

### III. Recommendations

The proposed trail network for the Township is shown in Appendix A. The proposed network meets the guiding principles of the plan, as discussed above. It has the potential to link the Township's residential neighborhoods, while providing access to parks, open space, and the County trail system. The network was developed through a combination of technical expertise and public input, with the consulting team and the steering committee working closely to look at technical feasibility, and the residents of the Township providing input at key junctures regarding the popular demand and political feasibility of the network. This section includes descriptions of the types of facilities considered, a description of the network plan and summary of the network itself, and recommendations regarding the implementation of the plan. Implementation includes prioritization, phasing, cost estimates, and potential funding sources.

#### A. Types of Facilities Considered

A key issue is determining which types of trails would be most appropriate in Whitemarsh Township. For each project recommended in this plan, a particular type of facility is anticipated. During implementation, however, some of these recommendations may change. In some locations where sidewalks are recommended, for example, it may turn out that conditions on the ground make a gravel sidepath more appropriate. Where a fully striped bike-lane is recommended, it may only be possible to widen the curb lane slightly and add share the road signs.

In addition to physical conditions imposing constraints, ownership and use of lands abutting the various types of proposed trail facilities could have an impact on the appropriateness of a specific type of facility. Therefore, if there is a change in use of a major tract of land bordering a roadway with a proposed trail facility, the need for that facility and/or the type of proposed facility should be re-evaluated and appropriate recommendations made at that time.

To give the reader an understanding of what types of facilities are being discussed in the recommendations below, the range of possible path and trail facility types is illustrated below:



#### Multi-Use Trail

Most often used for long distance regional facilities, often on rail to trail conversions. Usually 12-16 feet wide. These trails can be paved or consist of gravel / crushed stone, or some combination. Appropriate for cyclists, runners, roller-bladers, walkers, etc. These trails can run alongside existing roadways, or traverse wooded or open land.

Parks, Regional Trails, Schools, and Historic points of interest, etc., may already have or may need to develop similar arrival identification signage.

At trail heads 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.

*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. Art may be integrated into the walking/biking system including entrances, gateways, bridges, and especially signage. Using the skills and sensitivities of artists and designers, Whitemarsh could develop the ped/bike network as a strong a sense of place.



**Gateway to the Township: The historic Andorra Inn greeted travelers from Plymouth Township on Ridge Pike at Butler Pike. This is a 1931 photograph.**



**The same location in 2007. Pedestrians on Ridge Pike crossing from Plymouth Township into Whitemarsh are greeted by a concrete “jersey” barrier once across Butler Pike.**



### **Bike Lane and Sidewalk**

Typically found on urban or suburban arterials. Provides facilities for both high-speed cycling and walking. Bike lane 4-6 feet in width. Sidewalk 6 feet or more in width. This example is along Northwestern Avenue at the Morris Arboretum.



### **Bike Route**

A full, striped bike lane should be at least 4-6 feet in width. When this is not possible, a bike route can be established whether a striped shoulder is present or not. The total width of the lane or lane plus shoulder should be at least 14-15 feet and signage designating the road as a bike route (such as "Share the Road" signs) should be present.



### **Sidewalk**

Typically found adjacent to urban or suburban roads. Generally 6-10 feet in width. Concrete or asphalt construction. Typically used by walkers, small children on bicycles, etc.



### Sidepath

The least intensive type of path. Generally 4-8 feet in width. No formal edges. Most appropriate for walkers and runners, although very light bicycle use is also possible. Least expensive to construct – most expensive to maintain. Appropriate in locations where a full sidewalk would not be feasible. This example is in nearby Upper Merion Township.

## B. Description of Network Plan

As noted previously, the overall intent of the recommended network is to provide links from all neighborhoods in the Township to all schools, parks and recreational facilities, commercial areas, and other common destinations. The proposed network meets this goal by providing trails, sidewalks, side paths, and bike routes appropriate to each link. Forging connections between Whitemarsh's neighborhoods and Montgomery County's multi-use trail system is a central goal of this plan; interconnections between Whitemarsh Township and our neighboring municipalities are also emphasized.

The physical locations of potential pedestrian and bicycle network routes are depicted in the maps included in Appendix A. The maps are organized as follows:

- **NETWORK MAP** – *Township-Wide* – The recommended Pedestrian, Bicycle and Multi-Use Trail routes are mapped out on one sheet to show the overlay of connections linking neighborhoods, parks, open spaces, public schools, roadways, and regional rail service.
- **PHASE MAPS** – *Phases 1 through 5* – Shows how the network should be implemented in stages.
- **BUS MAP** – Shows the locations of transit bus lines within the Township. Pedestrian improvements should be made wherever bus stops are located.

The following describes the network plan map – the maps of individual phases are discussed in the section on implementation. The map illustrates the following network elements:

## **BICYCLE NETWORK**

### **RECOMMENDED BIKE LANES**

Roads where bike lanes are proposed have been shaded light blue on the maps.

With a few exceptions, narrow pavement widths preclude the installation of bike lanes on most of the roads that traverse Whitemarsh Township. The major exceptions to this are Bethlehem Pike and Germantown Pike. For its entire length through the township, Germantown Pike's pavement width should be sufficient to accommodate bike lanes. In some places (for instance the southbound approach to the Joshua Road intersection) the center turn lane can be re-striped narrower, thus freeing up more space near the edges of pavement for bicycles. For most of its length, Bethlehem Pike also offers an opportunity for bike lanes. However, between Church Road and Skippack Pike, four lanes of heavy traffic occupy every inch of space between the curbs, and this will require a more difficult solution.



**Much of Germantown Pike is of sufficient width to accommodate bike lanes**

### **RECOMMENDED ON-STREET BIKE ROUTES**

Those roads shaded yellow on the maps, may serve as bicycle routes without bike lanes. These roads vary widely in their degree of bicycle-friendliness. Thirty-foot wide streets such as Spring Mill Road (west of Ridge Pike) carry reasonable traffic volume and can be ridden comfortably. Other roads, such as River Road, are exceedingly narrow and will require, at the least, "Share the Road" signs, if not more extensive design modifications.

By Pennsylvania law, Bicycles are considered a vehicle and all roadways are required to be safe and usable by bicycles, except limited access highways. Most roads throughout the township have been rated as bicycle friendly *for experienced cyclists* except for limited access highways such as the Pennsylvania Turnpike and 309 Expressway, and portions of arterials like Ridge Pike which has a combination of four lanes, a lack of shoulders, high traffic volume and traffic speeds. Similarly, the severe grades leading up to the higher elevations of the Township can be hazardous as well. An example is Joshua Road where the narrow road climbs the steep ridge within Fort Washington State Park. Less experienced riders may experience varying levels of comfort on some roads depending on time of day, traffic volumes, etc.

## **PEDESTRIAN NETWORK**

### **EXISTING SIDEWALK**

Existing sidewalks are represented with a thin, solid orange line. These sidewalks are typically of concrete construction. Those sidewalks that do not provide through connections have not been mapped.

### **RECOMMENDED SIDEWALK/SIDE PATH**

Streets recommended to receive a sidewalk or side path are represented with a solid thick blue line. In some cases, where a clear "bench" of relatively level land within the public right of way is present, a concrete sidewalk may be the most appropriate type of facility. In other cases, with more difficult topography and vegetation, an unpaved path may be the more appropriate way to provide for pedestrian use of the road. In addition to those shown, sidewalks or side paths should be constructed adjacent to all SEPTA bus stops (current transit bus routes are shown on Drawing 7, Appendix A).

### **RECOMMENDED “VILLAGE WALKING STREET”**

Local streets with very low motor vehicle traffic volume and low prevailing speeds can be suitable for both pedestrians and bicycles. Where such streets represent links in the township-wide network, they are represented by green shading. Traffic calming measures such as curb bump-outs and speed tables can be implemented on “Village Walking Streets,” in an effort to enhance the safety of pedestrians and bicyclists.

### **EXISTING OFF-ROAD MULTI-USE TRAIL**

Existing multi-use trails are represented with a thick, solid orange line. Montgomery County has already constructed two of these (Schuylkill River Trail and part of the Green Ribbon Trail) and has plans to build more (see Planned Off-Road Multi-Use Trail, below).

### **PLANNED OFF-ROAD MULTI-USE TRAIL**

Multi-use trails under construction or already in the planning stage are represented with a thick, dashed orange line. Montgomery County is planning to construct the Cross County Trail in the near future, as well as to extend the existing isolated portion of the Green Ribbon Trail.

### **RECOMMENDED OFF-ROAD MULTI-USE TRAIL**

This plan’s proposed new multi-use trails are represented with a thick, solid magenta line. An example is the multi-use trail proposed to run alongside Skippack Pike from Butler Pike to Mathers Lane (where connection would be made to the Green Ribbon Trail).

### **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 difficult solution would be required to implement a sidewalk/path are represented dashed blue line. These paths or sidewalks would be difficult to implement by virtue of:

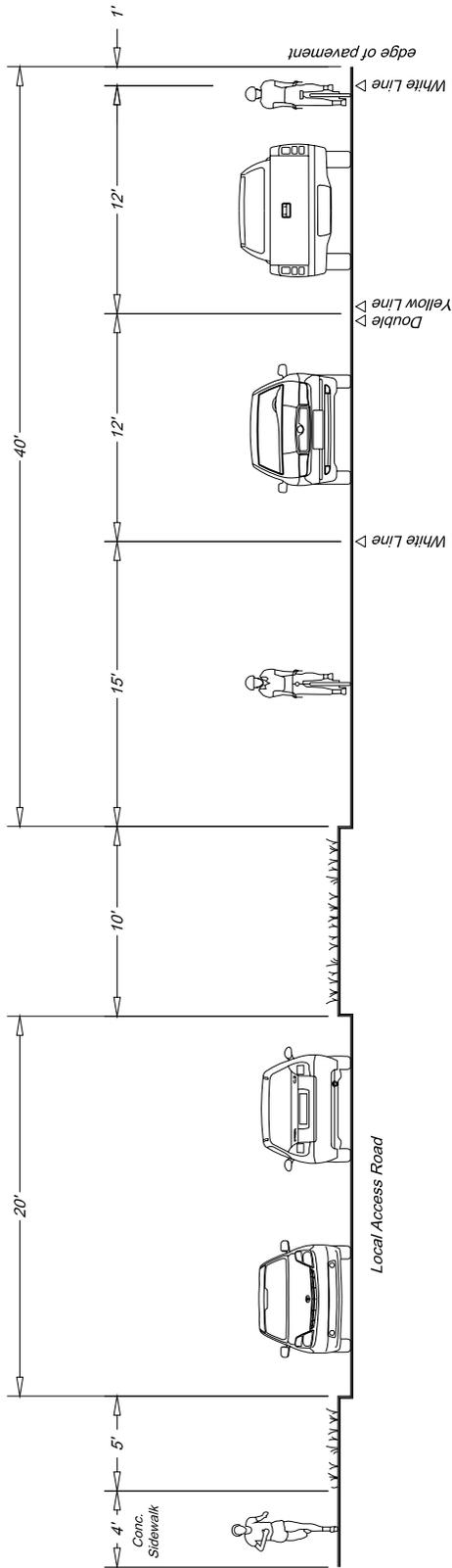
- *Physiographic Obstacles* - such as steep earthen slopes, large rocks, water ways, etc.
- *Major Structure Obstructions* - within the “bench” area such as stone walls, fences, trees, etc.
- *Property Owners* - whose landscaping and mailboxes, etc. have encroached into the area where a sidewalk/path 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 re-grading, and the construction of retaining walls or boardwalks may be required.

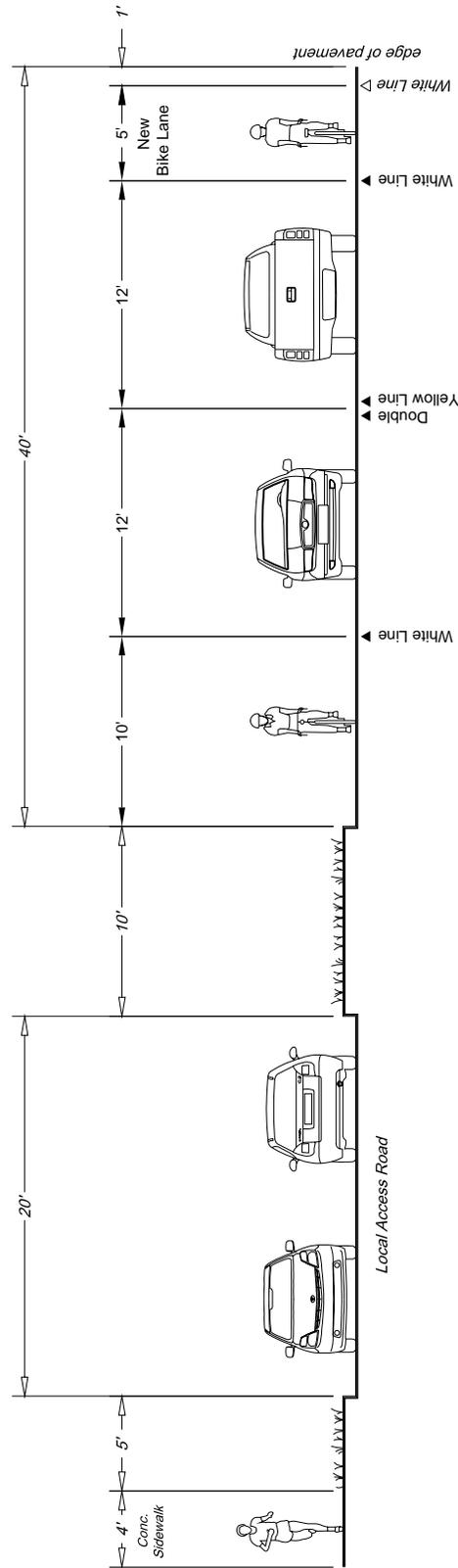
### **SUMMARY**

The following table illustrates the total mileage of each type of network segment, by type:

<b>Proposed Network Mileage</b>	
<b>Neighborhood Street</b>	<b>2.0 miles</b>
<b>Sidewalk / Sidepath</b>	<b>13.1 miles</b>
<b>Footpath</b>	<b>3.1 miles</b>
<b>Multi-Use Trail</b>	<b>10.9 miles</b>
<b>Bike Route</b>	<b>22.4 miles</b>



**Flourtown Road -- Existing Conditions**



**Flourtown Road -- Proposed Improvements**

**Re-striping the existing traffic lanes on Flourtown Road can allocate adequate width for bicycle lanes.**

## C. Transit and Signage Recommendations

### 1. Transit Access

#### Transit Links

The recommended township-wide network reaches transit stops along both the SEPTA R5 and R6 Regional Rail lines. R5 trains serve Fort Washington in the northeast corner of the township; R6 serves Miquon and Spring Mill in the Schuylkill River valley. These trains offer quick, convenient service to Philadelphia. Express trains reach Center City from Whitmarsh in as little as 21 minutes.

In addition, seven bus routes serve the township. These are:

- The SEPTA L bus travels the length of Germantown Pike in the Township. Its endpoints are the Plymouth Meeting Mall, and the Olney Broad Street Subway station in Philadelphia. It offers the most frequent service of any transit route in the Township, with a bus at least once every twenty minutes on weekdays, every half hour on Saturdays, and hourly on Sundays.
- The SEPTA 27 bus runs on Ridge Pike through the Township. Its endpoints are the Plymouth Meeting Mall, and Center City Philadelphia by way of Roxborough and Manayunk. Like the L bus, this line offers frequent service particularly on weekdays.
- The SEPTA 94 bus runs on Bethlehem Pike in the northeast corner of the township. Its endpoints are Montgomery Mall (by way of Ambler), and Chestnut Hill in Philadelphia. Service is hourly seven days a week.
- The SEPTA 134 bus is essentially a Route 94 express, sharing the 94's endpoints and its route through the Township but taking a more direct route north of Ambler to Montgomery Mall. It offers rush hour service, plus three trips on Saturdays and Sundays.
- The SEPTA 97 bus connects Barren Hill with Conshohocken and Norristown, via Joshua Road. Service is hourly, seven days a week.
- The SEPTA 98 bus traverses Butler Pike in the far northern corner of the Township. Its endpoints are Norristown and Willow Grove Mall. Service is hourly, six days a week.
- The SEPTA 201 bus connects the Fort Washington Regional Rail Station with the Fort Washington Office Center. Base service is hourly, weekdays only.

Overall, the proximity of the clearly defined pedestrian and bicycle network to train stations and bus stops 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 and along bus routes (please refer to the Bus Routes map, Appendix 7). 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. 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. Additionally the Township should work with SEPTA to have bicycle lockers



**Express commuter train *Schuylkill Flyer* reaches Center City Philadelphia from Miquon Station in 21 minutes**

installed at Spring Mill, Miquon, and Fort Washington Stations. Although SEPTA has long been reluctant to install bicycle lockers at rail stations, and now uses security concerns in the wake of the 9/11 attacks as its rationale, the Township should push SEPTA to re-examine this position. Lockers are especially important 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 source of Township revenue if arrangements can be made with SEPTA.

### **Bicycles on Transit**

Bicycles are permitted on all seven SEPTA bus routes that service the Township. SEPTA buses are equipped with front bicycle racks that hold two bicycles. The routes 27, 94, 97, 98, 134, 201 and L buses that pass through the Township are designated as bicycle rack routes where racks should always be available. Bicycles can be taken on buses with racks anytime as long as the racks are not already full – if they are, the rider would have to wait for the next bus because bikes may not be taken onboard buses. An already-full bike rack can be a serious inconvenience on those bus routes which operate only hourly.



**All SEPTA buses are equipped with front racks that will accommodate two bicycles**

Bicycles can be taken on R5 and R6 commuter rail trains during non-peak hours on weekdays and at all hours on weekends and major holidays, but are not permitted during peak hours. SEPTA rules limit bicycles to two per train (regardless of the number of cars that comprise the train), but enforcement is usually left to the discretion of the individual conductor. It should be noted that folding (collapsible) bicycles are permitted at all times.

## **2. Safety and Wayfinding Signage**

### **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.

### **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 Whitemarsh 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:* The most important key to developing a way finding system is to define important destinations, points of interest, and interchanges then link them together. Key destinations such as Township