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Feasibility Study for the Upper Merion Township-Wide Pedestrian and Bicycle Network

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I. Executive Summary

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 a sidewalk or a safe bike route that would allow you to get to your preferred destinations? These are some of the important questions suburban municipalities and “edge cities” are asking their citizens today. As many township, state and interstate roadways were built or modified with the safety, capacity, and comfort of motor vehicles in the forefront, many of these roadways remain hazardous and uncomfortable for pedestrian and bicycle use. This is because pedestrian and bicycle systems are rarely documented in a master plan that would ensure that future roadway development include specific pedestrian and bicycle issues.

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, in-line skating, etc.
- **Present to the Public and Township Officials initial findings** of legal feasibility, usage feasibility, and location feasibility.
- **Report on final study results and develop** a conceptual Pedestrian Network, Bicycle Network and Greenway/Multi-use 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.

Public Participation

Based on township study committee recommendations, community outreach, and questionnaires, the study has identified desired routes on a Master Plan for the Township Wide Network.

Citizen Survey - SUMMARY results compiled (+/-19.99 Margin of Error):

- Recreation is the most preferred activity followed by Running and Jogging and Partaking in Nature Hikes
- 75% say it not easy to walk and bike in the Township
- 71% want access to the Schuylkill River
- 83% will use new connections
- 63%are willing to use their cars less often
- Biking and Walking to Public Transit is also a preferred activity
- Parks, Natural Resources, and Rivers/Streams should be Increased with trail access
- Gaining Access to the trails/paths was the top concern followed by Safety/risk of Accident
- 54% willing to support capital expenditure to Increase Recreation and Access
- Only one participant had no interest in the study
- Points of Interest and Routes to travel were identified



C. Master Plan Recommendation Drawings

MASTER PLAN RECOMMENDATIONS	Please see Master Plan Recommendation Drawings (<i>APPENDIX A</i>)
Township-Wide Network (Dwg #: MAPKEY)	Shows Township-Wide Network for Pedestrians and Bicycles
Trail Network (Dwg #: TRAIL)	Shows Proposed Multi-Use Trails (Hard Surfaced)
Pedestrian Network (sidewalks) (Dwg #: PEDMAP)	Shows Proposed Side-of-Road and Off-Road Pedestrian Network
Bicycle Network (Dwg #: BIKEMAP)	Shows Recommended On-Road Bike Routes and Bike Lanes
Implementation Network (Dwg #: PED impl)	Shows Side-of-Road and Off-Road Pedestrian Network to be Implemented (includes difficult physical conditions)

Summary of 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. DeKalb Pike/Valley Forge Road/Allendale Road)
- Stripe Bike Lanes where possible
- Link together Schuylkill River Trail West and the Crow Creek/Rail to Trail Local Loop (Multi-Use trails)
- Link Ped/Bike Network to Adjacent Municipalities, Public Transit and the Schuylkill River Trail
- Investigate implementation of key pedestrian and bicycle bridges
- Implement Signage and Information Systems
- Educate and inform the public of the benefits of walking and cycling and location of alternative routes
- Integrate recommended routes into State / MPO plans
- 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
- Form a committee to 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 teams to process and prepare planning, design and construction documents for prioritized legs and segments of trails based on the guidelines established within this study and the decisions of 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, Pennsylvania Utility Commission to secure appropriate clearances, permits, and authorizations for future construction.

D. Implementation

This report is the first planning step towards the realization of the township-wide ped/bike network for Upper 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 the networks facility type:

PRIORITY MULTI-USE TRAIL / SIDEWALK / BICYCLE ROUTES									
Existing Network Mileage and Facility Type			Proposed Network Mileage and Facility Type						
			Pedestrian				Bicycle		
On Neighborhood Street	Trail	Sidewalk	Multi-use Trail (Ped/Bike)	Trail/Footpath (Earthen)	Sidepath (Gravel or Asphalt)	Sidewalk	Special Design Consideration (i.e. Difficult to Implement)	Bike Lanes/Wide Shoulders	On-Road Bike Route
1.50	2.00	5.50	18.00	0.00	0.70	2.30	1.40	2.80	10.80

PRIORITY ROUTES IDENTIFIED

The study has selected Major Routes, to be studied in detail for costs. The routes are represented on the PRIORITY Drawings (see Section III-C-1 to 5 and/or APPENDIX A, Dwg #: MAPKEY). Color-coded route numbers in circles identify each segment of the route and each segment’s ends are represented with a black tick mark.

PRIORITY ROUTES		
Priority Pedestrian Projects		Priority Bicycle Route Projects
A = Multi-Use Trail Routes	B = Priority Sidewalk Routes	C = Priority Bicycle Route Projects
Color GREEN	Color RED	Color BLUE
Schuylkill River Trail West	Henderson Road Priority Sidewalk Route	Henderson Road / S Gulph Rd Priority Bicycle Route
The Crow Creek and Rail to Trail Loop	Crossfield Rd/E Valley Forge Rd Priority Sidewalk Route	Crossfield Rd/E Valley Forge Rd Priority Bicycle Route
The Valley Forge Historic Park to Chester Valley Trail Connection	DeKalb Pike Priority Sidewalk Route	East Side Priority Bicycle Route
The DeKalb Pike Sidepath, and	South Side Priority Sidewalk Route	South Side Priority Bicycle Route
Other Trails	The Chester Valley Trail to Allendale Road Priority Sidewalk Route	Allendale Road to The Chester Valley Trail Priority Sidewalk Route
	Roberts School Priority Walking Route	

E. Summary of Opinion of Probable Cost

See Section I-E-Table 1a on the next page for the Summary of the Construction Costs and Design Fees associated with the above Priority Projects. The full table containing the Opinion of Probable Cost that includes the entire Pedestrian and Bicycle Network recommended in this study can be found in Section III-B-Table 1.

F. Summary of Maintenance Cost

It is our opinion that when implemented, the Township should be prepared to budget a minimum of \$169,600 dollars per year for repair and maintenance costs for the 43.4 miles of Priority Network. This does not include other segments of the pedestrian and bicycle segments recommended to complete the entirety of the network. When the entire recommended Township-wide Network is constructed, the Township should be prepared to budget a minimum of \$283,100 dollars per year for repair and maintenance cost for the entire 104.4 mile Bicycle and Pedestrian Network. This opinion does not include snow removal or equipment costs.

OPINION OF TOWNSHIP-WIDE NETWORK MAINTENANCE COST						
TYPE OF FACILITY	COST PER MILE PER YEAR	PRIORITY NETWORK MILEAGE	PRIORITY NETWORK COST PER MILE PER YEAR	OTHER NETWORK SEGMENTS MILEAGE	OTHER NETWORK SEGMENTS COST PER MILE PER YEAR	TOTAL YEARLY MAINTENANCE
MULTI-USE TRAILS ROUTES	\$7,000	19 miles	\$133,000	4 miles	\$28,000	\$161,000
SIDEWALKS ROUTES	\$1,500	10.9 miles	\$16,350	24.5 miles	\$36,750	\$53,100
BICYCLE ROUTES	\$1,500	13.5 miles	\$20,250	32.5 miles	\$48,750	\$69,000
TOTAL	–	43.4 miles	\$169,600	61 miles	\$113,500	\$283,100

Upper Merion Township-Wide Pedestrian and Bicycle Network Feasibility Study - SUMMARY PRELIMINARY OPINION OF PROBABLE COST FOR PRIORITY ROUTES ONLY (TABLE 1a)

Montgomery County, Pennsylvania
Prep'd by Campbell Thomas & Co - 1504 South Street - Philadelphia PA 19146-1636 - Tel:215-545-1076 - Fax 215-545-8397
Date: November 2005

Table with columns: Route ID #, Route Name, Reach of Route, OWNERSHIP (Public/Private), DISTANCE & TYPE OF REACH (Existing/Proposed Network), Cost (Units, Cost/Unit, Cost Factor, Subtotal), SPECIAL SIGNAGE @ CROSSINGS (Pedestrian/Bicycle), Reach Subtotal, TOTALS, Comments, ID #. Rows include projects A1 through B20.

Upper Merion Township-Wide Pedestrian and Bicycle Network Feasibility Study - SUMMARY PRELIMINARY OPINION OF PROBABLE COST FOR PRIORITY ROUTES ONLY (TABLE 1a)

Montgomery County, Pennsylvania
Prep'd by Campbell Thomas & Co - 1504 South Street - Philadelphia PA 19146-1636 - Tel:215-545-1076 - Fax 215-545-8397
Date: November 2005

Table with columns: Route ID #, Route Name, Reach of Route, OWNERSHIP, DISTANCE & TYPE OF REACH, Cost, SPECIAL SIGNAGE @ CROSSINGS, and ID #. Includes project details for Henderson Road, Crossfield Rd, East Side, South Side, and Allendale Road.

TOTAL PRIORITY PEDESTRIAN AND BICYCLE ROUTE CONSTRUCTION COSTS
Subtotal Network and Sample Implementations
TOTAL PRIORITY TRAIL/PED/BIKE ROUTES
TOTAL PRIORITY ROUTE CONSTRUCTION

PRIORITY DESIGN AND ENGINEERING FEES
Preliminary Design/Engineering
Final Design/Engineering
Construction Phase Services by Design Professional

TOTAL OPINION OF PROBABLE COSTS FOR PRIORITY ROUTES
Total Construction
Total Design and Engineering
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 2007 Dollars.
5. Total costs have been rounded to the nearest \$1000
6. Proposed pedestrian network includes costs for surface construction only and is for planning purposes only. ADA ramps, piping and filling ditches, concrete ditch removal, asphalt removal, tree removal, fence removal, clearing and leveling, firehydrant moving, and new power poles are not included.

TOTAL DESIGN and CONSTRUCTION FOR PRIORITY ROUTES \$26,672,000