construction industry. The study team does not control the cost of labor, materials, equipment, or a contractor’s method of determining prices; nor competitive bidding practices and market conditions. The probable costs of construction represent our best judgment as professionals at the time of preparation. The study team cannot guarantee that proposals, bids and construction costs will not vary from these estimates.

Sample Routes and Network Segments have been itemized per Table 1 by route name and each reach of route where typologies change. In general, adjacent land ownership jurisdiction (at times multiple), mileage and facility type, and number of crossings requiring special way-finding signage have been estimated.

SAMPLE ROUTE IDENTIFICATIONS

The study has selected four Major Routes, two pedestrian and two bicycle, to be studied in detail for costs. The routes are represented on the Master Plan MAPKEY (see Section VI: Appendix A: Master Plans B). Color coded route numbers in circles identify each segment of the route and each segment’s ends are represented with a black tick mark.

**Pedestrian Route Sample Implementation**

Route A. Schuylkill River Trail West – color Green

Route B. Public Footpath to Gladwyne/Bryn Mawr – color Red

**Bicycle Route Sample Implementation**

Route C. Bicyclist’s City Avenue – color Blue

Route D. Spring Mill Bike Route – color Blue

NETWORK SEGMENT IDENTIFICATION

From the above “sample routes”, detailed costs for the rest of the network segments were estimated by type. These are represented on the Master Plans BIKEMAP and PEDMAP (see Section VI: Appendix A: Master Plans C,D) with color coded route numbers in circles identifying each segment of the network and each segment’s ends are represented with a black dot:

**PEDMAP**

Route ID#’s 100 – 148  Pedestrian Network Segments – color Pink

**BIKEMAP**

Route ID#’s 200 - 250  Bicycle Network Segments – color Aqua
### TABLE 1

#### PEDESTRIAN ROUTE SAMPLE IMPLEMENTATION

<table>
<thead>
<tr>
<th>Route ID</th>
<th>Name</th>
<th>Length</th>
<th>Existing Network</th>
<th>Proposed Network</th>
<th>Cost</th>
<th>Pedestrian Use</th>
<th>Total Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>A0</td>
<td>One side only. Steep embankment and guard rail.</td>
<td>$8,600</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>$12,200</td>
<td></td>
</tr>
<tr>
<td>A1</td>
<td>Respect Town Rights - Special Design Consideration</td>
<td>$2,000</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>$4,000</td>
<td></td>
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<tr>
<td>A2</td>
<td>Respect Town Rights - Existing Network Privacy</td>
<td>$3,000</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>$6,000</td>
<td></td>
</tr>
<tr>
<td>A3</td>
<td>Respect Town Rights - Proposed Network Privacy</td>
<td>$1,300</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>$2,600</td>
<td></td>
</tr>
<tr>
<td>A4</td>
<td>Respect Town Rights - Major Network Intersections</td>
<td>$1,000</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>$2,000</td>
<td></td>
</tr>
<tr>
<td>A5</td>
<td>Respect Town Rights - Bicycle Existing Network</td>
<td>$1,570</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>$3,140</td>
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<tr>
<td>A6</td>
<td>Respect Town Rights - SRT Trailhead (Main Street) to I-76 Underpass</td>
<td>$3,800</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>$7,600</td>
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</tr>
<tr>
<td>A7</td>
<td>Respect Town Rights - Proposed Bridge to Abandoned Pennsylvania Rail Bed</td>
<td>$5,900</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>$11,800</td>
<td></td>
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<tr>
<td>A8</td>
<td>Respect Town Rights - From active Amtrack line to Belmont Avenue</td>
<td>$9,600</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>$19,200</td>
<td></td>
</tr>
<tr>
<td>A9</td>
<td>Respect Town Rights - Proposed Trail from Active Amtrack Line to Main Street</td>
<td>$11,500</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>$23,000</td>
<td></td>
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<tr>
<td>A10</td>
<td>Respect Town Rights - SRT Trailhead (Main Street) to Conshohocken State Rd (SR23)</td>
<td>$6,300</td>
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<td>2</td>
<td>1</td>
<td>$12,600</td>
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<tr>
<td>A11</td>
<td>Respect Town Rights - Rt 100 Bryn Mawr Station to Lancaster Avenue</td>
<td>$5,000</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>$10,000</td>
<td></td>
</tr>
<tr>
<td>A12</td>
<td>Respect Town Rights - Spring Mill Road to West Conshohocken at the Township Line</td>
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<td>1</td>
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<tr>
<td>A13</td>
<td>Respect Town Rights - Sid Thayer Trail (Bridlewild Trail)</td>
<td>$6,000</td>
<td>1</td>
<td>2</td>
<td>1</td>
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<tr>
<td>A14</td>
<td>Respect Town Rights - Sid Thayer Trail (Bridlewild Trail)</td>
<td>$3,100</td>
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<td>2</td>
<td>1</td>
<td>$6,200</td>
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<tr>
<td>A15</td>
<td>Respect Town Rights - One side only. Steep embankment and guard rail.</td>
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<td>2</td>
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<td>$7,000</td>
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<tr>
<td>A16</td>
<td>Respect Town Rights - Proposed Bridge to Abandoned Pennsylvania Rail Bed</td>
<td>$8,600</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>$17,200</td>
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</tbody>
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#### BICYCLE ROUTE SAMPLE IMPLEMENTATION

<table>
<thead>
<tr>
<th>Route ID</th>
<th>Name</th>
<th>Length</th>
<th>Existing Network</th>
<th>Proposed Network</th>
<th>Cost</th>
<th>Bicycle Use</th>
<th>Total Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>B0</td>
<td>One side only. Guard rail at Rock Creek may need relocation.</td>
<td>$8,800</td>
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<td>2</td>
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<tr>
<td>B1</td>
<td>Respect Town Rights - Proposed Trail from Active Amtrack Line to Main Street</td>
<td>$5,000</td>
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<td>1</td>
<td>$10,000</td>
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</tr>
<tr>
<td>B2</td>
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<td>1</td>
<td>$19,200</td>
<td></td>
</tr>
<tr>
<td>B3</td>
<td>Respect Town Rights - Proposed Bridge to Abandoned Pennsylvania Rail Bed</td>
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<td>2</td>
<td>1</td>
<td>$23,000</td>
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</tr>
<tr>
<td>B4</td>
<td>Respect Town Rights - Proposed Bridge to Abandoned Pennsylvania Rail Bed</td>
<td>$6,300</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>$12,600</td>
<td></td>
</tr>
<tr>
<td>B5</td>
<td>Respect Town Rights - Rt 100 Bryn Mawr Station to Lancaster Avenue</td>
<td>$5,000</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>$10,000</td>
<td></td>
</tr>
<tr>
<td>B6</td>
<td>Respect Town Rights - Spring Mill Road to West Conshohocken at the Township Line</td>
<td>$3,500</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>$7,000</td>
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<tr>
<td>B7</td>
<td>Respect Town Rights - Sid Thayer Trail (Bridlewild Trail)</td>
<td>$6,000</td>
<td>1</td>
<td>2</td>
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<td>Respect Town Rights - Sid Thayer Trail (Bridlewild Trail)</td>
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<td>2</td>
<td>1</td>
<td>$6,200</td>
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</tr>
<tr>
<td>B9</td>
<td>Respect Town Rights - One side only. Steep embankment and guard rail.</td>
<td>$3,500</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>$7,000</td>
<td></td>
</tr>
<tr>
<td>B10</td>
<td>Respect Town Rights - Proposed Bridge to Abandoned Pennsylvania Rail Bed</td>
<td>$8,600</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>$17,200</td>
<td></td>
</tr>
</tbody>
</table>

**Notes:**
- **Subtotal:** Represents the total cost for all routes included in each category.
- **Total Length:** Represents the combined length of all routes included in each category.
- **Cost:** Represents the cost for each specific item or project within each route category.
- **Bicycle Use:** Indicates whether the route is specifically designed for bicycle use.
- **Pedestrian Use:** Indicates whether the route is specifically designed for pedestrian use.

**Additional Information:**
- The table includes various categories such as Existing Network, Proposed Network, Cost, etc., to provide a comprehensive view of the different aspects of each route.
- The table also includes comments for each route, providing further details on specific aspects or considerations.

**Prepared by:** Campbell Thomas & Co - 1504 South Street - Philadelphia PA 19146-1636 - Tel: 215-545-1076 - Fax 215-545-8397

**Prepared for:** Lower Merion Township-Wide Pedestrian and Bicycle Network Feasibility Study

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### Lower Merion Township-Wide Pedestrian and Bicycle Network Feasibility Study

#### Preliminary Opinion of Probable Cost

**TABLE 1**

<table>
<thead>
<tr>
<th>Route ID</th>
<th>Route Name</th>
<th>Reach of Route</th>
<th>Existing Network</th>
<th>Proposed Network Segments</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>100</td>
<td>CITY AXIES</td>
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#### Township Ownership

- PennDOT
- Protected
- On Neighborhood Street
- Trail/Footpath (Earthen)
- Special Design Consideration

#### Major Network Intersections

- Major Network Intersections - Bicycle (each)
- Major Network Intersections - Bicycle Existing Network
- Major Network Intersections - Pedestrian

#### Milage

- Miles
- LF

#### ID #

- 147
- 146
- 144
- 140
- 138
- 137
- 136
- 134
- 131
- 129
- 127
- 123
- 122
- 120
- 119
- 116
- 113
- 111
- 110
- 108
- 106
- 104
- 103
- 100
- 124

#### Cost Estimation

- Subtotal
- Total
- $ in thousands

**Page 2 of 4**

[Credit line]

*(g:\LMT-TRAI\FeasibilityStudy\CostEst.xls)*

*(Prep’d by)*

*(Table created by)*
### Lower Merion Township-Wide Pedestrian and Bicycle Network Feasibility Study

#### Table 1

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**Notes:**
- Adjacent Land Jurisdiction:
  - Public
  - Protected
  - Unprotected
- Type of Network:
  - Neighborhood Street
  - Sidewalk
  - Multi-use Trail
  - Trail/Footpath (Earthen)
- Bicycle Network Type:
  - On-Road Bike Route
  - Bikelanes

**Total Construction Cost:** $1,711,000
## TABLE 1

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<th>Protected</th>
<th>Unprotected</th>
<th>On Neighborhood Street</th>
<th>Trail</th>
<th>Sidewalk</th>
<th>Multi-use Trail</th>
<th>Multi-use Trail/Footpath</th>
<th>Sidepath</th>
<th>Special Design Consideration</th>
<th>Bikelanes</th>
<th>On-Road Bike Route</th>
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<th>Reach</th>
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<th>Comments</th>
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### SAMPLE DESIGN AND ENGINEERING FEES

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<th>Subtotal</th>
<th>Reach</th>
<th>Subtotal</th>
<th>TOTALS</th>
<th>Comments</th>
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| Preliminary Design/Engineering | 1299000 | 75% of Predesign | $1,298,880.00 |
| Preliminary Environmental Investigation (Excluding Hazardous Materials) | 433000 | 25% of Predesign | $432,960.00 |

**Subtotal** $1,731,840.00

| Final Design/Engineering | 563000 | 65% of Final Design | $562,848.00 |
| Specifications | 87000 | 10% of Final Design | $86,592.00 |
| Erosion, Sedimentation and Pollution Plans | 173000 | 20% of Final Design | $173,184.00 |
| Estimate and Tabulation of Quantities | 43000 | 5% of Final Design | $43,296.00 |

**Subtotal** $865,920.00

**Construction Phase Services by Design Professional** $288,640.00

**TOTAL** $2,886,400.00

### GENERAL NOTES:

1. Costs are estimated for construction only. Any right-of-way and/or easement acquisition costs are additional.
2. All off-road trail construction is assumed to occur within a 20'-0" right-of-way.
3. Costs include mobilization, demobilization, maintenance and protection of traffic.
4. Costs have been inflated to 2006 Dollars.
5. Total costs have been rounded to the nearest $1000.
6. Proposed pedestrian network includes construction costs only and is for planning purposes only. ADA costs, power pole relocation, tree removal, fence removal, clearing and leveling, fire hydrant moving, and new power poles are not included.

**TOTAL DESIGN and CONSTRUCTION** $16,007,000
C. Implementation and Priorities Strategy

Overview

This report is the first planning step towards the realization of the township-wide ped/bike network for Lower Merion. It lays out a dynamic and public supported vision giving a verbal, visual and diagrammatic strategy of what the network could look like, and how some of the processes involved will lead to its construction. This feasibility report attempts to estimate the cost and prioritize key routes/projects at an overall planning level. The Township can make the most of this report by seeing it as a “menu” of items and segments of routes for the Township to choose projects for implementation. As the next steps in the process, the Township, with the continued assistance of the study committee, should continue to meet through end of 2004. This will allow the committee to work out priorities for development and strategize implementation techniques from the “menu” options at a more specific, local level, i.e. whether segments should be sidewalks or side paths, what funding stream is most applicable, and which political avenues would be the most effective to pursue. The following table illustrates the total existing or construction mileage of each type of network segment:

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<th>Existing Network Mileage</th>
<th>Proposed Network Mileage</th>
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<td>Sidewalk (Gravel or Asphalt)</td>
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<td>Special Design Consideration (i.e. Difficult to Implement)</td>
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<td>Bikelanes</td>
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<tr>
<td>On-Road Bike Route</td>
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Pedestrian Network Implementation

PEDimpl – Master Plan Recommended Routes: Pedestrian Routes to be Implemented – Shows only the segments of the pedestrian network that are required to be implemented. This plan is important for singling out particular projects that need to be constructed in order to complete the entire network (please refer to: Section VI: Appendix A: Master Plans F).

- The entire pedestrian network will utilize 49 miles of Lower Merion’s existing network. These routes are not located on the plan.
- The entire pedestrian will only need to construct 23 miles of trail and sidewalks/sidewalks as located on the plan.
- The entire pedestrian network can be completed if 7.5 miles of special design considerations are solved as located on the plan.

Bicycle Network Implementation

- The entire Bicycle Network will need to implement 6.75 miles of Bicycle Routes and 34 miles of On-road Routes.
In the short term, it is important for the Township to adopt codes and standards that reinforce the implementation of the network and to include and involve public/community associations in each step of the planning/implementation process. For the long term, the various projects that make up the network should be formally included in the respective Township, County, MPO, Penn DOT, and Federal transportation, open space, recreation, and preservation plans and programs so that they are recognized broadly as a committed vision of what the Township wants to become. The township should develop a ped/bike checklist for any up-and-coming capital project, scheduled roadway maintenance, and any proposed development to ensure that ped/bike issues are considered.

Listed below are some of the more common implementation techniques:

**Capital Improvements**

Capital improvement projects, such as longer segments of the network that can not, or should not, be developed piecemeal, may first need to be evaluated, studied, conceptually designed, and scoped. They may also need to identify specific construction items and costs, before any funding can be considered. Public involvement will most likely be necessary, before implementation of any longer segment of sidewalks, trails or bicycle routes can proceed. As a general rule of thumb, capital improvement projects should garner advocacy and citizen committees to ensure that ped/bike needs are given the attention they deserve throughout the community. Please note, that depending on the funding source(s), such as Federal Transportation Enhancement funds, projects that affect Penn DOT controlled roads (i.e., SR23, 30, 1) may have to meet environmental and design standards that are more rigorous and that obey by an in-depth public involvement process.

**Maintenance Implementation**

The Township can choose to implement smaller parts of the network such as crosswalk installation, bike lane striping, sidewalk repair, and minor constructions such as curb ramps, as Township maintenance projects. This will help manage the scope of the larger ped/bike projects by including the smaller projects in the maintenance budget. Additionally, the Township can pressure landowners who are responsible for sidewalks along their properties into upgrading or infilling portions of the network by strictly enforcing municipal maintenance codes where violations occur.

**Proposed Development Implementation**

When conducting larger street widening, repaving, or bridgework, another implementation technique is to piggyback smaller ped/bike projects into the scope of the larger projects. Such project coordination can keep the overall cost of the ped/bike network project down. As well, the Township can pressure any new private development or subdivision fronting portions of the recommended network into developing the network as part of their project by adopting Township ped/bike standards into the design, construction, approval, and review process.

**Priorities for Development**

Because this study prioritizes certain series of improvements, over time, it can be easier for the Township to budget improvements through the maintenance department allocations and to locate and be alerted of potential proposed development coordination. Below, is a table grouped by values that were considered and should be considered when ranking the priority for each project type. Added significance can be assigned when a project eliminates a hazard or solve a network problem.
Schuylkill River Trail West Priorities

As there is only one feasible township long greenway trail, its development has been prioritized from first to last:

1. The multi-use section from Green Lane Bridge to the end of Flat Rock Park near Mill Creek should be the highest priority for development as it is the most “implementable” segment of the trail.
2. Secondly, the hiking route from Flat Rock Park at Mill Creek to West Conshohocken should be developed. This will involve negotiating several Bridlewild Trail easements for public use and the trail blazing from Riverbend thru Woodmont to West Conshohocken.
3. Third, the bridge over the Schuylkill should be implemented as it will link to the Schuylkill River Trail and open the highest amenity to Lower Merion and regional trail users.
4. Lastly, due to the high cost of renovating the Georgia Pacific bridge and the new structure spanning a future railroad and electric lines, the segment of trail thru Westminster and West Laurel Hill should have the lowest priority.

PRIORITIZATION TABLE OF VALUE ASSIGNMENTS

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<tr>
<td>Traffic Volume</td>
<td></td>
</tr>
</tbody>
</table>
Pedestrian Network Ranking Priority System

The City of Eugene, Oregon, developed a system that has been adopted by PennDOT, from which governments can rank sidewalk projects in order of importance. Although local circumstance should always be of highest priority, this point based system allows planners to objectively analyze sidewalk improvements. This study proposes the minimum pedestrian network to make the Township walk-able. In order to do this many segments of the system must be implemented. By following the table below and adding street classification points to the combined pedestrian attractor points (as one pedestrian route can have more than one attraction such as two shopping centers thus totaling 20 points) the Township can begin to set priority to the development of the segments of the pedestrian network. Using this approach the Township could look at assigning priority values as follows:

<table>
<thead>
<tr>
<th>PEDESTRIAN SYSTEM PRIORITY RANKING SYSTEM</th>
<th>STREET CLASSIFICATION</th>
<th>POINTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>CLASSIFICATION AND PEDESTRIAN ATTRACTORS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>STREET CLASSIFICATION</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sidewalks needed on <strong>major arterials</strong> (not including limited access)</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>Sidewalks needed on <strong>minor arterials</strong></td>
<td>15</td>
<td></td>
</tr>
<tr>
<td>Sidewalks needed on <strong>collector streets</strong></td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Sidewalks needed on busy <strong>local streets</strong> (1000 ADT or above)</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>MAJOR PEDESTRIAN ATTRACTORS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>School Location - Sidewalks within a 1/4 mile radius of school</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td><strong>Typical School Walking Route</strong> - Streets located within a 3/4 mile to one mile walking radius and which provide a direct route and serve as a pedestrian collector for other streets (add to school location)</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td><strong>Parks and Recreation</strong> - Sidewalks within 1/4 mile radius of park and recreation facility</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td><strong>Commercial Facilities</strong> - Sidewalks within 1500 feet of commercial areas</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td><strong>Link to Public Transit</strong> - Sidewalks on streets that serve bus routes or regional rail lines. Proximity to stops/stations are also a priority.</td>
<td>10</td>
<td></td>
</tr>
</tbody>
</table>
**Bicycle Route Priorities**

While many routes and segments throughout the Township have been identified as recommended bicycle routes, it may not be cost effective for the Township to implement the entire system at once. Therefore, this study has identified a “bare bones” network which prioritizes the minimum selected bike routes to make the Township more bike-friendly as shown in the graphic on the next page:
bicycle route priorities
(purple)
D. Analysis of Expense and Revenue

The question of expense and revenue is how the new network facilities will run. Are there admission fees for the users of a new sidewalk? Must you be a member to walk on a trail or ride on a bike route? The answer is most likely, no. The proposed networks are not proposed to be supported by fee based activities, such as where an ice hockey team might rent out an ice rink or a swimming team might have a seasonal facility fee. The township must be aware that this network will be more on the public expense side than on the public revenue side; however, pathways and bikeways can add to the success of the local private sector and the associated tax revenues.

Economic Impacts of Walking and Bicycling Facilities

Trails, sidepaths and bike routes have offered many communities greater prosperity by opening new means of transportation and by attracting recreational tourists. For example, on the Northern Outer Banks of North Carolina a ribbon trail and regional bicycle network has attracted 680,000 visitors who bicycle in the area. This number represents 17% of all tourists in the area but a study has concluded that bicyclist generate an economic impact of $60 million dollars annually. In this case, over the last 10 years, $6.7 million dollars of public funds were used to widen shoulders around the region and create multi-use paths that create a safe haven for recreational bicyclists. Bicyclist spending in the area has created and supported over 1,400 jobs where, all in all, the annual economic impact of the cyclist is nine times what it cost to build the facilities (see North Carolina Department of Transportation, Pathways to Prosperity: The Economic Impact of Investments in Bicycle Facilities: A Case Study of the North Carolina Northern Banks: April 2004).

Closer to home, in 1998, the half-finished Great Allegheny Passage generated a direct economic impact of $14 million dollars per year and raised property values. Trails and Greenways enhance the natural beauty of communities while also enhancing property values – in some cases up to a 9% increase - and have been shown to “make adjacent properties easier to sell.” (see Rails to Trails Conservancy, Economic Benefits of Trails and Greenways: 2004). With the huge success of the Schuylkill River Trail, the Philadelphia Bicycle Network, and the increasing variety of regionally significant trails, the already beautiful destination of Lower Merion Township has the potential of tapping into economic impact of the estimated 500,000 annual Schuylkill River Trail users. In many instances, small trail related businesses, such as snack stops, bicycle rental facilities, and cafes have already developed to serve the Schuylkill River Trail users and will most likely create new business opportunities within the Township.

1. Maintenance and Management Plan

Overview and Description

The successful operation of the Schuylkill River Trail West, the Bicycle Network, and Pedestrian Route Network will rely on a continued and regular program of maintenance of the trail, routes and support facilities. A Maintenance and Management Program will not only ensure a quality recreational or travel experience for the user but is also an essential ingredient of a risk management plan for the operator of the networks. Sufficient manpower and monetary resources must be devoted to a regular maintenance schedule in order to meet these goals.

The 10.75 mile Schuylkill River Trail West, when completed, will consist of 4.25 miles of “paved surface” trail, 6.5 miles of “soft surface” trail, several major bridges, numerous smaller bridges and culverts, and trail amenities such as signage and access control devices all requiring regular maintenance.

The 46.25 miles of Bicycle Network, when completed, will have approximately 165 major network intersections requiring bike route way finding signage, general safety signage throughout, striping of 6.75 miles of roadway, a bicycle parking facility plan, and will require sweeping of debris from the bicycle lanes.

The 68 miles of Pedestrian Network of concrete sidewalks and “paved” or “soft” surface sidepaths, when completed will have approximately 175 major network intersections and 25 major mid-block crossings each requiring pedestrian route way finding signage, any necessary safety lights for these pedestrian crossings, general safety signage throughout, and will require the development of a maintenance plan by either the public agency or the adjacent private landowners.
**Maintenance Goals**

The maintenance program for the Schuylkill River Trail, the Bicycle Network, and Pedestrian Route Network should provide for a safe, clean, attractive facility for use by its users cyclists, hikers, joggers, dog walkers, roller bladders, horseback riders, and other recreational users. The majority of maintenance expenses will fall on the Township.

**Schuylkill River Trail West Management Plan**

The proposed Schuylkill River Trail West is essentially a linear greenway or linear park connecting a series of Township parks. Using precedence set in the development of the Schuylkill River Trail and the Perkiomen Trail, preliminary maintenance and operation of the Schuylkill River Trail West should be the responsibility of Lower Merion Township Park and Recreation Department or, if possible, integrated it into the operations of the Montgomery County Trail System. In the Montgomery County Trail System, Lower Perkiomen Park currently maintains portions of the Perkiomen Trail and the Schuylkill River Trail while other park entities maintain other sections of the trail. This creates a partnership of responsibility between several parks.

This study recommends that maintenance of the Schuylkill River Trail West be similar in nature to this agreement. The park rangers and maintenance personnel currently responsible for the operation and maintenance of Flat Rock Park, should share in the operational and maintenance responsibilities of the trail corridor with Rolling Hill Park personnel and Knealy Nature Park personnel. The divisions and extents of responsibility will need to be worked out before the trail can open.

Lower Merion Township is ideally suited for channeling the efforts of local organizations, governmental units, businesses, civic groups, and individuals in planning, decision-making, and preparing for management of the trail. Ultimately, a public agency should own and operate the trail to assure that maintenance and operation funds are dedicated as needed.

The township’s operation budget may only be large enough to take care of the general safety of users and other increased amenities such as additional landscaping or plantings may be left out of the plan. The most practical thing to do to get started on trail maintenance is to enter into agreements with clubs and organizations to adopt segments of the trail, such as the Bridlewild Trail Association. These should be formal cooperative agreements that clearly define roles and responsibilities of each party. Developing an effective maintenance management system is an on-going process. As the Township works with these groups, new and more effective maintenance methods and techniques can be developed. It will be important for people to recognize that creativity and experimentation with different approaches will help to improve maintenance operations.
### Schuylkill River Trail West Maintenance Requirements

The following table identifies major maintenance tasks required for the operation of the Schuylkill River Trail West facility. A description, frequency and general comments for each activity are outlined. Both short term periodic maintenance tasks such as mowing, and long term tasks such as trail resurfacing are provided.

#### MAJOR MAINTENANCE TASKS — SCHUYLKILL RIVER TRAIL WEST

<table>
<thead>
<tr>
<th>ACTIVITY</th>
<th>DESCRIPTION</th>
<th>FREQUENCY</th>
<th>COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mowing</td>
<td>-1.2m (4’) min. wide each side of trail</td>
<td>3-4 times annually</td>
<td>flail type mower best - less debris on trail</td>
</tr>
<tr>
<td>Pruning</td>
<td>-Prune woody vegetation 1.2m (4’) back from sides of trail – 4.2m (14’) vertical clearance – remove invasive vines</td>
<td>Annually</td>
<td>Vegetation Management Program may reduce this task long term</td>
</tr>
<tr>
<td>Removal of Tree Limbs</td>
<td>-Evaluation/removal of unhealthy or dead limbs</td>
<td>Annual</td>
<td></td>
</tr>
<tr>
<td>Signage</td>
<td>-Maintain boundary signs at 1.5 km (one tenth mile) intervals – Maintain directional &amp; informational signs</td>
<td>Paper signs - annually Permanent signs - periodically as required</td>
<td></td>
</tr>
<tr>
<td>Access Control</td>
<td>-Replace damaged access control devices</td>
<td>Periodically as required</td>
<td>Estimated frequency: 10% annually due to vandalism</td>
</tr>
<tr>
<td>Trail Surface (if Hard Paving)</td>
<td>-Resurface</td>
<td>Every 10 years</td>
<td></td>
</tr>
<tr>
<td>Trail Surface (if Soft Surface)</td>
<td>-Repair surface damage from vehicles, erosion, etc.</td>
<td>Periodically as required</td>
<td></td>
</tr>
<tr>
<td>Drainage Structures</td>
<td>-Clean inlets, keep swales clear of debris</td>
<td>Minimum - Annually</td>
<td>Complete rehabilitation during construction dramatically reduces this maintenance task after storms</td>
</tr>
<tr>
<td>Litter Pick Up</td>
<td>-Trailside-litter pickup -Access area litter pickup</td>
<td>Weekly or as required</td>
<td>Weekly</td>
</tr>
<tr>
<td>Trash Collection</td>
<td>-Removal of trash from receptacles at access areas</td>
<td>Weekly</td>
<td>Problems with non-user trash. Some agencies do not have trash containers at access points for this reason</td>
</tr>
<tr>
<td>Trail Bridges</td>
<td>-Inspection by P.E. every 2 years -Maintenance of bridge to ensure structural integrity</td>
<td>Bi-annually by Lower Merion Township Engineering Consultants</td>
<td>Inspection by staff during normal cycle to identify possible problems</td>
</tr>
<tr>
<td>Major Bridges</td>
<td>-Pencoyd/Georgia Pacific Bridge -Proposed Ped/Bike Bridge over Schuylkill River</td>
<td>Bi-annually but Varies</td>
<td>Township to provide Inspection Program or share with adjacent municipalities or County</td>
</tr>
<tr>
<td>Graffiti Control</td>
<td>-Repaint bridges/abutments as required</td>
<td>Annual / spot basis</td>
<td>Possibly include trail logo/name</td>
</tr>
</tbody>
</table>
Schuylkill River Trail West Maintenance Costs

Information regarding maintenance costs for trails is difficult to come by. Generally maintenance cost tracking for trails is not done either because the trail is too new or because it is maintained as part of a larger facility such as a park. For trails where cost can be estimated, these Costs generally range between $2,600 to $5,200 per mile per year for trails similar to the Schuylkill River Trail. If there are special maintenance considerations such as bridges or tunnels that are in need of repair, this Cost can be doubled. Once the trail is developed, the managing agency will have to develop a tracking system to document maintenance costs.

We recommend that the responsible agency use a figure of **$3,250 per mile** to estimate maintenance costs during the first year after development. This translates 10.75 miles of trail into a maintenance budget nearing **$35,000 per year** not including bridge structures. This figure can be evaluated at the end of the first year, particularly in light of the bridges along the trail, to determine its accuracy and can be adjusted accordingly. This cost can be used for fundraising purposes as well as to solicit volunteer help for maintenance.

Bicycle Network Management Plan

In general, the bicycle network will become part of the routine maintenance of the existing roadway system throughout Lower Merion Township. Many of these roadways are under PennDOT jurisdiction, however if not maintained by PennDOT, a detailed maintenance agreement should be developed between the Township and PennDOT prior to the designation of any bicycle route for a particular roadway. The following excerpt describing the operation and maintenance of bicycle facilities is from the ASHTO, *Guide for the Development of Bicycle Facilities*, 1999:

> The jurisdictions responsible for the operation, maintenance and policing of bicycle facilities should be established prior to construction. In addition to construction costs, operating and maintenance costs should be considered and included in the overall budget for the facility. Neglecting routine maintenance eventually may render bicycle facilities un-ride-able and such deteriorating facilities may become a liability to the state or community. Bicyclists should be encouraged to report bicycle facilities that are in need of maintenance. A central contact person who can authorize maintenance work should be designated to receive such reports.

> A smooth surface, free of potholes and debris, should be provided on all bikeways. Glass, sand, litter and fallen leaves often accumulate on bike lanes, paved shoulders and shared use paths; therefore, regular sweeping is desirable. Pavement edges should be uniform and should not have abrupt drop-offs. Signs and pavement markings should be inspected regularly and kept in good condition, and if determined to be no longer necessary, promptly removed. Highways with bicycle traffic may require a more frequent and higher level of maintenance than other highways.

> For shared use paths, attention should be given to maintaining the full paved width and not allowing the edges to ravel. Trees, shrubs and other vegetation should be controlled to provide adequate clearances and sight distances. Trash receptacles should be placed and maintained at convenient locations. Seeded and sodden areas in the vicinity of shared use paths should be mowed regularly. Snow plowing should be used to remove snow from bikeways because de-icing agents and abrasives can damage bicycles. Also, enforcement is often necessary to prevent unauthorized motor vehicles from using a shared use path.

> The routine maintenance of roadways and bikeways will usually provide good riding conditions. Several bicycle facility improvements can be implemented during routine maintenance activities. Consideration also can be given to adjusting lane widths and providing wider outside curb lanes for bicyclists during re-stripping operations. The addition of edge lines can better delineate a shoulder, especially at night. When shoulders are resurfaced, a smooth surface suitable for bicycle riding should be considered.
Bicycle Network Maintenance Requirements

The following table identifies major maintenance tasks required for the operation of Bicycle Network. A description, frequency and general comments for each activity are outlined. Both short term periodic maintenance tasks long term tasks are provided.

**MAJOR MAINTENANCE TASKS — BICYCLE NETWORK**

<table>
<thead>
<tr>
<th>ACTIVITY</th>
<th>DESCRIPTION</th>
<th>FREQUENCY</th>
<th>COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sweeping</td>
<td>-Removal of broken glass, leaf litter, sand, stones, trash, etc.</td>
<td>3-4 time annually</td>
<td>Always sweep in spring to remove anti skid materials left from winter</td>
</tr>
<tr>
<td>Pruning</td>
<td>-Prune woody vegetation 1.2m (4’) back from sides of roadway – 4.2m (14’) vertical clearance – remove invasive vines</td>
<td>Annually</td>
<td>Vegetation Management Program may reduce this task long term</td>
</tr>
<tr>
<td>Removal of Tree Limbs</td>
<td>-Evaluation/removal of unhealthy or dead limbs</td>
<td>Annual</td>
<td></td>
</tr>
<tr>
<td>Signage</td>
<td>- Maintain directional &amp; informational signs</td>
<td>Paper signs - annually Permanent signs - periodically as required</td>
<td></td>
</tr>
<tr>
<td>Pothole repair and edge repair</td>
<td>-Repair damaged roadway surfaces to ensure safe route</td>
<td>Periodically as required</td>
<td></td>
</tr>
<tr>
<td>Snow Removal</td>
<td>-Ensure snow removal of entire roadway from curb to curb to ensure route is usable</td>
<td>As required</td>
<td>Task is included in existing roadway maintenance costs</td>
</tr>
<tr>
<td>Bicycle Safe Grates</td>
<td>-Replace any stormwater grates that have parallel openings to the curb with perpendicular openings</td>
<td>Implementation and inspect after any roadwork</td>
<td>Should be considered during implementation</td>
</tr>
<tr>
<td>Drainage Structures</td>
<td>-Clean inlets, keep swales clear of debris</td>
<td>Minimum - Annually</td>
<td>Complete rehabilitation during construction dramatically reduces this maintenance task after storms</td>
</tr>
</tbody>
</table>

Bicycle Network Maintenance Costs

Information regarding maintenance costs for bicycle routes is also difficult to come by. Generally maintenance cost tracking for bike route is not done either because the route is maintained as part of the roadway system. For bicycle routes where cost can be estimated, these costs generally range between $1,000 to $2,000 per mile per year for a network similar to the Philadelphia Bikeway Network. Once the bicycle network is developed, the managing agency will have to develop a tracking system to document maintenance costs.

We recommend that the responsible agency use a figure of **$1,500 per mile** to estimate maintenance costs during the first year after development. This translates 46.25 miles of bicycle network into a maintenance budget nearing **$70,000 per year** not including bridge structures. This figure can be evaluated at the end of the first year, particularly to determine its accuracy and some expenses will be shared by other entities such as PennDOT.
Pedestrian Network Management Plan

The proposed Pedestrian Network is essentially an extension of the existing township-wide sidewalk and pathway system and will most likely maintain the existing management framework established and already in use by the Township. Adopted in 1979, Chapter 133 of the Code of the Township of Lower Merion makes the responsibility of maintenance of sidewalks, public walks and adjacent cross walks a duty of the owners of the land on or adjacent to the walkway.

The development of new sidewalks and paths, according to Chapter 135, can occur in locations deemed necessary for “public safety and convenience” as approved by the Board of Commissioners. Only 30 miles of new sidewalk/path are necessary to connect together the 68 miles of proposed walking routes, but this will require a significant investment of capital and operational expenditure.

This study recommends, in light of the scope of this work, that the maintenance and implementation sections of the Code of the Township of Lower Merion be reviewed and adapted, as necessary, to become new written "tools" by which Lower Merion Township could implement and assign maintenance responsibilities for the proposed network. It is very important to address in a management plan the issues of ownership, management, and liability early on in the planning process to ensure that a safe walking network is realized. This is the best way to reduce liability for all parties involved.

The pedestrian network management plan should include maintenance considerations for Sidewalks and Walkways, Crosswalks and Curb Ramps, Shoulders, Overpasses and Underpasses, Work Zones, and Traffic Control Devices. Major maintenance tasks are listed in the following pages.
Pedestrian Network Maintenance Requirements

The following table identifies major maintenance tasks required for the operation of the Pedestrian Network. A description, frequency and general comments for each activity are outlined. The information that follows can be found in more detail in: FHWA, Planning. Design and Maintenance of Pedestrian Facilities, 1989.

<table>
<thead>
<tr>
<th>ACTIVITY</th>
<th>DESCRIPTION</th>
<th>FREQUENCY</th>
<th>COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sidewalks and Walkways</td>
<td>1. Tree roots cracking and heaving the sidewalk.</td>
<td>1. Remove failed sidewalks, cut roots and install new sidewalk. A local arborist should be contacted prior to removing large roots.</td>
<td>As necessary</td>
</tr>
<tr>
<td></td>
<td>2. Section pop-up of vertical height greater than 13 mm (1/2 in).</td>
<td>2. Replace defective section or provide temporary asphalt shim.</td>
<td>As necessary</td>
</tr>
<tr>
<td></td>
<td>3. Cracked or spalling surface and poorly placed temporary patches.</td>
<td>3. Replace defective sections.</td>
<td>As necessary</td>
</tr>
<tr>
<td></td>
<td>4. Snow and ice buildup and ponding from snow melt.</td>
<td>4. Enact and enforce local regulations requiring abutting land users to perform timely clearance activity.</td>
<td>As necessary</td>
</tr>
<tr>
<td></td>
<td>5. Separation of expansion and construction joints so that space between adjoining sections are greater than 13 mm (1/2 in).</td>
<td>5. Hire private contractor to clear sidewalk and assess cost to abutting land users. Fill joint with hardening expansion compound.</td>
<td>As necessary</td>
</tr>
<tr>
<td></td>
<td>6. Trash, loose sand, oil and grease on walkways.</td>
<td>6. Serve notice to abutting land owners to clean and maintain sidewalks.</td>
<td>As necessary</td>
</tr>
<tr>
<td></td>
<td>7. Materials, signs, vending machines, etc. restricting effective sidewalk width.</td>
<td>7. Require responsible parties to remove obstructions.</td>
<td>As necessary</td>
</tr>
<tr>
<td></td>
<td>8. Low hanging tree limbs, bushes, weeds and other foliage growing into sidewalk and/or posing obstructions and sight restrictions.</td>
<td>8. Enact and enforce local regulations requiring abutting land users to perform timely clearance activity. Hire private contractor to clear sidewalk and assess cost to abutting land users.</td>
<td>Annually</td>
</tr>
</tbody>
</table>

### MAJOR MAINTENANCE TASKS — PEDESTRIAN NETWORK

<table>
<thead>
<tr>
<th>ACTIVITY</th>
<th>DESCRIPTION</th>
<th>FREQUENCY</th>
<th>COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crosswalks and Curb Ramps</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Curb ramp surface is worn into a glazed and slippery surface.</td>
<td>1. Replace curb ramp. Texturize surface with shallow, transverse grooves.</td>
<td>As necessary</td>
<td></td>
</tr>
<tr>
<td>2. Poor drainage causing water retention in gutter area.</td>
<td>2. Clean gutter and catch basin area.</td>
<td>As necessary</td>
<td></td>
</tr>
<tr>
<td>3. Street rutting causing water ponding in crosswalk.</td>
<td>3. Resurface street or crosswalk area.</td>
<td>As necessary</td>
<td></td>
</tr>
<tr>
<td>4. Street repaving resulting in step or transition problem at bottom of curb ramp.</td>
<td>4. Repaving contract specifications should specify a maximum of 6 mm (1/4 in) vertical edge between new pavement and gutter or curb ramp.</td>
<td>As necessary</td>
<td></td>
</tr>
<tr>
<td>5. Slippery manhole covers in crosswalk.</td>
<td>5. When manholes must be located in crosswalk, they should have slip resistant cover design and be flush with surface and visible.</td>
<td>As necessary</td>
<td></td>
</tr>
<tr>
<td>6. Snow and ice buildup and ponding from snow melt.</td>
<td>6. A maintenance program should be developed to ensure snow and ice removal.</td>
<td>As necessary</td>
<td></td>
</tr>
<tr>
<td>7. Stop bar and crosswalk pavement markings.</td>
<td>7. Identify high volume locations that require additional refurbishing activities.</td>
<td>As necessary</td>
<td></td>
</tr>
<tr>
<td>8. Separation of expansion and construction joints so that space between adjoining sections are greater than 13 mm (1/2 in).</td>
<td>8. Fill joint with hardening expansion compound.</td>
<td>As necessary</td>
<td></td>
</tr>
</tbody>
</table>

## MAJOR MAINTENANCE TASKS — PEDESTRIAN NETWORK

<table>
<thead>
<tr>
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<th>DESCRIPTION</th>
<th>FREQUENCY</th>
<th>COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shoulders</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Debris, trash and loose sand on shoulder.</td>
<td>1. A maintenance program be developed to provide for regular sweeping of shoulders.</td>
<td>Weekly or as required</td>
<td></td>
</tr>
<tr>
<td>2. Snow and ice buildup.</td>
<td>2. A maintenance program should be developed to ensure snow and ice removal.</td>
<td>As necessary</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overpasses and Underpasses</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Falling objects from overpass.</td>
<td>1. Enclose overpass with chain link fencing.</td>
<td>As necessary</td>
<td></td>
</tr>
<tr>
<td>2. Sparse pedestrian use of underpasses.</td>
<td>2. Underpass should be well lighted to provide a feeling of personal security.</td>
<td>As necessary</td>
<td></td>
</tr>
<tr>
<td>3. Worn step or ramp surfaces.</td>
<td>3. Overlay, replace or texturize to slip free and unbroken surface.</td>
<td>As necessary</td>
<td></td>
</tr>
<tr>
<td>4. Snow and ice buildup and ponding from snowmelt.</td>
<td>4. A maintenance program should be developed to ensure snow and ice removal.</td>
<td>As necessary</td>
<td></td>
</tr>
<tr>
<td>5. Section pop-up of vertical height greater than 13 mm (1/2 in).</td>
<td>5. Replace defective section or provide temporary asphalt shim.</td>
<td>As necessary</td>
<td></td>
</tr>
</tbody>
</table>

### MAJOR MAINTENANCE TASKS — PEDESTRIAN NETWORK

<table>
<thead>
<tr>
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<th>DESCRIPTION</th>
<th>FREQUENCY</th>
<th>COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Work Zones</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Temporary pathways at work zones are typically constructed of relatively inexpensive, short life materials</td>
<td>1. The pathway surface should be frequently inspected. Pathway surface materials constructed of wood should be treated with no slip strips or surface treatment. Surface materials with holes, cracks or abrupt changes in elevation should be replaced.</td>
<td>Frequent inspections</td>
<td></td>
</tr>
<tr>
<td>2. Detour pedestrian paths place greater volumes on detour roadway.</td>
<td>2. The detour pathway should be checked periodically for:  - Adequacy of pedestrian and vehicular signal timing.  - Proper pedestrian detour signing.  - Pedestrian traffic hazards.  - Proper motorist information.</td>
<td>Periodic inspections</td>
<td></td>
</tr>
<tr>
<td>3. Construction materials debris in pathway.</td>
<td>3. Require the contractor to maintain a clear pathway.</td>
<td>Frequent inspections</td>
<td></td>
</tr>
<tr>
<td>4. Changing pedestrian accommodation needs due to dynamic construction activities.</td>
<td>4. Perform periodic inspection to ensure pedestrian information needs keep pace with construction activities.</td>
<td>Periodic inspections</td>
<td></td>
</tr>
<tr>
<td>5. Damaged traffic barriers.</td>
<td>5. Damaged traffic barriers should be replaced and their adequacy reevaluated to ensure pedestrian safety.</td>
<td>As necessary</td>
<td></td>
</tr>
</tbody>
</table>

MAJOR MAINTENANCE TASKS — PEDESTRIAN NETWORK

<table>
<thead>
<tr>
<th>ACTIVITY</th>
<th>DESCRIPTION</th>
<th>FREQUENCY</th>
<th>COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Traffic Control Devices</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Signs must be readily visible to pedestrians.</td>
<td>1. Inspect the signs from the vantage point of the pedestrian who is expected to read it. The signs should not be obscured by other signs or foliage.</td>
<td>Minimum - Anually</td>
<td></td>
</tr>
<tr>
<td>2. Pedestrian signs must be at a mounting height that can be read by all pedestrians,</td>
<td>2. If the sign extends into an accessible route they must be mounted in accord with the MUTCD to permit safe passage under the sign. Signs mounted on a wall should be mounted at a height between 1370 millimeters and 1675 mm (54 in and 66 in).</td>
<td>At implementation</td>
<td></td>
</tr>
</tbody>
</table>
| 3. Pedestrian signals must be maintained, | 3. Pedestrian signals should be periodically  
   • Inspected for damage due to turning vehicles. If damaged, consider back bracketing the pedestrian assembly  
   • Refurbish, including lens cleaning and bulb replacement | Periodic inspections |                                               |


Pedestrian Network Maintenance Costs

Information regarding maintenance costs for sidewalks and paths is a large and varied field. Generally maintenance cost tracking for sidewalks/paths is not done because they are typically maintained as part of a roadway. For sidewalks/paths where cost can be estimated, these costs generally range between $1,000 to $2,000 per mile per year for typical concrete sidewalks. If there are special maintenance considerations such as bridges or tunnels that are in need of repair, this cost can be significantly increased. Once a new sidewalk/path is developed, the managing agency will have to develop a tracking system to document maintenance costs.

We recommend that the responsible agency use a figure of $1,500 per mile to estimate maintenance costs during the first year after development. This translates 68 miles of new and existing sidewalk/paths into a maintenance budget nearing $100,000 per year not including bridge structures. This figure can be evaluated at the end of the first year, to determine its accuracy and can be adjusted accordingly. This cost can be used for fundraising purposes as well as to solicit volunteer help for maintenance.
E. Potential Funding Sources

1. Federal Level

Land and Water Conservation Fund (LWCF)
The LWCF was established in 1965 to help provide “close-to-home” park and recreation opportunities throughout the nation. Money for the fund comes from the sale or lease of non-renewable resources, primarily federal offshore oil and gas leases and surplus federal land sales. A large portion of the annual LWCF allocation goes toward acquisition of land for federal land management agencies; however, a portion of the money is provided to cities, counties and park districts to acquire land and develop parks. LWCF funds are provided to each state annually by the National Park Service. State funding is based on a population formula. A state administers the program through a State Liaison Officer, who recommends projects to the National Park Service for approval. Local governments are eligible applicants. Communities must be able to match LWCF grants with a 50 percent provision of funding or services.

In order to qualify for funding, a project must meet two criteria. First, the project must be primarily for recreation purposes, not transportation. Second, the organization leading the project must guarantee that the project will be maintained in perpetuity for public recreational use. Any deviation from recreational use must be approved by the National Park Service, and property of at least equal recreational value must be provided to replace the loss.

- Americans for Our Heritage and Recreation provides an overview of the LWCF program at http://www.ahrinfo.org/lwcf_overview.html and links to the National Park Service and State Liaison Officers
- The National Park Service maintains an LWCF web site at http://www.nps.gov/ncrc/programs/lwcf/index.html
- Pennsylvania’s State Liaison Officer may be contacted at: Bureau of Recreation and Conservation
  
  PA Dept. of Conservation and Natural Resources
  
  P.O. Box 8767
  
  Harrisburg, PA 17105
  
  Tel: 717-783-2659
  
  http://www.dcnr.state.pa.us/brc/grants/

Transportation Equity Act for the 21st Century (TEA-21)
The Intermodal Surface Transportation Efficiency Act of 1991, dubbed “ISTEA,” included funding for non-traditional transportation improvements which were categorized as transportation enhancements. This act provided $3.3 billion nationwide over the six-year life of the Act for improvements such as pedestrian and bicycle routes, preservation of historic transportation structures, scenic beautification of transportation facilities, and other environmentally beneficial transportation projects. ISTEA expired in September of 1997; however, the transportation enhancements provisions have been included in its successor, the Transportation Equity Act for the 21st Century (TEA-21), signed into law June 1998. TEA-21 not only continued the visionary policies of its predecessor, but also provided more funding than ever before for non-motorized transportation modes, specifically bicycle and pedestrian modes. Under the new law, Pennsylvania is to receive nearly $1.3 billion in transportation funding, a significant increase over ISTEA levels.

A relatively modest amount of the funds allocate to TEA-21 are available for local planning of bikeways and recreational trails. The act emphasizes coordinated overall planning and funding of projects at the state level and involvement by MPOs. All federal funding programs require conformity to plans developed by the states and MPOs.
For more information about TEA-21:

- Go to the US Department of Transportation’s TEA-21 home page at [http://www fhwa dot gov/tea21/sumcov htm](http://www.fhwa.dot.gov/tea21/sumcov.htm)
- Contact the Delaware Valley Regional Planning Commission at:
  The Bourse Building
  111 S. Independence Mall East, 8th Floor
  Philadelphia, PA 19106
  215-592-1800

Project funding for pedestrian and bicycle projects is provided by TEA-21 through the following applicable mechanisms:

**Surface Transportation Program and Transportation Enhancements Program**

Surface Transportation Program (STP) funds may be used for either the construction of bicycle transportation facilities and pedestrian walkways, or non-construction projects, such as maps, brochures, signage and public service announcements related to safe bicycle use and walking. Proposed projects must be designed primarily for transportation rather than recreation. TEA-21 adds the modification of public sidewalks to comply with the Americans with Disabilities Act as an activity that is specifically eligible for the use of these funds.

The most relevant element of the STP program to local government trail development is the opportunity to participate in transportation enhancements. The intent of the transportation enhancements is to creatively integrate transportation facilities into local communities and the environment. Ten percent of each state’s annual STP funds are set aside for Transportation Enhancement Activities (TEAs). The law provides a specific list of activities that are eligible TEAs including: provision of facilities for bicycles and pedestrians, provision of safety and educational activities for bicyclists and pedestrians, and the preservation of abandoned railway corridors (including the conversion and use thereof for bicycle and pedestrian trails).

Pennsylvania is expected to receive $120 million over the six-year life of TEA-21 for Transportation Enhancements. A few of the previously funded projects include:

- Provision of facilities for bicycles and pedestrians
- Provision of safety and education activities for bicycles and pedestrians
- Preservation of abandoned railroad corridors for bicycle and pedestrian trails

Transportation enhancements projects are eligible for a maximum of 80 percent federal funding, with 20 percent coming from a local government’s match. A match may be made with dollars or in-kind services, and in some cases, other federal or state funding sources may be used as the match. Pennsylvania’s program has been structured to have project sponsors fund the pre-construction phases of work, e.g., the design, right-of-way acquisition, and utility relocation work, with non-federal funding, and to then provide 100% federal funding for the construction phase. This generally results in about an 80/20 cost-sharing arrangement. There is one more round of funding to submit Transportation Enhancements projects during the life of TEA-21, which expires in 2003.

PennDOT provides staff to administer the program and give advice and technical assistance as necessary; however, individual MPOs (Metropolitan Planning Organizations) are usually responsible for coordinating and recommending transportation enhancements projects for their regions. Individual applicants submit their projects to the Delaware Valley Regional Planning Commission, the MPO for a five-county area in southeastern Pennsylvania and southern New Jersey. The applications are reviewed, prioritized, and a recommendation is forwarded to PennDOT for final review and then passed on to the State Transportation Commission for final adoption. A legal agreement, which establishes the federal and local money to be spent on the project, is signed between PennDOT and the sponsoring group.

Another ten percent of each state’s STP funds is set aside for safety. The Hazard Elimination and Railway-Highway Crossing Programs are two programs under the safety category, which address bicycle and pedestrian safety issues. Each state is required to implement a Hazard Elimination Program to identify and correct locations that may constitute a danger to motorists, bicyclists, and pedestrians. Funds may be used for...
activities, including a survey of hazardous locations, for projects on any publicly owned bicycle or pedestrian pathway or trail, or for any safety-related traffic calming measure. Improvements to railway-highway crossings shall take into account bicycle safety.

- A useful web site for information on this program is the National Transportation Enhancements Clearinghouse at [http://www.enhancements.org](http://www.enhancements.org)

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Email: daccurti@state.pa.us
PennDOT Web Site: [http://www.dot.state.pa.us/internet/secinet.nsf](http://www.dot.state.pa.us/internet/secinet.nsf)

- For more information, also go to the Federal Highway Administration’s web site on bicycle and pedestrian provisions at [http://www.fhwa.dot.gov/environment/bikeped/BP-Guid.htm](http://www.fhwa.dot.gov/environment/bikeped/BP-Guid.htm)

Pennsylvania FHWA Division TE Coordinator
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Transportation Planner
FHWA
PA Division
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Email: Matt.Smoker@fhwa.dot.gov
PennDOT Web Site: [http://www.dot.state.pa.us/internet/secinet.nsf](http://www.dot.state.pa.us/internet/secinet.nsf)

Transportation and Community and System Preservation Pilot Program (TCSP)
TCSP provides funding for a comprehensive initiative including planning grants, implementation grants, and research to investigate and address the relationships between transportation, community, and system preservation and to identify private sector-based initiatives. In 1999, $20 million was authorized for the first year of this pilot program, and $25 million per year was authorized for 2000 through 2003. A total of $120 million was authorized for this program for FYs 1999-2003. TEA-21 was set to expire in September 2003, but Congress passed a series of extensions for funding through September 2004. As of that date the United States Congress has not taken any action to further the program, although it may yet do so. Contact your U.S. Senator or Representative for updated information.

An interagency team evaluates applications for competitive TCSP Program grants. The team includes representatives from: Federal Highway Administration (FHWA), Federal Transit Administration (FTA), US Department of Transportation (DOT) Office of the Secretary, Federal Railroad Administration (FRA), Research and Special Programs Administration (RSPA)/Volpe Center, and the Environmental Protection Agency (EPA). TCSP Program grants can also be designated by Congress.

Some of the eligible projects include:
- Corridor preservation activities necessary to implement transit oriented development plans
- Traffic calming measures
- Spending policies that direct funds to high growth areas
- Urban growth boundaries to guide metropolitan expansion
- Green corridors that provide access to major highway corridors for efficient and compact development
States, local governments, metropolitan planning organizations (MPOs), and tribal governments are eligible to apply for TCSP Program funds.

- For more information, go to the Federal Highway Administration’s TCSP web site at http://www.fhwa.dot.gov/tcsp/

**Congestion Mitigation and Air Quality Improvement Program**

Congestion mitigation and air quality improvement funds are authorized for transportation projects within non-attainment areas, such as Philadelphia, defined by the Clean Air Act Amendments of 1990. To be funded, projects must contribute to attainment of the National Ambient Air Quality Standards. Funds may be used for either the construction of bicycle transportation facilities and pedestrian walkways or non-construction projects (such as maps, brochures, and public service announcements) related to safe bicycle use. Funding is provided through an 80 percent federal and 20 percent state or local match.

- The Bureau of Transportation Statistics provides a guide to CMAQ funding called “A Clean Cities Guide: Applying For And Using CMAQ Funds”. You can search for this book in local libraries by accessing the TLCat (Transportation Library Online Catalog). TLCat can be accessed from http://ntl.bts.gov/link.cfm
- See also the Federal Highway Administration’s web site regarding CMAQ at http://www.fhwa.dot.gov/environment/cmaqpgs/index.htm

**National Highway System (NHS)**

Funds may be used to construct bicycle transportation facilities and pedestrian walkways on land adjacent to any highway on the National Highway System, including Interstate highways. The facilities must be principally for transportation. Funding is provided through an 80 percent federal and 20 percent state or local match.

- General information on this program is available at the Federal Highway Administration’s web site, http://www.fhwa.dot.gov/environment/rectrails/fundrec.htm

**Recreational Trails Program**

Funded through the Highway Trust Fund, the program is related to the Symms National Recreational Trails Act of 1991 and was originally created as the National Recreational Trails Trust Fund to provide for and maintain recreational trails that are part of Statewide Comprehensive Outdoor Recreation Plans (SCORP). Pennsylvania’s SCORP program is titled the “Pennsylvania Recreational Trails Program.” Funds under this program may be used for all kinds of trail projects, including trail maintenance, acquisition and development, and for improving access to and use of trails by persons with disabilities. The Pennsylvania Department of Conservation and Natural Resources administers the program, which is described more fully below under “State Grant Programs.” National mandates require that, of funds apportioned to a state, 30 percent be used for motorized trail uses, 30 percent for non-motorized trail uses, and 40 percent for diverse trail uses. The latter funds are allocated at the state’s discretion, but preference is given to projects with the greatest number of compatible recreational purposes or to those that provide for innovative recreational trail corridors used for motorized and non-motorized recreation.

- Information on this program is available through the Federal Highway Administration’s web site at http://www.fhwa.dot.gov/tea21/factsheets/rec-trl.htm

**Federal Lands Highway Program**

Provisions for pedestrians and bicyclists are eligible under the various categories of the program in conjunction with roads, highways, and parkways. Priority for funding projects is determined by the appropriate Federal Land Agency or Tribal government. These funds are used at the discretion of a state’s department of transportation. Local municipalities may petition PennDOT to obtain funding. Bicycle facilities must be principally for transportation rather than recreation. Projects are 100 percent federally funded.

A new program category for refuge roads was added to FHLP. This program provides funds that may be used by the U.S. Fish and Wildlife Service and the FHWA for the maintenance and improvement of federally owned public roads that provide access to or within a unit of the National Wildlife Refuge System. Refuge Roads funds may be used for:
• Maintenance and improvement of refuge roads;
• Maintenance and improvement of adjacent vehicular parking areas, provision for pedestrians and bicycles, and construction and reconstruction of roadside rest areas including sanitary and water facilities that are located in or adjacent to wildlife refuges;
• Administrative costs associated with such maintenance and improvements.

• More information is available through the Federal Highway Administration’s web site at http://www.fhwa.dot.gov/tea21/factsheets/fedland.htm

Additional TEA-21 Programs
Title 49 United States Code (as amended by TEA-21) allows the Urbanized Area Formula Grants, the Capital Investment Grants, and the Loans and Formula Program for Other than Urbanized Areas transit funds to be used for improving bicycle and pedestrian access to transit facilities and vehicles. Eligible activities include investments in pedestrian and bicycle access to a mass transportation facility that establishes or enhances coordination between mass transportation and other transportation. TEA-21 also created a Transit Enhancement Activity Program with a one percent set aside of Urbanized Area Formula Grant funds designated for, among other things, pedestrian access and walkways and bicycle access, including bicycle storage facilities and equipment for transporting bicycles on mass transportation vehicles. Job Access and Reverse Commute Grants are available to support projects, including bicycle-related services, designed to transport welfare recipients and eligible low-income individuals to and from employment.

• The Federal Highway Administration provides information fact sheets on these programs at the following internet sites:
  • For Urbanized Area Formula Grants, see http://www.fhwa.dot.gov/tea21/factsheets/urbnfg.htm
  • For Capital Investments Grants and Loan Program, see http://www.fhwa.dot.gov/tea21/factsheets/trcap.htm
  • For Formula Grants for Other than Urbanized Areas, see http://www.fhwa.dot.gov/tea21/factsheets/nonurbfg.htm
  • For Transit Enhancements, see http://www.fhwa.dot.gov/tea21/factsheets/transenh.htm
  • For Job Access and Reverse Commute Grants, see http://www.fhwa.dot.gov/tea21/factsheets/jobaccs.htm

2. State Level Grant Programs
Pennsylvania has five major programs supporting greenways and trails, administered by the Pennsylvania Department of Conservation and Natural Resources (PA DCNR), aside from federal transportation enhancement funds administered by the Pennsylvania Department of Transportation (PennDOT) and described in the previous section. The five PA DCNR grant programs are:

• The Keystone Planning, Implementation and Technical Assistance Program
• The Keystone Acquisition and Development Grant Program
• The Keystone Land Trust Program
• The Pennsylvania Recreational Trails Program
• The Heritage Parks Program

The Department of Conservation and Natural Resources (DCNR), Bureau of Recreation and Conservation administers grants for funding of acquisition, development, planning, implementation, and technical assistance projects through the Keystone Recreation, Park and Conservation (Keystone) Fund. These Keystone grants are administered under the agency’s Community Grant Program, Rails-to-Trails Grant Program, and Rivers Conservation Grant Program.

The Keystone Fund was established by passage of the Keystone Recreation, Park and Conservation Fund Act (Act 1993-50) signed on July 2, 1993. On November 2, 1993 the voters of the Commonwealth
overwhelmingly approved a public referendum incurring bond indebtedness by the Commonwealth in the amount of $50 million to provide for the funding of nature preserves and wildlife habitats and for improvements to and expansion of state parks, community parks and recreation facilities, historic sites, zoos and public libraries. The Keystone Fund is currently supported by a 15% allocation from the State Realty Transfer Tax revenues.

PA DCNR’s Recreational Trails Program provides funding to develop and maintain trails and trail-related facilities for both motorized and non-motorized recreational trail uses. DCNR's Bureau of Recreation & Conservation administers this program in consultation with the Pennsylvania Recreational Trails Advisory Board (PARTAB), which is composed of both motorized and non-motorized recreational trail users. Funding for the Recreational Trails Program is provided to the Commonwealth through the Federal Highway Administration (FHWA) and the Transportation Equity Act for the 21st Century (TEA 21), and supplemented by state funds.

In addition, the PA DCNR uses Growing Greener funds to augment the already successful and highly requested Community Conservation Partnership grant programs. Over five years, DCNR will allocate Growing Greener funding over several existing grant programs to help more communities and organizations meet their conservation and recreation goals. The grant programs funded through Growing Greener include:

- Community Grants (also funded by Keystone 93)
- Rails to Trails Grants (also funded by Keystone 93)
- Land Trust Grants (also funded by Keystone 93)
- Heritage Park Grants

For more information on these grant programs, contact the PA Department of Conservation and Natural Resources at the central office:

Bureau of Recreation and Conservation
Rachel Carson State Office Building
P.O. Box 8475
Harrisburg, Pennsylvania 17105-8475
(717) 783-4734

Or contact the Recreation and Park Advisor for Region I at:
Southeast Regional Office (Philadelphia)
908 State Office Building
1400 Spring Garden Street
Philadelphia, PA 19130
(215) 644-0609

- Also, visit the PA DCNR grants home page at http://www.dcnr.state.pa.us/brc/grants/

The Keystone Land Trust Program
Land Trust Grants provide 50 percent state funding for acquisition and planning of open space and natural areas which face imminent loss. Lands must be open to public use and the acquisition must be coordinated with the communities or counties in which the property is located. Priority is given to habitat for threatened species. Eligible applicants are nonprofit land trusts and conservancies. The funds require a 50 percent match.

Although these funds are targeted to protecting critical habitat for threatened species, many of these lands also provide key open space, greenway, bikeway, trail and heritage corridor opportunities and connections in greenway systems. Many land trusts and conservancies are undertaking greenway initiatives and are willing partners in greenway projects.
Keystone Planning, Implementation and Technical Assistance Program (PITA—DCNR)

Within DCNR’s PITA Program are three separate programs of interest to the greenways and trail community:

- Community Grants
- Rails-to-Trails Grants
- Rivers Conservation Grants

Community Grants provide funds for comprehensive recreation, park and open space plans; greenway plans; site master plans for neighborhood or regional parks; peer-to-peer technical assistance to study park and recreation facilities issues; and other types of planning. Municipal governments (including counties), councils of government (COGs) and some authorities are the only eligible applicants.

Community Grants include a Circuit Rider program, a three-year position for a full-time recreation, greenway and/or park director to share services through an intergovernmental cooperative effort created by two or more municipalities. Available funding for the Circuit Rider’s salary decreases gradually throughout the three-year period from 100 percent to 0 in the fourth year.

Rails-to-Trails Grants may be requested by appropriate non-profit organizations, as well as municipalities. PA DCNR funds up to 50% of eligible costs. Money is provided for rail-trail feasibility studies and master plans and for special-purpose studies, such as studies of bridges, tunnels and culverts, that may impact the conversion of a rail corridor to a trail. Site control, either through ownership or a long-term lease, is required in order to develop a master plan or special-purpose study; however, it is not a requirement for feasibility studies.

Rivers Conservation Grants are available to municipalities and appropriate non-profit organizations for conducting watershed and river corridor studies and plans, many of which include greenway and trail elements. PA DCNR funds up to 50 percent of the cost (maximum $50,000 grant).

Keystone Acquisition and Development Grant Program

The Keystone Acquisition and Development Grant Program includes three components:

- Community Grants
- Rails-to-Trails Grants
- Rivers Conservation Grants

Although these bear the same names as grant programs under the PITA grants, they are separate programs with distinct features.

Under the Community Grant Program, municipalities, COGs and some authorities are the only eligible applicants. These grants provide funding for the purchase of land for park, recreation, or conservation purposes, and the rehabilitation and development of park and recreation areas and facilities, including greenways and trails. Generally, funding is provided for up to 50% of eligible costs. Small Communities/Small Projects grants are included for municipalities with a population of 5,000 or less. Grants are limited to a maximum of $20,000 and will provide up to 100 percent funding of material costs and professional design fees. Grants are for the rehabilitation and development of basic outdoor park and recreation facilities and minor indoor recreation renovations.

The Rails-to-Trails Grant Program is open to municipalities and non-profit organizations. Funding is provided for up to 50% of eligible costs. Grant funds may be used for acquisition of abandoned railroad rights-of-way and adjacent land for trail use and access. Funds may also be used for rehabilitation and development of abandoned rail rights-of-way and support facilities for public recreational trail use.

Under the Rivers Conservation Grant Program, funding is available to both municipalities and appropriate organizations for acquisition and development projects recommended in an approved Rivers Conservation Plan (such as those created under the PITA Program). To be eligible for acquisition or development funding, the Rivers Conservation Plan must be listed in the Pennsylvania Rivers Registry. The state will fund up to 50 percent of the project up to a maximum of $50,000.
The Pennsylvania Recreational Trails Program

In addition, the Pennsylvania Recreational Trails Program provides grants between $2,500 and $100,000 for a wide range of trail development categories for both motorized and non-motorized trails: maintenance and restoration of existing recreational trails; development and rehabilitation of trails side and trailhead facilities and trail linkages; purchase and lease of recreational trail construction and maintenance equipment; construction of new recreational trails (with the exception of new trails on federal land); and acquisition of easements or property for recreational trails or trail corridors. The state will provide up to 80 percent of the funding (up to a maximum of $100,000) except for acquisition projects, which require a 50 percent match. “Soft match” (credit for donations of funds, materials, services, or new right-of-way) is permitted from any project sponsor, whether a private organization or public agency. The Commonwealth may also use up to 5 percent of its funds for the operation of educational programs to promote safety and environmental protection related to the use of recreational trails.

The Department will also give consideration to projects that provide for the redesign, reconstruction, non-routine maintenance, or relocation of recreational trails to benefit the natural environment. Project sponsors are encouraged to enter into contracts and cooperative agreements with qualified youth conservation or service corps to perform trail construction and maintenance.

The Recreational Trails Program is administered by PA DCNR but uses Federal Highway Administration (FHWA) and Transportation Equity Act for the 21st Century (TEA-21) funds. TEA-21’s predecessor legislation, ISTEA, included the Symms National Recreational Trails Act, and thus these grants are sometimes referred to as "Symms Grants." State funding supplements the federal is some years.

Recreational Trails Program grants are available to federal and state agencies, municipal government, organizations, and even private individuals. Grant money may be used for a variety of purposes, including work on trails to mitigate or minimize the impact on the natural environment, provide urban trail linkages, and develop trail side and trail head facilities. DCNR has a detailed grant application manual that includes necessary application procedures, forms, worksheets, sample contracts and agreements, and as well as an environmental survey form. DCNR also provides technical assistance and training workshops for interested applicants.

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

Heritage Parks Program

Heritage Parks are large multi-county corridor and geographic areas that contain heritage elements of national or state significance related to historic industrial themes, such as oil, steel, coal, railroads, and transportation. Through public-private partnerships and a bottom-up grassroots public participation process, regional management action plans are completed to protect and enhance the natural, cultural, recreational, historic and scenic resources of the area. These resources are interpreted, packaged and promoted to create economic development opportunities based on tourism for the area.

Most of the designated State Heritage Parks, including the Schuylkill River Heritage Corridor, and those being planned include greenways, trails and river corridor projects in their regional strategies for preservation, enhancement, interpretation, education and promotion. Some of the state’s best greenway corridors are found in State Heritage Parks and have benefited from funding through the program.

DCNR administers the Heritage Parks Program in conjunction with a task force of other state agencies and non-profit organizations. Annual appropriations from the General Assembly are used to fund study, planning, implementation and management projects in officially designated State Heritage Parks in the Commonwealth. Heritage Parks Grants promote public-private partnerships to preserve and enhance natural, cultural, historic and recreation resources to stimulate economic development through heritage tourism. Grants are available to municipalities, nonprofit organizations or federally designated commissions acting on behalf of the municipalities in a heritage park area. The Schuylkill River Greenway Association coordinates and administers grants for the Schuylkill River Heritage Corridor. Grants are awarded for a variety of purposes including feasibility studies; development of management action plans for heritage park areas; specialized studies;
implementation projects; and hiring of state heritage park managers. Grants require a 25-50 percent local match.

**Growing Greener II Initiative - Governor Ed Rendell**

(Information taken from [http://www.dep.state.pa.us/growgreen](http://www.dep.state.pa.us/growgreen)

Revitalizing Communities through Recreation and Conservation

“DCNR will provide grants to repair and upgrade outdoor recreation facilities in older communities throughout the state, targeted in those areas with other economic development and revitalization initiatives. Funding will be used for greenway development, riverfront access and conservation, tree planting, new park facilities, open space acquisition, and heritage infrastructure. With the $80 million in additional funds, DCNR could help to build 34 new pools, rehabilitate 66 existing pools, build 300 new play fields, develop 500 miles of multipurpose trails, and build 800 new pavilions. How will the Growing Greener bond be used?”

- $330 million for Protecting Open Spaces – protecting threatened lands, preserving farmland, and restoring and improving state parks, Fish and Boat Commission facilities and Game Commission facilities
- $300 million for Environmental Cleanup – abandoned mines, rivers and streams, brownfields and energy harvest
- $170 for Revitalizing Communities – community redevelopment, including parks and conservation projects

**The Community Conservation Partnerships Program – DCNR**

(Information taken from [http://www.dep.state.pa.us/growgreen](http://www.dep.state.pa.us/growgreen)

Applications deadline for 2004 is closed. 2005 open application period will be announced at a future date.

“The Community Conservation Partnerships Program is a combination of several funding sources and grant programs: the Commonwealth’s Keystone Recreation, Park and Conservation Fund (Key 93), the Environmental Stewardship and Watershed Protection Act (Growing Greener), and Act 68 Snowmobile and ATV Trails Fund. The Program also includes federal funding from the Land and Water Conservation Fund (LWCF) and the Recreational Trails component of the Transportation Equity Act for the Twenty-first Century (TEA-21).”

“The C2P2 contains the following grant components: Community Recreation, Land Trusts, Rails-to-Trails, Rivers Conservation, Snowmobile/ATV, Heritage Parks, Land and Water Conservation Fund and Recreational Trails. Except for the Heritage Parks grants, all other components have been combined into one annual application cycle (generally late summer/early fall), and use a single application format and process with one grant manual and one set of application forms. Applications selected for federal LWCF funding require some supplemental information to enable submission of the application to the National Park Service (NPS). Generally, all components require a match, usually 50 percent of cash or in-hand contributions.”

**Hometown Streets, Safe Routes to School Programmed**

(Information taken from [http://www.dot.state.pa.us/penndot/Bureaus/CPDM/Prod/Saferoute.nsf](http://www.dot.state.pa.us/penndot/Bureaus/CPDM/Prod/Saferoute.nsf)

“PennDOT has prepared an application form and process for communities to apply for the Home Town Streets and Safe Routes to Schools programs. Governor Rendell has called for a $200 million investment over four years in Home Town Streets and Safe Routes to Schools. Awards will range up to $1 million per project. Eligible projects for Home Town Streets include sidewalk improvements, planters, benches, street lighting, pedestrian crossings, traffic calming, bicycle amenities, transit bus shelters, kiosks, signage and other visual elements. The program is not intended to cover the costs of street paving, storm water management and traffic signals. Eligible projects for Safe Routes to Schools include sidewalks, crosswalks, bike lanes or trails, traffic diversion improvements, curb extensions, traffic circles, raised median islands and walking paths. Any government agency, school district or non-profit organization is eligible to apply as a project sponsor. For more information on the program please visit [http://www.dot.state.pa.us/penndot/Bureaus/CPDM/Prod/Saferoute.nsf](http://www.dot.state.pa.us/penndot/Bureaus/CPDM/Prod/Saferoute.nsf).”
3. County Level

Montgomery County Green Fields/Green Towns Program

Montgomery County has allocated Lower Merion Township with $3.1M in Open Space Grant monies over the next 10 years (the largest amount allocated to any county municipality). These monies are to be used develop and protect open space and “green” infrastructure such as trails, greenways, park improvements, street trees, public plazas, town center greenery and attractive public places, etc., in an effort to enhance the quality of life, provide for outdoor recreation activities and enhance property values. In accordance with the Montgomery County Green Fields/Green Towns Program Recommendations, December 2003 recommendations within this report can make use of this funding stream. Key items for the Township to consider are as follows:

- If not current, update the Township Open Space Plan to include the recommendations contained in this Ped/Bike Feasibility Study, as “Green Infrastructure Projects” and project any necessary “Land Acquisition”. This is currently under way.
- Apply for Open Space Grants relating to the network including Acquisition Grants, Green Infrastructure Grants, Trail and Pathway Grants and Schuylkill Greenway Grants
- Emphasize importance of potential Township links and access to the Schuylkill River Trail of the Montgomery County Trail System
- Coordinate the continuation of the recommended ped/bike network with adjacent Montgomery County municipalities
- Gain approval of the Montgomery County Commissioners for projects recommended in this study to make use of the 3.1 million dollars of Open Space Grants allocated to Lower Merion Township

4. Local Level

(summaries from “National Center for Bicycling & Walking”, 2002)

Property Taxes – Local governments use property taxes as their principal source of revenue. Property taxes usually flow into a general fund used to pay for the operation of local government. Some municipalities are able to use property taxes for capital improvement projects. Other communities may not be allowed to use monies in the general fund for street improvements or maintenance or projects that voters have approved.

Local Improvement Districts – Where a group of property owners agree that improvements are needed in their immediate neighborhood, they also may agree to pay for such improvements through an assessment levied by the local government. A local ordinance must be enacted to establish a local improvement district and related conditions. Local improvement districts are sometimes known as urban renewal districts, economic improvement districts or business improvement districts.

Impact Fees – Impact fees are a way to fund public infrastructure associated with new development. The idea is to have developers share the cost of improvements required to support the increased demand their projects cause on transportation, water and sewer, schools or other public services. Impact fees usually apply to public improvements directly associated with new development. They typically are not used for general infrastructure improvements.

Exacts – Where local governments place the burden of road improvements on abutting landowners and developers, an exactment can be used to require installation of a sidewalk or other improvement in the public right-of-way adjacent to the landowner’s property.
5. Private Donations

(summary from “National Center for Bicycling & Walking”, 2002)
Private donations can range from corporate investment to individual contributions towards the cost of a community project. Because some pedestrian and bicycle improvements are small and specific, even individuals can participate in making their communities more friendly to walking and bicycling.

6. Foundation Grants and Other Private Funding

Numerous large community, family, and corporate foundations make grants to greenway and trail groups. Copies of directories of foundations can be found in local libraries. The directories provide information on each foundation’s grant making history and philosophy.

  Resources for Global Sustainability, Inc. publishes this report annually. They maintain a database of over 47,000 grant programs that can be searched by keywords to determine the foundations serving a particular area and type of project. The directory is available as hard copy or on a CD.

- Foundations can also be located by searching the Internet.

- Other resources for grant information include local economic development agencies and trust officers at local banks, who manage small family foundations and charitable trusts.

Pew Charitable Trusts
The Pew Charitable Trusts, based in Philadelphia, are a national philanthropy established 48 years ago. Through their grant making, the Trusts seek to encourage individual development and personal achievement, cross-disciplinary problem solving and innovative, practical approaches to meeting the changing needs of a global community. Each year, the Trusts make grants of about $180 million to between 400 and 500 nonprofit organizations in six areas: culture, education, environment, health and human services, public policy, and religion. In addition, the Venture Fund supports independent projects outside of these six areas that take an interdisciplinary approach to broad issues of significant interest or concern.

In particular, the Culture program selectively supports programs for artists and cultural organizations in Philadelphia and has funded history interpretive programs—the Heritage Investment Program has provided technical assistance and challenge grants to historic sites in Philadelphia and the region, and the Philadelphia History Exhibitions Initiative has assisted Philadelphia-area history museums in producing high-quality, innovative exhibitions. Such programs could be used to fund interpretation of trail related historic resources and sites.


The Surdna Foundation
This foundation is a national leader in funding greenway efforts and have funded the Florida Statewide Greenways Program. Surdna supports government, private and volunteer actions that produce a sustainable environment. They encourage the restoration of suburban and urban environments by public and community involvement in education, planning for and advocating environmental appreciation. One area of focus is alternative transportation, particularly reducing vehicle miles traveled and maximizing accessibility over mobility.

- Information on their grants programs can be located at the Surdna web site, [http://www.surdna.org/programs/environment.html](http://www.surdna.org/programs/environment.html)

The William Penn Foundation
The mission of the foundation is to improve the quality of life in the Philadelphia region through efforts that: strengthen our children’s future; foster rich cultural expression; and deepen our connections to nature and community. The foundation has provided substantial and consistent funding during the past few decades for greenway and trail planning and development in the Philadelphia area, including a bi-state greenway project on
the Delaware River, greenways development along the Delaware and Raritan Canal, and funding for the Mid-Atlantic Coordinator position associated with the East Coast Greenway in Pennsylvania. Religious organizations, non-profits and government agencies are eligible applicants.

- Information about the foundation’s Environment and Communities grants can be located at [http://www.williampennfoundation.org/info-url3564/info-url.htm](http://www.williampennfoundation.org/info-url3564/info-url.htm)

Schuylkill River Heritage Corridor Grants

*These grants are for both planning and implementation for community in the Schuylkill River Heritage Corridor.*

- Information on their grants programs can be located at the Schuylkill River Greenway web site, [http://www.schuylkillriver.org](http://www.schuylkillriver.org)

Delaware Valley Regional Planning Commission – Transportation and Community Development Initiative Grants

*These grants are for planning to make generally established communities more friendly to transit-oriented development, walking and bicycling. See attached sheet for typical projects.*

- Information on their grants programs can be located at the DVRPC website, [http://www.dvrpc.org](http://www.dvrpc.org)
F. Recommendations for Future Action

1. Summary of Key Recommendations:
   - Create New Side paths (soft surface) / New Sidewalks (hard surface) with township character
   - Create “Share the Road” Bike Routes and Routes that Parallel High Traffic Volume Roads (i.e. Lancaster/Montgomery/City Ave/Conshocken State)
   - Stripe Bike Lanes where possible
   - Link together Schuylkill River Trail West (a soft surface Multi-Use trail)
   - Formalize portions of Bridlewild Trail Network
   - Link Ped/Bike Network to Adjacent Municipalities and Schuylkill River Trail
   - Implement Signage and Information Systems
   - Educate and inform the public of the benefits of walking and cycling and location of alternative routes.
   - Review potential funding sources including Montgomery County Open Space Funds.
   - Encourage the formation of proactive ped/bike citizen groups and “Safe Routes to School” organizations.
   - Select and prioritize projects for implementation that will make the largest positive township-wide political impact with the largest positive local change with the least amount political opposition.
   - Define and negotiate necessary easements and rights-of-way with land owners.
   - Select planning and design/ engineering consultant team to process and prepare planning, design and construction documents for prioritized legs and segments of trails based on the guidelines established within this study the prioritization committee.
   - Obtain funding from sources that will either provide a matched contribution to outside grant sources or dedicate capital improvements funds for design and construction phases.
   - Coordinate with local municipalities to incorporate desired connections to planned park and recreation and land development sites and facilities.
   - Coordinate with municipal, state and regional agencies to secure appropriate clearances, permits, and authorizations for future construction.
2. System Development Recommendations
The following are solutions for accommodating pedestrians and bicycles in suburban areas. Recommendations sited within this report are in bold. A full township-wide ped/bike system can be developed by following the recommendations suited to the specialties of the following agencies:

### Executive and Legislative Body
1. Assign responsibilities to staff person or agency for addressing bicycle and pedestrian issues.
2. Institute a Bicycle/Pedestrian Advisory Committee.
3. Establish a capital funding program that can be used to fund bicycle and pedestrian related project or leverage state and federal grants.
4. Adopt ordinances to provide bicycle parking facilities at new buildings and employment centers.
5. Institute a public awareness campaign of benefits of bicycling and walking.
6. Provide leadership through the initiation and adoption of a comprehensive bicycle and pedestrian plan.
7. Initiate a citizen participation process that allows public input into decision-making regarding bicycling and walking.
8. Increase the number of areas zoned as mixed-use development.
9. Require all new development plans to include plans for accommodating bicycle and pedestrian facilities.

### Planning Department
1. Develop a comprehensive bicycle and pedestrian plan as a separate plan or as an element in the county and township transportation or open space plans.
2. Develop and implement a procedure for evaluation of bicyclists' and pedestrians' needs in the early planning stages of all capital projects.
3. Implement a bicycle usage monitoring program.
4. Prepare land use plans and ordinances that encourage mixed-use development.
5. Administer a public participation program.
6. Improve bicycle and pedestrian accessibility around schools and transit stations.
7. Prepare plans for linkages between shopping centers, other commercial areas, parks, residential areas, and future land use.
8. Design open space linkages using abandoned rail corridors, stream valleys, utility corridors and other right-of-ways.

### Public Works Department
1. Provide bicycle and pedestrian facilities in conjunction with capital projects.
2. Provide bicycle and pedestrian facilities as independent capital projects.
3. Develop a spot improvement and maintenance program.

### Recreation Department
1. Promote bicycling and walking to parks by providing access facilities.
2. Develop greenways to link open spaces.
3. Conduct bicycle and pedestrian safety programs.
4. Include programs to promote walking and bicycling.

### Police Department
1. Foster safe, shared use of highways by all users through the promulgation of enforcement actions and programs.
2. Develop and conduct educational programs that train bicyclists and motorists in safe bicycling and walking in traffic.
3. Provide training for law enforcement officials in bicycle and pedestrian education and regulations.
4. Implement a bicycle and pedestrian accident monitoring and surveillance system.

### Transit Authority
1. Improve bicycle and pedestrian facilities at transit facilities to encourage bicycling and walking connections to transit.
2. Develop facilities and operational guidelines for carrying bicycles on buses and trains.

### Significant Landowners, Advocacy Groups and Service Organizations
1. Assist with the development of comprehensive bicycle and pedestrian master plans.
2. Monitor legislative, educational, and engineering opportunities for increasing efficient and safe bicycling and walking.
3. Conduct Effective Bicycling or similar education program.
4. Provide assistance to educational institutions in the delivery of bicycle and pedestrian education programs.
5. Conduct or assist with user surveys.
6. Identify barriers to bicycling and walking.
7. Participate in citizen participation or public involvement processes.

### Educational Institutions
1. Acquire or develop educational material that will encourage safe and effective bicycling and walking.
2. Deliver bicycle and pedestrian education programs in conjunction with other curriculum or as a separate program.
3. Support enforcement activities by providing educational elements.
4. Develop programs to promote walking and bicycling to school and at the same time limit student automobile parking.

### Employers and Corporations
1. Encourage bicycling and walking to work as part of an Employee Commute Options Program.
2. Promote bicycling and walking as part of health and wellness programs.

Adapted from PennDOT Statewide Bicycle & Pedestrian Master Plan, April 1996
IV. Methodology

This section contains the processes used during the study to gather information and public input (detailed in Section V: Inventory and Analysis) and make specific recommendations. The methodology below describes in more detail how the study team:

- gathered existing reports and plans;
- conducted a field survey to inventory the Township’s roadways;
- conducted a resident and business survey;
- formed a study steering committee;
- held public and township meetings and interviews with participants;
- developed a draft location plan;
- recommended specific pedestrian and bicycle routes; and
- prioritized the routes for implementation and estimated the costs involved.

A. Existing Plans and Reports

The project team initially conducted a desktop study to review relevant planning documents and reports regarding bicycle, pedestrian, open space, greenway, and pedestrian issues at both the local and regional scale. The following reports were reviewed:

- 1995 Lower Merion Township, “Middle and Upper Mill Creek Open Space Network Master Plan”
- 1995 DVRPC, “Bicycle and Pedestrian Mobility Plan”
- 1996 Lower Merion “Park & Recreation Plan”
- 1996 PennDOT, “Statewide Bicycle and Pedestrian Master Plan”
- 1998 Township of Lower Merion, “Conservationist Agenda”
- 1998 Montgomery County, "A Bike Mobility Plan – Bicycling Roadmap”
- 2001 Lower Merion Township, “Multi-modal Transportation Study, Lancaster/Montgomery Avenue”
- 2001 Township of Lower Merion, “Conservationist Agenda Progress Report”
- 2002 National Center for Bicycling and Walking, “Increasing Physical Activity Through Community Design”
- 2003 Montgomery County. “Green Fields/Green Towns Program Recommendations”
- Undated, James P. Harrison III, “The Mill Creek Bridge, Gladwyne, PA”
- Undated, Lower Merion Township, “Open Space Study”

Global Information System (GIS) data and other township-wide maps were provided to the project team for use as reference materials and base information. Please see Section V.A.1 – Inventory and Analysis for a more in-depth description of materials used.

B. Field Survey

The consultants, on bicycles and foot, conducted a township-wide field survey to inventory the existing pedestrian and roadway systems. The survey documented existing physical conditions that included:

- Measuring the width of all connector/thru streets,
- Locating existing pathways/sidewalks, and
- Assessing potential areas for sidewalks/paths.
- Observing traffic volumes for bike routes/bike lanes.
Please refer to Section V.A.2 - Inventory and Analysis for a more in-depth description of the field survey. Although design standards will pay special attention at many points along the network, the following criterion was used as a general basis for assessment:

<table>
<thead>
<tr>
<th>Standard Sidewalk Dimensions</th>
<th>Standard Bikeway Dimensions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Width</strong> (varies by type of street, larger number preferred):</td>
<td><strong>Standard Bikeway Width</strong> (One-way travel; recommended width depends on motor vehicle speed and volume.)</td>
</tr>
<tr>
<td>• Local = 5 to 6 ft</td>
<td>Bike Lane = 4 to 6 ft</td>
</tr>
<tr>
<td>• Commercial area outside downtown = 8 to 10 ft</td>
<td>Paved Shoulder = 4 to 6 ft</td>
</tr>
<tr>
<td>• Downtown = 10 to 12 ft</td>
<td>Wide Curb Lane (shared by cars and bikes) +/-14 to 16 ft</td>
</tr>
<tr>
<td><strong>Horizontal Clear Space</strong> = 3 to 5 ft</td>
<td></td>
</tr>
<tr>
<td><strong>Vertical Clear Space</strong> = 7 to 8 ft</td>
<td></td>
</tr>
<tr>
<td><strong>Planting Strip</strong> (buffer zone)</td>
<td></td>
</tr>
<tr>
<td>Between sidewalk and street = 4 to 8 ft</td>
<td></td>
</tr>
<tr>
<td><strong>Surface vertical change</strong></td>
<td></td>
</tr>
<tr>
<td>(abrupt, such as sidewalk cracks) = 1/4 in. maximum</td>
<td></td>
</tr>
<tr>
<td><strong>Surface gap</strong> = ½ in. maximum</td>
<td></td>
</tr>
<tr>
<td><strong>Slope</strong> in direction of travel = 5 percent maximum (1:20)</td>
<td></td>
</tr>
<tr>
<td><strong>Cross-slope</strong> across direction of travel = 2 percent maximum (1:50)</td>
<td></td>
</tr>
</tbody>
</table>

C. Resident and Business Survey

A “Resident and Business Survey” was randomly sent by the township to approximately 800 households/businesses, 5% of the 23,000 household/58,000 population township. Please see Appendix B: Resident and Business Survey Example for an example of the survey delivered to the citizens. Included in the survey are “Businesses” who may also turn out to be important stakeholders. Some business owners/employees may not live within the township but may also wish to have a voice. The survey was designed to determine the level of public support, needs and issues involved with the implementation of a township-wide network. Please refer to Section V.B.1 - Inventory and Analysis for a more in-depth summary of the Resident and Business Survey’s findings.

Citizen Survey - SUMMARY (results compiled: ~300/800 responses)

- Recreation Preferred Activity followed by Walk/Bike to Town Centers and Natural Areas
- 46% say it not easy to walk and bike in Township
- 68% want access to the Schuylkill River
- 58% will use new connections
- Paths should be Increased/Improved
- Access to Natural Areas and Community Places should be Increased
- Safety/risk of Accident is top concern
- 50% willing to support capital expenditure to Increase Recreation and Access
- Only 8% have no interest in study
- Points of Interest and Routes to travel were identified

D. Public and Township Meetings

**Newsletter:** The Township informed the residents of Lower Merion of this Township-wide Feasibility Study in the Township’s Community Newsletter mailing.

**Ideas Workshop:** An Ideas Workshop was held to gather information and input from various interested parties regarding the potentials for the township-wide system. The agenda included a public design charrette and presentation of the public’s ideas. The same workshop was given twice, once in each of two township locations.

**Design Workshop:** A Design Workshop was held to present initial study findings/recommendations and to allow various interested parties to revaluate route alternatives and implementation priorities. The same workshop was given twice, once in each of two different township locations. Please refer to Section V.B.2 - Inventory and Analysis for a more in-depth description of the above workshops.
Study Steering Committee Meetings:

A Study Committee was formed to review findings and to advise and steer the study process. Meetings were held at strategic intervals when key findings were to be presented, information was needed or political or process direction was requested. The Township invited members of the Township Staff, and both Local and Regional Groups and Organizations to attend the committee meetings. Invited members included the following:

<table>
<thead>
<tr>
<th>Core Committee Agency</th>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lower Merion Building &amp; Planning</td>
<td>Liz Rogan, Special Projects</td>
</tr>
<tr>
<td>Lower Merion Public Works</td>
<td>Brendan Lederer Open Space Crew Leader</td>
</tr>
<tr>
<td>Lower Merion Parks &amp; Rec. Commissioner</td>
<td>Matthew Comisky Commissioner</td>
</tr>
<tr>
<td>Lower Merion Parks &amp; Rec.</td>
<td>Lindsay L. Taylor Director</td>
</tr>
<tr>
<td>Lower Merion Police</td>
<td>Traffic Safety Unit</td>
</tr>
<tr>
<td>Lower Merion Economic Development Specialist</td>
<td>Eric Persson, Economic Development</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Area Municipalities/Organizations</th>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>National Park Service/ Rivers/Trails &amp; Conservation Community Assistance Program</td>
<td>Bob Potter</td>
</tr>
<tr>
<td>Dept. of Conservation &amp; Natural Resources</td>
<td>Victor Banks, Recreation Advisor</td>
</tr>
<tr>
<td>Delaware Valley Regional Planning Commission</td>
<td>John Madera</td>
</tr>
<tr>
<td>Montgomery County Planning Commission</td>
<td>John Wood, Chief of Open Space Planning</td>
</tr>
<tr>
<td>Schuykill River Greenway Association</td>
<td>Dixie Swenson, Executive Director</td>
</tr>
<tr>
<td>Haverford Township</td>
<td>Tim Denny, Director Parks &amp; Recreation</td>
</tr>
<tr>
<td>Radnor Township</td>
<td>Tom Blomstrom, Director Parks &amp; Recreation</td>
</tr>
<tr>
<td>Upper Merion Township</td>
<td>Dave Broida, Director Parks &amp; Recreation</td>
</tr>
<tr>
<td>Upper Darby Township</td>
<td>Joseph R. Manfre, Director</td>
</tr>
<tr>
<td>Darby Creek Watershed</td>
<td></td>
</tr>
<tr>
<td>City of Philadelphia/ Fairmount Park Comm.</td>
<td>Stephanie Craighead, Deputy Dir. for Planning</td>
</tr>
<tr>
<td>City of Philadelphia/ Street Dept. (Bike lanes)</td>
<td>Bob Wright</td>
</tr>
<tr>
<td>Borough of West Conshohocken</td>
<td></td>
</tr>
</tbody>
</table>

Ad Hoc Representatives

<table>
<thead>
<tr>
<th>Group/Organization</th>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lower Merion School District</td>
<td>Bob Shultz, Director of Facilities</td>
</tr>
<tr>
<td>Penn Valley Civic</td>
<td>Sally Mattison, Barry M. Harvis</td>
</tr>
<tr>
<td>Bridlewild Trails Association</td>
<td>Jim Winsor or Vickie Gershon</td>
</tr>
<tr>
<td>Lower Merion Conservancy</td>
<td>Mike Weilbacher, Executive Director</td>
</tr>
<tr>
<td>Riverbend Environmental</td>
<td>Russ Johnson, Education Executive Director</td>
</tr>
<tr>
<td>Natural Lands Trust</td>
<td>Dave Steckel</td>
</tr>
<tr>
<td>LM Business Community</td>
<td>Jim Franks, Main Line Fence</td>
</tr>
<tr>
<td>Environmental Action Committee</td>
<td>Barry Jefferies, Ralph Grasso</td>
</tr>
</tbody>
</table>
E. Interviews with Significant Landowners and Organizations

The above study committee suggested the project team meet with the following people, beyond the public workshops, to aid in collecting information and garnering support for the ped/bike system:

<table>
<thead>
<tr>
<th>Individual Organizations</th>
<th>Agency Interest Groups</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>LMT Parks and Recreation</strong></td>
<td><strong>Regional Perspective</strong></td>
</tr>
<tr>
<td><strong>LMT School District (LMSD)</strong></td>
<td>John Madera (DVRPC), John Wood (MONTCO), Don Gephart (DCNR), Brian Vitulli (SEPTA), Bike/Ped Task Force</td>
</tr>
<tr>
<td><strong>Lower Merion Conservancy</strong></td>
<td>Curt Zwickl/David Downs</td>
</tr>
<tr>
<td><strong>Norfolk Southern</strong></td>
<td><strong>Schuylkill River Greenway</strong></td>
</tr>
<tr>
<td><strong>Utilities</strong></td>
<td>Russ Johnson</td>
</tr>
<tr>
<td><strong>Riverbend Environmental Education Center</strong></td>
<td><strong>Club and Association Interest Groups</strong></td>
</tr>
<tr>
<td><strong>Significant Landowners</strong></td>
<td><strong>Recreational Clubs</strong></td>
</tr>
<tr>
<td><strong>University/College Committees/Administration</strong></td>
<td>Bryn Mawr Running Club (Bob Schweln note:Wed's night runs) and clubs associated with Bike Line and Eastern Mountain Sports; Bicycle Coalition Delaware Valley (John Boyle)</td>
</tr>
<tr>
<td><strong>Philadelphia Country Club Woodmont</strong></td>
<td><strong>Bridlewild Trails</strong></td>
</tr>
<tr>
<td><strong>Henry Foundation West Laurel Hill Cemetery</strong></td>
<td>Vicki Gershon and Jim and Donna Winsor</td>
</tr>
<tr>
<td><strong>Natural Lands Trust – Reserve in LMT; e.g. Saunders Woods</strong></td>
<td><strong>Federation and Penn Valley Civic Association</strong></td>
</tr>
<tr>
<td><strong>Barnes Foundation Arboretum Lankenau Hospital</strong></td>
<td>Penn Valley is one of two associations that expressed interest in study</td>
</tr>
<tr>
<td><strong>Adjacent Governments</strong></td>
<td><strong>Neighborhood Crime Watch</strong></td>
</tr>
<tr>
<td><strong>Appropriate Adjacent County and Township Representatives:</strong></td>
<td>Mat Peskin (good for on-street safety)</td>
</tr>
<tr>
<td><strong>West Conshohocken</strong></td>
<td>Narberth</td>
</tr>
<tr>
<td><strong>Upper Merion Township</strong></td>
<td><strong>Upper Merion Township</strong></td>
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<tr>
<td><strong>Radnor Township</strong></td>
<td><strong>Radnor Township</strong></td>
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<tr>
<td><strong>Haverford Township</strong></td>
<td><strong>Haverford Township</strong></td>
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<tr>
<td><strong>Delaware County</strong></td>
<td><strong>Delaware County</strong></td>
</tr>
<tr>
<td><strong>Montgomery County.</strong></td>
<td><strong>Montgomery County.</strong></td>
</tr>
<tr>
<td><strong>City of Philadelphia</strong></td>
<td><strong>City of Philadelphia</strong></td>
</tr>
</tbody>
</table>
Interview Workshops

“Interview Workshops” were held at the Township Building with two focus groups invited: 1) Significant Landowners, and 2) Interest Groups and Organizations. The formats of these workshops were similar in scope to the Public Ideas Workshops. More detail is provided below in Section V.B.2. – Inventory and Analysis.

Districts

The Lower Merion School District and the City Avenue Special Service District were also interviewed to discuss ideas and directions on the potential of a fully integrated ped/bike network in and around district grounds. More detail is provided below in Section V.B.2. – Inventory and Analysis.

Site Visits

Also, individual site visits were held with the Riverbend Environmental Education Center and Lower Merion Conservancy, two of Lower Merion Township’s major open space and education organizations to help determine the feasibility of trails in and around their properties. More detail is provided below in Section V.B.2. – Inventory and Analysis.

F. Draft Location Plan

Location feasibility for identifying bicycle and pedestrian routes is directly determined by two major factors:

1) Physical constructability, including environmental and technical concerns, and
2) Public/Landowner acceptance and desires.

A draft plan (see: Appendix A: Township of Lower Merion Bicycle and Pedestrian Path System Draft Plan) was developed to help analyze the potential physical locations for the bicycle and pedestrian network. The draft plan documents the potential walking and cycling routes through out the Township. Only township roadways that link to other “connector” streets were analyzed in detail. The routes shown on the map were selected considering the information gathered from Existing Plans and Reports, the Field Survey, the Resident and Business Survey, Public Ideas Workshops, Township Meetings, Owner/Organization Interviews and Site Visits. In general, the public aided in locating paper streets, trails off-of-the-map, and other hidden connections that are or could be used by residents. Public acceptance and desires were critical in developing the recommendations of specific routes in the next level of analysis. A more detailed description of the draft plan can be found in Section V.D. - Location Feasibility.

G. Method of Recommendation of Specific Routes

From the Draft Location Plan, the design consultants in coordination with the study committee began to select a network of Bicycle Routes, Pedestrian Routes and a potential Greenway Trail. The information and discussions held at the Public Workshops and data collected from the Residents and Business Survey greatly influenced the selection of the networks, in many cases, by example of how residents currently cycle or walk across the township. In other cases, residents identified major ped/bike gaps, by which, if filled in, would open large opportunities for walking and/or cycling. Other approaches included the evaluation of:

- Physical topography, traffic volumes, natural and built features, utility corridors, proposed development, historical features, were also analyzed prior to selection of the network. See Section V. – Inventory and Analysis.
- Proximity to and safe access from neighborhoods and town centers were a critical element of selecting the routes,
- Linking parks, open space and recreation facilities together were strong desires that were integrated into the design.
- Existing sidewalks, trails and roadways across the township also helped in identifying specific routes. The more the proposed route could make use of existing pathways the less construction would need to occur to open the corridor.
- Ownership of land - whether private or public; existing right-of-ways; knowledge of owner acceptance of trails/pathways, etc all played an important role in selecting route corridors.
H. Method of Prioritization of Routes with Estimated Costs and Impacts

The study committee and consultants selected 4 main routes to study in more detail and estimate physical construction costs as identified in Appendix A: FIG: MAPKEY with proposed route identification numbers as follows:

Pedestrian Route Sample Implementation
   A. Schuylkill River Trail West
   B. Public Footpath to Gladwyne/Bryn Mawr

Bicycle Route Sample Implementation
   C. Bicyclist’s City Avenue
   D. Spring Mill Road Bike Route

These routes were selected with the following in mind:

- These are projected as the easiest projects to implement, from the standpoint of cost and constructability
- These projects benefit the residents of Lower Merion and the region giving safe access to the Schuylkill River, the Schuylkill River Trail, Township parks and trails, creating a safe walking/jogging route from Gladwyne to Bryn Mawr, creating a safe bicycling route parallel to and allowing access to City Avenue shopping, and creating a safe bicycling route with bike lanes from West Conshohocken to Radnor Township
- These specific projects provide a good “cross section” of various conditions from which to estimate cost; which then can be applied to the rest of the 250 network segments contained in the study
v. Inventory and Analysis

This section contains the information and public input gathered as a result of the study’s methodology. This information has been used as the basis for the study’s design assumptions and recommendations. The information can be seen as a “trail resource” to be used by the Township and design professionals when working on the next phases of implementation. The information below contains:

- township-wide base maps;
- field survey measurements and findings from specific site visits;
- a summary of physiographic features and a utility review of particular areas studied;
- a summary highlighting the business and resident survey findings;
- detailed comments from meetings and workshops held;
- summaries of discussions with Lower Merion School District and City Avenue Special Services District;
- an understanding of demographics and user demand;
- a description of key elements located on the township-wide draft analysis plan; and
- an understanding of the potential legal issues involved.

A. Physical Conditions

1. Existing Plans and Base Maps (GIS)

The project team requested and gathered “Existing Plans” and “Base Maps” from the Township in order to proceed with trail analysis. These fall into two main categories 1) Geographic Information System (GIS) and 2) Other Township Maps as follows:

a) GIS

GIS information requested from the Township included:

- Ortho Photography, 2000 March
- Property Lines and access to Property Identification #’s (50% Quality assured)
- Planometrics
  - Elevation Points
  - Contours
  - Hydrology
  - Rights of Way
  - Transportation—roads/ rails/sidewalks/bridges
  - Built Structures
  - Utilities

After conversations with Karen Roads and Rob Philips, database specialists at Lower Merion Township, the project team compiled the Township's GIS base information and the project team converted it into an AutoCAD 2000 readable format for use as the study’s basemap. Overall, the Township provided three major pieces of data:

1) Orthophotography as of March of 2000, that are 100% quality assured (QA’d)
2) Property Lines. These are about 50% quality assured by the Township.
3) Planometrics in various GIS layers and file types. This information was not quality assured as the township is still checking accuracy and attributing information.

The Township could not provide electronic nor paper maps showing utility locations. The rights-of-way GIS data was provided digitally, however this information was not completely quality assured and it was understood that the information be used for planning and not be used for engineering purposes.

The planometric information consisted primarily of .ADF files (or Adapter Description Files/ARCView ARCInfo Coverage Data Files) and .TWF files (Tab Works Files/Geo Referenced Information Files) and contained the following “layer” sets:

<table>
<thead>
<tr>
<th>Layer</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1)</td>
<td>transport</td>
</tr>
<tr>
<td>2)</td>
<td>structures</td>
</tr>
<tr>
<td>3)</td>
<td>railroad</td>
</tr>
<tr>
<td>4)</td>
<td>bridges</td>
</tr>
<tr>
<td>5)</td>
<td>centerline</td>
</tr>
<tr>
<td>6)</td>
<td>contours</td>
</tr>
</tbody>
</table>
7) elevations TEXT and .DAT files) 11) misc files, (containing .DBF, .PRJ, .TAT, .TXX, .NIT, .DIR, .XML files) making:
   a. apts_shops
   b. census_blocks
   c. lmt_soils
   d. river
   e. town_streams

The Township informed us that the Coordinate Base Point Reference System for the GIS mapping is:

NAD_1983_STATEPLAIN_PENNSYLVANIA_SOUTH_FIPS_3702_FEET

The Geographic Coordinate system is:

GCS_NORTHAMERICAN_1983

b) Other Township Maps

Other Township Maps requested from the Township included:

- Zoning Maps
- Land Use Maps
- Historic Districts Map
- Parks Map
- Existing Trails (i.e. Bridlewild and others)
- Posted Bicycle Routes
- Government Services and Schools (i.e. fire stations, post offices, libraries and other facilities)
- Tax Maps and other property ownership documents
- Public Transportation (i.e. bus routes, trolleys, railroad stations)
- Slope Maps (we can create from GIS)
- Wetlands/Flood Plain Maps
- Woodland Maps
- Traffic Volume Maps
- 1990 Population Data (available from ERSI website)
- Proposed Development
- Utilities Maps (if GIS is not available)

The Township Planning Department has access to paper copies of the above information. In the past, consultants working for the Township would come in and, with the assistance of planning division staff, ‘dig’ for this information. Angela Murray and Karen Rhoads reported that the Township does not have the following information:

1. Land Use Maps
2. Posted Bicycle Routes
3. Government Services and Schools
4. Public Transportation
5. Traffic Volume Maps
6. Utilities Maps

Maps of Zoning, Historic Districts, Parks and Existing Trails are all available to some extent as paper documents. Tax Maps and deed registrations are on file at the Township. This material can be viewed at the Township Administration Building in the Planning Division. The same would be true for Proposed Developments. 1990 (and 2000) Census data is best found on the Internet from either Penn State’s State Data Center or at www.census.gov. The Township has Wetlands/Floodplain Maps and Woodlands Maps in progress both digitally and in paper but the Planning Department should be contacted to access this information.

2. Field Survey

The project team conducted a township-wide field survey to document the existing conditions of the township’s roadways system – i.e. widths of all thru-roadways, location of existing sidewalks and on-street parking – and analyzed “in-the-field” the potential conditions for new bike routes/lanes, sidewalks/sidewalks, and trails. The map (shown below) acted as the base data for the draft and master network plans. The study focused on roadways which lead somewhere or connect to other arterial roadways. The Township code similarly defines these roadways as primary, secondary and tertiary streets. Roadways that do not connect to another thru-roadway were considered “quiet neighborhood streets” and were not surveyed. Similarly by code definition these are considered “minor” streets and culs-de-sacks. The project team recorded the following, as shown in a portion of the survey:

---
<table>
<thead>
<tr>
<th>FIELD SURVEY</th>
<th>Existing Conditions</th>
<th>Demarcation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Green Roads</td>
<td>In green color</td>
<td></td>
<td>These are thru-roadways that connect to the arterial system that have both low-traffic volumes and speeds and are considered to be pedestrian and bicycle friendly.</td>
</tr>
<tr>
<td>Existing Roadways</td>
<td>2L-27’</td>
<td></td>
<td>Where 2L = number of travel lanes; 27’ = width in feet.</td>
</tr>
<tr>
<td>Existing Parking</td>
<td>P E Side</td>
<td></td>
<td>Where P = parking lane; E Side = cardinal side of street.</td>
</tr>
<tr>
<td>Existing Sidewalks</td>
<td>Solid red line</td>
<td></td>
<td>Sidewalk exists on side of street as shown.</td>
</tr>
<tr>
<td>Existing Trails</td>
<td>Dotted red line</td>
<td></td>
<td>Off-road trail exists as shown</td>
</tr>
<tr>
<td>Existing “Bench”</td>
<td>Dashed red line</td>
<td></td>
<td>Areas along sides of roadways that have potential to become a sidewalk/sidepath</td>
</tr>
<tr>
<td>Pedestrian Rating</td>
<td>P or P</td>
<td></td>
<td>Roadway rated “Pedestrian Friendly” or “Pedestrian Un-friendly”</td>
</tr>
<tr>
<td>Bicycle Rating</td>
<td>B or B</td>
<td></td>
<td>Roadway rated “Bicycle Friendly” or “Bicycle Un-friendly”</td>
</tr>
</tbody>
</table>

Sample Field Survey
3. Natural/Built Features and Utilities

a) Physiographic

The primary consultants involved with this study experienced the physiographic nature of Lower Merion Township first hand by conducting a field survey of all “connector roads” within the township while riding their bicycles. Some hills were a treacherous climb and some were an exhilarating downhill. The topography of the township is essentially the mesa of the “main line” with creek and stream valleys cutting deep fingers into the banks of the Schuylkill River Valley. These natural features of the landscape have defined the locations of the existing roadway system, the existing pathway network and have affected residential and commercial development patterns. The Schuylkill River itself and the rolling is one of the most beautiful natural features in the Township, but has become, for the most part inaccessible to residents due to the creation of the I-76 expressway. Such physiographic features also informed the location and alignment of the Schuylkill River Trail West and the proposed bicycle and pedestrian routes. The path of least resistance was chosen as often as possible making a trail that weaves in and out of the creek valley fingers as steady grades.

This study also conducted a desktop study of the physiographic features utilizing GIS information. As well, this study referenced the most complete physiographic report of township in the 1995 Open Space and Environmental Resources Plan (OSER) complied by and now currently being updated by Natural lands Trust. The Open Space Plan Update of 2004 maps the following for future reference:

- Existing Protected Lands
- Historic Resources
- Scenic Views
- Scenic Road Corridors
- Hydrologic Features
- High Water Table Soils
- Topographic Features
- Geology
- Agricultural Soils
- Shallow Soils
- Woodlands
- And More
PennDOT Roadways

The following segments of the proposed pedestrian/bicycle system share PennDOT roadways as shown in the table and map below (PennDOT roads are shown in red). Special consideration should be given to any planned improvements/implementation in these areas. Improvements must be coordinated with PennDOT District 6 and comply with PennDOT design regulations and standard review processes.

<table>
<thead>
<tr>
<th>Shared Segments (From/To)</th>
<th>ADT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Entire Length - Conshohocken State Rd</td>
<td>27000</td>
</tr>
<tr>
<td>West Rock Hill Road/Rock Hill Road</td>
<td>7400</td>
</tr>
<tr>
<td>Vaughn’s Lane/Waverly Road</td>
<td>10000-17000</td>
</tr>
<tr>
<td>Spring Mill Road/West Conshohocken Municipality</td>
<td>17000</td>
</tr>
<tr>
<td>Entire Length-City Line Ave/County Line Ave</td>
<td>20000-34000</td>
</tr>
<tr>
<td>County Line Rd/Montgomery Ave</td>
<td>11000</td>
</tr>
<tr>
<td>Spring Mill Rd/Spruce Lane</td>
<td>11000-17000</td>
</tr>
<tr>
<td>Montgomery Ave/Old Gulph Rd</td>
<td>6000</td>
</tr>
<tr>
<td>Spring Mill Rd/Matson Ford Rd</td>
<td>11000</td>
</tr>
<tr>
<td>Township Line/City Line Ave</td>
<td>13000-15000</td>
</tr>
<tr>
<td>City Line Ave/Argyle Rd</td>
<td>19000</td>
</tr>
<tr>
<td>Haverford Ave/Wynnewood Rd</td>
<td>5600</td>
</tr>
<tr>
<td>Township Line/Haverford Rd</td>
<td>6700</td>
</tr>
<tr>
<td>Argyle Rd/Spring Avenue</td>
<td>17000</td>
</tr>
<tr>
<td>Township Line/Lancaster Ave</td>
<td>8500</td>
</tr>
<tr>
<td>Township Line/Lancaster Ave</td>
<td>6200</td>
</tr>
<tr>
<td>County Line Rd/Lancaster Ave</td>
<td>12000</td>
</tr>
<tr>
<td>Montgomery Ave/West Conshohocken Municipality</td>
<td>11000-15000</td>
</tr>
<tr>
<td>City Line Ave/Interstate 76</td>
<td>15000-27000</td>
</tr>
<tr>
<td>Belmont Ave/Conshohocken State Rd</td>
<td>9100</td>
</tr>
<tr>
<td>Hagys Ford Rd/River Road</td>
<td>7800</td>
</tr>
</tbody>
</table>
b) Utility Review

A review of utilities was conducted for the major off-road segments of the Township Wide Pedestrian Network. Most of these major off-road trails can be identified in the northeastern corridor of the bicycle and pedestrian network in the estates area along the Schuylkill River. The purpose of this review was to see if there were any utility corridors that could double use as both an utility easement and a trail corridor. According to Joe Newby, planning office, Lower Merion Township, the Township does not have any sewer easements in areas along the Schuylkill River; other areas throughout the Township have sewers in the public ROW of the streets. Mr. Newby provided a list of the utilities on the PA One Call list with the name and contact person of each of the ten utilities that have service connections in the township.

PA One Call was contacted March 23, 2004 to inquirer about the general off-road corridors in question. In order for the request to be investigated they required specific routes. This was difficult to provide since the specific areas of the off-road trails cannot easily be determined, such as determining the side of the street and intersections. To the best of the study’s knowledge we identified three main corridors for PA One Call to investigate. They gave us the identification numbers for the three areas. It should be noted that, the best time to conduct a ‘One Call’ for trails is after a specific project has determined a more detailed alignment. This call should occur again during future pre-design activities.

The ten potential utility companies that could have utilities in the area are:

1. AT & T,
2. Cavalier Telephone,
3. Comcast Cablevision of Lower Merion,
4. AT& T local services,
5. Aqua Pennsylvania Inc.,
6. PECO Energy,
7. MCI,
8. Abovenet Communications Inc.,
9. Wiltel Communications LLC, and
10. Verizon Pennsylvania Inc.

The off-road corridors areas in question are:

- The proposed pedestrian area in the northeast corner of the township along the river from Conshohocken State Road east to a small eastern portion of Spring Mill Road and back on west side of the river to Kenealy Nature Park on Lafayette Road and heading south along the Rock Creek Valley to Stony Lane, continuing along Youngsf ord Road to Waverly Road. There are no sewers in this area.

- The next area is the connection at Flat Rock Park heading south along Mill Creek Valley Park area along Mill Creek Road starting at River Road west to Rose Glen Road becoming Youngsf ord Road where it insects passing Conshohocken State Road and intersects through to Merion Square Road ending at Dodds Lane. All the township sewers are in the street and the few connections that run between houses would not be suitable for trail connections according to Joe Newby. Rose Glen Road has some small areas set back from the street, but nothing of substantial size to use as a corridor or connection.

- The Schuylkill River bank between the river and I-76 (“Harry Olsen” trail) from Hollow Road to Belmont Avenue also does not have sewers.

- No information has been discovered on the abandoned Pennsylvania Railroad bed off Rock Hill Road and Belmont Avenue now owned by PECO.

- From West Mill Creek Park at the intersection of Mill Creek and Crosby Brown Roads following a Mill Creek tributary westward to Righters Mill Road at Margo Lane near Penn Valley School; sewers do not exist in these off-road areas.

- The township does not have any ROWs or easements through Lankanau Hospital property off Lancaster Avenue to Haverford Avenue or in Westminster Cemetery.
PA One Call

The following utility companies sent plans of the specific areas in question (above) on the proposed trail alignment as requested from PA One Call.

**Philadelphia Suburban Water Company**

Most of Philadelphia Suburban Water Company water lines in Lower Merion Twp lie in the ROW with some in the macadam roadway, while on other streets, the lines are on the shoulder behind the curb. The cover on the pipes varies, some of which is about five to ten feet according to some plans that have cross-sections and road profiles shown. The majority of these single pipe lines are six, eight and twelve-inch ductile iron (DI) and cast iron (CI). Some exceptions are as follows:

- Conshohocken State Road from Black Rock Road to the intersection of Vaughan Lane has two parallel pipe lines in the ROW, one on each side of the street. Younsgford Road also has two lines above the intersection of Conshohocken State Road.

- Gulph Road that has a bridge a few feet before it intersects Merion Square Road, has a five-foot main off the south side of the road. There is no indication of the depth of the main before and after it goes over the bridge. It runs along the underside of the concrete bridge.

- Between Briar Hill and Monk Roads, (cul du sacs overlooking the river), there is a pipe section connecting the two roads at Soapstone Drive. (new development?) No identifying information about the size or cover; only a location across what appears to be private land

**PECO**

Gas and electric lines are generally in the street ROW on the shoulder with only an occasional crossing under the macadam roadway.

Gas transmission and distribution lines generally lie in the ROW meandering between the side of the roadway and center while some lines run irregularly in the roadway.

The newer developments will have underground electric such as in the areas of Younsgford Road and Merion Station, while the older developments have above ground utility poles for transmission.

Both the PECO and Philadelphia Suburban Water Company lines will need to be verified prior to the final location of the pedestrian and bike trail alignment. A variety of conventions have been followed over the years along with changes due to maintenance and road realignments.

c) **Wildlife Summary**

Located just outside of Philadelphia, Lower Merion provides its residents with relatively good natural resources: rolling topography, trees along streets, protected open spaces, and several creeks and streams such as, Mill Creek in Bryn Mawr and Gladwyne, Indian Creek in Wynnewood, Gulley Run in Belmont Hills, etc.

It seems that natural environment in the Township supports a variety of wildlife habitats, however, no intensive wildlife inventory has been performed to this time. This summary report is prepared for Lower Merion Trail Feasibility Study and mostly based on 3 reports, the Birds of Lower Merion (2002), Muddy Waters (2002 Mill Creek Report), and 4th July Butterfly Count plus empirical knowledge from the executive director of the Riverbend Environmental Education Center. This study has not found evidence of wildlife within the Township that could be of concern to the development of a Township-wide ped/bike network.

**Birds**

In 1997, the Lower Merion Conservancy initiated a bird watch program to survey birds in Lower Merion natural areas like West Laurel Hill Cemetery and Saunders Woods. Over the six years, they found a number of bird
species residing in or migrating through the Lower Merion Landscape. According to the 2002 report, 134 bird species were identified in 2002 including 2 new species observed for the first time, Willet and Caspian Tern, and total of 176 species have been spotted over the six years by volunteers for the program.

The total number of species and birds slightly varies from year to year. However, the most common species remain unchanged. The top five species that are most populated in Lower Merion Township include robins, grackles, geese, starlings and crows.

Aquatic Life
There have been no specific inventories completed for fish, amphibians and reptiles in Lower Merion. However, the Mill Creek Report (2002) shows some important indication of aquatic ecosystem in Lower Merion. Even though the creek is in fair condition that still is able to support aquatic life, it appears to be worsening due to the negative impact of suburban development, the destruction of habitat and water quality.

Native Brook trout once populated in the waters of Lower Merion, but disappeared decades ago. Many species of clean-stream insects and worms are also no longer found in the creek, resulted in fewer number of fish and the lack of diversity in the aquatic life.

Mammals
There have been also no intensive inventories performed for mammals in Lower Merion. The animals listed below are from empirical knowledge. Wild animals that reside in the township are as follows:

- Fox, Coyote, Squirrel, Chipmunk, Flying Squirrel, Groundhog, etc
- Deer are overpopulated
- No evidence of PA endangered species

\[ d\) Proposed Development \]

Andrea Campisi, Township Planner, reviewed some future developments, but it appears that they will not impact the recommendations proposed in the bike and trail feasibility study.

- **Lower Merion School District:** The School District is currently selecting sites to develop one or two new high schools within the township. This would include a new master plan. The recommended ped/bike routes should be coordinated with the School District.

- **Appaloosa:** There is a recently built residential development I-76 that was not identified in the GIS data that is an extension of Wesley’s Run Road off of Conshohocken State Road nearest West Conshohocken and I-76. This development is on a steeply graded site and although there are multiple units on the 25 acre + piece of land, the land is not subdivided. There is a thirty foot wide sewer easement that runs the length of the site and a 100’ foot building setback line. A trail associated with the proposed Schuylkill River West Trail could physically be accommodated within this building setback line along the hidden wooded banks of the Conshohocken Curve.

- **Page Terrace:** There is a newly built development of 4 homes (no development name) on Page Terrace between Conshohocken State Road and Spring Mill Road which is an extension of an existing cul du sac. The township developed a preservation/open space overlay behind the homes with the anticipation of a trail. However, the new owners collectively did not want a public trail behind their homes to which the township agreed. The width of the overlay area that permanently restricts further development in this area varies from 25 feet to possibly 50 feet. According to Andrea Campisi, there may be a better opportunity to put in paved sidewalks in the front of the new homes especially since the residents do not want a trail open to the public behind their property. The proposed trail network does not align near this development.

- **Reserve at Maybrook:** A 21.5 acre preservation area is proposed to be located in the northeastern portion of a proposed subdivision on Penn Road called “The Reserve at Maybrook”. The 44 acre parcel was submitted to the Township for approval in the Preliminary Subdivision/Land Development Plan and Conditional Use process. The parcel is proposed to be subdivided into six lots to include a 250 unit apartment building, an attached 3-story parking garage and surface parking area with another 125
additional parking spaces to be held in reserve. There is a 21.5 acre preservation area that is located in the estate portion of the property, which currently has a walking path through it that can perhaps be a potential connection to the proposed development with the proposed Township-wide bike/pedestrian plan. This can be finalized when the subdivision is approved in the future. The proposed Bicycle Network does share alignment with the asphalt path noted above and will require immediate coordination.

- **Mill Creek Condos**: A development is proposed that will renovate the historic Mill Creek mill (Barker Mill) into condominiums at 1400 Mill Creek Road. Two Bridlewild Trials exist along Mill Creek's Northwestern Bank behind Barker Mill to Rolling Hill Park. One follows the elevation of the creek, passes the recently stabilized Millhouse Ruins, and connects to a switch-back trail that ascends the hill to Rolling Hill Park's entrance. The other existing trail follows a gradual climb from the rear parking lot of Barker Mill to the entrance of Rolling Hill Park. A new building is proposed along the banks of these existing trails. The trails are planned to remain as part of the development. Because this study recommends the Schuylkill River West Trail share alignment with one or both of these trails coordination with the developer will be necessary.

### e) Historical and Archeology Features

Lower Merion Township is rich in sites of historic importance, artistic merit, architectural significance or natural beauty. These places are already well documented through numerous sources both in print and electronically. The implementation of the township-wide trail system will further aid in bringing the public to these locations. Should a point of major significance not be directly on the ped/bike network, we highly recommend that the Township implement a signage program along the nearby routes to direct the users to these sites.

Sites of significant merit include:

- **Mill Creek Historic District, Gladwyne** – This National Register District consists of 575-acres and 150 historic structures. Mill Creek was a center of industry throughout the 18th and 19th centuries. Welsh Quaker mill operators relied on the creek for power to operate their saw, grist, paper and textile mills. Preserved are mills, mill ruins, and mill-workers houses. Farming, was also a contributing factor in the development of the area. Numerous remaining farmhouses, barns, farm outbuildings, and springhouses are part of the district. Also contributing to the district’s rich fabric are several late 19th-century estate mansions.

- **Woodmont Mansion, Gladwyne** – Woodmont was built in 1892 at an estimated cost of one million dollars as the home of industrialist Alan Wood, Jr.. It described as "one of the most magnificent estates in Pennsylvania,". The manor house, designed by architect Will Price in the French Chateau Gothic style, was set at the highest elevation point in Montgomery County affording Wood an overlook from which he could observe his steel plant, the Alan Wood Steel Company, across the Schuylkill River in Conshohocken. In 1952 the 67-acre Woodmont Estate became the property of the Palace Mission Incorporated and was consecrated and dedicated as the country seat of Father and Mother Divine. Since that time it has served as the communal home for the followers of the Palace Mission. Under Mother Divine’s stewardship the house and grounds have been maintained in exemplary condition and have always welcomed visit by the public.

- **Saunders Woods House & Barn, Gladwyne** – The boundaries of Saunders Woods have remained virtually unchanged since it was subdivided from the Welsh Tract in 1792. Today the 25-acre natural area is managed by Natural Lands Trust. Well-maintained walking and bridle trails wind through the wooded stream valley and meadows; both of which are brimming with native wildflowers in the spring and the summer. Mature upland and riparian forests and tall grass meadows provide habitat for deer, fox, small mammals and a variety of grassland-nesting and interior birds. A restored (but still rustic) 19th-century barn includes indoor and outdoor meeting spaces, a kitchen and restroom facilities and is available for day, evening and overnight rental.

- **Henry Foundation for Botanical Research, Gladwyne** – The Henry Foundation boasts 50 acres of spectacular views and dazzling plantings with trails for hiking and horseback riding along Rock Creek.
The Foundation was created by Mary Gibson Henry (1882-1967), a highly respected field botanist and plantswoman, who traveled North America selecting native plants. Henry became interested in native plants as a young woman, and, when she found she couldn't buy any to grow in her Gladwyne garden, set out to find them in their native habitats. For more than 40 years, this mother of five braved weather, wildlife and, occasionally, threatening people to travel North America, studying and collecting native flora, assembling thousands of herbarium specimens, and keeping careful records and diaries. She became a close friend to many of the world's leading plant explorers and arboretum directors and assembled unrivaled collections in at least 10 different genera, including hollies, magnolias and lilies. In November 1954, on a trip to Georgia, a sweetspire with deep red autumn foliage caught her eye. Mary Henry brought it back from Georgia and planted it at her home. Today, Itea virginica "Henry's Garnet" flourishes in thousands of gardens, and Henry's legacy lives on at the Henry Foundation.

- **Bryn Mawr College Campus & Bryn Mawr College Historic District, Bryn Mawr** — Many of the early buildings on the Bryn Mawr campus are designed in the “Collegiate Gothic” style. Later additions include a beautiful Queen Anne cottage by Frank Furness and Louis Kahn’s Erdman Hall, designed as a modern Scottish castle it has become an icon of mid-20th century modernism. The campus itself was originally landscaped by Frederick Law Olmsted and Calvert Vaux, the designers of New York’s Central Park. The adjoining Bryn Mawr College Historic District contains many wonderful buildings and beautiful views including the former Bryn Mawr Hotel (now the Baldwin School) designed by Furness, Evans & Co. 1891 for the Pennsylvania Railroad. Furness, Evans also designed the original Bryn Mawr Hospital whose rambling wings reflect the work important area architecture firms including Zantzinger, Borie, & Medary, (1926-27 addition).

- **Harriton House, Bryn Mawr** — Harriton was built by a Welsh Quaker named Rowland Ellis in 1704. He called his estate "Bryn Mawr" which means "high hill" in Welsh. The three-story, T-shaped stone house, which he built, with its flaring eaves and its tall brick chimneys survives as a unique and sophisticated example of early Pennsylvania architecture. The original interior paneling and closed-string staircase show stylistic elements from this early period. Ellis had only a small subsistence farm at Bryn Mawr, describing in a letter to his son-in-law that he had approximately 15 acres under cultivation in the middle 1690’s, about the size of the park which remains today. Ellis’ small farm simply could not support him and his family, and he was forced to sell the property in 1719. The name of the estate changed from "Bryn Mawr" to “Harriton” when Ellis sold the property to a Maryland tobacco planter named Richard Harrison. Charles Thomson, the Secretary to the Continental Congresses, was Harriton’s best known occupant. Thomson acquired the house and estate through his marriage to Harrison’s daughter, Hannah, in 1774. In 1789, after serving 15 years as the Secretary of the Continental and Confederation Congresses, Charles Thomson and his wife Hannah retired to Harriton, where he remained until his death in 1824.

- **Rosemont College, Rosemont** — Rosemont College was founded in 1921 by the Society of the Holy Child Jesus on the former summer estate of Joseph Sinnott. In the 19th century, Cornelia Connelly, an American convert to Catholicism, founded the Society of the Holy Child Jesus and opened her first school in England. Rosemont’s Administration Building was built in 1891 as “Rahalla” Sinnott’s manor house. Designed by the firm of Hazelhurst & Huckel, the twin-turreted French Renaissance structure originally housed all of the College’s operations. The interior features thirty-two rooms on four floors, a grand staircase, and intricate woodwork. Renovated and restored in 2000, today Rahalla is used for official College functions and houses numerous administrative offices. It remains the architectural center of the campus as all later buildings, built of local stone in varying degrees of French Gothic and Renaissance styles, form two concentric arcs around it.

- **Barnes Foundation, Merion** — Dr. Albert C. Barnes was a self-made man with substantial financial and intellectual resources, combative intensity, relentless curiosity, a keen eye for art, and a deeply-rooted respect for the common man. He established the Barnes Foundation in 1922 to "promote the advancement of education and the appreciation of the fine arts." The Foundation’s galleries hold one of the greatest post-Impressionist French art collections in the world, including numerous paintings by Renoir, Cezanne, and Matisse, as well as masterpieces of other periods and cultures. Dr. Barnes, himself, and through others, purchased paintings and sculpture in France, and collected early Pennsylvania furniture and handicrafts. Barnes befriended artists, educators, art dealers, and
philosophers, including the great twentieth century philosopher John Dewey, who served as The Foundation’s first education director, and remained Barnes’ lifelong friend. The graceful neo-classical building was designed by architect Paul Philippe Cret and completed in 1923. An arboretum surrounds the museum building offering visitors a quiet respite in which to contemplate the great art they have just seen. (Possible re-location should be mentioned)

- **Merion Tribute House, Merion** – Immediately after World War I, there was interest among Merion residents in creating a community center with facilities for cultural and social events as well as a playground for children. Elridge Johnson, founder in 1891 of the Victor Talking Machine Company in Camden, offered to demolish the house on his property and build a "Tribute House" in recognition of the 81 men from Merion who were in the armed services. Mr. Johnson requested that the building be "the most beautiful structure of its kind in this locality". Karcher and Smith, Architects, were selected to design the building using Gothic patterns and local stone. The arts and crafts tradition of the early 20th century promoted attention to detail throughout the construction. The ornamental iron work and lamps were designed by Samuel Yellin. There are military emblems embedded in stained glass, hand carved decorative figures and division patches awaiting discovery by guests. The Merion War Tribute House was completed in June 1924 at a cost of $330,000. From its opening to today, the Merion Tribute House is host to a plethora of activities year round including luncheons, dinners, weddings, anniversary parties, lectures, dances, concerts, garden parties and charitable events.

- **Frank Lloyd Wright’s Suntop Homes, Ardmore** – Based upon Wright’s Broadacre City model, these units have been known as Suntop Homes, Cloverleaf Homes, Quadruple Housing, and The Ardmore Experiment. The original Suntop Homes project was for the United States Government on a tract near Pittsfield, Massachusetts. A change in housing administration and complaints from local architects that they, not an "outsider", should do the project prevented its construction. In 1938 plans were to construct four of these units in Ardmore, built in a row but each angled differently on the sites. Only one was built. The building is divided into quarters, each of two stories plus basement and sunroof, and houses four families. The units are still private residences. The exterior is of brick and horizontal lapped cypress wood siding. Damage to two of the apartments has caused reconstruction that is not in accordance with Wright's plans.

- **Dolobran, Haverford** – Dolobran was the country estate of Clement A. Griscom, the founder of the American Line of steamships. In 1879, Griscom acquired a large tract of land from Edmund Evans, over time Griscom purchased adjoining parcels eventually expanding the estate to 146 acres. Remodeled from a farmhouse in 1881 by the firm of Furness, Evans and Co., Griscom’s country-seat was named Dolobran after the family home of his ancestors. This vast residence was altered by Frank Furness in 1894. Some of the changes made at that time include the addition of stone chimneys at the east end of the house, the construction of a ground gallery, and the darkening of the structure's exterior. The mansion, loving maintained by its current owners, still serves as a private residence.

- **Merion Cricket Club, Haverford** – Founded in 1865, the Merion Cricket Club is one of America’s oldest sporting clubs. Originally members played a number of sports including cricket, croquet, lawn tennis and squash. Cricket was introduced to the Philadelphia at Haverford College in 1834. Between 1850 and 1920, 160 cricket clubs were active in the area, but these had dwindled to three by 1980: the Philadelphia, Germantown, and Merion cricket clubs. In 1891 club members bought land on Montgomery Avenue in Haverford. They hired architect Allen Evans of Furness, Evans & Co. to design the club house. Fires in 1895 and 1896 damaged the building but it was rebuilt to the original plans in 1987. The ruddy red brick and terra-cotta building is especially enhanced by the rich summer green of the surrounding cricket lawn.

- **St. Charles Borromeo Theological Seminary, Overbrook** – Saint Charles Borromeo Seminary was chartered in 1838 by the Commonwealth of Pennsylvania, under the legal designation of the Philadelphia Theological Seminary of Saint Charles Borromeo, and is empowered by that authority to grant academic degrees. The fundamental mission of Saint Charles is the preparation of Catholic men of the Archdiocese of Philadelphia and of other dioceses and religious communities for pastoral service in the Roman Catholic priesthood. The beautifully landscaped campus features numerous structures of architectural interest. The Saint Charles Borromeo Seminary art collection contains, in particular, six
portraits by Thomas Eakins of distinguished clerics at the seminary. In the 1970s St. Charles Borromeo started a collection of important modern prints.

- **Appleford/Parsons-Banks Arboretum, Villanova** -- Appleford is a handsome example of early Pennsylvania architecture. Situated in a 22-acre arboretum and bird sanctuary, the estate was originally part of a land grant from William Penn. The house has a 1728 date-stone although tradition dates the earliest portion from 1705. After a variety of additions over two centuries, the architect, Richard Brognard Okie, redesigned the house and gardens for “modern living” in 1926. Okie hired landscape architect Thomas Sears to design the gardens, ponds, and waterfalls that give the property its distinguished attraction and charm. In addition to the beauty of its surroundings, Appleford contains many important antique furnishings. In 1973 Mrs. Louis H. Parsons bequeathed the property to Lower Merion Township. With its valuable early furnishings, greenhouses, and beautiful landscaping, it now preserved as part of the Parsons-Banks Arboretum, and is available to the community for meetings, receptions, and garden parties.
Lower Merion Township Roadways under PennDOT Jurisdiction are demarcated in red.
B. Public Participation

1. Resident and Business Survey

The highlights of results include the following:

Participants for this survey are primarily from households comprised of 1-5 family members. Two people households are most common (32.8%), followed by households with 4 people (19.5%), and single adult households (14.5%).

1. Recreational bicycling, hiking or walking is presently the most preferable activity to participants in the Lower Merion Township, followed by bicycling or walking to shopping, partaking in nature walks and running or jogging. More than 50 percent of participants who prefers recreational bicycling, hiking or walking participates in those activities more than 10 times per month. The least preferable activities among all activities include bicycling or walking to work, horseback riding, and cross country skiing.

2. When asked how you or your household or business find it getting to places in and around the township by biking or walking, 54 percent of the participants said it is “easy or somewhat easy” while 46 percent of them thought it is “not easy”.
3. Many participants (68%) agree that access to the Schuylkill River on its tributaries should be improved. Important type of improvements include the followings:

- Safe access and trail along major roads (Belmont, Montgomery, City Ave, etc)
- Trail connections to city, towns, and rivers (Bala Cynwyd, Manayunk, etc)
- Easier access points
- Trails along creeks and through woods
- Pedestrian bridges to connect towns and cities

See more detailed information in Appendix B Resident and Business Survey Results.

4. While 58 percent of the participants are willing to use the new connections if pedestrians walking and biking access were improved, 30 percent of them answered they are not.

5. When asked whether they would use their cars less often if a pedestrian walking and biking access were improved, 53 percent of the participants said they are willing to use cars less often. 29 percent of them answered they will not.

6. If community connections or links were improved, participants would most prefer “biking, hiking, or walking recreationally”, followed by “nature walks”. “Running or jogging” and “biking or walking to public transportation” are types of activities they would also like to do.

Other activities include walking to school, canoe/kayak, walk dog, etc.

7. Participants were asked to express their thoughts for the condition of existing path connections or links within Lower Merion Township. Many indicated that the majority of path connections or links should be “increased” or “improved”. However, many participants had no opinions for horseback riding, mountain bike paths, and neighborhoods to religious services.
8. Parks, natural resources, library or other community places, and rivers and streams are the top features or connections to be considered for trail/path systems in Lower Merion Township. Social/commercial places such as shopping centers, town centers, recreation areas, transportation centers are less important. Religious services or schools and cemeteries are important for only a small segment of the participants.

9. Many participants would recommend encouraging most of activities listed in question 9. However, more than 27 percent of participants expressed their opposition to promoting “tourism” in the township.

10. When asked what concerns/issues you might have if more pedestrian biking and walking path connections were to be created by Lower Merion Township, the participants regarded “safety/risk of accidents” as the major/first concern. The other common concerns were “more trash”, “access to the trails”, “increased volume of outsiders”, etc. In addition, a couple of concerns not listed in the question 10 were “parking” and “signage”.

11. More than 50 percent of participants are willing to support capital improvements to increase access and recreational opportunities throughout the township.

12. Most participants replied that they have interest in following the progress of the Lower Merion Township-Wide Bike / Pedestrian Path System Study. Only 8 percent of participants answered that they have no interest in it.

13. The important destination points, corridors, and routes within township that the participants would like to travel are as follows:

Points:
- Gladwyne
- Narberth center, train station, shopping areas
- Ardmore
- Bryn Mawr
- Wynnewood shopping area
- Manayunk
- Suburban square
- Bala Cynwyd shopping center
- Haverford
- Penn Valley

Routes and Corridors
- Lancaster Ave
- Montgomery Ave
- Haverford Road
- Ardmore Ave
- Mill Creek Road
- Spring Mill Road
- Gulph Road
- Belmont Ave
- Schuylkill River Bike Path
- County Line Road

14. There were two additional comments in common regarding the future of a township-wide pedestrian linkage are as follows:

- Making safer paths and crossings for pedestrians
- The need to increase and improve walking and biking trail system in the township to enjoy great natural environment

See more detailed comments in Appendix B: Resident and Business Survey Results.
2. Public Meetings

a) Ideas Workshops

Public “idea” open workshops provided residents with an opportunity to share ideas and envision what a bicycle and pedestrian path system in Lower Merion Township could be. The general public, business and civic associations, community organizations, religious institutions, schools and legislators were invited to attend.

Two “Ideas” Public Workshops were held to assist the project team in understanding resident’s personal needs, concerns, ideas, and gathering other thoughts about a possible path/trail system for Lower Merion. The workshops asked residents to visit an “Idea” Station, and to mark up a copy of the map of Lower Merion with the following information. Members of the study team were available to assist the residents at each station. The residents were asked the following questions:

1- Where and how do you want to go? Residents drew lines on a base map linking starting and ending points of trips they make, or would like to make on foot, bicycle, horse or roller blades.

2- What are your destinations? Residents marked their origins/destinations with a dot, and capital letters as follows:

H = Home  O = Office Bldg  C = Commercial/Retail  R = Restaurant  W = House of Worship
S = School  M = Museum/Other Cultural and Arts Institutions  P = Park/Recreation Site

3- What obstacles do you face in walking or bicycling? With a zig-zag red line, residents marked and noted problems such as difficult crossings, sidewalks which end suddenly, and unsafe roads.

4- Existing off-road trails you know. To help the project team plan a possible system, residents marked in black existing off-road trails they knew that make travel possible on foot or horseback.

b) Design Workshops

The general public, business and civic associations, community organizations, religious institutions, schools and legislators were also invited to attend two design workshops. These open design workshops provided the public with a hands-on opportunity to review and evaluate the initial findings and recommendations of the bicycle/pedestrian path system study.

The project team recapped the findings from the previous “Ideas” Workshops and the Resident and Business Survey. The team presented the Draft Plan (i.e. analysis map; see Appendix A: Township of Lower Merion Bicycle and Pedestrian System Draft Plan) detailing the following:

- **Street Network**: The existing street and off-road trail network through the township,
- **Bicycle Network**: The existing and potential bicycle lanes and routes
- **Pedestrian Network**: The map located existing sidewalks and off-road paths and showed potential locations for the implementation of sidewalks/side paths, and off-road paths.

The project team then generally commented on initial findings and recommendations including but not limited to:

- **Ownership Status** – of potential affected properties and level of owner interest, i.e. evaluation of acquisition and easement options.
- **Usage Feasibility** – including reasonable service areas, community character, current and projected population and demographic patterns, potential user profiles, initial and future usage including seasonal versus year round usage.
- **Physiographic Analysis** – right-of-way boundaries, length, topography, surrounding land use and potential drainage problems.
- **Utility Analysis** – existing and projected development.
- **Wildlife Analysis** – habitats along the proposed trail negatively impacted.
- **Existing Development** – significant cultural, historical recreational sites.
The public was then asked to evaluate route alternatives and suggest implementation priorities by talking with
the project team. The public marked-up base maps with alternate routes.

The Ideas of residents to consider from this workshop have been summarized as follows:

1. Harry Olsen suggested a link from Centennial Road utilizing a culvert to the River Path.
2. Consultants should check on the feasibility of a trail between Old Gulph Road and Rights Mill Road continuing up from Elliot Park.
3. Investigate whether Open Space Funds (i.e. Montgomery County) can be used to negotiate easements for both the Hillside Trail and important connections in the Bridlewild Trails network.
4. Residents noted that signage and way-finding are key components to trail and bike route use.
5. Motorized vehicles must be controlled throughout the network.
6. Two possible trail links should be considered in Penn Valley:
   a. From the eastern side of Mill Creek crossing Conshohocken State Road near Hollow Rd. continuing up-hill crossing Fairview Rd and connecting into the Sibley Ave cul-de-sac.
   b. Utilizing the existing park on Rights Mill Road between Haggis Ford Rd and Margo Ln, continuing parallel to Old Gulph Road, crossing Mill Creek in the park and terminating at Gulph Mill and Crosby Brown Roads.
7. Mainline Art Center suggested that art be integrated into the walking/biking system including entrances, gateways, bridges, and especially signage. Consider using artists and designers to develop a sense of place. Mainline Art Center would be amenable to help with fundraising for “art” signage.
8. Important to find for a connection from Bryn Mawr to Mill Creek.
9. Investigate funding for structures including boardwalks, and a new bridge across Schuylkill River.
10. On the West side of Lancaster Ave, between Clover Hill and Remington, there is greater potential for a sidewalk than the East side.
11. A new sidewalk has just been installed to Clothier Rd from Lancaster Ave as part of the “Strawbridge Estate”.
12. A pedestrian signal has been topic of civic meeting discussions at the intersection of Wynnewood Rd, East Wynnewood Rd, and North Wynnewood Rd.
13. Remington Rd has good potential for new sidewalk/path(s).
14. Residents near Lankenau Hospital are concerned with a second vehicular entrance to the grounds, but are not concerned with pedestrian access.
15. Future development along N. Wynnewood Rd between Wynnewood Rd, Sabine Ave and Penn Rd is currently in litigation with Narberth, but is planned to have a trail system within it.
16. Obtaining easements is the largest “Red-Flag”.
17. Consider daily commuter bicycle route to Conshohokens from Ardmore. Route was drawn on map (in file) depicting a one way AM route and a different PM route due to varying traffic and grade conditions.
18. Consider parallel bike routes to City Ave, Montgomery Ave, Lancaster Ave, and Conshohocken State Rd. One possible parallel to Lancaster Ave could utilize Haverford College path and pedestrian trail and bridge between the college and the Friends Meeting House.
19. Consider Rails to Trail corridor thru Westminster and West Laurel Hill Cemeteries.
20. Investigate percentages of students that bike to school or would bike to school.
21. Investigate “Share the Road” as potential 1st implementation project.
22. Sidewalk on Mango Ln was recently installed near Penn Valley Elementary School.
23. Consider topography and hills in determining bike routes.
24. Consider Bala Ave to avoid hill on Bryn Mawr Ave south from Montgomery Ave.
25. Post maps at key intersections for way-finding.
26. A trail may be developed thru Maybrook
27. Need to repair Rockland Ave Bridge as it is a key pedestrian route.
29. Consider requiring the installation sidewalks when properties change hands.
30. Reinforce Pedestrian laws to encourage walking – See crossing in Ardmore.
31. Consider closing a street on Sundays for recreational use and access to the river, i.e. Mill Creek Rd.
32. Parking along or near the River Trail is important.
33. Pursue Rockland Ave as a good and needed pedestrian connection.
34. Investigate underpass at Jones Rd as possible connection.
35. Focus on implementing sidewalks for the township, especially to the river from the Main Line.
36. Bala Ave is important bike route to identify.
37. Investigate future link from Rights Ferry Rd. south along Norfolk Southern rail yard to link to West River Dr.
38. Investigate possible Greenway in Woodbine from Belmont Hills.
39. Investigate public easement for Bridlewild trails.
40. Investigate alternate bike routes to the major bike-unfriendly roads.
41. A 12 mile jogging route was identified from Narberth utilizing McClenaghan Mill Rd/Mill Creek Rd/River Road and returning Youngsford Rd/Merion Square Rd/Old Gulph Rd/McClenaghan Mill Rd.
42. Key Bicycle connection to Philadelphia should be from Bryn Mawr Ave.
43. Investigate the possibility of one-way bike lanes in a circuit if there is not enough room on the road for two-way bikelanes. (see map in file)
44. Investigate trail along R-5 Line from N. Wynnewood Rd to Hathaway Ln.
45. Investigate possibility of expanding school walking pockets as implementation priority.
c) Township Staff and Study Committee Meetings

As stated meetings were held with both Township Staff and the participants of the Study Committee to review study findings and to advise and steer the study process. Meetings were held at strategic intervals when key findings were to be presented, information was needed or political or process direction was requested. The Township invited members of the Township Staff, and both Local and Regional Groups and Organizations to attend the meetings. Detailed summaries of the meetings follow below:

Study Committee Meeting (May 29, 2003)

This meeting was held to review the project status, to identify key people and organizations to meet with, and to discuss the projects next steps.

1. **Key Peoples and Organizations**: The committee suggested meeting with those listed in Section IV.E of this report to aid in collecting information for the ped/bike system.

   The committee raised issues regarding the following:

   1. **Ordinalance Designations**: may need to be established to ascertain maintenance responsibility of soft surface path system if implemented.

2. **Bridge over Schuylkill River**: General feasibility and preferred location of bridge linking LMT to the Schuylkill River Trail was discussed. Also, the impact of multi-uses on River Road was discussed.

3. **Bike Lane Width**: Safety concerns were raised regarding reduced automobile lane width if bike lanes are implemented.

Township Staff Meeting (Oct 16, 2003)

Items discussed at the Township Staff Meeting (Oct 16, 2003), held prior to a Study Committee Meeting, included:

1. Township Standards state that gates are required in fences along sidewalks so owners can maintain sidewalks

2. The Township Staff requested that the Study team provide evaluation criteria for “benches”.

3. There is a project underway that will test a 4 lane cross-section to a 3 lane narrowing, or “road diet”, near Bryn Mawr by implementing trial rubber curbs.

4. A class 3 alternate, or parallel, bike route should be investigated for Montgomery Avenue, City Avenue and Lancaster Avenue.

5. Traffic counts are available thru the LM Police Department and other Traffic Studies.

6. The Bridlewild Trail network is based on “handshake agreements” and does not hold land easements. The project team should investigate accessing funding for Bridlewild easements from Montgomery County Open Space Funds.

7. If using crushed stone, soft surface paths can be designed to maintain ADA accessibility.

8. The project team may wish to rate bicycle route with varying “levels of quality”, i.e. beginner, moderate, advanced routes.

9. Recommendations of this study will be coordinated with the Township’s Open Space Plan update for the county.

10. Encourage trail and sidewalk development as part of any proposed development.

11. Issues that should be discussed with the Study Committee included:

   o Easement acquisition with the possibility of tax breaks as a selling point.

   o Township Board of Commissioners is concerned with liability of Township implemented sidewalks and who will be responsible for maintenance issues, the Township or the Landowner.

   o Discuss feasibility of renovating the Pencoyd Bridge and the implementation of a new Bridge spanning the Schuylkill River.

Study Committee Meeting (Oct 31, 2003)

Items discussed at the Study Committee Meeting (Oct 31, 2003), included:

1. Remington Road should be considered a high priority for cyclists and pedestrians.

2. River Access should be given consideration at the recycling center near the Conshohocken curve as a place to appreciate the River.

3. The study team should think about initial “jump start projects” that would be of different types and different locations around the Township.

4. Police are planning two lighted crosswalks with runners in Ardmore ad Bryn Mawr.

5. According to Bob Duncan, LMT Code Official, all sidepaths (concrete or gravel) require landowner maintenance.
Township Staff Meeting (Feb 23, 2004)

The “master plan” for the Township-wide Bicycle and Pedestrian Network was presented to Township Staff. Items discussed at the Township Staff Meeting (Feb 23, 2004), held in preparation for a Study Committee Meeting, included:

1. The bike route on Montgomery Avenue sidewalks was discussed as a “hazardous” situation.
2. Right-of-way acquisition recommendations of this study should be integrated into Montgomery County’s Green Field/ Green Towns Program.
3. The proposed bridge spanning the Schuylkill River should be considered as a multi-county/multi-township funded project.
4. Signage for the bike/ped network could utilize and reuse the historic green street signage typically found at Lower Merion’s intersections. These street signs are being replaced all over the township with new reflective signage.
5. The project team should investigate overlay ordinances for Bicycle Parking, i.e. for commercial areas and train stations as part of T.O.D. (transit orientated development) legislation.
6. Surrounding Communities should be contacted and made aware of the findings of this study.

Study Committee Meeting (March 15, 2004)

This meeting was held to recap findings of the study, present a master plan detailing recommended pedestrian and bicycle routes, and retain comments and suggestions from the study committee. Below is a summary of key topics discussed:

1. Implementation and priorities: The project team presented recommended routes for development and explained that the feasibility report will estimate the costs and prioritize key routes/projects. This will become a “menu” of items and segments of routes for the Township to choose projects. The township requested that the study committee continue to meet through end of 2004; this will allow the committee to work out priorities for development and strategize implementation techniques from the “menu”, i.e. whether segments should be sidewalks or side paths, and what political avenues should be used.

2. Signage Guidelines: A signage and way-finding system will be an integral part of the township-wide network. The nature of this signage could retain the historic character of the existing township “green” signs as they are to be replaced by new PennDOT street signs. Design Guidelines were also developed for the Business District Signage Program that depicts Gateways and Vehicular Directions to various destinations around the township. These signs are currently being installed and should be coordinated with study recommendations of the ped/bike signage system.

3. Montco Open Space Funds: It was reported that if the township can link to the Schuylkill River Trail, then it is more likely that county open space funds could be used to implement trails in the township. For example, the recommended West Side Trail could possibly become part of the Montgomery County Trail System.

4. Schuylkill River Bridge: The Township is largely cut off from river and Schuylkill River Trail (SRT). The new bridge at the proposed location (Flat Rock Park), allows for existing crossings of I-76, Norfolk Southern RR, and SEPTA, utilizing public lands, and could be funded as a multi-county project. It was reported that one commissioner suggested looking at other options for connection such as a ped/bike ferry service and it was emphasized by CTC that a public workshop format was used during the study development. This process supported the idea of a non-vehicular bridge connection.

5. Landowner Liability Act: The landowner liability act (for both trails and significant destinations within properties) was discussed. It was also noted that MONTCO, in developing the Perkiomen Trail, provided some landowners with an indemnification clause.

6. Trail Heads: Location for a trail head near the Pencoyd Bridge was discussed. One location suggested was on the Wissahickon/Manayunk side utilizing the mall (AMC movies) parking lot and, secondly, it was suggested by the committee to use the West Laurel Hill Cemetery as a trail head. Flat Rock Park will be a good location for a Township trail head and another could be developed in Conshohocken.
7. **Bike Route Alternatives**: Township police recommended:
   a. Sycamore instead of shown Bowman/Mongomery alignment
   b. Investigate additional route for Wynnewood/Ardmore connection
   c. Investigate W. Rock Hill as alternate to shown Rt. 23 curve inorder to link Bryn Mawr Ave to Rock Hill Ave.

8. **Trail Alternatives**: Bridlewild recommended utilizing the recently developed trail on the East side of Mill creek instead of a new West side. This would require crossing of the creek and Mill Creek Road.

d) **Major Landowner Workshop**

The Township made initial contact with significant landowners and asked them to attend an “Ideas” workshop to find out desired links and destinations, obstacles to walking and cycling, locations of off-road trails, concerns that owners may have about paths crossing their land, and any proposed or future development plans. During the study, the Township was and will continue to be responsible for educating landowners on the benefits of creating the township-wide network. The following concerns and suggestions were discussed at the workshop:

Owners had general **concerns** with:

1. Enforcing speed limits.
3. Erosion due to trails.
4. Mixing of uses, i.e. horses, dogs, bikes, etc.
5. Difficulty walking along Spring Mill Road.
6. Damage occurring on Bridlewild Trails due to mountain bikes.
7. SR 23 is un-walk-able and Fayette Street is a dangerous intersection.
8. Cars speed along River Road.
9. There is currently a danger of cycling and walking on back roads.

Owners had the following general **suggestions**:

1. The sidewalk bike route on Montgomery Avenue is unsafe and an European model should be used for inserting bikeways on sidewalks.
2. Some owners would like to see bike lanes next to roads.
3. Focus on easy bike routes and alternative routes.
4. Educate and inform the public of the benefits of walking and cycling and location of alternative routes.
5. A walking route should be developed from West Conshohocken to Gladwyne.

Specifically, landowners had the following **comments**:

1. **Barnes Foundation** was concerned with the township’s perceived “Social status” of walkers and cyclists in an automobile dominated culture.
2. **West Laurel Hill** is only open from 7am to 7pm but could provide a link to Manayunk.
3. **Lankenau Hospital** is preventing access to “back 40” but would like pedestrian access from Penn Wynne.
4. **Bryn Mawr Hospital** has good pedestrian access.
5. **Harcum College** is getting more commuters. A possible bike lane could be added through their parking lot and representatives questioned whether improved sidewalks were part of the recommendations of the study.
6. **Bryn Mawr College’s** campus is open to pedestrian and cyclists but sidewalks are missing on Morris Avenue and Old/New Gulph Road. The college encourages any commuter transit links, such as sidewalks to train stations.
7. **Woodmont** suggested checking if there is still a link to Four Falls, Conshohocken. They are amenable to a public trail but have concerns about nighttime lighting and deer.
8. Both the **Henry Foundation** and **Natural Lands Trust** are concerned about environmental impacts of bicycling through areas like Saunders Woods. Erosion is the main concern.

e) **Organizations and Interest Group Workshop**

The Township contacted Individual Organizations and Interest Groups in the Township and asked them to attend an “Ideas” workshop to map desired links and destinations, obstacles to walking and cycling, locations of off-road trails, and discuss concerns that trail and civic groups may have about paths. The following concerns and suggestions were discussed at the workshop:

In **general** the organizations and interest groups marked up maps with desired ped/bike routes, locations of
dangerous intersections, and specific areas of ped/bike conflicts with vehicular traffic. As well, the groups saw a need for:

1. Educating the public about walking and cycling,
2. Educating and the enforcing the “Landowner Liability Protection Act”
3. Investigating ped/bike accidents statistics in the township
4. Enforcing rules and restrictions of use, i.e. “No Mountain Bikes” and dog walking (especially on Henry Arboretum lands)

The Bridlewild Trail Association mapped out desired links including:

1. A bridge link to the Schuylkill River Trail
2. An extension of Green Lane from SR23 to Rolling Hill Park
3. A link from Spring Mill Road to Limber Lost Lane utilizing Stony Lane and Kenealy Nature Park
4. An extension of Amies Lane from Williamson Road thru the park to Dove Lake Road, Old Gulph Road continuing to Mill Creek Rd ending at Crosby Brown Road

f) Site Visits

The project team conducted two major site visits with the Riverbend Environmental Education Center and Lower Merion Conservancy.

Riverbend Environmental Education Center

Located at the end of Spring Garden Road, overlooking the Schuylkill River and Conshohocken, Riverbend Environmental Education Center’s mission is to preserve 30-acres of open space in Lower Merion Township, and educate people of all ages about the workings of our natural world and the role of humans in it. Through social programs Riverbend influences the quality of life of the whole community through hands-on habitat restoration activities and access to a full network of trails/foot paths that link together parts of the property.

Russ Johnson, Executive Director, has been a key diplomat in working together with adjacent landowners towards connecting a longer trail/foot path around the hillside of the Conshohocken Curve from Kenealy Nature Park thru Riverbend and Woodmont to West Conshohocken. Mr. Johnson took members of the project team on a field visit to explore the potentials of this path. It was found that it is feasible to create such a hillside trail. This idea has been incorporated into the Township-wide Ped/Bike Network Master Plans. From Southeast to Northwest the Trail would utilize the following alignment:

- Beginning at Lafayette Rd use Martins Lane to connect to the Sid Thayer Trail of the Bridlewild Trails
- Utilize the Sid Thayer Trail on Philadelphia Country Club lands along existing paths thru a junkyard and bamboo forest thru privately protected open space lands to Spring Mill Road at the entrance to Riverbend.
- On Riverbend lands, utilize the existing Riverbend driveway, pass the Education Center to the Valley View Trail and continue on the Reid Trail around the bend to more privately owned lands.
- Negotiate agreements/easements with the landowners up to the Woodmont property. Russ Johnshon has informed the project team that the Kravit family – working with Riverbend, Bridlewild Trails, and Woodmont – have agreed to extend the Reid Trail across their property to Woodmont.
- Connect to Pioneer Road on Woodmont property. Woodmont has reported that they are amenable to a public trail.
- Engineer a connection from Pioneer Road thru the natural gully to Woodmont Road.
- Utilize Woodmont Road to recently developed Appalosa subdivision parcels.
- Investigate connection from Woodmont Road to Four Falls in West Conshohocken.
- Coordinate with recent subdivision development to locate connection to SR 23
- Another point to note: Access from Riverbend lands to the Schuylkill River does exist, however, it is not suitable for public use as the railroad underpass has only a five foot head room clearance.
Lower Merion Conservancy

Located at the entrance to Rolling Hill Park off of Rose Glenn Road, atop the hill, Lower Merion Conservancy’s mission is to protect and enhance “our quality of life by engaging residents in preserving open space, the natural environment, and the historic character of the community.” The non-profit conservancy is at once a land trust, watershed association, historic association, and an education association.

Mike Weilbacher, Executive Director of the Conservancy, met with the project team to discuss the feasibility of a trail/footpath meandering alongside one of Lower Merion’s most valued resources — Mill Creek. Members of the project team initially thought that Mill Creek had great potential as a major trail spine running thru the center of the township connecting Villanova to the Schuylkill River. However, development patterns along the creek with residences fronting very close to the creek, as well as large diversity of property owners, has proven this major trail spine unfeasible at this time. Mr. Weilbacher did note three main areas where trails/footpaths exist or are feasible within the Mill Creek Valley, as follows:

1. **Southeast Bank of Mill Creek Valley Park** – An existing Bridlewild Trail aligns from Hollow Road, near I-76, along the hillside of Mill Creek Valley Park and reconnects to Hollow Road near Conshohocken State Road. The trail also connects to Mill Creek Road downstream from Rose Glen Road at the Pigeonaire (noted above). There is currently no connection to River Road or Flat Rock Park from this trail. Recently, Bridlewild Trails, in association with the Township, created a new link from this trail to the creek elevation trail on the Northwest bank of Mill Creek in Rolling Hill Park. This utilizes a mid-block crossing of Mill Creek Road and spans Mill Creek to connect to the Rolling Hill Park trails near the recently restored ruins.

2. **Northwest Bank of Mill Creek – Rolling Hill Park** – Two Bridlewild Trials exist along Mill Creek’s Northwestern Bank behind Barker Mill to Rolling Hill Park. One follows the elevation of the creek, passes the recently stabilized Millhouse Ruins, and connects to a switch-back trail that ascends the hill to Rolling Hill Park’s entrance. The other existing trail follows a gradual climb from the rear parking lot of Barker Mill to the entrance of Rolling Hill Park. Further west from these trails, along Mill Creek, property owners have installed fences to prevent the public accessing their property and were having problems with birdwatchers. The Conservancy reported that this property is the extent of the Mill Creek Trail up to SR 23 and that further west river easements exist but trail easements do not.

Mr. Weilbacher explained there is a possibility for a new trail that would continue from Barker Mill along the North West Bank downstream to the Schuylkill River/Flat Rock Park. The owner(s) of these lands would like to donate this land to the Conservancy and may be amenable to a trail. A new trail in this location would require alignment along the creek’s steep ridge and a crossing at Rose Glen Road. This alignment provides an easy connection to the river as it would utilize an existing I-76 underpass and underpasses the railroad thru one of the structures existing barrel vaults. This idea has been incorporated into the Township-wide Ped/Bike Network Master Plans.

3. **West Mill Creek Park** – An existing township trail loop exists in West Mill Creek Park along the Northwest bank of Mill Creek near SR 23. Properties and structures between this between West Mill Creek Park and Rolling Hill Park are too numerous and dense to easily provide for a contiguous trail link, however, many of the properties have retained protected river easements.
g) Lower Merion School District – LMSD

According to the National Center for Bicycling and Walking, in many communities fewer children are bicycling and walking to schools than their parents did one generation ago. Today, more than ever, safe routes to school are becoming less and less common. Even if a route is walk-able, some parents do not like their children to be unattended and do not encourage walking or bicycling because children are put in the danger of traffic or crime. Michael Andre of the Lower Merion School District’s Transportation Department, reports that even children who live within a block or two of Township schools – an easy walking distance – are often transported by bus or car. This is due to two factors: 1) lack of sidewalks in “walking zones”, and 2) concern with personal security.

Walking Zones

Lower Merion Township School District has defined “Official Walking Zones”, encompassing a ¾ mile walking radius around each school and contingent on the safety of the walk to and from school. These zones define the safe limits of walking to each of the District’s 10 public schools by assessing the availability of sidewalks, low traffic speeds and volumes, required street crossings, visibility, and availability of pedestrian signals and crossing guards. As demarcated in yellow hatched areas on the Draft Analysis Plan in Appendix A, the zones are smaller in areas where sidewalks do not exist and larger where sidewalks are available.

Likewise, as one can see in the table below, there is a physical correlation between the percentage of walkers to school and the availability of sidewalks. Township-wide about 86% of total students enrolled are bussed to school, whereas 14% of students walk to school. Dependant on the availability of sidewalks, 21% percent of students walk to school in the “Main Line” neighborhood fabric since sidewalks and pedestrian amenities exist, whereas only 2% percent of student in the “Estates” area of the township walk to school since sidewalks are few and far between. The Township should evaluate and prioritize segments of the proposed pedestrian network within these ¾ mile walking radii, in order to extend the walk-ability of the school zones.

<table>
<thead>
<tr>
<th>Total Walkers to School (Data from Lower Merion School District)</th>
</tr>
</thead>
<tbody>
<tr>
<td>School Name</td>
</tr>
<tr>
<td>---------------------</td>
</tr>
<tr>
<td>Bala Cynwyd Middle School</td>
</tr>
<tr>
<td>Belmont Hills Elementary School</td>
</tr>
<tr>
<td>Cynwyd Elementary School</td>
</tr>
<tr>
<td>Gladwyne Elementary School</td>
</tr>
<tr>
<td>Harriton High School</td>
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<tr>
<td>Lower Merion High School</td>
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<tr>
<td>Merion Elementary School</td>
</tr>
<tr>
<td>Penn Valley Elementary School</td>
</tr>
<tr>
<td>Penn Wynne Elementary School</td>
</tr>
<tr>
<td>Welsh Valley Middle School</td>
</tr>
<tr>
<td><strong>Township-Wide TOTAL</strong></td>
</tr>
<tr>
<td>Estates TOTAL</td>
</tr>
<tr>
<td>Main Line TOTAL</td>
</tr>
</tbody>
</table>

The project team talked with Robert Shultz of LSMD’s Maintenance Department responsible for implementation, upgrades and maintenance of sidewalks and bicycle rack provisions. Mr. Shultz reported that the School District has no current plans to extend sidewalks within the walking zones, but accessing school grounds remains a key issue for the School District, particularly when capital improvements are scheduled. Currently, the department will provide bike racks to school grounds upon request from the school’s principal but bicycle parking is not a Township-wide issue at the moment. Mr. Shultz explained that ped/bike improvements should be encouraged when the School District builds new schools or renovates existing school grounds.
Personal Security

According to the National Center for Bicycling and Walking, communities concerned with personal security of their walking and bicycling students have been forming organizations that help provide “Safe Routes to School” for children. A formed “Safe Route to School” organization can provide walking maps, educate on and encourage walking and cycling to school. One way these organizations can prevent parental fears is to first encourage the implementation of lacking physical pedestrian amenities necessary for safe a route. If there is still fear of traffic and crime, parents could establish, for example, a walking route on which an adult would be responsible for picking up children and shepherding the way to and from school watching for automobile traffic. If such a group was formed it could also take a proactive role in connecting schools to the communities they serve with sidewalks, safe crossings, and bicycle routes.

h) City Avenue Special Services District - CASSD

Office parks and business centers such as the City Avenue Special Services District, Lancaster Avenue, Suburban Mall, and Bryn Mawr often isolate walkers and cyclists due to their locations along highly traveled vehicular arterials and the vast areas of parking required to support them. Sidewalk links to nearby residential areas are often un-inviting and most employees do not even consider bicycling to work because there are not any contiguous on-road bicycle facilities. Ped/Bike connections to these areas should be direct and simple where sidewalks are contiguous and bike routes are well signed. As a matter of convenience and security, it is most important to provide bicycle parking facilities at these parks and retail areas. On the whole, intersections at the entrances to parking lots, and at local roadways should be designed to reduce ped/bike and vehicular conflicts.

The project team conducted a telephone interview with David Cohen, AICP, Executive Director of the City Avenue Special Services District. This district, once know as the “Golden Mile”, is currently developing streetscape improvements including a new pedestrian bridge crossing City Avenue, has a Community Service Representative force that patrols the district on bicycles, and once operated a Regional Transit bus service to and from Manyunk. The District is not currently conducive to bicycle use and has not conducted any ped/bike planning studies. However, a comprehensive plan was developed by Cope Linder which recommends over 5 million dollars in streetscape improvements to the district. In general, Mr. Cohen had the following recommendations for the ped/bike Study in regards to the special service district:

1. Vehicular "Rights on Red" on City Avenue should be limited to enable more pedestrian crossing ease.
2. Limit vehicular “curb cuts” along City Ave for pedestrian ease.
3. In General, recommend that the Township be more flexible in allowing bus shelters.
4. Bicycle routes should focus on crossing City Avenue and utilizing a parallel route to City Avenue.

The District is open and flexible to Bicycle Parking. There is not a perceived need for bicycle parking at this moment, but the District would be willing to work with the Township and landowners to implement bicycle parking on their properties and within public rights-of-ways.
i) Final Study Results Discussion

Since the Draft version of this Feasibility Report was submitted to Study Committee Members, the Township and DCNR for review, the following actions have been taken:

1) The following projects were recommended as priority projects in the Natural Lands Trust’s 2004 Draft Open Space Plan Update prepared for Lower Merion Township as part of the Montgomery County Green Fields/Green Towns Program:

   THE SCHUYLKILL RIVER GREENWAY PROJECTS (see Appendix A: FIG: TRAIL)
   As there is only one feasible township-long greenway trail - termed the Schuylkill River Trail West - its development has been prioritized from the most important corridor to least:

   **Priority # 1.** A paved multi-use section from Green Lane Bridge to the end of Flat Rock Park near Mill Creek should be the highest priority for development as it is the most “implementable” segment of the trail.

   **Priority # 2.** Secondly, a formalized public hiking route from Flat Rock Park at Mill Creek to West Conshohocken should be developed. This will involve negotiating several Bridlewild Trail easements for public use between public lands and a “trail blazing” from Riverbend through Woodmont and other properties to West Conshohocken.

   **Priority # 3.** Third, a new bridge over the Schuylkill River should be implemented as it will link the township to the Schuylkill River Trail, in a safe and effective manner and open the highest amenity to Lower Merion and regional trail users.

   **Priority # 4.** Lastly, due to the high cost of renovating the Georgia Pacific Bridge and a proposed new structure spanning a future railroad and electric lines, the segment of Multi-Use Trail through Westminster and West Laurel Hill Cemeteries continuing down Belmont Ave to the Green Lane Bridge should have the lowest priority.

   MUNICIPAL TRAIL AND PATHWAY DEVELOPMENT PROJECTS (see Appendix A: FIG: MAPKEY)

   For ease of organization, although numbered in chronological order, the following projects are not prioritized by importance, as these projects may be valued as important as or more important than the Greenway Project.

   **Priority # 5.** Focus on opening a municipal pathway from SEPTA’s Rt. 100 Station in Bryn Mawr (in Delaware County) connecting through Gladwyne to Rolling Hill Park.

   **Priority # 6.** Re-open the Rockland Avenue Bridge for pedestrian use and negotiate with Narberth for a multi-municipal connection.

   **Priority # 7.** In general, prioritize critical connections from neighborhoods to parks, schools, civic buildings, public transportation stops and central commercial districts.

2) A Bicycle and Pedestrian Implementation Committee was formed by the Township to further analyze, garner support and funding, and prioritize projects for detailed design and engineering and implementation.

3) The following comments were received:

   **DCNR Comments:** The Draft Feasibility Study was approved in compliance with the Community Conservation Partnership Program contingent on addressing review comments. The substantial request was that “The legal feasibility and final study results are key facts in our determination of a viable plan.” This request has been incorporated into this Final Feasibility Report.

   **Bridlewild Comments:** The Bridlewild Trails Association made recommendations to realign portions of the Schuylkill River Trail West to create a more interesting trail thru undeveloped areas of the Township and realign portions of the Public Footpath the Gladwyne/Bryn Mawr nearing Rolling Hill Park. As the greenway trail corridor is in its planning stages, no specific alignment has been determined. Because this alignment has not been studied in detail by the consultants the Final Feasibility Study references this suggestion by labeling a “Recommended
Bridlewild Alignment” and a “Studied Alignment” on the Appendix A: FIGS: MAPKEY, PEDMAP, and TRAIL.

It should be noted here that although specific routes were studied in order to develop planning recommendations, the specific locations of trails, sidewalk/paths, bike routes and lanes are subject to change and will depend on the results of detailed planning and design of each segment.

Resident of Penn Valley: A resident in Penn Valley raised concern regarding “night Lighting” of trail intersections as a detrimental effect on the character of place; the resident also suggested the use of pervious trail surfaces and requested bicycle routes be incorporated within Penn Valley.

The Final Feasibility study would like to respond to these concerns/questions in the following way:

1) Night lighting will be evaluated on a case by case basis for local character and safety concerns as part of detailed design and engineering.

2) The selection of surface materials is a question of environmental concern, safety, maintenance, and suitable local character and will also be evaluated on a case by case basis as part of detailed design and engineering.

3) Please see the factors referenced in Section IV: G/H. Local routes to and from the overall networks will be established as the network is established and the neighborhoods access the Township-wide system. Just to note, the routes surrounding Penn Valley were selected due to ease of grade and overall network and regional connections.

4) The Draft Plans have been shared with some adjacent municipalities and will continue to be shared with surrounding municipalities, regional MPO’s, and PennDOT when the feasibility study is finalized to ensure a regional outlook.
C. Usage Feasibility

1. Demographics and Analysis of Demand of Potential Users

Demographic and economic characteristics of a community have an effect on recreation resources, opportunities and leisure interests. Overall, Lower Merion Township has above the County and Commonwealth average income, education and housing. Higher levels of affluence are associated with a willingness to pay for more sophisticated leisure activities and transportation choice such as the proposed bike/pedestrian trail plan.

The economic conditions appear to be favorable to the proposed bike/pedestrian trail plan. Historically, the household incomes in Lower Merion Township are more than double that of the Commonwealth of Pennsylvania and nearly 30% higher than Montgomery County. Significantly fewer families live below the poverty level in Lower Merion Township than elsewhere in Pennsylvania.

Higher educational levels are also associated with higher levels of participation in leisure activities. The education levels of Lower Merion Township residents were significantly higher than those of the County and Commonwealth.

Housing information is another indicator of the affluence of the community. Historically, housing values in the Township are about four times higher than those of the State and almost double those of Montgomery County. The ratio of owner-occupied to renter-occupied units in the Township was slightly higher than that of the County or the Commonwealth.

Lower Merion Township demographics have remained stable, with a slightly decreasing population from 1970 to 1990 according to the statistics from the US Census Bureau. However, the 2000 census data indicated a 1.3% increase in township population from 1990, albeit a fairly small change. The population in 1990 was 58,003 and in 2000 it increased to 58,740. The biggest demographic change was in the age characteristics. There was a 46% increase in the 75+ age group and a 13.4% decrease in the 35 to 45 age group.

Due to better healthcare and lifestyles, older adults today live longer and are more active than previous generations. Combined with more time, older adults will continue to be a major use group of the trails within Lower Merion Township as they constitute a strong market for this type of recreation. The older adult population typically utilizes a variety of passive, low impact recreational activities such as walking trails, to travel to local shopping areas and to recreational facilities such as senior centers or parks, or simply around their neighborhoods.

The proposed corridors of the Lower Merion Township-wide bike/pedestrian path system will be a recreational resource in itself and will serve as a key connection and link between some of the many park and recreation facilities for its diverse population. The residential and business survey results confirm this.

There is strong support for the bike/pedestrian plan as reflected in the resident and business survey. Many survey responses indicated that path connections or links should be increased or improved. Recreational bicycling, hiking or walking is the most preferred activity, with more than 50% of the responses who prefer this recreational activity and participate in it at least ten or more times per month. 58% are willing to use the new connections while 53% stated that they are willing to use their cars less. More than 50% of the respondents are willing to support capital improvements to increase access and recreational opportunities throughout the Township. It could be predicted that there will only be small percentages of change in the township population either up or down, especially since this first class township has reached its maximum build out according to the current zoning.

Although Lower Merion Township is largely built-out, all future developments should be planned in conjunction with this bike/pedestrian plan. It will be important to coordinate each change with this plan to ensure that they will complement and extend the bike/pedestrian plan, achieving community connections that are part of the vision for this plan.
D. Location Feasibility (Draft Plan)

The physical locations of existing and potential recreation and transportation networks were mapped out in the Draft Plan (please refer to: Appendix A: Township of Lower Merion Bicycle and Pedestrian Path System Draft Plan). For purposes of this study only township roadways that link to other “connector” streets were analyzed in detail. The Draft Plan provides the basis for the analysis and final selection of the recommended routes found in the Master Plan. The draft plan evaluates and locates the following networks and their respective components:

STREET NETWORK

NEIGHBORHOOD STREET
All township streets determined to be pedestrian and bicycle friendly are represented by the grey lines of the base map. These streets have been observed to have “calm” or “low” traffic volumes as they typically lead to residences, dead end or hinder thru-traffic. They do not require the development of sidewalks/side paths or signed bicycle routes because residents can walk or bicycle in the streets as they exist.

NEIGHBORHOOD STREET CONNECTION
All township streets that allow traffic to pass thru neighborhoods or connect one thru-street to another thru-street and have been determined to be both pedestrian and bicycle friendly are represented by a thick green line. These “green” streets have also been observed to have “calm” or “low” traffic volumes and they do not require the development of sidewalks/side paths because residents can walk or bicycle in the streets as they exist.

BICYCLE NETWORK

EXISTING BICYCLE LANES
All existing thru-streets with bicycle lanes already in place are represented with a dark blue and black striped line. By dividing bicycling from automobile use with a white fog line, bike lanes significantly increase the comfort and safety for all modes of transportation. However, all existing bicycle lanes are currently located outside of the Township’s boundaries.

POTENTIAL ON-STREET BIKE ROUTES
All township thru-streets determined to be cycle-able are represented with a light blue solid line. By Pennsylvania law, Bicycles are considered a vehicle and all roadways are usable by bicycles thru-out the township, except limited access highways. Most roads throughout the township have been rated as bicycle friendly for “A” type cyclists except for roads such as City Ave, Montgomery Ave, Lancaster Ave, and portions of Conshohocken State Road which have been observed to have higher than normal vehicular traffic volumes and speeds that make cycling uncomfortable. Less experienced riders may experience varying levels of comfort on some roads. It is important to note that the comfort of these potential bike routes will fluctuate with daily variations in traffic such as rush hours. During non-peak traffic hours, even roads not rated as a potential route, such as Montgomery Avenue, could become more comfortable for many cyclists.

POTENTIAL BIKE LANES
All township thru-streets determined wide enough to receive a new bike lane stripes are represented with a dark blue line accompanied by a series of numbers representing the proposed roadway lane cross section dimensions. In determining the proposed lane re-striping a minimum critical width of 10'-0” has been maintained for all vehicular lanes while a minimum critical width of 4'-0” has been maintained for all bicycle lanes. It should be noted that minimum vehicular lane widths are a design consideration and should be investigated in more detail before implementation. This is because, certain roadways, such as PennDOT arterials, require wider lanes due to average daily trip (ADT) counts and percentage of truck use. It should also be noted that all potential bike lanes thru-out the township have not been included as final “Master Plan” routes, however, all roads shown that have the potential to receive bike lanes can be striped. This would provide cyclists with increased safety and ease of use even if the roads are outside of the proposed Township network.
PEDESTRIAN NETWORK

EXISTING SIDEWALK

All township streets with existing sidewalks are represented with a solid thin red line on the respective side of the street that the sidewalk is located. These sidewalks are typically of concrete construction and have been assumed to all be ADA accessible, for the purpose of this study. It has also been assumed for the purpose of this study that the all existing sidewalks provide safe pedestrian crossings at all intersections. It is understood that this may not always be the case and in some locations the existing sidewalks end mid-block, making users cross the streets without proper safety measures.

POTENTIAL SIDEWALK/PATH

All township thru-streets with a generally unobstructed “bench” area located along side of the road and could potentially receive a sidewalk or side path are represented with a solid thick red line on the respective side of the street that the “bench” is located. A walking “bench” is the area of right-of-way land, between the street edge and the adjacent property line or fencing. It was observed that, these areas are generally clear of physiographic impediments and major structures thus providing the basis for potential sidewalk/path locations.

EXISTING OFF-ROAD PATH

Selected existing township off-road paths and trails are represented in a dashed thin red line. These actively used paths include the Schuylkill River Trail and are typically part of the Township park system or the Bridlewild Trail System. The majority of the lands that contain the Bridlewild Trails are in private ownership and are under handshake usage agreements. These existing active and typically earthen or soft-surfaced (gravel/stone dust) paths provide the basic framework for locating potential major off-road walking and equestrian paths.

POTENTIAL OFF-ROAD PATH

Off-road paths that are not part of the Township park system or the Bridlewild Trail system but have potential as trails are represented in a dashed thick red line. These paths are the “hidden” connective tissues of the network and allow for continually interesting off-road walking and equestrian paths to be formed such as along the west banks of the Schuylkill River.

DIFFICULT SOLUTION REQ’D FOR PEDESTRIANS

Areas along township thru-streets that do not contain either a sidewalk or “bench” and have been determined to have “special” design considerations or where a hard solution would be required to implement a sidewalk/path are represented in a dashed orange line. These areas get in the way of implementing a sidewalk/path with ease by containing either:

- Physiographic Obstacles - such as steep earthen slopes, large rocks, water ways, etc.
- Major Structure Obstructions - within the “bench” area such as stone walls, fences, trees, etc.
- Property Owners - whose landscaping and mailboxes, etc. have encroached into the area where a sidewalk/path could exist and whose resistance to change could prevent the implementation of the sidewalk/path.

As these are difficult areas to design for, property owner issues may need resolution and major physical alterations such as earth regarding, and the construction of retaining walls or boardwalks may be required before sidewalk/path construction could occur.

EXISTING PUBLIC SCHOOL WALKING AREA

As noted above, Lower Merion Township School District has defined “Official Walking Zones”, encompassing a ¾ mile walking radius around each school and contingent on the safety of the students walk to and from school. These zones are represented in yellow hatched areas. The zones are smaller in areas where sidewalks do not exist and larger where sidewalks are available. It should be noted that potential sidewalks/paths “benches” located within this ¾ mile radii could become a priority for development by the Township in order to extend the walking zones of the schools even if they are not part of the proposed network.
EXISTING BRIDGE

Existing bridges within the township that are critical to the township’s interconnectivity have been represented with a thin lined black bridge icon.

POTENTIAL BRIDGE

Potential areas within the township that will require a new bridge construction to in order to connect portions of the proposed network are represented in a thick bridge icon outlined in black.

EXISTING RAIL LINE

Existing rail lines have been represented in a thin black line with track markings. Existing rail stations have been located with black rectangles.

EXISTING RIVER TRAIL

The existing Schuylkill River can be used as a recreational water trail and boating the entire length of Lower Merion Township and is represented in blue. A boat launch is located at Flat Rock Park.

E. Legal Feasibility (Ownership Status)

One of the best general overviews of legal feasibility, especially for trails, was written by the Brandywine Conservancy Environmental Management Center in 1997. *The Community Trails Handbook*, describes the importance of the balance between Ownership, Management and Liability. With permission, Chapter 6, pages 54 to 60, has been included in Appendix C for the Township’s reference. This chapter takes one through the options for ownership and possession of trails, different managing agencies, Liability and Risk Management, and Recreational Use Statues (RUS) and describes the limited immunity from liability of trails. The URL for the Brandywine Conservancy is [http://www.brandywineconservancy.org/](http://www.brandywineconservancy.org/) and their other contact information is as follows:

For more information send email to emc@brandywine.org, call 610-388-2700, or write to Environmental Management Center, Brandywine Conservancy, P.O. Box 141, Chadds Ford, PA 19317

Also in Appendix C is a copy of the Pennsylvania Landowner Liability Act, amended in 1992, a RUS that encourages landowners to make lands available to recreation purposes by limiting liability.

Ownership Status

In general, this study did not identify particular individual landowners along any proposed routes as this is typically a task where the municipality is involved. The GIS parcel information that was provided for use in this study was provided with the caveat that it was only 50% quality assured, which is generally fine for a feasibility study at the township planning level. As well, right-of-way lines and dimensions of roadways that can be found in the GIS data cannot be trusted for engineering purposes, but are fine for general planning purposes. For example, the primary consultants of this and other studies have found numerous instances where field measured widths of road are several, even up to 10’-0” in difference from what is represented on the orthophotography generated topographic maps. The only way to be assured that right-of-ways, easements, and property lines are correct is to have a field survey completed for the corridor and research property deeds, and R/W records for each segment of each route.
The following table outlines legal considerations for each type of route:

### LEGAL FEASIBILITY

<table>
<thead>
<tr>
<th>Topic</th>
<th>BICYCLES</th>
<th>SIDEWALKS/PATHS</th>
<th>TRAILS</th>
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<tbody>
<tr>
<td><strong>Right of Ways</strong></td>
<td>• All within Public Right of Way</td>
<td>• Many in Public Right of Way</td>
<td>• Typically not in existing Right-of-way</td>
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<tr>
<td></td>
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<td>• Right of Way may need widening</td>
<td>• HOA necessary at PennDOT Intersections</td>
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<td>• Easement could be pursued</td>
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<tr>
<td><strong>Greatest Obstacles</strong></td>
<td>• Legal on all roads but Expressways</td>
<td>• Owners may not be amenable if improvements don’t sensitively relocate elements found in legal Right of Way</td>
<td>• Non amenable owners</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Owners may not be amenable to widened R/W</td>
<td>• If a County or PennDOT owned trail then Eminent Domain can be used</td>
</tr>
<tr>
<td><strong>Greatest Liability</strong></td>
<td>• Township or PennDOT if not maintained well</td>
<td>• If child walks in street then Township liability if maintained or not</td>
<td>• Improper maintenance</td>
</tr>
<tr>
<td></td>
<td>• Rider must be on facility designed consistent with the Rules of the Road as described in Chapter 11 of the Uniform Vehicle Code (UVC)</td>
<td>• If Child walks on sidewalk then owner’s liability if left not maintained</td>
<td>• Improper signage</td>
</tr>
<tr>
<td></td>
<td>• Same status of liability as without bikelanes</td>
<td></td>
<td>• Improper design</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Limited liability available</td>
</tr>
</tbody>
</table>

**Recommended Acquisition Techniques**

Montgomery County has been very successful in acquiring the needed rights-of-way, easements, and agreements for neighboring trails such as the Schuylkill River Trail and more recently the Perkiomen Trail and should be used as a resource by Lower Merion Township when it comes to trail and sidepath acquisition. As well, PennDOT is very familiar with roadway widening and negotiating R/W, and should be drawn upon as a resource.
Fortunately, a majority of the selected projects are proposed to cross existing public lands owned by Lower Merion Township. However, the routes will necessitate interface with private properties, several of which have existing zoning and land use compatible with trail use and others where negotiations with private property owners will be required. A significant portion of the proposed routes alignment (on private or public land) will utilize existing roadways and right-of-ways. This approach intentionally to minimizes impacts to private properties, and as well, minimizes impacts to adjacent natural historic and environmental landscapes.

This study recommends the use of acquisition techniques similar to the recently completed Perkiomen Trail. In this precedence, it is Lower Merion Township, PennDOT or Montgomery County’s responsibility to negotiate easements, R/W’s, and set costs for necessary acquisition of land. This study cannot compare acquisition prices as this has typically been the responsibility of the governing jurisdiction. However, several of the preferred acquisition techniques that have proven mutually amenable to municipalities and property owners are described as listed:

**Easement**
Montgomery County has joined the number of municipalities across the nation that have been very successful in negotiating with property owners in securing easements and rights-of-way for similar projects on both state and national levels. Easements may be drafted based upon agreements with property owners to permit conveyance of recreational facilities across subject properties with limited liability to the property owner. The legal terms of easement agreements can vary based on the type and use of property as well as the proximity of historic, cultural or environmental features. Generally, easements are defined spaces that overlay existing property, zoning, and land use for the specific intent and use proposed. Very similar in nature to stormwater conveyance easements, trail and recreation easements permit conveyance and allow use of public activity across a defined space within or across a property. Typically, the municipality will secure the easement in the form of a formal agreement recorded by the County in the form of a written description or legally surveyed and deeded description. Expenses incurred for easement requested by the municipality are typically covered or reimbursed by the municipality cited as perpetual using agency or as an extension of existing park lands.

**License Agreement**
Similar to easements, a municipality may determine (through negotiations with property owners) that a non-specific easement may be desired to permit location of a trail across subject properties. This type of license agreement would secure trail location and functions for a specific period of time rather than producing a permanent agreement between parties specified and recorded in the land deed.

**Fee Simple Purchase**
In similar circumstances on the Perkiomen and Schuylkill River Trails, although often least preferred, more cumbersome, and time consuming approach, municipalities have negotiated with property owners for outright purchase of property for public use. Following negotiations with property owners and upon determination that easement or license agreement is not amenable, land transfer through monetary purchase is possible. From the municipalities’ standpoint, this is often the most costly solution given the time required to process subdivision and land development plans, prepare parcel survey and prepare and record new deeds.

Fortunately, with expected appropriations to refuel the Transportation Enhancement Act, funding will continue to become available to municipalities for reimbursement of capital outlay for public property used as transportation and recreation corridors.

**Security and Risk Management Plan (Primarily for any off-road trails)**

**Safety and Risk Management:** Experience at other trails shows that trail owners have not experienced significant safety, crime or liability problems. Research suggests that when a trail is more used, there will be fewer problems regarding safety and risk. However, in a litigious society, the Township and Montgomery County must take the necessary steps to provide both a safe trail for the users and to protect themselves from liability claims wherever possible.

**Safety in Design and Development:** The Schuylkill River Trail West must be designed and developed in accordance with federal and state standards for trails. As noted earlier, these include the standards of AASHTO (American Association of State Highway and Transportation Officials), and of PennDOT.

All hazardous conditions and attractive nuisances should be identified and removed where possible during the original construction of the Trail. Those that cannot be removed should have warning signs posted.
Existing structures with safety devices that are in poor condition should be a top priority. For example, loose bridge railings need to be repaired expediently. They are more dangerous than no railing at all, as they create the perception of safety.

As entrances are developed with signage, and when pamphlets and guidebooks are published, clear mention should be made that the trail or portions thereof, while open to the public, are not yet fully developed, and that users must exercise necessary care when using the trail.

**TreeTrimming for Sight Lines and Safety:** Most vehicular collisions occur at intersections, often because one or both parties did not see the other. Trees and brush should be cut back as necessary at this and other intersections where sight lines are impaired. Special attention should be paid at points where the links join roads at grade at a sharp angle.

In addition, trees adjacent to the Trail should be evaluated annually for the removal of unhealthy, dead and hazardous limbs, or entire trees.

**Maintenance:** One of the most effective ways that the managing agency can provide safe trail conditions and protection from liability is through a conscientious maintenance management system. An on-going maintenance program will help to remove trail hazards with the potential for causing accidents and injuries. The maintenance management program should include regular inspections for trail safety.

In addition to reducing trail hazards, documentation of trail maintenance activities is essential in combating possible liability claims. Through written records of good maintenance practices, the managing agency will be able to build a case against negligence accusations.

Trail managers report that professional, well-trained staffs are key in keeping the trail safe and secure. Well-trained people are in the best position during the course of their normal work functions to identify and report hazards.

**Liability:** Pennsylvania’s state law for the ‘Recreational Use of Land and Water” (68 P.S. 477-1 to 477-7) limits the liability of property owners who make their land available to the public for recreational use. Although this law does protect the managing agencies to a large extent, they still need to be concerned with this issue.

A recent case in Philadelphia challenged this law with the courts finding in favor of the plaintiff and holding the City of Philadelphia responsible for the injury. However, the decision was based upon the view that the injury resulted from a poorly maintained element of a developed recreational facility. Because this is a recent case, the impact of the case on the limitation of liability act is not known. Thus, a good risk management plan, including maintenance needs, is imperative for the Trail operating agency.

Because of the cost of liability insurance, Lower Merion Township should retain ownership of the right-of-way that the trail would be on, with management through an agency or department such as the Parks and Recreation Department. Public/private partnerships regarding trail ownership and management are common. A public agency owns the trail while local and/or private organizations manage and maintain it such as is the case with the Schuylkill Canal Association.

The managing agency should develop an incident reporting system to document injuries and accidents on the trail. In addition, the managing agency should develop a complaint management system. Both systems will help the trail in terms of safety management as well as public relations if the staff deals courteously and swiftly with the people involved.

**Trail Security:** While security generally increased with heightened trail use, vandalism and littering generally decrease significantly with heightened volume of users and local ‘ownership’ develops. The managing agency should work out cooperative agreements regarding security and protection for the trail. The local police department should determine how the trail should be patrolled within their own jurisdiction. Telephone numbers for police and emergency personnel should be posted at major access points. The Township will be responsible for coordinating the design and placement of emergency access/response signage that is currently being developed by the Schuylkill River Greenway association for use along the entire river corridor. Alternatively, “911 Call Boxes” could be installed in a future phase of work at road crossings where telephone lines are likely to exist. A trail entrance design includes easily removable bollards for access by emergency and law enforcement vehicles. These bollard “gates” should be lockable.
Bicycle Parking Ordinances

Currently, the relative absence of bicycle parking at many office and retail locations makes bicyclist feel unwelcome. It is recommended that the Township of Lower Merion adopt a bicycle parking ordinance that fits the township’s needs. Below are links to some examples of bike parking ordinances from other communities:

Cambridge, MA
http://www.cambridgema.gov/~CDD/et/bike/bike_zone.html

Eugene, OR
http://www.ci.eugene.or.us/Cityreco/Citycode/Chapter9/c9.6000-6885.htm

Portland, OR
http://www.portlandonline.com/shared/cfm/image.cfm?id=53320
http://municipalcodes.lexisnexis.com/codes/portland/
(follow link to Title 33, zoning code/Title 33, 266: parking & loading, then to 33.266.200 in the pdf file)

Watertown, MA
http://www.massbike.org/bikelaw/pwtrtown.htm

Santa Cruz, CA
http://www.bikeplan.com/sc-ord.htm

Burien, WA

Model Ordinances

Here are some other resources:
Association of Pedestrian and Bicycle Professionals
http://www.apbp.org

Pedestrian and Bicycle Information Center
http://www.bicyclinginfo.org
vi. Appendix A - Drawings

A. Township of Lower Merion Bicycle and Pedestrian Path System Draft Plan (Location and Analysis)

B. MAPKEY – Master Plan Recommended Routes: Township-Wide

C. BIKEMAP – Master Plan Recommended Routes: Bicycle

D. PEDMAP – Master Plan Recommended Routes: Pedestrian

E. TRAIL – Master Plan Recommended Routes: Trail

F. PEDimpl – Master Plan Recommended Routes: Pedestrian Routes to be Implemented
VII. Appendix B - References

A. Resident and Business Survey Example
RESIDENT AND BUSINESS SURVEY
Lower Merion Township-Wide
Bike/Pedestrian Path System Study

How many people live in your home, related or unrelated to you, including yourself? ________

Are you a household or business? (circle)

What is your zip code? ________

1. Presently, do you or anyone in your household or workplace, participate in any of the following activities in Lower Merion Township? (check all that apply)

<table>
<thead>
<tr>
<th>Activity</th>
<th>More than 10 times/ month</th>
<th>Less than 5 times/month</th>
<th>Between 5 and 10 times/ month</th>
<th>Never</th>
</tr>
</thead>
<tbody>
<tr>
<td>Run or jog</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>Bike or walk to shopping</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>Bike or walk to school or religious services</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>Bike or walk to public transportation or institutions</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>Bike or walk to work</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>Bike, hike or walk recreationally</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>Horseback ride</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>Cross Country Ski (in season)</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>Partake in nature walks</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>Other</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
</tbody>
</table>

2. In general, how do you or your household or business find it getting to places in and around the Township by bike or walking?
   □ Easy    □ Somewhat easy    □ Not easy

3. In your opinion, should access to the Schuylkill River or its tributaries be improved?
   □ Yes    □ No
   3a. If yes, what type of improvements should be made?

   ________________________________

   3b. If yes, where should additional access sites or connections be made or be provided?

   ________________________________

Resident and Business Survey
5.19.03 CT&C in association with The RBA Group
The Lower Merion Township-Wide Bike/Pedestrian Path System study is funded in part through a grant from The Pennsylvania Department of Conservation and Natural Resources (PA DCNR)

4. If pedestrian walking and biking access were improved, would you, or your household or business be more inclined to use the new connections?
   □ Yes  □ No

5. If a pedestrian walking and biking access were improved, would you use your car less often?
   □ Yes  □ No  □ Not sure

6. If community connections or links were improved, in which activities would you or your household or business participate?
   □ Bike or walk to public transportation  □ Cross country ski
   □ Bike or walk to work  □ Nature walks
   □ Run or jog  □ Horseback ride
   □ Bike, hike, or walk recreationally  □ other ____________________________

7. From the following list of activities within Lower Merion Township, please check these path connections or links that you think are adequate, should be increased, or should be improved:

<table>
<thead>
<tr>
<th>Connection/Street/Road Activities</th>
<th>Should be Adequate</th>
<th>Should be increased</th>
<th>Should be improved</th>
<th>No opinion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Walking paths</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>Jogging/fitness</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>Hiking connections to adjacent regional trails</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>Horseback riding</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>Bicycle paths</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>Mountain bike paths</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>Greenways (unpaved trails)</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>Wildlife corridors</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>Neighborhoods to schools</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>Neighborhoods to religious services</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>Neighborhoods to public transportation</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>Neighborhoods to major business or retail centers</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
</tbody>
</table>

8. Check off what features or connections are of the most interest and/or importance to you?
   □ Natural areas  □ Parks
   □ Rivers and streams  □ Cemeteries
   □ Library or other community places  □ Shopping centers
   □ Religious services or schools  □ Visiting neighbors and other people
   □ Transportation centers/stops  □ Recreation areas/centers
   □ Towns centers  □ other ____________________________

---

**Resident and Business Survey**

5.19.03 CT&C in association with **The RBA Group**

**The Lower Merion Township-Wide Bike /Pedestrian Path System** study is funded in part through a grant from The Pennsylvania Department of Conservation and Natural Resources (PA DCNR)
9. In regard to a path or trail, please indicate whether you would recommend *encouraging* or *discouraging* each of the following activities:

<table>
<thead>
<tr>
<th>Activity</th>
<th>Encourage</th>
<th>Neutral</th>
<th>Discourage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Develop a pedestrian walking or biking network in Lower Merion Township (like the one around Kelly Drive in Philadelphia)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Improve walking or biking access to shopping centers and retail development</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Promote more secure bike racks at public transportation, shopping areas, and other destinations</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Promote tourism in the township</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Improve inter-municipal biking and walking connections</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Develop links to the larger county-wide bike and hiking trails</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Preserve undeveloped land along natural corridors</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Promote more access to natural resources-based recreational opportunities (Schuykill River, parks, etc.)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Preserve our historic resources</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Preserve our scenic character</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Protect our wildlife habitat</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Strengthen municipal ordinances to preserve contiguous forested land</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Increase walking and biking opportunities to travel throughout the Township in a safe and interesting manner</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

10. What concerns/ issues might you have if more pedestrian biking and walking path connections were to be created in Lower Merion Township?

- Access to the trails or paths
- Increased volume of outsiders
- Increased volume of bicycle/pedestrian traffic
- Safety/risk of accidents
- More crime
- Trespassing
- More trash
- Degraded quality of the natural areas
- Land erosion
- Noise
- Increase in property owner responsibility
- Other __________________________

**Resident and Business Survey**
5.19.03 CT&C in association with **The RBA Group**
The Lower Merion Township-Wide Bike /Pedestrian Path System study is funded in part through a grant from The Pennsylvania Department of Conservation and Natural Resources (PA DCNR)
11. Would you be willing to financially support capital improvements to increase access
and recreational opportunities throughout the Township?
   Increase taxes □ Yes □ No
   Permits and/or user fees □ Yes □ No

12. Please check off one box indicating your level of interest in following the progress of the Lower
Merion Township-Wide Bike/Pedestrian Path System Study.
   □ 1 great interest - want to attend and participate in all public meetings, receive written updates
   □ 2 some interest – would like to attend some meetings and possibly receives written updates
   □ 3 interested – would only like to receive written updates
   □ 4 somewhat interested- only interested in knowing if it affects my property or neighborhood
   □ 5 no interest

13. Please list your major destination points within the Township, and the corridor(s) or route(s) you
currently travel, or would like to travel.
____________________________________________________________________________
____________________________________________________________________________
____________________________________________________________________________
____________________________________________________________________________
____________________________________________________________________________
____________________________________________________________________________

14. Do you have any additional comments regarding the future of a Township-wide bike and
pedestrian path system?
____________________________________________________________________________
____________________________________________________________________________

15. Do you want to be placed on our mailing or emailing list for updates and public meeting notices
regarding the Township’s bike and pedestrian path system?
   □ Yes □ No

16. If yes, what is your name, mailing address, and email address? (optional)
____________________________________________________________________________
____________________________________________________________________________

Please fill this out return this survey questionnaire and mail back to Lindsay Taylor,
Executive Director, Parks and Recreation Department, Lower Merion Township, 75 E.
Lancaster Avenue, Ardmore, PA 19003, no later than June 20, 2003.

Thank you!

Resident and Business Survey
5.19.03 CT&C in association with The RBA Group
The Lower Merion Township-Wide Bike/Pedestrian Path System study is funded in part through a
grant from The Pennsylvania Department of Conservation and Natural Resources (PA DCNR)
B. Resident and Business Survey Results
RESIDENT AND BUSINESS SURVEY  
LOWER MERION TOWNSHIP - WIDE  
BIKE/PEDESTRIAN PATH SYSTEM STUDY

How many people live in your home, related or unrelated to you, including yourself?

<table>
<thead>
<tr>
<th></th>
<th>1st Survey</th>
<th>2nd Survey</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 person</td>
<td>2</td>
<td>42</td>
<td>44</td>
</tr>
<tr>
<td>2 people</td>
<td>23</td>
<td>76</td>
<td>99</td>
</tr>
<tr>
<td>3 people</td>
<td>6</td>
<td>37</td>
<td>43</td>
</tr>
<tr>
<td>4 people</td>
<td>9</td>
<td>50</td>
<td>59</td>
</tr>
<tr>
<td>5 people</td>
<td>4</td>
<td>21</td>
<td>25</td>
</tr>
<tr>
<td>6 people</td>
<td>0</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>7 people</td>
<td>0</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>No Response</td>
<td>0</td>
<td>25</td>
<td>25</td>
</tr>
</tbody>
</table>

Are you a household or business?

<table>
<thead>
<tr>
<th></th>
<th>1st Survey</th>
<th>2nd Survey</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Household</td>
<td>26</td>
<td>229</td>
<td>255</td>
</tr>
<tr>
<td>Business</td>
<td>0</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>No Response</td>
<td>18</td>
<td>25</td>
<td>33</td>
</tr>
</tbody>
</table>

What is your zip code?

<table>
<thead>
<tr>
<th>Zip Code</th>
<th>1st Survey</th>
<th>2nd Survey</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>19035</td>
<td>13</td>
<td>18</td>
<td>31</td>
</tr>
<tr>
<td>19096</td>
<td>3</td>
<td>55</td>
<td>58</td>
</tr>
<tr>
<td>19003</td>
<td>1</td>
<td>20</td>
<td>21</td>
</tr>
<tr>
<td>19085</td>
<td>1</td>
<td>22</td>
<td>23</td>
</tr>
<tr>
<td>19072</td>
<td>7</td>
<td>29</td>
<td>36</td>
</tr>
<tr>
<td>19004</td>
<td>5</td>
<td>40</td>
<td>45</td>
</tr>
<tr>
<td>19041</td>
<td>1</td>
<td>12</td>
<td>13</td>
</tr>
<tr>
<td>19066</td>
<td>6</td>
<td>25</td>
<td>31</td>
</tr>
<tr>
<td>19010</td>
<td>0</td>
<td>29</td>
<td>29</td>
</tr>
<tr>
<td>No Response</td>
<td>8</td>
<td>9</td>
<td>17</td>
</tr>
</tbody>
</table>

1. Presently, do you or anyone in your household or workplace, participate in any of the following activities in Lower Merion Township? (check all that apply)  

<table>
<thead>
<tr>
<th>Activity</th>
<th>&gt; 10 x month</th>
<th>&lt; 5 x month</th>
<th>5 to 10 x month</th>
<th>Never</th>
</tr>
</thead>
<tbody>
<tr>
<td>Run or Jog</td>
<td>14 + 59 = 73</td>
<td>6 + 33 = 39</td>
<td>2 + 26 = 28</td>
<td>5 + 109 = 114</td>
</tr>
<tr>
<td>Bike or walk to shopping</td>
<td>0 + 55 = 55</td>
<td>6 + 66 = 72</td>
<td>9 + 39 = 48</td>
<td>0 + 76 = 76</td>
</tr>
<tr>
<td>Bike or walk to school or religious</td>
<td>0 + 19 = 19</td>
<td>0 + 33 = 33</td>
<td>0 + 18 = 18</td>
<td>0 + 148 = 148</td>
</tr>
<tr>
<td>Bike or walk to public transport</td>
<td>9 + 39 = 48</td>
<td>8 + 46 = 54</td>
<td>6 + 25 = 31</td>
<td>5 + 125 = 130</td>
</tr>
<tr>
<td>Bike or walk to work</td>
<td>2 + 16 = 18</td>
<td>2 + 18 = 20</td>
<td>1 + 10 = 11</td>
<td>18 + 168 = 186</td>
</tr>
<tr>
<td>Bike, hike or walk recreationally</td>
<td>16 + 103 = 119</td>
<td>12 + 38 = 50</td>
<td>3 + 52 = 55</td>
<td>0 + 41 = 41</td>
</tr>
<tr>
<td>Horseback ride</td>
<td>1 + 2 = 3</td>
<td>0 + 12 = 12</td>
<td>3 + 5 = 8</td>
<td>20 + 202 = 222</td>
</tr>
<tr>
<td>Cross country ski (in season)</td>
<td>2 + 1 = 3</td>
<td>4 + 25 = 29</td>
<td>5 + 6 = 11</td>
<td>11 + 195 = 206</td>
</tr>
<tr>
<td>Partake in nature walks</td>
<td>9 + 26 = 35</td>
<td>9 + 75 = 84</td>
<td>9 + 23 = 32</td>
<td>5 + 98 = 103</td>
</tr>
</tbody>
</table>

Others: Dog walking, Canoe the Schuylkill, Walk with strollers, Ice skating, and Roller Blading
2. In general, how do you or your household or business find it getting to places in and around the township by biking or walking?

<table>
<thead>
<tr>
<th></th>
<th>1st Survey</th>
<th>2nd Survey</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Easy</td>
<td>0</td>
<td>42</td>
<td>42</td>
</tr>
<tr>
<td>Somewhat easy</td>
<td>13</td>
<td>90</td>
<td>103</td>
</tr>
<tr>
<td>Not easy</td>
<td>22</td>
<td>104</td>
<td>126</td>
</tr>
</tbody>
</table>

3. In your opinion, should access to the Schuylkill River or its tributaries be improved?

<table>
<thead>
<tr>
<th></th>
<th>1st Survey</th>
<th>2nd Survey</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>31</td>
<td>155</td>
<td>186</td>
</tr>
<tr>
<td>No</td>
<td>2</td>
<td>75</td>
<td>77</td>
</tr>
<tr>
<td>Not sure</td>
<td>2</td>
<td>9</td>
<td>11</td>
</tr>
</tbody>
</table>

If yes, what type of improvements should be made?

Comments:
- Bala Cynwyd
- Walking paths, bike paths, access to Gladwyne
- Walking Access: along roads, through woods
- Pedestrian Bridge or making connection to Whitemarsh Twp.; River Park - Whitemarsh W. Connecting to Schuylkill Center
- Walking trail connections from Gladwyne Proper to the river
- Make it safe for children to bike ride
- Bike-walking paths
- Path along Park in Gladwyne
- A bridge at Flat Rock Park. Improve Spring Mill Trail with gravel
- A direct train that links with Schuylkill River Trail at Ivy Ridge Station opposite Belmont Hills
- Bike lanes if possible. Continuation of RiverRoad to connect to Green Lane Bridge. Maybe just a dirt path not for cars
- Picnic spots to bike to
- Biking & hiking trails - Definitely on our side of the river
- Clear & East access. Safe & Secure
- Bike access from L.M. to East River Drive
- Sound barriers for expressway
- Pedestrian bridges- Mill Creek and/or Waverly
- Bike/walking path
- Safer bike route from Merion to the Drives - Better connection further up the river toward City Avenue.
- Develop bike path along Mill Creek - Connect to Kelly Drive (safe way getting through car traffic
- Hiking, running, biking in remaining open space
- Easier to get there and them to have access
- Safe bike access to bike trails on East side of Schuylkill
- Land bridge to connect Bala Cynwyd and Manayunk
- Safe access
- Safe access/bike lanes along Belmont Ave., Montgomery Dr., and City Ave.
- Paved bike path along creeks and roads
4. If pedestrians walking and biking access were improved, would you or your household or business be more inclined to use the new connection?

<table>
<thead>
<tr>
<th></th>
<th>1st Survey</th>
<th>2nd Survey</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>25</td>
<td>100</td>
<td>125</td>
</tr>
<tr>
<td>No</td>
<td>0</td>
<td>65</td>
<td>65</td>
</tr>
<tr>
<td>Not sure</td>
<td>3</td>
<td>21</td>
<td>24</td>
</tr>
</tbody>
</table>

5. If a pedestrian walking and biking access were improved, would you use your car less often?

<table>
<thead>
<tr>
<th></th>
<th>1st Survey</th>
<th>2nd Survey</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>24</td>
<td>128</td>
<td>152</td>
</tr>
<tr>
<td>No</td>
<td>2</td>
<td>82</td>
<td>84</td>
</tr>
<tr>
<td>Not sure</td>
<td>4</td>
<td>46</td>
<td>50</td>
</tr>
</tbody>
</table>

6. If community connections or links were improved, in which activities would you or your household or business participate?

<table>
<thead>
<tr>
<th>Activity</th>
<th>1st Survey</th>
<th>2nd Survey</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bike or walk to public transportation</td>
<td>12</td>
<td>83</td>
<td>95</td>
</tr>
<tr>
<td>Bike or walk to work</td>
<td>8</td>
<td>47</td>
<td>55</td>
</tr>
<tr>
<td>Run or job</td>
<td>13</td>
<td>85</td>
<td>98</td>
</tr>
<tr>
<td>Bike, hike, or walk recreationally</td>
<td>32</td>
<td>192</td>
<td>224</td>
</tr>
<tr>
<td>Cross country ski</td>
<td>11</td>
<td>35</td>
<td>46</td>
</tr>
<tr>
<td>Nature walks</td>
<td>20</td>
<td>117</td>
<td>137</td>
</tr>
<tr>
<td>Horseback ride</td>
<td>1</td>
<td>15</td>
<td>16</td>
</tr>
<tr>
<td>Other:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Walk to school</td>
<td>3</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Canoe/ kayak</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Run to stores</td>
<td>2</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Connection to retailers</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Utilize other resources along major trails</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Walk Dog</td>
<td>0</td>
<td>5</td>
<td>5</td>
</tr>
</tbody>
</table>
7. From the following list of activities within Lower Merion Township, please check these path connections or links that you think are adequate, should be increased, or should be improved.

<table>
<thead>
<tr>
<th>Connection/Street/Road Activities</th>
<th>Adequate</th>
<th>Should be Increased</th>
<th>Should be Improved</th>
<th>No Opinion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Walking paths</td>
<td>0+42=42</td>
<td>26+152=178</td>
<td>15+44=59</td>
<td>0+29=29</td>
</tr>
<tr>
<td>Jogging/ fitness</td>
<td>2+36=38</td>
<td>17+95=112</td>
<td>8+37=45</td>
<td>5+80=85</td>
</tr>
<tr>
<td>Hiking connections to adjacent trails</td>
<td>0+24=24</td>
<td>16+97=113</td>
<td>13+38=51</td>
<td>2+75=77</td>
</tr>
<tr>
<td>Horseback riding</td>
<td>1+30=31</td>
<td>5+10=15</td>
<td>4+16=20</td>
<td>17+162=179</td>
</tr>
<tr>
<td>Bicycle paths</td>
<td>1+23=24</td>
<td>21+128=149</td>
<td>16+46=62</td>
<td>2+48=50</td>
</tr>
<tr>
<td>Mountain bike paths</td>
<td>2+28=30</td>
<td>7+54=61</td>
<td>7+20=27</td>
<td>12+120=142</td>
</tr>
<tr>
<td>Greenways (unpaved trails)</td>
<td>0+28=28</td>
<td>16+88=104</td>
<td>11+31=42</td>
<td>5+79=84</td>
</tr>
<tr>
<td>Wildlife corridors</td>
<td>1+30=31</td>
<td>8+81=89</td>
<td>7+21=28</td>
<td>4+94=98</td>
</tr>
<tr>
<td>Neighborhoods to schools</td>
<td>0+47=47</td>
<td>14+62=76</td>
<td>10+42=52</td>
<td>7+90=97</td>
</tr>
<tr>
<td>Neighborhoods to religious services</td>
<td>3+55=58</td>
<td>6+28=34</td>
<td>5+18=23</td>
<td>12+116=138</td>
</tr>
<tr>
<td>Neighborhoods to public transportation</td>
<td>2+54=56</td>
<td>8+62=70</td>
<td>10+45=55</td>
<td>7+71=78</td>
</tr>
<tr>
<td>Neighborhoods to major business or retail ctrs.</td>
<td>1+55=56</td>
<td>12+77=89</td>
<td>18+49=67</td>
<td>2+61=63</td>
</tr>
<tr>
<td>Other: Work cooperatively w/adjacent municipalities</td>
<td>0+0=0</td>
<td>2+0=2</td>
<td>0+0=0</td>
<td>0+0=0</td>
</tr>
</tbody>
</table>

8. Check off what features or connections are of the most interest and/or importance to you?

<table>
<thead>
<tr>
<th>1st Survey</th>
<th>2nd Survey</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parks</td>
<td>23</td>
<td>175</td>
</tr>
<tr>
<td>Natural resources</td>
<td>28</td>
<td>151</td>
</tr>
<tr>
<td>Library or other community places</td>
<td>18</td>
<td>130</td>
</tr>
<tr>
<td>Rivers and streams</td>
<td>23</td>
<td>122</td>
</tr>
<tr>
<td>Shopping centers</td>
<td>16</td>
<td>104</td>
</tr>
<tr>
<td>Town centers</td>
<td>20</td>
<td>95</td>
</tr>
<tr>
<td>Recreation areas/ centers</td>
<td>20</td>
<td>86</td>
</tr>
<tr>
<td>Transportation centers/ stops</td>
<td>7</td>
<td>84</td>
</tr>
<tr>
<td>Visiting neighbors and other people</td>
<td>17</td>
<td>67</td>
</tr>
<tr>
<td>Religious services or schools</td>
<td>6</td>
<td>48</td>
</tr>
<tr>
<td>Cemeteries</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>Other: Post Office</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Movie Theatre</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Historic / Archeological Areas</td>
<td>13</td>
<td></td>
</tr>
</tbody>
</table>
9. In regard to a path or trail, please indicate whether you would recommend encouraging or discouraging each of the following activities.

<table>
<thead>
<tr>
<th>Activity</th>
<th>Encourage</th>
<th>Neutral</th>
<th>Discourage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Develop a pedestrian walking/ biking network in Lower Merion Township</td>
<td>34+188=222</td>
<td>0+32=32</td>
<td>0+21=21</td>
</tr>
<tr>
<td>Improve walking or biking access to shopping centers &amp; retail development</td>
<td>31+136=167</td>
<td>4+68=72</td>
<td>0+13=13</td>
</tr>
<tr>
<td>Promote more secure bike racks at public transportation, shopping areas &amp; other</td>
<td>23+163=186</td>
<td>5+55=60</td>
<td>0+9=9</td>
</tr>
<tr>
<td>Promote tourism in the township</td>
<td>13+66=79</td>
<td>10+97=107</td>
<td>4+66=70</td>
</tr>
<tr>
<td>Improve inter-municipal biking and walking connections</td>
<td>27+142=169</td>
<td>5+62=67</td>
<td>0+17=17</td>
</tr>
<tr>
<td>Develop links to the larger county-wide bike and hiking trails</td>
<td>30+155=185</td>
<td>2+61=63</td>
<td>0+15=15</td>
</tr>
<tr>
<td>Preserve underdeveloped land along natural corridors</td>
<td>30+180=210</td>
<td>0+35=35</td>
<td>0+7=7</td>
</tr>
<tr>
<td>Promote more access to natural resources based recreational opportunities</td>
<td>30+165=195</td>
<td>0+47=47</td>
<td>0+16=16</td>
</tr>
<tr>
<td>Preserve our historic resources</td>
<td>31+199=230</td>
<td>1+32=33</td>
<td>0+6=6</td>
</tr>
<tr>
<td>Preserve our scenic character</td>
<td>31+209=240</td>
<td>1+15=16</td>
<td>0+2=2</td>
</tr>
<tr>
<td>Protect our wildlife habitat</td>
<td>31+190=221</td>
<td>1+35=36</td>
<td>0+7=7</td>
</tr>
<tr>
<td>Strengthen municipal ordinances to preserve contiguous forested land</td>
<td>28+190=218</td>
<td>0+35=35</td>
<td>0+5=5</td>
</tr>
<tr>
<td>Increase walking and biking opportunities to travel throughout the township in a safe and interesting manner</td>
<td>29+196=225</td>
<td>0+28=28</td>
<td>0+7=7</td>
</tr>
</tbody>
</table>

10. What concerns/ issues might you have if more pedestrian biking and walking path connections or were to be created by Lower Merion Township.

<table>
<thead>
<tr>
<th>Concern/Issue</th>
<th>1st Survey</th>
<th>2nd Survey</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Safety/risk of accidents</td>
<td>15</td>
<td>117</td>
<td>132</td>
</tr>
<tr>
<td>More trash</td>
<td>9</td>
<td>118</td>
<td>127</td>
</tr>
<tr>
<td>Access to the trails or paths</td>
<td>20</td>
<td>83</td>
<td>103</td>
</tr>
<tr>
<td>Increased volume of outsiders</td>
<td>6</td>
<td>91</td>
<td>97</td>
</tr>
<tr>
<td>Degraded quality of the natural areas</td>
<td>11</td>
<td>77</td>
<td>88</td>
</tr>
<tr>
<td>Trespass</td>
<td>5</td>
<td>70</td>
<td>75</td>
</tr>
<tr>
<td>Increased volume of bicycle/pedestrian traffic</td>
<td>4</td>
<td>61</td>
<td>65</td>
</tr>
<tr>
<td>More crime</td>
<td>2</td>
<td>62</td>
<td>64</td>
</tr>
<tr>
<td>Land erosion</td>
<td>9</td>
<td>45</td>
<td>54</td>
</tr>
<tr>
<td>Noise</td>
<td>2</td>
<td>48</td>
<td>50</td>
</tr>
<tr>
<td>Increase in property owner responsibility</td>
<td>2</td>
<td>32</td>
<td>34</td>
</tr>
<tr>
<td>Other:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Security</td>
<td></td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>Parking</td>
<td></td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>Signage</td>
<td></td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>
11. Would you be willing to financially support capital improvements to increase access and recreational opportunities throughout the township.  

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increase taxes</td>
<td>27+119=146</td>
<td>4+108=112</td>
</tr>
<tr>
<td>Permits and / or user fees</td>
<td>32+41=73</td>
<td>0+18=18</td>
</tr>
</tbody>
</table>

*1st Survey + 2nd Suvey = Total

12. Please check off one box indicating your level of interest in following the progress of the Lower Merion Township -Wide Bike / Pedestrian Pathy System Study.

<table>
<thead>
<tr>
<th></th>
<th>1st Survey</th>
<th>2nd Survey</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Great Interest</td>
<td>17</td>
<td>26</td>
<td>43</td>
</tr>
<tr>
<td>Some Interest</td>
<td>13</td>
<td>60</td>
<td>73</td>
</tr>
<tr>
<td>Interested</td>
<td>2</td>
<td>85</td>
<td>87</td>
</tr>
<tr>
<td>Somewhat interested</td>
<td>0</td>
<td>40</td>
<td>40</td>
</tr>
<tr>
<td>No interest</td>
<td>0</td>
<td>20</td>
<td>20</td>
</tr>
</tbody>
</table>

13. Please list your major destination points within the township and the corridor or route you currently travel, or would like to travel.

See the attached sheets

14. Do you have any additional comments regarding the future of a township-wide pedestrian linkage or network system?

See the attached sheets

15. Do you want to be placed on our mailing or emailing list for updates and public meeting notices regarding the Township’s bike and pedestrian path system?

<table>
<thead>
<tr>
<th></th>
<th>1st Survey</th>
<th>2nd Survey</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>29</td>
<td>122</td>
<td>151</td>
</tr>
<tr>
<td>No</td>
<td>1</td>
<td>95</td>
<td>96</td>
</tr>
</tbody>
</table>
Lancaster Avenue and Mont Avenue
Penn Valley School, Wynnewood Train Station, Suburban Square
Frequent travel to Managunk
Fix our roads first !!!
At present there are few places to walk/ride safely, gently, quietly.
Suburban Square & Wynnewood Shopping Center
Riverbend, Shopping - Suburban Square, Wynnewood Shopping Areas, Schools, Fitness Center
City Line Shopping Center
Wynnewood Shopping Center
Like to go into Gladwyne Village, Go to the river. I find it dangerous to ride a bike except on weekends, walking w/o sidewalks along Rte 23 is very dangerous.
Lancaster Avenue (Rt 30), Ardmore Avenue, PSC, Superfresh & Whole foods (entrance and exits need improvement)
Bus 106 to Ardmore
Bus 105 to Lankenau & Wynnewood
Ardmore - Suburban Square Area -Youngsford, Mill Creek Montgomery; Brynmawr-Black Rock - Williamson - Morris Avenue-Lancaster Libraries, 23, Lancaster, Montgomery Avenue
Use Bridelewild Trails
Montgomery Avenue West, Lancaster West, Belmont East
Wynnewood & Ardmore shopping districts via Montgomery Avenue & Penn Road. I have no problem getting to either on foot or by car.
Bala Ave to Cynwood Train Union Ave to the library and post office; Rt. 23 to school; Montgomery Avenue to shopping.
Montgomery & Lancaster Avenue, Gulf Road, Expressway, 476, Hollow Road
Library, Bryn Mawr, Ardmore shopping, Suburban Square
Montgomery & Lancaster Avenue
BC, Narberth-Wynnewood-Ardmore
Down Valley Road to Merion Train Station
Work & shopping
Narberth & Penn Valley
Bank, Food Shopping Gas station, church, library & hospital
Transportation, City Parks, shopping & the pool
Public Transportation
Ardmore - Bike from HS to YMCA
Train Station , Merion botanical garden, dog parks, Narberth
Shopping centers - travel by Montgomery or Lancaster Avenues.
Shopping centers - Bala Cynward, Ardmore, Narbeth, Wynnewood
To travel to Philadelphia use Bryn Mawr Ave., Destinations in the township at Bryn Mawr & Ardmore -back roads always. Frequently go
To Gladwyne & Lower Merion Conservancy in Gladwyne.
Shopping & services along Lancaster Pike to Wayne
Crossing Lancaster and Montgomery
Would like to bike/jog/walk on Montgomery Ave in Villanova & improve safety & width of sidewalks on Montgomery Ave in Ardmore
Conshohocken State Road is becoming increasingly dangerous as drivers speed around the curves. It is also dangerous that walk
Up & down Lancaster Ave in the Ardmore. Brynmar area is better walking areas & hiking areas. Perhaps a bike path between sidewalk & street or more plantings.
Haverford Road, Lancaster Pike
Bala Cynwyd to Bryn Mawr, Ardmore /Haverford
Bala Cynwyd to Ardmore, Narberth
Montgomery Avenue
South Ardmore Park, Suburban Square, Haverford College
Connect to Valley Force to Manayunk trail
Church, Post Office & Drycleaners
Fairmount Park-Belmont Ave., Manayank – Belmont Ave., Bala Ave. – a rail to protect bikers/walkers on bridge over Cynwyd Station on Montgomery Ave.
Narberth, Ardmore, Bryn Mawr
Merion botanical Park, Bala Cynwyd Shopping Center, Bala cwnwyd Post Office, Narberth Business District, Wynnewood Shopping Center, Bala Cynwyd Business district.
Shopping Center
Wynnewood Shopping
Bike/Hiking trails in Gladwyne
Suburban Square, Train Station
Local Shopping Areas
Shopping (Montgomery Ave.)
Narberth, Ardmore, Wynnewood, Montgomery Ave, Lancaster Ave, Wynnewood Rd
Shopping Center – Conshohocken State Rd / City Line
Safe walk to the train station on County Line Rd.
Route 30 Shopping & Business Areas / Gladwyne Town Center
Bryn Mawr Hospital/Bank/Rail
Home to Narberth to work, Home to church in Ardmore, Home to shop on Wynnewood & Ardmore, Home to Route 476 travel and work
Spring Mill Rd, Montgomery Ave, Lancaster Ave, Bryn Mawr, Suburban Square
Shopping Center, Bus stops, Restaurants, Bank
Belmont Ave, Conshohocken State Rd, Montgomery Ave, City Ave, Bryn Mawr Ave.
Schuylkill River/Drives, Train stations
To work, shopping areas, and parks
Narberth Park and Town, Suburban Square
Restaurants, shopping, library, doctor’s office, etc…
Library, bank, liquor store….
E and W Wynnewood Rd – Lancaster Ave., Montgomery Ave., Old Gulph rd., Bryn Mawr Ave., City Ave.
Bryn Mawr Hospital area, City line shopping center
Public park
Train station (Wynnewood), Church (Montgomery), Library (Lancaster), Shopping centers, post office
Mill Creek By Bike, River road by bike, Travel to Narberth and Manayunk by bike, Schuylkill river trail to Fairmount park and Valley Forge
Suburban square, bike path along river
Along Montgomery Ave
Crossing City Ave. is always dangerous and must be improved
Shopping, Schools, religious institution, park, library
City Ave shopping, parks – bike trails
Suburban square and Schuylkill River
Narberth – train station and shopping
Residential commercial parks
From Belmont hills to Narberth Boro, Penn Valley, Manayunk, Schuylkill River, and Ardmore
From Bala Cynwyd to Ardmore
Gladwyne town center
Short Ridge Park, Playgrounds, Suburban Square, restaurants
Safe path along Montgomery Ave. into Bryn Mawr. County Line Rd in Villanova needs a bike and walking path to train and trolley stations
Ardmore-Montgomery Ave
Ardmore shopping, Suburban square
Schuylkill river bike path – Conshohocken state rd.
Gladwyne center, Ardmore, Haverford, Bryn Mawr, Montgomery Ave.
Haverford, Lancaster and Montgomery Ave.
River to Manayunk, Rt 23 into Gladwyne
Narberth Shopping – Lancaster Ave. – Ardmore, Bala Cynwyd
Merion to Gladwyne, Ardmore, and Bala Cynwyd
Gladwyne to Ardmore on Mill Creek Rd
Cherry Lane – up Glenn Rd to shopping, Cherry Lane to Montgomery Ave
Haverford Station(Septa), Haverford to Haverford college, Ardmore, Bryn Mawr.
A path running down Spring Mill road to the Villanova train station.
Montgomery Ave from City Line to Ardmore Square, City Line Ave from Bala Cynwyd Shopping center to Haverford Rd
Suburban Square, LM High School
Suburban Square, Haverford College, Bryn Mawr College, Merion Golf Course, Parks, Montgomery Ave
Suburban Square, Wynnewood Shopping Center
Walk to train, shopping centers, library, Montgomery Ave, and Lancaster Ave
Gulph Rd (No sidewalk)
Montgomery Ave to Ardmore town center and make Mill Creek Rd more pedestrian friendly
Many shopping areas – suburban square, etc…, train station, restaurants, schools
Gladwyne to Ardmore, Bryn mawr, Wayne and Gladwyne to Conshohocken
Haverford Rd, Morris Rd, Lancaster Ave
Gladwyne – Rolling Hill Park, Narberth center, Ardmore-Suburban square, Mill Creek
Merion to the Manayunk Bike trail via neighborhood streets to the west Laurel Hill cemetery, then across the Connelly container bridge to Manayunk
From Penn Valley to Narberth center on Woodbine Ave.
Lancaster and Montgomery Ave’s, Ardmore Ave, Mill Creek Rd, Old Gulph Rd, Upper Gulph Rd
Town Center (Narberth), Wynnewood Shopping Center, Ardmore, Bryn Mawr
Woodbine Ave, Manayunk Ave, conshohoken state road, Bryn Mawr Ave
Ardmore, Bryn Mawr – Lancaster Ave, Haverford Rd
Gladwyne – Narberth, Gladwyne – Conshohocken
Question #14

This area could have absolutely fantastic walking and biking trails. Philadelphia needs leadership in youthful, healthful recreation of this sort. It can be a draw to retaining young educated persons and help “green” economic growth, good jobs go together with environmental friendliness for example: Seattle. We moved here because of the natural environmental, but we can’t enjoy it to the extent we’d like, or I’d like my children too.

We must work with PennDOT to make safer crossings for pedestrians against the rush of motorists who run red lights! Lower Merion Environmental Advisory Council should be involved in this study.

Persuading more L.M.H.S students to walk/bike to school rather than driving. It would make life easier for the neighbors.

Need Maplecrest Circle connected by sidewalk along Consh. State Road to Youngsford road light.

In a community that is so beautiful, I am surprised that the public hasn’t pushed for this harder. It is about time we take the step forward!

We lived in a planned community in Florida 10 years ago & had an extensive network of paths for biking & hiking. It was great for property values, physical fitness, community building, and decreased use of motorized vehicles.

Let’s make it happen!!!

I support the installation of the Mill Creek Bridge; Flat Rock Park should be for “LM residents only”. Mountain bike area should be separate from walking paths. Signal at trailhead should slow trails and indicate degree of difficulty, length and time of walk.

I don’t feel great about my 11 & 13 year old biking in the street. I feel it would be safer running w/ sidewalks or paths. I live in NJ & DC where they had great bike paths in the woods and we used them for biking/hiking quite a bit. I would like the ability to bike or walk from Ardmore train station to Gladwyne without taking my life in my hands.

I am surprised this “system” is so poorly developed.

Build a bridge at Flat Rock Park. Improve signage; increase public transit exposure and information to encourage landowners to participate.

Penn Valley Civic Association strongly supports bike trails. I see two District goals: promote recreational biking or walking and to get people out of cars – fewer auto commuters. We also need to balance promotion of positive goals with safety from crime. We don’t want increased access to lead to loitering and abuse of natural area e.g. crack vials ant Gladwyne expressway off ramp near river; beer bottles and fires in Henry Land Park.

I believe that a township wide pedestrian linkage will further reinforce our traditional neighborhood plan which was originally meant to have people walk to town centers, shops and public access. This will further strengthen a closeness among the community and reduce our dependence to automobiles.

Long overdue! Wonderful idea!

Montgomery Avenue is a big problem. The speed limit enforcement is a big problem.

Cars respect for pedestrians is non-existent. People in general drive too fast!

As a commuter bicyclist, I think anything to encourage safe cycling should be done.

My biggest concern is the safety issue with biking along the major through fares, Montgo, Lancaster, Conshocken, Belmont & the minor one Bryn Mawr Avenue, Bala Avenue, and Ardmore Ave.

Need to build HUB and spoke system around parks and from public parking. The town is a collection of strong neighborhoods with individual identity. People don’t get out to other neighborhoods. Make small trail networks in each neighborhood rather than try to link one end of town to another. Exception is along the Schuykill River and Mill Creek.

Would like to see the Rockland Road Bridge in Narberth reopened for pedestrian traffic – it is a vital line from Merion to Narberth and Wynnewood. Also, safer walking path along Merion Road from Montgomery Avenue to Merion Park and also the Merion School-Develop Mill Creek area as recreation and biking area.

Closing of the pedestrian bridge over RR tracks on Rockland avenue between Narberth and Lower Merion (near the elementary school on Bowman Avenue was a terrible shame. This cut off the Lower Merion side from the school and the little bit of open space that the school offered.

Open the bridge and rockland Ave. over to the Merion School on Bowman.

Child Safety a concern. Would like to have child bike to school

Support it!

None

I think it would be very popular. We already pay enough taxes I believe to have much better paths.

Limit it to park areas

Keep the township as quiet as it is!!!

Safety is my major concern.

The Twp Commissioners never care, they just love to take a 20 minute meeting and turn it into 4 hours. You gotta love politicians.

I live on Montgomery Ave where bicycles are permitted on the sidewalks. I have been nearly hit on several occasion

Please see safety concerns. Pedestrian paths

It would be nice to have sidewalks in our area of the township & it would make it easier to visit neighbors. The police should cite bicyclists For failing to observe red lights, stop signs etc. State laws require that they obey the same laws as motorists.

My interest would be to see a bike/walking greenway path along the Schuykill & Mill creek for recreational use.

No permits no taxes. People that have the luxury of time for these activities get themselves where biking and hiking recreations are.

Much needed!

Sounds like an idea whose time has come!

If the R-6 line is discontinued make it a path & hiking trail.

More places to lock your bike

Keep w/ character of the township if that changes it could diminish property. Trails are great but costly & difficult to maintain. Keep Streets sidewalks safe & clean. No need to duplicate city w/ rural.

We are beyond the age of getting much use from the path system, but we support it for others to use.
Natural looking trails
Separated paths for pedestrian
Waste of our money
Paved sidewalk
Too many race bikers on back streets make driving hazardous (Bryn Mawr Ave.)
Little interest
Too heavy traffic and no time for anyone to ride a bike to walk. There are many nice back roads for a pleasure ride on weekends.
A trail along the river between the River rd. and the train track, if feasible. A pedestrian bridge over the river to provide access to the Schuylkill river trail would be even better
Very excited about possibility
Making green transportation make this area a better community for all
Due to the lack of sidewalks, safety is a huge issue for walking and biking to nearby locations.
A published bike/hike map would be nice to have available
More pedestrian crosswalks for safe crossing
I think such a system would greatly improve the environment and quality of life for residents.
Great idea
There are currently no designated bike lanes on any major road. No bike parking at Septa stops and most shopping malls. Not all sewer drains are bike friendly
Narberth and Ardmore
Need safer path for biking and walking
Please allow dogs and plan for use by people with strollers
The current paths (Lancater Ave and Montgomery Ave) are unsafe and inadequate
I think it would make Lower Merion a more desirable place to live
Route 30 is far too dangerous for biking
I think painted lines on busy roads are of marginal value.
Wonderful thought! Would love to see such an improvement
Ardmore-Suburban Square, Bryn Mawr-Business District and Ludington Library, Villanova-train station
Bike to Ardmore from City Ave
To Bryn Mawr Center, Philadelphia, Western main line
Suburban Square, Manayunk downtown, and lower merion high school
Need sidewalks on some roads
Bike trails which are not shared with automobiles.
C. Ownership, Management and Liability/Pennsylvania Landowner Liability Act
Community Trails
Handbook

Brandywine Conservancy
Environmental Management Center
Chadds Ford, Pennsylvania
1997
Ownership, Management, and Liability

Every trail poses different factual and legal circumstances. Different trails within a single trail network may be owned and managed by a number of entities; these entities must be coordinated to provide safety and ensure proper trail maintenance. Specific decisions affecting ownership, management, and risk reduction methods must be based on sound advice from legal, insurance, trail, highway, and park management experts.

Trail ownership, management, and liability must be addressed during the trail planning process. Optimum safety should be the primary goal, as it is the best means to reduce liability. If an accident occurs on a trail as a result of inadequate management, an injured party may seek compensation from the landowner, the trail-managing agency, or both. If either entity is found to be negligent, it may be held liable.

Ownership of and Access to Trails

There are various forms of ownership and possession of trails. Fee simple owners, easement holders, and tenants under a lease (discussed below), all possess various rights. For example, a private person may own land and grant an easement to a second party, such as a county or municipality, to use a portion of that land for a trail. Although the county may construct and own the trail, a third party, such as a local park or transportation department, may lease or
manage the trail.

The following individuals or entities have potential liability for injury to persons using the trail: those responsible for the maintenance and management of a trail, owners of the trail, those possessing a right to the land on which a trail is located, and owners or possessors of land adjoining a trail. The form of ownership can determine the rights and obligations of owners and possessors.

- Fee Simple—Fee simple owners retain the ownership of all rights and incidents a person can have in land, including possession, enjoyment, and disposal. A person who owns property in fee simple holds the right to place a trail on the property, the right to grant another the right to place a trail on the property, and the right to prohibit others from using the property without consent. A trail or path located within a county-owned park would fall into this category. A strip of land constituting only a trail may be held in fee simple if all rights to the property are held by a single owner.
- Easement—An easement is a grant of select property rights from a fee simple owner to a second party. Generally, the easement holder has rights against all successors to the grantor (original owner granting easement) and can transfer these rights. Depending upon the terms, an easement holder is granted either
shared or exclusive use of the easement area. The title to the original parcel of land is held by the grantor subject to the rights of the easement holder. An easement must be in writing and should explicitly state terms and conditions for use. In the context of trail development, a fee simple holder may grant an easement to a second party for use of a portion of his property for a trail, usually for a fee.

- **Lease**—A lease is a grant by a fee simple owner of the right to use and possess all or part of the land, generally for a term of years. The tenant’s right to possession of the leased area is not shared with the owner or others. The lease must contain terms and conditions under which the right of use and possession is granted.

- **License**—A license is the consent or permission by an owner, lessee, or other possessor of land to the use of the land by another person. Generally, a license is not transferable by the licensee to another person. It may be either verbal or in writing, with or without conditions as to the terms of use and possession, and is generally revocable at will. An example of a license is the permission of a landowner to allow another individual to cross a portion of his property.

- **Invitee**—An invitation encourages others to enter upon or make use of the property. An invitee is an individual who is not licensed by the possessor to enter the property and whose decision to do so is based on an invitation. There is generally no written agreement between the possessor and the invitee, although sometimes admission tickets or signs stipulate terms and conditions of entry. The terms of use and occupancy are therefore somewhat less precise than for the typical easement or lease. The category of invitee applies to most persons using trails held open for public use. The invitee is generally owed the highest degree of care by the owner or possessor of the land, as compared to the duty owed to other persons using the land. While there is no clear line between a license and a public invitee, persons will be public invitees only if the possessor of the land has taken some action which appears to hold the land open to the public, such as by improving the land for that purpose. Merely allowing someone to use wholly unimproved land may not give that person the rights of an invitee or impose a higher duty of care on the owner or possessor; however, persons who own land along a public trail should be sure that their land does not look as though it is being held open for use by those who are using the trail.

- **Maintenance Agreement**—A maintenance agreement is not necessarily a right of use possession but is often associated with such rights. A maintenance agreement is a legal relationship that could exist between a land owner and a managing agent, such as a municipality or trail club, that agrees to maintain a trail.

- **Trespasser**—A trespasser is a person who enters onto the land of another without any consent of the possessor or owner.

Fee simple owners, easement holders, and lessors all have rights of possession in land. They are the primary legal relationships under which most trails will operate. Most users of a trail are considered invitees of the possessors. Those who stray from the trail onto private property (clearly identified or set apart as not a portion of the trail) are considered trespassers.

**Managing Agencies**

Management responsibilities must be clearly defined with regard to any trail network. There are many reasons why management responsibilities are not always best vested in owners or possessors, but perhaps the most compelling is that a single trail may have many owners, and it is preferable to have one agency manage a single trail. Increasingly, partnerships between different levels of government and private and public agencies are forming for the management of trail systems. For example, bikeways may be located within state highway rights-of-way although their development and management has been undertaken by a county or municipality. Private citizens may purchase or dedicate trail corridors that are later developed and managed by governmental agencies.

The proper managing agency will depend upon the type of trails involved and the resources of the potential agencies. A trail network may be comprised of interstate trails, regional trails, and community trails. Individual trails for transportation or recreation may need to be managed according to their designation. Management of the two types of community trails may differ. Bicycle-oriented trails are generally regularly managed by road crews who are routinely driving the roads that the bikeways parallel or include. The major problems for those trails are tire treads, automobile parts or other objects in the roadway that could cause bicycle damage or injury. Pedestrian-oriented trails may be better managed by park and recreation departments in larger communities (because they are more likely to have tree and grass trimming equipment and small vehicles necessary for management) and road crews, supplemented whenever possible by volunteers in small municipalities. With the exception of ownership and management by landowners of private collector trails, it is preferable for a trail network system to be managed by government. When two departments share responsibility for community trails, a single agency should be designated responsibility overall. Depending on the leadership and the equipment resources, continuity to a trail system providing for uniform trail surfaces, regulations, maintenance, and a single entity to whom problems may be addressed and to whom volunteers will report.
Apart from community trails, the determination of who manages a trail or trail network will depend on where the trail or system is located and the number of jurisdictions through which it runs.

- **Federal Management**—In general federal management of trails is uncommon and is usually limited to trails which run across federally owned properties. The National Park Service, the U.S. Forest Service, and the Bureau of Land Management manage and maintain trails on their properties.

- **State Management**—Most trails that are located within state parks are managed by state agencies. State agencies may also be the best choice for managing interstate or intrastate trails which pass through several counties. Management may be performed by a state transportation, or natural resource, or park agency.

- **County Management**—Generally, if a corridor traverses several municipalities or is located within a county park, county level management is preferred. In Pennsylvania where counties have no road maintenance responsibility, a county parks department may be the only properly staffed and equipped agency for management. In other states, county public works departments may be more appropriate. If state transportation departments manage all major roads (as in Virginia), properly vesting responsibility in the State Department of Transportation may take legislative action. Therefore, an interim agency may be needed.

- **Local Management**—A trail corridor or system that is located within a community or municipality is most appropriately managed locally by a city or township department of parks, recreation, public works, conservation, or transportation. Many municipalities with extensive trail networks establish a separate trail management agency.

- **Private Organizations**—Nongovernmental organizations and private groups are playing an increasing role in trail management. The former should be the managing agent for the low volume collector trails that provide access from private developments to the trail network system. In general, other than collector trail ownership and management, nongovernmental agencies and private groups should manage a trail system only if they have the personnel and financial resources to take on the responsibility and if there is no government entity willing to be responsible for the task.

Choosing a managing agency is dependent upon an agency’s resources, orientation and connection with other managed lands. Ideally, the local government agency should manage any trail network within its bounds. This will result in consistent trail management over the entire system.

From functional and political standpoints, local government officials may prefer that higher levels manage regional multipurpose trails and that state transportation agencies build and manage most bikeways. Many state transportation agencies are also attuned to local needs and particularly those of nonmotorized users.

**Liability and Risk Management**

**Legal Duty of Care**

The majority of trail users are public invitees. The legal duty of care that a possessor of land owes to an invitee in Pennsylvania is set forth in the *Restatement of Torts*, (2d ed.).

A possessor of land is subject to liability for physical harm caused to his invitees by a condition on the land if, but only if, he:

1) knows or by the exercise of reasonable care would discover the conditions, and should realize that it involves an unreasonable risk of harm to such invitees; and

2) should expect that they will not discover or realize the danger or will fail to protect themselves against it; and

3) fails to exercise reasonable care to protect them against the danger.

In other words, an owner or possessor of land who holds the land open for use by the public must make reasonable efforts to discover any hazardous conditions on the property and make it reasonable to protect invitees against such dangers. This effort to protect the public might include eliminating the dangerous conditions by filling a ditch along a trail, fencing around a deep hole along the trail, or making sure the public is adequately warned of the condition in such a way that the public can reasonably protect themselves from it. With respect to known and obvious dangers, the possessor of land might not be liable for harm caused by known and obvious dangers, unless the possessor of the land anticipates that invitees might be harmed even though they know about the danger.

**Trail Maintenance and Risk Management**

**Trail Owners, Planners, and Operators**

Careful professional planning, maintenance, and operation of a trail network system are essential to reducing the risk of loss to landowners and managing agencies affected by a trail. Managing agencies should develop comprehensive budget and management plans which provide for routine maintenance to ensure trail safety and reduce the potential of legal liability. They must provide a reasonably safe facility by discovering and eliminating any hazardous situations before an accident occurs. Landowners should ensure that such management plans are adopted and implemented to reduce their own liability. At a minimum, the following should be part of any planning process:

- The trail should be designed or located so as to avoid, to the extent possible, obvious dangers. This requires identifying potential hazards and the imple-
menting of mitigating factors. The primary goal of design and location is to provide for the personal safety of the user.

- The trail network plan should be constructed by professionals who are experienced and qualified in the design of trail surfaces, markings, gates, fences, and barriers.
- The trail should be adequately marked and have regular signage that warns users of uncorrectable hazards and of the users' obligations and duties. Trail regulations should be adopted and disseminated to the public.
- The trail should be regularly inspected by qualified personnel who have the experience and expertise to identify potential hazards and maintenance problems. Procedures for the regular inspection and maintenance of the trail must be developed and followed.
- Maintenance problems should be corrected promptly. Advances in the techniques and materials for construction and maintenance of trails should be incorporated as they are identified and become available. A mechanism for citizens to file complaints and maintenance requests should be established.
- Proper procedures for handling medical emergencies, including training of personnel, should be established.
- Records should be kept of the efforts made in regard to all of the following: memoranda and maps involved in the original trail design, maintenance schedules, repair efforts, regular documentation and photographs of trail signage, and documentation and follow up of all medical emergencies.

The implementation of these risk management techniques will help identify potential problems before injury occurs thereby diminishing the potential for lawsuits, reducing insurance costs and claims, and enhancing the safety of the trail network system and its support facilities.

Adjoining Land Owners

The potential liability of a person owning land abutting a trail or path is affected by several factors. As a general rule, people who own land adjoining a highway, or who even own land on which a highway is constructed and used by easement, do not have responsibility for the maintenance of that highway. The obligation of maintenance has been undertaken by the government, or in the case of trails, by the managing agency. If the owner of the adjoining land could reasonably foresee, however, that people using the highway or trail might be endangered by a condition on their land, such as a dead tree or ditch at the edge of a highway right-of-way, he or she may have liability for the resulting injury. The owner of land adjoining a trail may reduce risk of loss by doing the following.

- Work with trail designers, where possible, to have the trail located away from hazards that would be infeasible or prohibitively expensive to correct.
- Make sure the land does not appear to invite users of the trail to enter thereon and use the land as they use the trail. Insistence that designers use signage, landscaping screens, and fencing in certain areas may reduce this potential.
- If a hazardous condition exists close to the trail, eliminate the condition or warn people of the danger. The choice between the options will depend on the conditions.

A landowner should pay attention to obvious attractions to children that might be hazardous. Many states recognize that children may trespass to investigate certain attractive features. States that recognize the "Attractive Nuisance Doctrine" require a legal responsibility to children, even as trespassers, that is greater than the duty of care owed to others. Municipalities or trail clubs maintaining a trail should help adjoining land owners avoid liability by carefully marking or blazing trails. Municipalities should also post signs or notices that advise trail users that they are obligated to stay on the trail and do not have a right to deviate from the trail. Finally, to avoid risks to adjacent landowners, trail designers should locate the trail in areas that do not pass the vicinity of obvious hazards on adjoining private land.

Maintenance Agreements

Landowners and possessors may request that a maintenance agreement be established between the involved parties. First, a landowner should be confident that the parties responsible for trail maintenance are competent and will maintain the trail at a sufficiently safe level. A maintenance agreement should set forth the allocation of responsibilities and costs for repairs, marking, maintenance, inspection, and access control. The agreement should require that the managing agency have sufficient liability insurance to cover the likely amount of loss in the event the maintainer fails to perform its obligations. The insurance should be sufficient to cover the costs of providing a legal defense in the event of a liability suit. In certain circumstances where risks are particularly high a landowner or possessor may request that an indemnification agreement be created in the owner or possessor's favor.

Recreational Use Statutes and Limited Immunity from Liability

Many states have adopted a recreational use statute (RUS) to shield landowners from the liability which arises from permitting the public to use their land for recreational purposes. Although state RUS legislation and its court interpretations differ, a few generalities can be made. The statutes were created to encourage landowners to make their land available for public recreation purposes by limiting liability of possessors. The RUS limits the duty of care of a landowner to keep his or her premises safe for entry or use.
by a recreational invitee. It also limits a landowner’s duty to warn of hazardous conditions provided such failure to warn is not considered grossly negligent (that is, willful, wanton, and reckless). The result of many of many of these statutes is to limit landowner liability for injuries suffered by people engaging in certain recreational activities upon their land. They many also have the effect of reducing insurance premiums for landowners whose lands are used for passive recreation. (Alaska and the District of Columbia have not adopted some form of recreational use statute.)

Pennsylvania’s Recreational Use of Land and Water Act (RULWA) and the courts’ interpretations of its protection are an instructional example of an RUS. RULWA operates to reduce the risk of liability of landowners by granting limited immunity to those landowners whose property is used by the public for recreational purposes. Provided access to the property is not subject to a fee or charge, a landowner’s duty of care and duty to warn is no greater than that owed to a trespasser. There is no duty to exercise reasonable care to make a condition safe or to warn the recreational user of an unsafe condition. In addition, a landowner’s implied warranty of safety, sometimes imposed by the courts, and liability for acts of others on the land, is limited.

The protection offered by RULWA is not absolute. Both legislative and court exceptions exist. RULWA protection may be affected by whether the land has been improved, the degree of improvement, whether injury was caused by an improvement or activity being performed by the injured party, and whether a fee or other charge was imposed for the use of the land. The following summary of considerations for Pennsylvania landowners concerned about liability by recreational users, both invited and uninvited, may be useful when interpreting the RUS liability limitations in other states.

- Always maintain adequate insurance. Although RULWA may afford immunity in the long run, it does not cover the legal costs of defending against a frivolous suit, even if you ultimately prevail. Most homeowner policies cover usage comparable to that of sidewalks.
- Improvements tend to exclude you from RULWA, meaning that the statute’s limitations may not apply if injury is suffered in areas where improvements exist.
- RULWA liability protection will not apply if an access fee is charged.
- RULWA applies to landowners. Thus the issue of whether a possessor of land, such as an easement holder or tenant under a lease, is protected under RULWA depends upon the court’s interpretation of a land owner. More importantly, it seems logical that if the easement holder has management responsibilities under the terms of the easement, the fee title owners would generally be protected by law regardless of the determination of the applicability of RUS to the easement holder.
- Willful or malicious acts are not afforded RULWA immunity.

The Pennsylvania Supreme Court has determined that the legislature’s intent in RULWA was to limit liability protection only to “largely unimproved land.” The Court held:

When a recreational facility has been designed with improvements that require regular maintenance to be safely used and enjoyed, the owner of the facility has a duty to maintain the improvements. When such an improved facility is allowed to deteriorate and that deterioration causes a foreseeable injury to persons for whose use the facility was designed, the owner of the facility is subject to liability. We do not believe that RUA was intended by the legislature to circumvent this basic principle of tort law.

Thus an important issue under RULWA is whether the land where an injury occurs is “largely unimproved land.” Court decisions have addressed this issue. In Pomeren v. Commonwealth of Pennsylvania, the court ruled that the state was eligible for RULWA immunity from a hiker who was injured when stepping into a mudhole along an earthen trail. The court distinguished between “ancillary structures attached to open recreation land” (presumably immune) and “enclosed urban recreational facilities such as easily supervised swimming pools” (not immune).

The courts appear to look not at whether the land generally is improved, but whether the injury occurred on the improved part of the land or as a result of poor maintenance of the improved part of the land. Three cases illustrate this point. First, a landowner was not protected by RULWA when an athlete playing lacrosse on a field designed and built for that purpose was injured by a pothole in the field, arguably the result of poor maintenance. Although the sport was played on “open land,” the court was persuaded RULWA did not apply as the field was specifically improved for sports play, the field was not difficult to maintain, and the injury resulted from poor maintenance. Second, the court determined that RULWA did provide immunity for two landowners whose properties were improved with baseball fields when bystanders were injured, one by a falling tree branch and the other by a poorly hit baseball. Since the injuries did not occur on the improved parts of the properties, the baseball fields, nor as a result of poor maintenance, RULWA prevailed even though the bystanders were present as a part of the activity for which the improvements were constructed. From the above cases one might conclude that, in Pennsylvania, a trail improved by man-made features designed to be used by recreationists might not be entitled to RULWA immunity from liability for injuries resulting from factors such as defective design or maintenance. It is important here to reiterate the distinction between fee ownership and trail easement ownership and who has the design and maintenance responsibility. If the fee owner has main-
tenance responsibility for a paved trail, potential liability will be much higher than it would be if the easement holder had specific maintenance responsibility or if the trail were unpaved and the fee owner had maintenance responsibility.

_Friedman v. Grand Central Sanitation_ involved a hunter stalking prey was injured on landfill property when caustic fumes caused him to fall and injure himself. The court held that RULWA “affords protection to owners whose land is used for recreational purposes free of charge, even though the landowner has not donated the land to the public for such purposes.” The holding would appear to show that a landowner is afforded immunity under RULWA for injury to an uninvited person who nevertheless uses his property for recreational purposes if there is no connection between the improvement which caused the injury and the recreational use to which the improvement was put; however, in this case, the landowner demonstrated that he actively sought to prohibit uninvited persons from entering the property. Whether the holding would still apply without this demonstration is unclear.

Limiting Liability and Insurance

Regardless of the high degree of care and maintenance at which a trail is maintained, at some point during the period of a trail’s use it can be anticipated that a trail user will be injured on the trail. The American legal system permits private persons to recover damages from others responsible for injury or loss. Although the cause of injury may be unclear, in our litigious society trail managers and possessors should expect that a recovery suit for injuries will be filed. A RUS may (or may not) protect the landowner or managing agency from ultimate liability. At present, a RUS does not cover the costs of defending such a lawsuit, which may run into the thousands of dollars.

(If cost recovery were provided by legislation for lawsuits involving gross negligence or malicious acts of injured claimants or in cases where usage or the reasonable standard of care would be low, landowners and trail owning entities would be protected from nuisance suits and trail development could move through evolutionary stages at lower costs.)

In general, the legal person or group (that is, government agencies or non-profit organizations) responsible for trail maintenance is the most exposed if an injury claim is brought. The responsible management entity must buy an insurance liability policy sufficient in size to cover the costs of a potential jury award. The policy should also provide for the insurer to cover the costs of defending a suit for injury. The management entity must be prepared to pay for the costs in defending a suit, no matter how groundless. Many governmental agencies that take on the responsibility of managing trails carry insurance sufficient to cover the additional liability of a trail; however, the extent of coverage of existing policies must be reviewed to ensure they will cover any potential injury that might occur during a trail’s construction phase and use. If existing insurance coverage is insufficient, managing agents should purchase additional coverage to ensure adequate protection. Some management entities may consider excess liability policies or umbrella policies to protect against awards which exceed the limits of existing policies.

General Comprehensive Liability policies are usually sufficient to protect landowners and homeowner associations who may own and maintain private collector trails. Most such policies provide coverage to an owner if someone is injured on the property whether or not the person has permission to be there. Landowners should review their policies to insure that trails are not excluded from claims and that the amount of coverage is sufficient to cover potential claims. When reviewing the coverage of such policies make sure that all potential uses of the trail are considered. Some insurers may require separate policies for certain uses (such as equestrian use).

Trail liability issues are a questions of maintenance and usage. Developing a comprehensive trail management plan and budget that implements risk management strategies is the best defense against a suit for injury; however, no landowner or trail managing agent will ever be free from the filing of a lawsuit, no matter how frivolous. Therefore, adequate liability insurance is a necessary expense to protect the trail network system.
Pennsylvania Landowner Liability Act

No. 586, HB 1005, signed into law Feb. 2, 1966
Amended March 26, 1992

Encouraging landowners to make land and water areas available to the public for recreational purposes by limiting liability in connection therewith, and repealing certain acts.

The General Assembly of the Commonwealth of Pennsylvania hereby enacts as follows:

Section 1. The purpose of this act is to encourage owners of land to make land and water areas available to the public for recreational purposes by limiting their liability toward persons entering thereon for such purposes.

Section 2. As used in this act:

1. "Land" means land, roads, water, watercourses, private ways and buildings, structures and machinery or equipment when attached to the realty.

2. "Owner" means the possessor of a fee interest, a tenant, lessee, occupant or person in control of the premises.

3. "Recreational purpose" includes, but is not limited to, any of the following, or any combination thereof: hunting, fishing, swimming, boating, camping, picnicking, hiking, pleasure driving, nature study, water skiing, water sports, cave exploration *, and viewing or enjoying historical, archaeological, scenic, or scientific sites.

4. "Charge" means the admission price or fee asked in return for invitation or permission to enter or go upon the land.

Section 3. Except as specifically recognized or provided in section 6 of this act, an owner of land owes no duty of care to keep the premises safe for entry or use by others for recreational purposes, or to give any warning of a dangerous condition, use, structure, or activity on such premises to persons entering for such purposes.

Section 4. Except as specifically recognized by or provided in section 6 of this act, an owner of land who either directly or indirectly invites or permits without charge any person to use such property for recreational purposes does not thereby:

1. Extend any assurance that the premises are safe for any purpose.

2. Confer upon such person the legal status of an invitee or licensee to whom a duty of care is owed.
(3) Assume responsibility for or incur liability for any injury to persons or property caused by an act of omission of such persons.

Section 5. Unless otherwise agreed in writing, the provisions of sections 3 and 4 of this act shall be deemed applicable to the duties and liability of an owner of land leased to the State or any subdivision thereof for recreational purposes.

Section 6. Nothing in this act limits in any way any liability which otherwise exists:

(1) For willful or malicious failure to guard or warn against a dangerous condition, use, structure, or activity.

(2) For injury suffered in any case where the owner of land charges the person or persons who enter or go on the land for recreational use thereof, except that in the case of land leased to the State or a subdivision thereof, any consideration received by the owner for such lease shall not be deemed a charge within the meaning of its section.

Section 7. Nothing in this act shall be construed to:

(1) Create a duty of care or ground of liability for injury to persons or property.

(2) Relieve any person using the land of another for recreational purposes from any obligation which he may have in the absence of this act to exercise care in his use of such land and in his activities thereon, or from the legal consequences of failure to employ such care.

Section 8. The act of September 27, 1961 (P.L. 1696), entitled "An act limiting the liability of landowners of agriculture lands or woodlands for personal injuries suffered by any person while hunting or fishing upon the landowner's property," is repealed.

All other acts or parts of acts are repealed in so far as inconsistent herewith.

Section 9. This act shall take effect immediately.

Approved -- The 2nd day of February, A.D. 1966 by Gov. William W. Scranton

* The words "Cave Exploration" was added to this act by the act of 1992-10, signed by Gov. Robert P. Casey on March 26, 1992. Cave exploration became a covered activity on May 26, 1992.
