

The Forge to Refuge Trail - A Feasibility Study

Linking Valley Forge National Historical Park to the John Heinz National Wildlife Refuge

Extending Cobbs Creek Trail west into Haverford Township

Extending the Radnor Trail east to Villanova



Prepared for:

Radnor Township as the Coordinating Municipality

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November 30, 2015

Additional participating municipalities include:

The City of Philadelphia, Millbourne Borough and Haverford Township

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PNDI – Project Environmental Review Receipt pages 1 to 4 (Philadelphia, Millbourne Borough, Haverford Township)

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Public Workshop, East Section – 9/4/2014 – Attendance sign-in sheet, Meeting Minutes



Karakung Drive is currently closed to motor vehicles on Sundays during the warm weather. The Valley Forge to Heinz Refuge Trail will most likely parallel the Drive, providing a safe off-road route on a daily basis through the year.

EXECUTIVE SUMMARY

A. Some Background

Forge to Refuge – “The Idea”

The “idea” of the Forge to Refuge Trail came about as a result of meetings in Radnor Township regarding the extension of the Radnor Trail at both the east and west ends. Although there are some fairly substantial barriers in both directions, it was soon realized that the benefits of developing solutions to overcome those barriers resulted in a valuable regional, multi-municipal trail planning effort that offered far more than simply extending the already landlocked and isolated Radnor Trail.

Extending planning efforts through Tredyffrin Township, to the west and north, links the trail to Valley Forge National Historic Park, its trail network, and from there to the Schuylkill River Trail in Montgomery County. However, it was soon seen that breaching the barrier to the east offered even more.

The logical extension of the Radnor Trail to the east has always been the former P&W Railroad corridor, owned by PennDOT. The problem with this extension is that the remnant P&W right-of-way, from Radnor-Chester Road to the Villanova Junction, was cut in half by the construction of Interstate 476, the Blue Route. It was quickly noticed that if I-476 could be addressed, over, under or around, one was back on the rail corridor to Philadelphia, the SEPTA Norristown High Speed Line, just at the other end of which is Cobbs Creek and the Cobbs Creek Trail which will connect to John Heinz National Wildlife Refuge in the very near future.

And thus the Forge to Refuge Trail was born.

Radnor Township applied for funding which led to the formation of a steering committee and commissioning of this study. This study’s focus is on the eastward extension of the Radnor Trail, in particular two sections of it. The study explores trail alignment alternatives eastward, from Radnor-Chester Road through Villanova University and alternatives westward from the Cobbs Creek Trail, at 63rd and Market Streets, into Haverford Township. Study of the section from Villanova to Haverford has been postponed due to SEPTA’s planning efforts that may impact the Norristown High Speed Line Corridor.



The current end of the Radnor Trail at Sugartown Road clearly needs an extension.

B. The Study Team

Funding Partners – This study was funded, in part, by a grant from the Community Conservation Partnership Program administered by the Pennsylvania Department of Conservation of Natural Resources (DCNR). Matching funds were provided through a Delaware Valley Regional Planning Commission (DVRPC) Regional Trail Program Phase II grant.

Coordinating Municipality – Radnor Township as the grantee under the DCNR grant agreement was the coordinating municipality for the study with primary responsibility for the administrative duties outlined in the grant agreement, including selecting and retaining the planning consultants for the study and managing funding from the various sources. In addition Radnor Township participated as part of and organized the Steering Committee for the Forge to Refuge Trail.

Steering Committee and the Municipal Partners – The work of the study was coordinated by the Steering Committee formed to represent the four municipalities actively participating in the study, funding partners and other interested entities. The four active municipal partners to the study were Radnor Township, Haverford Township, Millbourne Borough, and the City of Philadelphia. Brief contact was made with Upper Darby Township as well.

The members of the Steering Committee and entities they represent were as follows:

John Fischer	Chairman, Forge to Refuge Trail Steering Committee
Melissa Conn	Purchasing and Contracts, Radnor Township
Elaine Schaefer	Board of Commissioners, Radnor Township
John Nagle, PE	Board of Commissioners, Radnor Township
Steve Norcini, PE	Public Works, Radnor Township
Tim Denny	Parks and Recreation, Haverford Township
Richard Kerr	Friends of Haverford Trails
Dennis O’Neil, PE	Borough Engineer, Millbourne Borough
Dr. Robert Armstrong	Historic Preservation & Development Specialist, Parks and Recreation, Philadelphia
Karen Holm	Manager, Delaware County Planning Department
Jeff Knowles, AICP	Environmental Planner, PA Dept. of Conservation of Natural Resources
Sarah Clark Stuart	Acting Executive Director, Bicycle Coalition of Greater Philadelphia
John Boyle	Research Director, Bicycle Coalition of Greater Philadelphia

The Consultant Team – Radnor Township retained the services of **Campbell Thomas & Company** (CTC) of Philadelphia as the lead trail planning consultant for the study. As the lead consultant CTC coordinated the overall work of the study; performed review and analysis, including research and field study; directed the public participation process; coordinated and conducted stakeholder meetings and interviews; developed alignment alternatives and related cost analysis; and produced the draft and final reports. Consultant **TPW Design Studios** of York, Pennsylvania provided services related to environmental planning and specific land planning issues such as drainage and stormwater management.

Contact information for the Consultant Team:

Campbell Thomas & Company

Robert P. Thomas, AIA – Partner in Charge

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phone: 215 985 4354 / e-mail: rthomas@campbellthomas.com

C. Purpose, Goals & Objectives

The overall goals and objectives of the Forge to Refuge Trail are both regional and local in nature.

Regional – On a regional level the goal is to further the development of critical trail networks and linkages through Delaware County that will form part of the larger regional trail network, the Circuit of Greater Philadelphia. It's hoped that upon completion, the Forge to Refuge Trail will ultimately provide a continuous, primarily off-road trail link between Valley Forge National Historic Park and the John Heinz National Wildlife Refuge as well as to Center City via the Schuylkill River Trail. In terms of major trail networks, it will form a direct link between the East Coast Greenway and the Schuylkill River Trail, west of the Schuylkill River. In the future the Forge to Refuge Trail will also link to The September 11 National Memorial Trail network both at the John Heinz National Wildlife Refuge, via the 58th Street Connector, and at Valley Forge National Historic Park.

Local – On the local level, the trail will interconnect multiple communities as it passes through Tredyffrin Township, in Eastern Chester County; Radnor, Haverford and Upper Darby Townships and Millbourne Borough in Northeastern Delaware County; and the City of Philadelphia. It will interconnect residential areas with shopping and business districts and provide opportunities to link community resources, recreational facilities and educational institutions, thus enhancing the local pedestrian and bicycle travel options.

User Goals – The ultimate goal was to identify a route along which a continuous, off-road, multi-use trail that will be mostly accessible for the entire length of both extensions studied can be built. It is generally felt that meeting these conditions will result in a finished trail that will be useable by the largest population in a community, for a wide variety of uses, such as:

- Walking/hiking for all age groups, including those using assistance devices.
- Wheel chair users, although tire types should be for outdoor, active use.
- Baby strollers and jogging strollers.
- Jogging/running, although soft surface shoulders might be considered to reduce impact.
- Bicycling for both high pressure tire road bikes and lower pressure crossovers.
- Family Bicycling including children just learning or in seats, carriers and trailers.
- Roller skating or Rollerblading.
- Winter cross country skiing if snow is not removed.
- Equestrian use was considered, but found to be impractical as the Trail is anticipated to be hard-surfaced. If space can be found for a parallel soft-surface trail, this decision merits reconsideration.

These types of trails offer far more than just recreational opportunities. They can facilitate local errands and daily trips such as shopping, going to schools, and trips to local community facilities. They add a very efficient level to commuting alternatives and even inter-community travel via walking, bicycling or even rollerblading. And of course, as is the intent of the Forge to Refuge Trail and its links to the Circuit Network and the East Coast Greenway, they can offer another option for both regional destination oriented trips and even longer distance travel.



Although many years have passed since a train used this tunnel under Market Street, heavy vehicular traffic and the Market-Frankford Line continue to travel above. This tunnel will provide a grade-separated link between the current end of the Cobbs Creek Trail, Upper Darby Township and Millbourne Borough.

D. Summary of the Analysis

The western study section in Radnor Township – In Radnor Township a number of alternatives were considered, but between Radnor-Chester Road and Ithan Avenue they primarily follow two main Corridors, the former P&W Rail corridor owned by PennDOT and the Lancaster Avenue corridor. The primary challenge to both corridors is I-476. I-476 quite literally cuts the P&W corridor in half with no provision to go from one side to the other along the former rail corridor. While I-476 crosses over Lancaster Avenue and the length of the overpass is quite generous, the number, lane width and arrangement of the on-ramps and off-ramps and their associated dedicated turning lanes become a challenging network for a pedestrian or bicyclist to negotiate.

The eastern section through Philadelphia, Millbourne Borough, Upper Darby and into Haverford Township – The study of the westward extension of the Cobbs Creek Trail was less a study of alternatives as it was an evaluation of the potential of existing trails and footpaths in place and of preferred alignments as they pass through existing park lands, primarily in Philadelphia and Haverford Townships. The study also included a review of the proposed Millbourne Trail through the proposed T.O.D. redevelopment site, formerly the location of Sears, and how it could be best incorporated into the surrounding network.

Summary – As a result of the study efforts, it can be clearly seen that there are wonderful opportunities for extending an off-road, multi-use trail east from the Radnor Trail and west from the Cobbs Creek Trail through both the west and east sections of this study. Most of the sections considered are along publicly owned rights-of-way and through public park lands. There are virtually no continuity gaps within the sections themselves; and they represent a substantial interconnection of local communities and their resources. The major issues in both sections occur at the end points of the sections as they approach Ithan Avenue and Eagle/Wynnewood Road respectively. In Radnor Township the P&W corridor route only reaches Sproul Road or Aldwyn Lane with relative ease. The Lancaster Avenue alternative reaches Ithan Avenue, but is not consistently feasible on either side and beyond that is a challenge unless the route shifts back to the Norristown High Speed Line corridor. In Haverford Township the route reaches the intersection of Mill Road and Karakung Drive before conditions again become difficult to negotiate. Once again, use of the NHSL corridor seems like it may offer the best options for continuation both beyond Mill Road and Eagle/Wynnewood Road.



The Trail will offer superb links to the Norristown High-Speed Line and the Market-Frankford Line

E. Summary of the Recommendations, Implementation and Phasing

Concept of the Phasing Approach – There are a number of ways phasing strategies can be developed. In many projects, funding takes precedence and the least costly sections are pursued first to get as much trail in place as quickly as possible. Then as funding becomes available, development continues on the higher cost phases. In the case of the Forge to Refuge Trail, while funding is an issue in development, it is agreed that the more important aspect of the Phasing is the concept of **extending the existing elements in place**, the Radnor Trail and the Cobbs Creek Trail. The goal is to see that a continuous trail grows from both ends, closing the gap while maintaining continuity of those elements.

The western study section in Radnor Township – Based on the input during the study and the analysis, the P&W Corridor is not only the preferred route, it is the most effective route for the Forge to Refuge Trail. Implementation is recommended in four phases with the final goal of building an off-road trail that extends the existing Radnor Trail to the Villanova Station of SEPTA's Norristown High Speed Line. At first the section will be completed and made contiguous using a potential temporary link to Lancaster Avenue. The final route will incorporate proposed overpasses of I-476.

PHASE I – Extend the existing off-road trail under Radnor Chester Road and along the P&W right of way to I-476. (Approximately \$650,000)

PHASE II – Link the two sections of the P&W right of way via Lancaster Avenue and extend the off-road trail to Aldwyn Lane. (Approximately \$725,000)

PHASE III – Extend the off-road trail to Villanova Station as a “Pilot Rail-with-Trail” within the SEPTA right of way behind the Aldwyn Lane properties. (Approximately \$180,000)

PHASE IV – Construct the overpasses of I-476 and the final link of the two sections of the P&W right of way (Approximately \$2.6 million)

The eastern section through Philadelphia, Millbourne Borough, Upper Darby and into Haverford Township – Based on the study the preferred routes through existing parklands and other sites appear feasible. There are a number of specific design issues that will need to be addressed during design and implementation, but in the end they create an effective off-road route for the Forge to Refuge Trail up to Mill Road in Haverford Township. Again four phases were identified as logical extensions of the Cobbs Creek Trail that maintained continuity and reached appropriate points in terms of linking neighborhoods and resources.

PHASE I – Cross 63rd Street and improve the existing off-road trail network through the Haddington Woods section of Cobbs Creek Park to the intersection of Haverford and Lansdowne Avenues. (Approximately \$610,000)

PHASE II – Construct the Millbourne Trail with its links to Market Street, via a ramp to the Cardington Branch Tunnel, and the Haddington Woods Trails, via a new bridge over Cobbs Creek. (Approximately \$850,000)

PHASE III – Complete the perimeter off-road trail around the Cobbs Creek Golf Club and into Carroll Park to the link to the Grange Estate in Haverford Township. This is the longest proposed phase and includes a proposed tunnel under City Avenue. (Approximately \$2.0 million)

PHASE IV – Extend the off-road trail through Carroll Park into Karakung Park up to Mill Road. (Approximately \$500,000)

I. INTRODUCTION



The Forge to Refuge Trail will follow the edge of the historic Cobbs Creek Golf Course.

A. Some Background

Forge to Refuge – “A Vision”

It's a beautiful spring morning in 2020.

Although the Radnor Trail was completed in 2005 and much of the Cobbs Creek Trail, below Market Street, at least ten years earlier, around 2010, citizens in the communities between Valley Forge National Historic Park and the John Heinz National Wildlife Refuge, including Radnor Township, Haverford Township, the Borough of Millbourne and Philadelphia, began to look how these isolated trails could not only be extended, but linked together to form what is now ***the Forge to Refuge Trail***.

Life in these communities and along the trail is now very different than it was just a short time ago:

- No longer do so many people drive to get to a trail, as they can often access this route directly from quiet streets in their own neighborhoods and communities.
- With more connections, people can go to school, shop, visit friends, and just stretch their legs locally without having to drive or ride on-road routes to older long distance trails, as they did to Fairmount Park or the Schuylkill River Trail.
- Now that the Forge to Refuge Trail, a key part of the Circuit Network of the Greater Philadelphia region, connects with such long-distance trails as the Chester Valley Trail, the Horse-Shoe Trail, the Schuylkill River Trail, the East Coast Greenway, and the large trail networks in Fairmount Park, Valley Forge National Historic Park and the John Heinz National Wildlife Refuge, the possibilities on a beautiful morning such as this seem endless.

- Commuting by bicycle is now much easier, more desirable, healthier and even practical. With the 58th Street Connector, which opened in 2013, linking the Forge to Refuge Trail to the Schuylkill River Trail, even Center City Philadelphia is now an easy, attractive off-road ride from Haverford Township, Millbourne and the Cobbs Creek Neighborhoods, and even points west such as Radnor and Tredyffrin Townships for stronger cyclists.

Forge to Refuge – “The Idea”

The “idea” of the Forge to Refuge Trail came about as a result of meetings in Radnor Township regarding the extension of the Radnor Trail at both the east and west ends. Although there are some fairly substantial barriers in both directions, it was soon realized that the benefits of developing solutions to overcome those barriers resulted in a valuable regional, multi-municipal trail planning effort that offered far more than simply extending the already landlocked and isolated Radnor Trail. Extending planning efforts through Tredyffrin Township, to the west and north, links the trail to Valley Forge National Historic Park, its trail network, and from there to the Schuylkill River Trail in Montgomery County. However, it was soon seen that breaching the barrier to the east offered even more.



The logical extension of the Radnor Trail to the east has always been the former P&W Railroad corridor, owned by PennDOT. The problem with this extension is that the remnant P&W right-of-way, from Radnor-Chester Road to the Villanova Junction, was cut in half by the construction of Interstate 476, the Blue Route. It was quickly noticed that if I-476 could be addressed, over, under or around, one was back on the rail corridor to Philadelphia, the SEPTA Norristown High Speed Line, just at the other end of which is Cobbs Creek and the Cobbs Creek Trail. Linking with the Cobbs Creek Trail will, when completed, connect to the John Heinz National Wildlife Refuge.



The namesakes of the Trail – Valley Forge National Historical Park (top) and the John Heinz National Wildlife Refuge (bottom)

And thus the Forge to Refuge Trail was born.

Tredyffrin Township has sought funding for, and is taking on the planning of the sections through their township to Valley Forge. Radnor Township applied for funding which led to formation of a steering committee and commissioning of this study. This study’s focus is on the eastward extension of the Radnor Trail, in particular two sections of it. The study will explore trail alignment alternatives eastward, from Radnor-Chester Road through Villanova University and alternatives westward from the Cobbs Creek Trail, at 63rd and Market Streets, into Haverford Township. Study of the section from Villanova to Haverford has been postponed due to current planning efforts underway by SEPTA impacting the Norristown High Speed Line Corridor.

B. The Study Team

Funding Partners – This study was funded, in part, by a grant from the Community Conservation Partnership Program administered by the Pennsylvania Department of Conservation of Natural Resources (DCNR), Bureau of Recreation and Conservation. The grant was applied for by and awarded to Radnor Township as the grantee in 2012. The grant agreement period is from January 1, 2013 to December 31, 2016, reference DCNR grant number BRC-TAG-18-160.

Matching funding was provided by a Delaware Valley Regional Planning Commission (DVRPC) Regional Trail Program Phase II grant.

Coordinating Municipality – As noted above, Radnor Township as the grantee to the DCNR grant agreement was the coordinating municipality for the study with the primary responsibility for the administrative duties outlined in the grant agreement, including selecting and retaining the planning consultants for the study and managing funding from the various sources. In addition Radnor Township participated on and organized the Steering Committee for the Forge to Refuge Trail.

Steering Committee and the Municipal Partners – The work of the study was coordinated by the Steering Committee formed to represent the four municipalities actively participating in the study, funding partners and other interested entities. The four active municipal partners to the study were Radnor Township, Haverford Township, Millbourne Borough, and the City of Philadelphia. Brief contact was made with Upper Darby Township as well.

The members of the Steering Committee and entities they represent were as follows:

John Fischer	Chairman, Forge to Refuge Trail Steering Committee
Melissa Conn	Purchasing and Contracts, Radnor Township
Elaine Schaefer	Board of Commissioners, Radnor Township
John Nagle, PE	Board of Commissioners, Radnor Township
Steve Norcini, PE	Public Works, Radnor Township
Tim Denny	Parks and Recreation, Haverford Township
Richard Kerr	Friends of Haverford Trails
Dennis O’Neil, PE	Borough Engineer, Millbourne Borough
Dr. Robert Armstrong	Historic Preservation & Development Specialist, Parks and Recreation, Philadelphia
Karen Holm	Manager, Delaware County Planning Department
Jeff Knowles, AICP	Environmental Planner, PA Dept. of Conservation of Natural Resources
Sarah Clark Stuart	Acting Executive Director, Bicycle Coalition of Greater Philadelphia
John Boyle	Research Director, Bicycle Coalition of Greater Philadelphia

It should be noted that all members of the Steering Committee offered invaluable assistance and insight during the course of the study. Of particular note are the efforts of committee chair John Fischer who worked tirelessly and directly with the consultant team on the assessment efforts and the public participation process, including meetings with key stakeholders.

The Consultant Team – Radnor Township retained the services of Campbell Thomas & Co. (CTC) of Philadelphia as the lead trail planning consultant for the study. As the lead consultant, CTC coordinated the overall work of the study; performed review and analysis, including research and field study; directed the public participation process; coordinated and conducted stakeholder meetings and interviews; developed alignment alternatives and related cost analysis; and produced the draft and final reports. Consultant TPW Design Studios provided services related to environmental planning and specific land planning issues such as drainage and stormwater management. Members of the consultant team included:

Campbell Thomas & Company

Robert P. Thomas, AIA	Partner in Charge
Harry Murray, NCARB	Architect and Trail Planner
Jeff Case, PE	Civil Engineer
Michael Szilagyi	Trail and Transportation Planner, GIS specialist (to Jan. 2015)
Doug Maisey	Trail Planner (from Oct. 2014)

TPW Design Studios

Timothy P. Wilson, RLA, LEED AP Landscape Architect, Environmental Planner

Contact information for the Consultant Team:

Campbell Thomas & Company

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Philadelphia, PA 19146
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C. Purpose, Goals & Objectives (DCNR – A.1)

The overall goals and objectives of the Forge to Refuge Trail are both regional and local in nature.

Regional – On a regional level the goal is to further the development of critical trail networks and linkages through Delaware County that will form part of the larger regional trail network, the Circuit of Greater Philadelphia. It's hoped that upon completion, the Forge to Refuge Trail will ultimately provide a continuous, primarily off-road trail link between Valley Forge National Historic Park and the John Heinz National Wildlife Refuge, as well as to Center City via the Schuylkill River Trail. In terms of major trail networks, the trail will form a direct link between the East Coast Greenway and the Schuylkill River



The Trail will link numerous historic sites such as The Grange.

Trail, west of the Schuylkill River. In the future, the Forge to Refuge Trail will also link to The September 11 National Memorial Trail network both at the John Heinz National Wildlife Refuge, via the 58th Street Connector, and at Valley Forge National Historic Park.

Local – On the local level, the trail will interconnect multiple communities as it passes through Tredyffrin Township, in Eastern Chester County; Radnor, Haverford and Upper Darby Townships and Millbourne Borough in Northeastern Delaware County; and the City of Philadelphia. It will interconnect residential areas with shopping and business districts and provide opportunities to link community resources, recreational facilities and educational institutions, thus enhancing the local pedestrian and bicycle travel options.

Site specific purposes of this study – The goal of the work of this study was to conduct analysis, assessment and determination of the feasibility of constructing on- or off-road, non-motorized, multi-use trails extending the Radnor Trail eastward to Villanova University and the Cobbs Creek Trail westward from 63rd and Market Streets in Philadelphia to the vicinity of the intersection of East Eagle Road and Haverford Road in Haverford Township.

D. Delineation of Study Area (DCNR – A.2,3,4) *(See the five location maps following this section)*

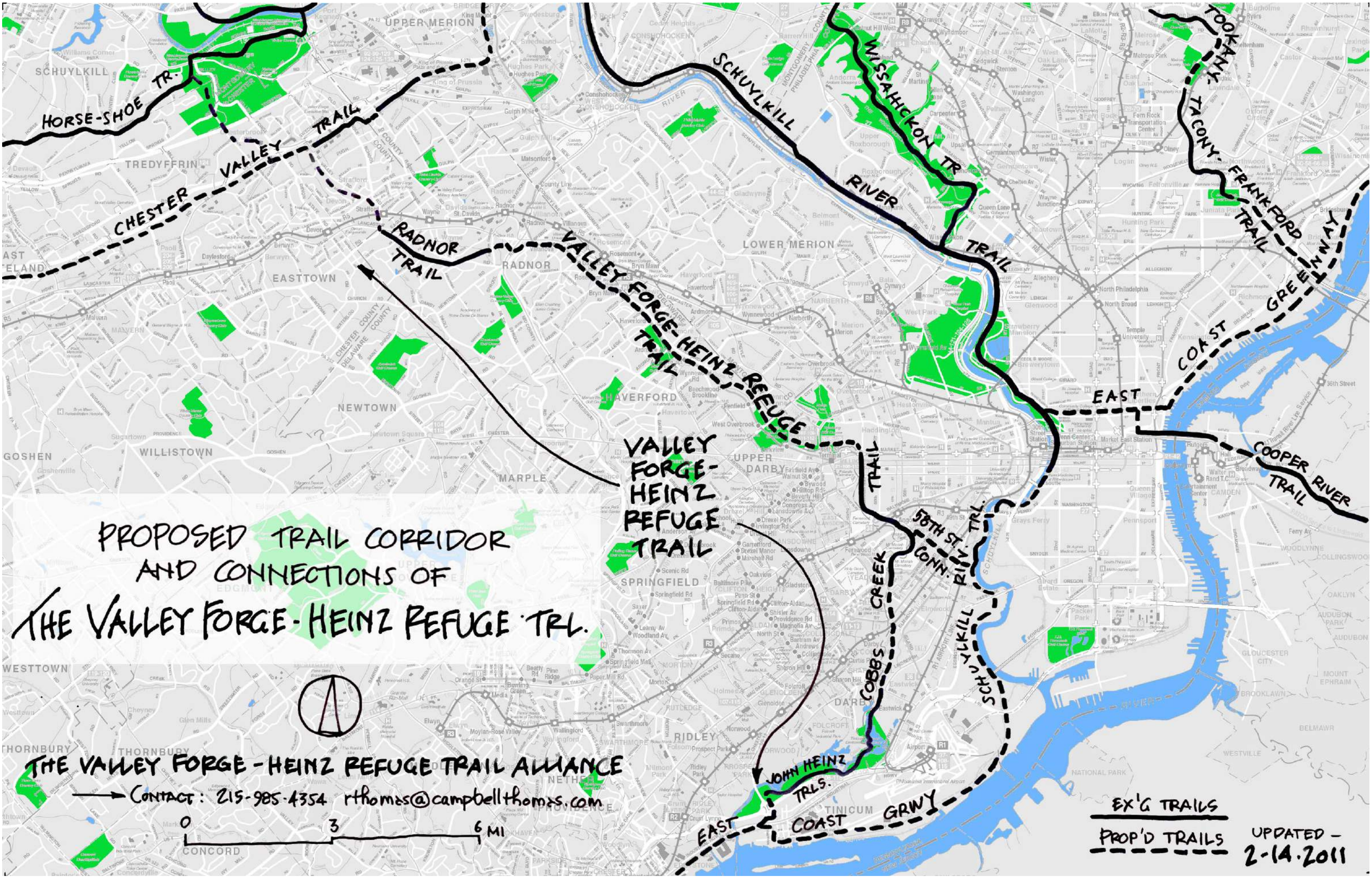
Long Term View – The Forge to Refuge Trail Corridor – The proposed corridor for the Forge to Refuge Trail is generally as identified on the following maps. From Valley Forge National Historic Park, the corridor heads south through Upper Merion and Tredyffrin Townships generally climbing out of the Chester Valley to the existing Radnor Trail at Sugartown Road and continuing along the existing trail to its current terminus at Radnor Chester Road. From there the trail will generally follow the former P&W corridor, owned by PennDOT, to the SEPTA Norristown High Speed Line corridor. While the trail may not be in the SEPTA right-of-way, the proposal at the present time is to plan a route that follows that corridor alignment from Villanova into Haverford Township where an alignment will be developed that generally follows Cobbs Creek through mostly Philadelphia Park Lands to the Cobbs Creek trail, at 63rd Street. The Cobbs Creek Trail, whose remaining sections are in design and construction, will complete the Forge to Refuge Trail alignment to John Heinz National Wildlife Refuge. Trails existing and planned in the Eastwick section of Philadelphia and within the Refuge complete the link, at multiple points, to the present East Coast Greenway Alignment. At the northern end, trails within Valley Forge NHP link the Forge to Refuge to the Schuylkill River Trail network.

Specific Study Area Limits – For this study there were two specific areas of focus at the east and west ends of the proposed Forge to Refuge Trail Corridor; extending the Radnor Trail east to Villanova University and extending the Cobbs Creek Trail west from 63rd and Market Streets.

To the west, through Radnor Township, the study area limits are Lancaster Avenue and the former P&W Rail corridors between Radnor Chester Road and Ithan Avenue. There were a few alternatives investigated that stray as far south as Conestoga Road in efforts to explore ways to temporarily or permanently address the barrier represented by US 476, but they were for the most agreed to be poor alternatives. Consequently, the limits are most effectively described by the two noted corridors and the lands adjacent and between.

In the east, through Haverford Township, limited sections of Upper Darby Township, Millbourne and Philadelphia; the study area limits are generally within a corridor following Cobbs Creek between 63rd Street in Philadelphia and Eagle/Wynnwood Road in Haverford Township. The study limits expand along this corridor in Philadelphia to include the bounds of city owned park land known as Haddington Woods and the Cobbs Creek Golf Club.

*ATTACHED LOCATION MAPS: Regional Map – showing the corridor and specific study areas
Official Circuit Map – showing the corridor and specific study areas
East Coast Greenway Map - showing the corridor
West Study Area Map
East Study Area Map*



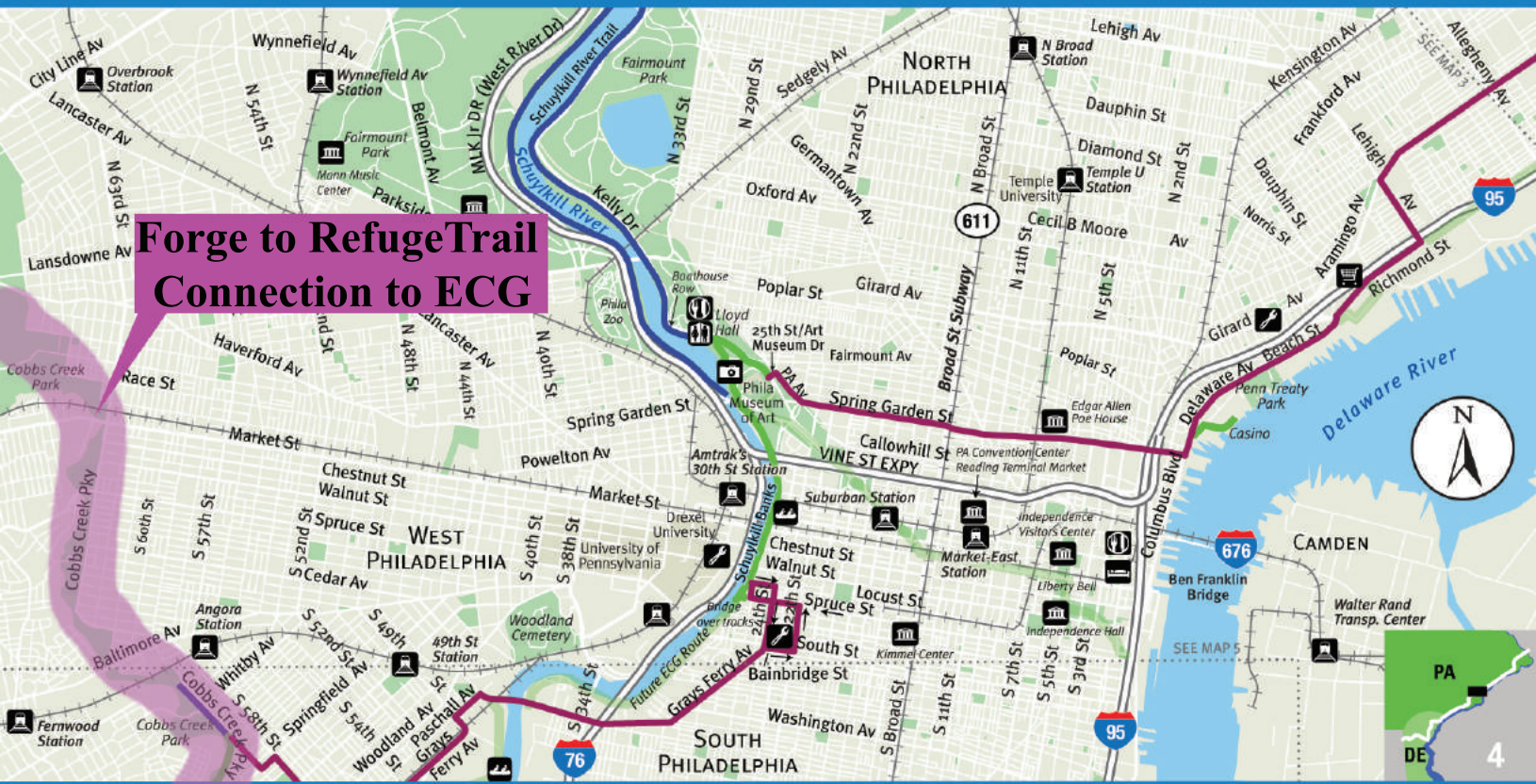


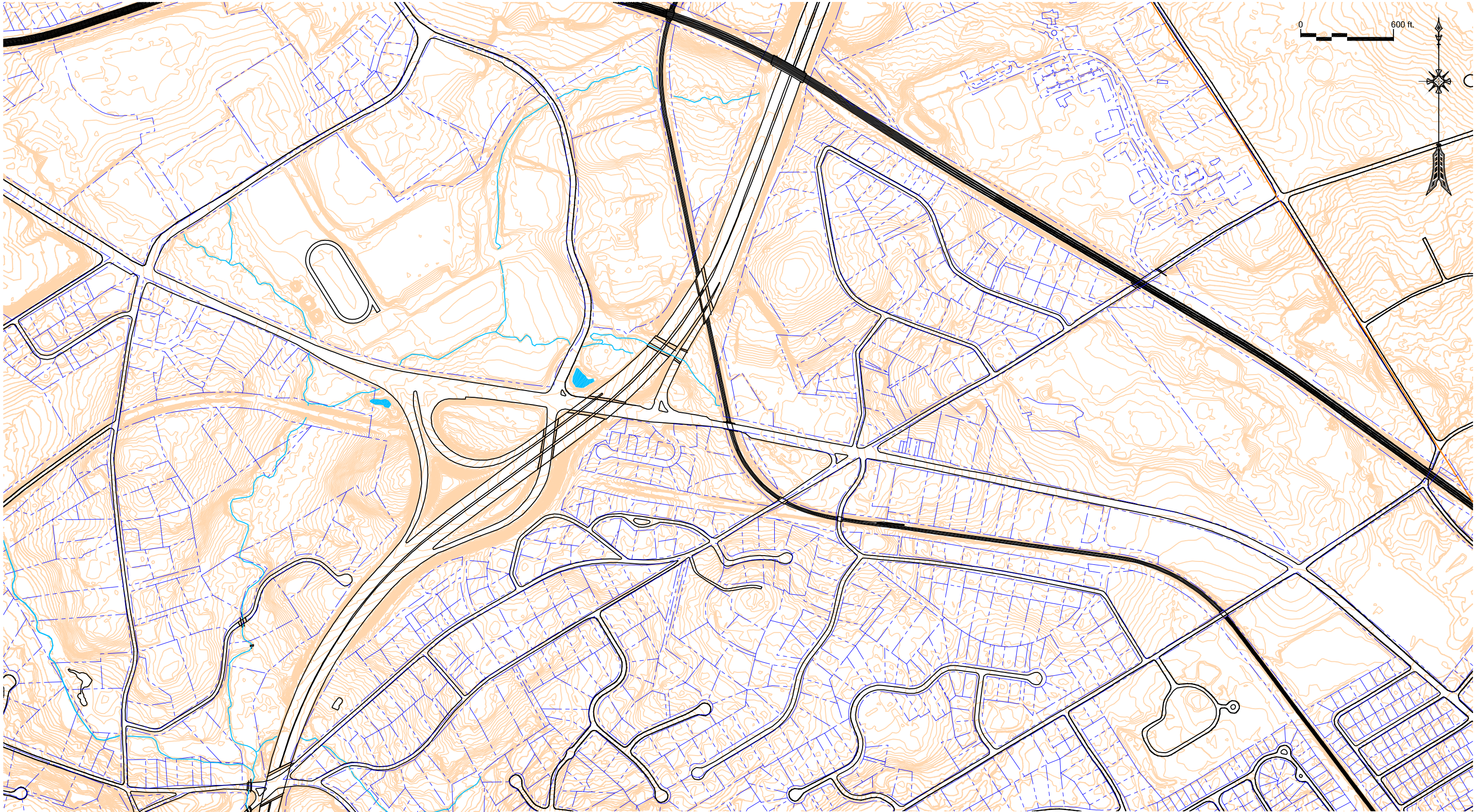
the Circuit
Greater Philadelphia's
Regional Trail Network

0

2 mi

Forge to Refuge Trail Connection to ECG





FILE: h:\rad-tini\dwgs\ base map.dwg		DRAWN BY ZMS	
PLOT SCALE: 1" = 600 ft.		CHECKED BY RPT	
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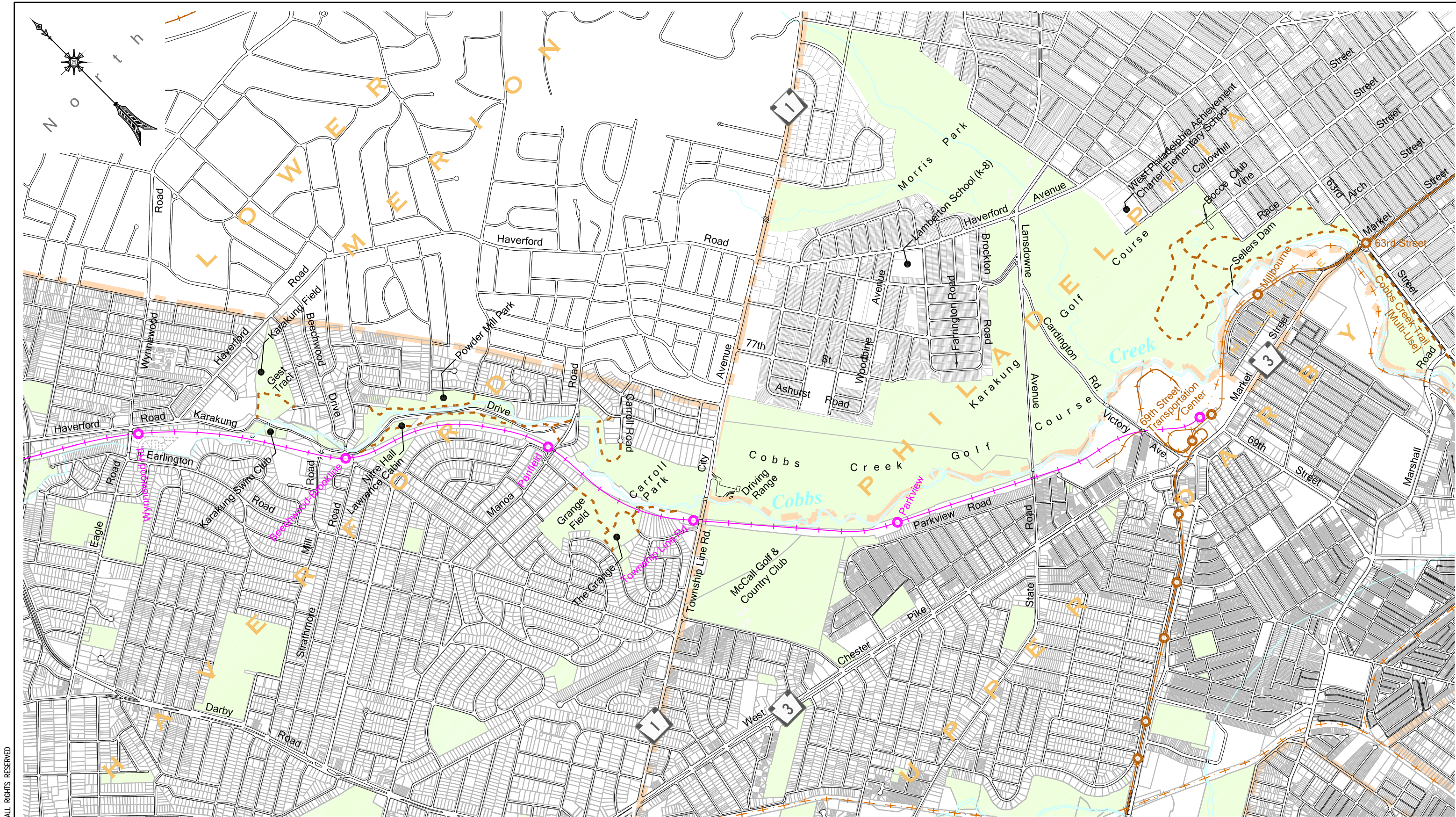
Forge to Refuge Trail Feasibility Study

Radnor Township 301 Iven Avenue Wayne, Pennsylvania 19087-5297

Campbell Thomas & Company 1504 South Street, Philadelphia, PA 19146 215-545-1076

TPW Design Studios 310 Elmwood Boulevard, York, Pennsylvania 17403 717-843-1897

TITLE	Western Section Base Map
DWG NO.	1



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Legend

- Existing Trail ———
- Norristown High Speed Line ——— Station
- Connecting Passenger Rail Line ——— Station
- Abandoned Railroad - - - - -

0 1/4 mile

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Forge to Refuge Trail Feasibility Study

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TITLE Eastern
Section
Base Map

DWG NO.
2

II. INVENTORY AND ANALYSIS

A. Background Materials

During the course of the work the study team researched and reviewed publicly available background materials and studies. They included the following:

Radnor Township

Radnor Township Comprehensive Land Use Plan – June 2003
Greenways and Open Space Plan – 2014 – direct coordination with consultant Simone-Collins

Delaware County

Delaware County Recreation, Open Space and Greenway Plan

Haverford Township

Field review with the Friends of Haverford Trails
Friends of Haverford Trails Website
Haverford Township Comprehensive Plan 1988

Millbourne Borough

Millbourne Borough Trail Feasibility Study – June 2012
Proposed T.O.D. Site Redevelopment Plan, Millbourne Borough – 2012

Philadelphia

City of Philadelphia Trails Master Plan and Update – 2013 & 2014

Villanova University

Development plan for south side of Lancaster Avenue – as modified and approved in 2015

DCNR

Greening Parks and Sustainable Practices Website

B. Site Analysis (DCNR – D)

Physical Site Analysis

Dimensions of Rights-of-Way / Easements – This feasibility study’s purpose is to develop recommendations for a general alignment or alignments that the Steering Committee, participating municipalities, stakeholders and community representatives agree will best facilitate creating a link between Valley Forge National Historical Park and the John Heinz National Wildlife Refuge through the two areas that are the focus of the study. Conditions vary along the route and specific dimensions of rights-of-way or easements, where needed, will need to be developed and negotiated as the actual trail design and planning progress. That being said, while the specific dimensions will likely vary, the ultimate goal is to establish sufficient rights-of-way or easements that will allow for construction a twelve (12) foot wide multi-use trail with sufficient shoulder width, in the range of two to four feet on both sides, total width sixteen (16) to twenty (20) feet, to the fullest extent possible. With the exception of a few specific areas discussed later in the report, it is felt this goal can be achieved. For the most part, the proposed alignment alternatives are through publically owned park lands, within public rights-of-way, within other lands or rights-of-way owned by public entities (Radnor School District, PennDOT and SEPTA) that are generally supportive of the project, and within lands owned by large private entities (Villanova University) that are also supportive of the effort. The alignment alternative through Millbourne Borough, while not in a defined easement, is already included as part of the redevelopment plan for the site as a condition of the redevelopment approval. Depending on which alternatives are chosen for

development of the trail in the study areas, we have identified up to sixteen (16) smaller, private property owners that will need to be contacted and negotiated with during future planning to gain access for relatively short sections of the proposed trail. This number could be significantly fewer depending on the alternatives selected.

Specific “right-of-way” conditions, by section alternative analyzed, are discussed in more detail in sections II-D, *Alternatives Analysis*, and II-E, *Legal Feasibility*, of this report.

Surrounding Land Use – Again the proposed alignment alternatives are, for the most part, through publicly held park lands and existing transportation corridors that are surrounded by a typical urban and suburban mix of uses.

The two proposed corridors in the west study section, Radnor Township, are the former P&W rail right-of-way owned by PennDOT and the Lancaster Avenue corridor. The surrounding uses along the P&W corridor are typically suburban, single family residential. Along the Lancaster Avenue corridor the uses are more mixed but dominated by commercial and educational uses.



The residences of Overbrook Park about the wooded edge of the Cobbs Creek Golf Course

The route in the east section travels, for most of its length, through public park lands. Starting in Philadelphia the proposed route passes through the Haddington Woods of Cobbs Creek Park and the Cobbs Creek Golf Club. The land uses surrounding these park lands are primarily urban residential, more specifically the Overbrook and Overbrook Park neighborhoods of Philadelphia. In Millbourne Borough the proposed alternative is along Cobbs Creek through a proposed mixed use, commercial and residential, transit oriented redevelopment site. Through Carroll and Karakung Parks in Haverford Township the surrounding uses are again mixed; commercial, mass transit and residential, but predominantly older, suburban, single family residential. Towards the end of the study section at the intersection of Haverford and West Wynnewood Roads the uses are still the same mix, but commercial uses dominate the mix.

Topography, Slope Conditions – The topographic conditions within the alternative sections considered are generally conducive for multi-use trail use as most sections are already in use as trails or footpaths, along lands suitably graded for adjacent transportation uses, or along suitably graded rail bed that is no longer in

use. Specific areas will need to be addressed during the design to develop grading to accommodate the width of the proposed trail, facilitate drainage and address slope conditions to facilitate accessibility (ADA requirements). Specific areas that will require more significant earthwork are identified and discussed in section II-D, *Alternatives Analysis*, of this report.

Drainage and Erosion – It is agreed that construction of a paved trail with suitable shoulders is the best approach to construction of the proposed Forge to Refuge Trail. This essentially continues the construction type of both the existing Cobbs Creek and Radnor Trails as the link between the two is developed and closed. A paved trail is also most suitable for the heavy usage that can be expected in the heavily developed suburban and urban areas through which the trail route passes and will facilitate both use and maintenance. Stormwater management along the route can be integrated into existing drainage ways and storm sewer systems where available. Where existing storm sewer systems are not available, best management practices such as downslope vegetated buffers, raingardens and bio-infiltration swales that all utilize native plant material can be incorporated into the design and construction of the trail. Already along the existing Radnor Trail the crushed stone shoulders on both sides are actually stone filled trenches designed to provide on site detention for the run-off generated by the asphalt paved trail. One side was designed wider and topped with a finer stone to provide an optional, lower impact surface for jogging and running. This approach could be continued in areas where stormwater from the trail construction needs to be addressed on site. If designed appropriately the construction of the trail can be developed as a feature that can significantly improve drainage, erosion and stormwater management within the trail corridor.

Structures and Encroachments – Structures and encroachments are discussed in detail by each alignment section evaluated in section II-D, *Alternatives Analysis*, of this report.

Utilities and Infrastructure – Utilities and infrastructure issues are primarily in the form of poles, manholes and traffic controls that the final design alignment will need to address and be “worked around”. They are discussed in detail by each alignment section evaluated in section II-D, *Alternatives Analysis*, of this report.



Coordinating with gas, electric and railroad utilities will require careful design. This is where Lancaster Avenue passes beneath the Norristown High-Speed Line in Radnor Township.

Intersections and potential access points – With the exception of the alternative routes along the P&W corridor, through Haddington Woods and through Carroll Park, proposed alternatives are closely related to the street network of the neighborhoods they pass near and offer a near continuous connection or opportunity for discrete entries to the adjoining neighborhoods. Even through the sections less directly related to the surrounding neighborhoods there are multiple opportunities to develop access points. Ramps or connecting paths can be developed to neighborhood streets as follows:

In Radnor Township along the P&W Corridor (West to East):

- South Radnor Chester Road
- Lancaster Avenue west of I-476
- Lancaster Avenue east of I-476
- Sproul Road
- Aldwyn Lane
- South Ithan Avenue

In Philadelphia through Haddington Woods

- 63rd and Market Streets
- The road network within the Millbourne Transit Oriented Redevelopment site
- Vine Street
- Callowhill Street

In Philadelphia through Cobbs Creek Golf Course

- Haverford Avenue
- Lansdowne Avenue
- Brockton Road
- Malvern Avenue and Farrington Road
- 77th and Wyndale Avenue
- Ashurst Road and Woodbine Avenue
- Brookhaven Road
- Sherwood Road
- City Avenue

In Haverford Township through Carroll Park

- Grover Place (via a link to the Grange Estate)
- Carroll Road
- Manoa and Old Manoa Roads

Environmental Hazards – Based on the uses along the proposed alternative route corridors, environmental hazards (REC's - Recognized Environmental Contaminants), may be an issue along those sections that will be constructed on former railroad beds. These would include the former Philadelphia and Western Railroad and SEPTA's Norristown High Speed Line in Radnor Township and the bed of the old Cardington Branch Line in Upper Darby and Millbourne. A primary concern may be materials formerly used in industrial lubricants, coolants and hydraulic fluids from the early 1900's to the 1970's. Environmental remediation work along the existing section of the Radnor Trail was limited to lead paint containment on the plate girder rail bridges. It is recommended that a "Phase I" Environmental Assessment be performed during the design stage along the rail corridors if they are the chosen alternatives for trail development.

Natural Features Analysis

Hydrology – There is a drainage divide just south of Villanova University. The major hydrological features within the project study area northwest of the University are the streams (Browns Run and Hardings Run) and

unnamed tributaries to Ithan Creek. Hardings Run combines with Browns Run within the project study corridor and connects with Ithan Creek south of the project study area.

The major hydrological feature in the southern section of the project study area closer to Philadelphia is Cobbs Creek and to a lesser extent its unnamed tributaries and Indian Creek that flows through the Cobb's Creek Golf Club.

Cobb's Creek is a true greenway that extends deep into Delaware County and can be followed south to the John Heinz National Wildlife Refuge.

Chapter 93 Designations – Browns Run, Hardings Run and Ithan Creek are not listed in chapter 93. They are assumed to be "Unnamed Tributaries to" Darby Creek, and the Chapter 93 Protected Uses for Unnamed Tributaries to Darby Creek are CWF (cold water fishes) and MF (migratory fishes). The Chapter 93 Protected Uses for Cobbs Creek are WWF (warm water fishes) and MF (migratory fishes). There are no Exceptions to Specific Criteria and the waters within the project area are not considered "HQ" High Quality or "EV" Exceptional Values waters.

Floodplains & Wetlands – The floodplain varies in widths corresponding to the project areas hydrological natural resources. Based on the potential alignments identified in this study, there are a few areas to identify

because trail development in these areas may require additional environmental permitting:

- 1) Along Cobbs Creek (including crossings) in Millborne Borough near the Millborne T.O.D. Redevelopment site adjacent to Haddington Woods and the Cobbs Creek Golf Club

- 2) The crossings of Cobbs Creek near City Avenue and the trail corridor and crossings through Carroll Park adjacent to the Grange Estate, across Manoa Road and along the Karakung Drive/Cobbs Creek corridor. Much of this stretch of trail construction would be within floodplain areas and would necessitate close coordination with DEP and/or the Delaware County Conservation District.

- 3) In the northern section of the project study area, it is densely developed and the only floodplain that would require crossing would be that of Browns Run. Being a very small tributary to Darby Creek, a FEMA floodplain could not be found for the run. In trail development, the floodplain should be estimated at a 50 foot distance from the tops of bank of the tributary.



A view of the Cobbs Creek Park and Gold Course from the clubhouse.

According to the National Wetland Inventory Mapping, it does not appear that trail development would adversely impact existing wetland areas. Although, at the time of preliminary and final design of the trail, a thorough presence/absence analysis should be performed by a professional environmental scientist to determine wetlands and impacts. If wetlands are found, further phases of analysis and reporting will be necessary for estimated impacts, permitting and approvals.

National wetland inventory mapping from the U.S. Fish and Wildlife Service is included in Appendix B.

Vegetation – Generally following the Cobbs Creek corridor and meandering through park areas, much of the project study corridor is wooded and/or sparsely wooded in some of the residential areas. The wooded areas are mostly mixed deciduous with a combination of Sycamore, Cherry, Beech, Oak, Hickory, Maple and Ash. Also, these same areas have an abundant understory of young trees, groundcover, shrubs and vines.

There are very few Evergreens to be found in the study area. Typically, they are stand-alone red cedar, spruce and pines.

A vast majority of the specimen trees are located in the wooded areas adjacent to “open space” and the hydrologic feature corridors.

Some invasive trees and vegetation such as Tree of Heaven, Japanese Knotweed and multiflora rose were spotted throughout the entire project study area. It is recommended that these species be removed and replaced with native vegetation along with the construction of the trail.

Wildlife and Pennsylvania Natural Diversity Inventory

Wildlife – The main wildlife corridor and greenway is the Cobbs Creek corridor and its associated riparian buffer and woodlands that parallel the trail study corridor. This creek “greenway” corridor provides fauna, such as deer, access to water and the foraging areas in the woodlands. It was also evident that deer and other fauna use the greenway as a migration corridor. Trail development of this corridor would not adversely affect or inhibit the migration routes of deer and other fauna due to the large riparian buffer along Cobbs Creek that they primarily use.

Also, various birds were spotted nesting, foraging and using the tree canopy of the wooded areas as layover in flight. Some of these birds included red - tailed hawks, robins, blue jays, cardinals, red-winged black birds, various finches and wild turkeys. A great blue heron was also spotted on the bank of Cobbs Creek in Millborne.

Although there was evidence of burrowing rodents (such as groundhogs) present in the project study area corridor, none were seen.

Preliminary Environmental Review – A Pennsylvania Natural Diversity Inventory (PNDI) search was conducted for both the eastern and western project corridor sections for potential trail and related use development. The PNDI results are in Appendix B. There were “no known impacts” for both the eastern and western study sections. Further review will be needed during the Preliminary and Final Design phases of the project to confirm the status and to make sure that new impacts did not present themselves between this study and Final Design.

C. Demand and Potential Use (DCNR – C)

General demographics of potential trail users – The Forge to Refuge Trail will serve a wide range of recreational and commuter users based on the nature of its proposed construction, its general location and the communities it will pass through.

Continuation of the hard surfaced construction of both the Radnor and Cobbs Creek Trails is recommended and, as such, they already see a wide range in types of use for recreation, exercise and local trips:

- Walking/hiking for all age groups.
- ADA Accessible, they serve wheel chair users and those with other assistance devices.
- Baby strollers and jogging strollers.
- Jogging/running, particularly the softer surfaced shoulders on the Radnor Trail.
- Bicycling by both high pressure tire road bikes and lower pressure cruisers and crossovers.
- Family Bicycling, including children just learning or in seats, carriers and trailers.

- Roller skating or Rollerblading.
- It is even reported that Radnor Trail is seeing winter cross country skiing when snow covered.

The Forge to Refuge Trail's intimate relationship with the SEPTA regional rail corridor, in particular the Norristown High Speed Line from 63rd Street Station to the Villanova junction, will offer options for commuters to driving and parking at the often crowded local stations. The proposed trail alternatives in the sections studied offer opportunities to create direct links to as many as seven of the local stations along the line and the potential to develop a link to SEPTA's 69th Street Terminal, a short distance from the trail as it passes through Millbourne.

Another large group of users already taking advantage of the proposed alternative corridors are the students, at the middle school, high school and university levels, in Philadelphia, Haverford and Radnor. Improving the safety and quality of these routes already in use can only be beneficial. Student populations near or right along the proposed route include those of:

- Radnor Middle School and High School.
- Villanova University
- In the future, all the Universities in and around Haverford Township
- The numerous Students of the Philadelphia Public Schools who use the 63rd Street Station.

The question really becomes ... who won't use this trail!



The existing Radnor Trail is enjoyed by a broad section of the community with people of all ages, both bicyclists, walkers and runners. The same is expected on the fully completed Trail.

Estimate potential demand and use of the trail – Although initially conceived as a long distance trail connecting two sites of major significance in the region, as noted above it is expected that the nature and the location of the trail will attract a wide range of potential users based on the improved local connectivity. As can be seen below just the two sections being considered at this time pass through well populated urban and suburban areas and high usage can be expected. The sections in place of the Radnor Trail and the Cobbs Creek Trail, and even the foot paths through Karakung Park and Haddington Woods, already see high use. Trail infrastructure improvements can only increase that use.

Locally the west section of this study passes through two census tracts in Radnor Township with the Villanova University campus occupying most of the more densely populated tract. Population density in this area ranges from 1100 to 6600 persons per square mile based on the following population data:

Census Tract	Total Pop. – Size sq. mi.
Radnor Twp. - 4097.01	7312 – 6.08
Radnor Twp. - 4097.02	1918 – 0.29

Locally the east section of the study passes through, or along the border of, tracts in Philadelphia, Millbourne Borough, Upper Darby and Haverford Township. The population density in this area is much higher and ranges from 5000 persons per square mile in parts of Haverford Township to well over 26,000 persons per square mile in neighborhoods of Philadelphia based on the following population data:

Census Tract	Total Pop. – Size sq. mi.	Census Tract	Total Pop. – Size sq. mi.
Philadelphia - 83.01	4081 – 0.20	Upper Darby - 4105	3917 – 0.25
Philadelphia - 96	4238 – 0.16	Millbourne - 49504	1159 – 0.07
Philadelphia - 100	4366 – 0.19	Upper Darby - 4005	4235 – 0.46
Philadelphia – 9808	6 – 0.83	Haverford Twp. - 4089	2933 – 0.58
Philadelphia- 98.02	5475 – 0.24	Haverford Twp.- 4088	4780 – 0.63
(Note: 9808 is a golf course)		Haverford Twp. - 4087	4871 – 0.82

Identify potential trail links and connections – The local population data, potential usership, potential rail and community connections noted above really are just the beginning of the story. Once the connections are completed and the entire length of the trail is in place from Valley Forge National Historical Park to the John Heinz National Wildlife Refuge, the Forge to Refuge Trail represents an approximately 30-mile long trail route that may become one of the most significant trails in the region. It will pass through two counties, four townships, Millbourne Borough, and Philadelphia, linking most of the Main Line with sites and attractions in Philadelphia and Valley Forge Park, not to mention all the stops along the way. Along with the Schuylkill River Trail it will form part of a continuous trail loop that travels through communities on both sides of the Schuylkill River starting from and returning to the East Coast Greenway. As such, it will form an important part of “The Circuit” trail network of the Greater Philadelphia area. Additional regional trail connections include:

The 58 th Street Connector Trail	The Chester Valley Trail
The Haverford Township Trails Network	The Schuylkill River West Trail
The Radnor Township Trails Network	The Horseshoe Trail
The Patriots’ Path	

In addition to its relationship to the Schuylkill River Trail, The Circuit and the East Coast Greenway another important national effort developing in the area needs mention, the September 11th National Memorial Trail, commonly known as the 911 Trail. The 911 Trail is an evolving network of off-road multi-use trails, greenways and scenic roads and byways that link the three National Memorials dedicated to the memory of those who died in the tragic events of September 11, 2001; the World Trade Center Memorial in New York City, the Pentagon Memorial in Washington D.C., and the United Airlines Flight 93 Memorial near Shanksville, Pennsylvania. Conceptually, they form a roughly triangular pilgrimage route that eventually will not only link the national memorials, but will link to cities, towns and communities along the way that are home to local memorials and significant sites that reflect that spirit of American patriotism, resilience and perseverance that brought the nation back from the tragic events of the day and forged the great nation that we see today. The Forge to Refuge will link to this important 1300 mile national trail network at both Valley Forge National Historical Park and the John Heinz National Wildlife Refuge.

Compatibility of trail use with adjacent land use – As noted above, the adjacent land uses along each section alternatives for the Forge to Refuge Trail are fairly consistent; generally well developed suburban and urban residential neighborhoods, typically with directly related or compatible commercial and institutional, primarily educational, uses. These are ideal adjacent uses for multi-use trail development. Particularly as multi-use trails become more fully understood as something more than just recreational elements and it is realized that they are a critical part of the infrastructure that needs to be creatively woven into these types of uses. There is rarely conflict with these uses. In most cases the trails serve to enhance and improve the quality of these uses. As demonstrated along the Radnor Trail and many others like it, multi-use trails even improve the economic performance and increase the value of these uses.



In Overbrook Park, extending the Cobbs Creek Trail, a part of the Valley Forge-Heinz Refuge Trail, along the edge of the golf course will give residents better access to their local park as well as to the entire regional trail network of The Circuit.

D. Alternatives Analysis

The ultimate goal has been to identify a route along which a continuous, off-road, multi-use trail that will be mostly accessible for the entire length of both extensions studied can be built. Ideally, an off road multi-use trail is a 12 feet wide paved surface with 4 feet wide shoulders on each side, a minimum 20 foot wide corridor or right-of-way is generally preferred. The shoulders can be gravel or planted in grass or other suitable ground cover, or a combination of both. To be considered accessible, surfaces need to be sound and stable, which does not necessarily mean paved; however, they must be relatively free of irregularities, maintained and have slope conditions meeting the ADA requirements with regard to maximum continuous slopes and cross slopes. It is generally felt that meeting these conditions will result in a finished trail that will be useable by the largest population in a community, for a wide variety of uses, such as:

- Walking/hiking for all age groups, including those using assistance devices.
- Wheel chair users, although tire types should be for outdoor, active use.

- Baby strollers and jogging strollers.
- Jogging/running, although soft surface shoulders might be considered to reduce impact.
- Bicycling for both high pressure tire road bikes and lower pressure crossovers.
- Family Bicycling including children just learning or in seats, carriers and trailers.
- Roller skating or Rollerblading.
- Winter cross country skiing if snow is not removed.
- Equestrian use was considered, but found to be impractical as the Trail is anticipated to be hard-surfaced. If space can be found for a parallel soft-surface trail, this decision merits reconsideration.

These types of trails offer far more than just recreational opportunities. They can facilitate local errands and daily trips such as shopping, going to school, and trips to local community facilities. They add a very efficient level to commuting alternatives and even inter-community travel via walking, bicycling or even rollerblading. And of course, as is the intent of the Forge to Refuge Trail and its links to the Circuit Network and the East Coast Greenway, they can offer another option for both regional destination oriented trips and even longer distance travel.

Extending the Radnor Trail East from Radnor Chester Road – Approximately 1.5 Miles

Radnor Township (R sections) – In Radnor Township a number of alternatives were considered, but between Radnor-Chester Road and Ithan Avenue they primarily follow two main Corridors, the former P&W Rail corridor owned by PennDOT and the Lancaster Avenue corridor. The primary challenge to both corridors is I-476. I-476 quite literally cuts the P&W corridor in half with no provision to go from one side to the other along the former rail corridor. While I-476 crosses over Lancaster Avenue and the length of the overpass is quite generous, the number, lane width and arrangement of the on-ramps and off-ramps and their associated dedicated turning lanes become a challenging network for a pedestrian or bicyclist to negotiate.

The existing Radnor Trail was built in the longest, western most, of the three remnant sections of the former Stratford branch of the Philadelphia and Western Railroad that was abandoned in 1956. The trail runs from Sugartown Road due east and terminates at Radnor Chester Road. A side path was constructed from that termination, along the west side of Radnor-Chester Road to a crosswalk at Chew Lane. From there a rather narrow sidewalk on the east side of the road is continuous to the intersection with Lancaster Ave.

Along the P&W Corridor

R-PW-1 (See Map W-1) – Extending the Radnor Trail along its present alignment on the P&W corridor seems the most logical choice. The first challenge is to cross Radnor-Chester Road. At one time there was an overpass at Radnor-Chester Road and the rail line ran continuously. Today that overpass is gone and Radnor-Chester road sits on an embankment. A rather substantial, non-accessible (ADA) ramp takes the Radnor Trail up to the road elevation. This ramp really should be reconstructed or eliminated. There are at least three options to continue along the rail right-of-way:

- Develop a street crossing of Radnor-Chester Road and build a ramp down to the rail right-of-way to the east. There are a few problems with this solution. Radnor-Chester Road is heavily used much of the day and there is a site distance issue at the present termination coming from the south on Radnor-Chester Road. Next there is a pipe/conduit that sits on a steel girder on the east side of the road that may not be practical to relocate. The last issue would be the elevation difference between the roadway and the railbed; another very long ramp would be required.
- Cross Radnor-Chester Road at the existing crossing at Chew Lane. Returning to the rail corridor on the east side of the road is difficult due to private land ownership along this edge.

- Construct a tunnel under Radnor-Chester Road to access the eastern portion of the right-of-way. As was noted above, there was once an overpass at Radnor-Chester Road so it is safe to assume there are likely no excavation issues, like the existing rock some of the original railbed was cut through. Materials under Radnor-Chester should be relatively clean, engineered fill materials. Even if the existing trail ramp to Radnor-Chester Road is left in place there appears to be sufficient lands within the right-of-way for a tunnel option. The primary issue with this approach is cost. It is expected a tunnel in this location might be in the range of \$350,000 to build. Removing the existing ramp to Radnor-Chester Road may simplify tunneling operations and result in a shorter tunnel, which might reduce cost.



Section R-PW-1 in Radnor Township

A note about the existing Radnor Trail ramp to Radnor-Chester Road: This ramp was not built per the original design, approved by both PennDOT and the Township. It was originally designed to keep the trail “accessible” (ADA) even from Radnor-Chester Road. The current condition is not accessible and is even somewhat dangerous for less experienced cyclists and other users. The original ramp design was developed so that all trail work at that time would be confined to the right-of-way owned by PennDOT and the ramp, due to the change in elevation that needed to be addressed, was somewhat monumental. This ramp could and should be eliminated especially considering the addition of the sidepath along Radnor-Chester Road and the long distance nature of the Radnor Trail in general as the regional trail system evolves. As members of the design team for the Radnor Trail, we have been concerned with the ramp solution as it was built in 2004-2005 as a partial solution to the long term trail across the Township. A much more reasonable accessible route to the Radnor Chester Road side path could be developed through the perimeter of the township owned park lands (Encke Park/Cappelli Golf Range) to the north of the existing Radnor Trail. Our team would be more than glad to offer initial schematic planning services for the redesign of this ramp to the township as a courtesy to help resolve a condition that would be a great improvement to the township trail and an asset to the regional trail network.

R-PW-2 (See Map W-1) – Once Radnor-Chester Road is “crossed,” the former rail right-of-way, owned by PennDOT, is intact to the on-ramp to southbound I-476. It transitions from being in a cut to being at the surrounding grade and on a very low embankment in this area. There are several homes that are close to and visible from the right-of-way through this section at the narrowest portion of the right-of-way, about 80 feet wide. On the completed Radnor Trail privacy fencing was an issue. Through this section solid fencing, as previously used, could result in an extremely unpleasant experience for both the trail users and residents. A more appropriate approach might be to keep the trail in the center of the right-of-way with a decorative

fencing, possibly split rail, at the edge of the shoulders. This would leave about a 30-foot wide buffer between the shoulder edge and the private properties that could be planted to improve privacy. This would both create a pleasant trail environment and serve to maintain the general character of the existing neighborhood. There appears to be some encroachment as there is a landscaped area in the center of the right-of-way at one point and a paved path that connects the end of Meadow Crest Road with what appears to be a private drive that serves six homes south of the right-of-way.

R-PW-3 (See *Map W-2*) – The southbound on-ramp of I-476 marks the start of a break in the rail right-of-way that is about 1000 feet long as a result of the construction of the highway that ends at the northbound off-ramp. There were essentially three alternatives considered to address this condition:

- Construct a pedestrian/bicycle bridge over the highway; much like the one that was built to cross the Schuylkill Expressway as part of highway reconstruction in the early 2000's that is now part of the Chester Valley Trail in Montgomery County. This could be constructed in two sections as there is a substantial land "island" between the highway and the southbound ramps in this area. This would of course need to be coordinated through and likely built by PennDOT. It is seen as a very long range alternate and may hinge on future reconstruction work on I-476 and its ramp system. Cost is another major factor with this alternative. This alternative was reviewed informally with the PennDOT District 6-0 Engineering Office in June 2015 and found to be feasible at the very preliminary stage. Since this study was initiated, new houses have been built on lands that were previously undeveloped at the end of Hillside Circle that are close to the existing PennDOT owned rights-of-way proposed for use.
- Pass under I-476 along the south side of Lancaster Avenue. To the north of the right-of-way there are township owned lands through which a multi-use trail could be constructed to a side path on the south side of Lancaster Avenue a short distance away. The Lancaster Avenue overpass has wide shoulders, beyond the curb line sufficient for constructing a side path. This requires safe road crossings be developed at the three on/off ramps and associated turning lanes on the south side, but once under the overpass there appear to be sufficient lands within the PennDOT owned right-of-way, beyond the sound walls on the west side of the highway, to return the trail construction to the rail right-of-way alignment.
- Pass under I-476 at Conestoga Road. This alternative is a significant southerly detour from the rail corridor alignment that would start by taking the trail through Martha Browns Woods, then through Ithan Village. Getting to Ithan Village and back to the rail right-of-way does not allow the option for a continuous, off-road, multi-use trail. Even if a shared road arrangement for bicycles is considered there are continuity and safety issues that seem to make the alternative impractical.

R-PW-4 (See *Map W-2*) – Once on the east side of I-476 the rail right-of-way is again intact and continuous to Sproul Road. There are some encroachments by adjacent residential property owners, some rather substantial as the fenced in areas of the right-of-way appear to be large sections of their yards. There is also some localized dumping, but again this appears to be actions by immediately adjacent property owners. Also within the last year new houses have been built on lands that were formerly undeveloped along the PennDOT I-476 right-of-way. While this construction limits the potential neighborhood connections to the trail and potentially to Lancaster Avenue in this area, the former P&W right-of-way is still sufficient for constructing a multi-use trail in this section.

R-PW-5 (See *Maps W-2 and W-3*) – At Sproul Road the embankments of the former rail overpass are visible but the girder railroad bridge and abutments have been removed. Traffic is generally heavy and fast moving on Sproul Road so a new bridge crossing should be considered. From this point east, the former P&W right-of-way is now the SEPTA Norristown High Speed Line right-of-way. Between Sproul Rd. and Aldwyn Lane is the location of the former junction with the Strafford Branch and the NHSL curves to run north. The south side of the SEPTA right-of-way has no tracks at this point but is being used by PECO for high tension lines through an agreement with SEPTA. Even with this use of the south side of the right-of-way, under present conditions, it appears a multi-use trail could be built from Sproul Road to Aldwyn Lane, and

then along the rear of the residential properties to the parking lot of the Villanova NHSL station. At that point the parking lot fills the right-of-way and without replanning, would be the end of the multi-use trail. Just to the east of the parking lot is a park on lands owned by Villanova that has a wide walkway to Ithan Avenue and the end point of this study. This section of right-of-way, starting at Sproul Road, is part of the right-of-way that has been withdrawn from consideration for trail use pending further developments for SEPTA's plans to provide service to King of Prussia.



The north side of Lancaster Avenue near Villanova University. If the Trail is to use this side of the road, some way would have to be found to widen the sidewalk to become a multi-use trail.

Along the Lancaster Avenue Corridor

Lancaster Avenue offers the only other corridor that provides a reasonable means of addressing I-476 within a reasonable distance of the Radnor Trail. In this particular section, from Radnor-Chester Road to the Villanova Campus, there are only minimal provisions for pedestrians on either side of the road, yet the corridor passes by the Radnor High School Campus and links the Villanova Campus with residential and shopping areas to the west that are well within a reasonable walking distance. During the public meetings and meetings with the steering committee it was agreed that simply improving conditions for pedestrian use on both sides of the road would be of great benefit to the community and using this corridor as part of a regional multi-use trail network even more so.

R-L-1 (See Map W-1) – As previously noted the existing Radnor Trail ends at Radnor-Chester Road. A side path (five to six feet wide) constructed on the west side, crossing to a narrow five-foot wide sidewalk on the east side at Chew Lane, presently provides pedestrian access to Lancaster Avenue. If this access to Lancaster Avenue becomes part of the multi-use trail network, consideration should be given to increasing its width to get as close to the ideal 12-foot width as possible. South of Chew Lane it appears the embankment on the west side is sufficient to accommodate a path about eight feet wide with modest shoulders. Lands immediately adjacent to this path are owned by the township which would seem to offer additional potential for redesign and increasing the width of this path. North of Chew Lane the sidewalk width on the east side is limited by the width of the right-of-way, private property boundaries and existing fence line. The distance

from the curb to the existing fence line is about 10 feet. Additional thoughts on this issue are noted above under section R-PW-1.

R-L-2 (See *Maps W-1 and W-2*) – In the section between Radnor Chester Road and I-476, conditions on both sides of the road appear to be suitable for construction of a multi-use trail. There are conditions on each side that need to be considered.

South side conditions

- Initially on the south side the width is limited by the fence line along five (three owners) residential properties starting at the southeast corner of Radnor-Chester Road and Lancaster Avenue. The distance between the curbline and the existing fences is roughly 11 to 12 feet.
- Past these properties are wooded lands owned by Radnor Township, that depending on future plans, appear to allow ample area for developing a multi-use trail, even somewhat set back from the roadway. In addition this offers the potential to develop a connection to the P&W right-of-way from Lancaster Avenue.
- Next, safe road crossings will need to be developed for the southbound ramps to I-476. At one point the two ramps come together and require crossing four lanes of traffic at a signaled intersection. The bigger issue is probably the two dedicated turning lanes, one for each ramp that are not part of the controlled intersections.
- Past the ramp intersection are more wooded lands that are part of the PennDOT right-of-way and again constructing a multi-use trail here seems possible and the specific design will be largely influenced by what PennDOT is willing to agree to.
- Another road crossing is required at the four-lane north bound off ramp. This intersection is also signal controlled.

North side conditions

- There is an existing crosswalk. Crosswalk signage and signaling should be improved to better accommodate the trail usage if this route is used.
- The north side is a continuous length along the edge of the High School campus and there appears to be ample room for construction of a multi-use trail.
- Some discussion was had with regard to extending the trail construction north along Radnor-Chester Road if a north side path is constructed.
- There are two concerns of the High School that will need to be addressed in the planning, campus security and maintaining the unpaved cross country course along this edge of the campus.
- Near the end of this section a road crossing will need to be developed at King of Prussia Road at the signaled intersection.

R-L-3 (See *Map W-2*) – The I-476 overpass offers significant shoulder areas on both sides beyond the curb line of the roadway. The distance between the curb and the abutment is over 17 feet on the south side and nearly 15 feet on the north. There is a five-foot wide concrete sidewalk on the north side that runs from King of Prussia Road to the north bound on-ramp to I-476. There appears to be ample room under the overpass and along Lancaster Avenue to construct a multi-use trail of a reasonable width on either side of the road.

R-L-4 (See *Map W-2*) – An alternative to the Lancaster Avenue overpass was also investigated during the field work. Just north of the Lancaster Avenue overpass there is a wide overpass over Brown's Run (the creek) for both the main route of I-476 and the northbound on-ramp. It was thought that this might create an interesting off-road route. Access would start at the west corner of the King of Prussia Road intersection. There is an existing, four-foot wide, concrete sidewalk along the west side of the road and the perimeter of

the High School campus. There appear to be sufficient lands to consider increasing the width of this sidewalk as the distance from the curb to the existing guide rail is in excess of 15 feet. The Brown's Run overpass is accessed from the entry drive to the former Bio-Med property recently acquired by Penn Medicine. With a crossing of King of Prussia Road near the Bio-Med drive there appear to be ample land to construct a multi-use trail south of the drive, then along the creek and back up to Lancaster Avenue. To get back to Lancaster Avenue, Brown's Run would have to be bridged and a significant slope addressed along the edge of Lancaster Avenue. One of the concerns with this alternative is that it appears to stay wet in this area and is subject to significant drainage as it is the low spot in surrounding topography created by highway construction and adjacent railroad embankment of the Norristown High Speed Line. Some of the area is identified as wetlands on the National Wetlands Inventory.



The little known overpass of I-476 above Brown's Run just north of Lancaster Ave.

R-L-5 (See Map W-2) – The section between I-476 and the Norristown High Speed Line overpass becomes more difficult to deal with. On the north side there is an existing five-foot wide sidewalk and while there appears to be room to widen it, there are several issues:

- The grade drops off quickly several feet from the edge of the sidewalk, limiting the width for a path and shoulders. This distance from the curb to the edge of the embankment varies but is roughly 16 feet. Within this area there is an existing guide rail that varies from between six and eight feet from the curb line.
- Utility poles and street lighting are generally placed right at the edge of the existing sidewalk, in some spots within the sidewalk width.
- While there are pedestrian crosswalks at the north bound on-ramp to I-476 and its associated dedicated turn lane, these crossings are generally only suitable for the very limited pedestrian usage

that presently exists. With the increased use a multi-use trail might represent, this crossing needs to be wider, better marked and signed, and better integrated into the signaling at the intersection.

On the south side there are no existing pedestrian provisions, but there appear to be sufficient lands within the public r/w to develop a multi-use trail along this side. Some issues to consider:

- There is a significant slope that will need to be addressed.
- A street crossing will need to be developed at Hillside Circle. Hillside Circle is a relatively short cul de sac road, with no through traffic that is primarily used by local residents. Traffic volume is very low at this intersection.
- There is a driveway entrance to a commercial property that also needs to be crossed.
- There are utility manholes along this side which would need to be worked around in planning the trail alignment.
- This side appears to allow access back to the P&W right-of-way within the existing PennDOT right-of-way but conditions are sloped and relatively tight, particularly considering the new houses built at the end of Hillside Circle. The existing PennDOT right-of-way allows access to the cul de sac at Hillside Circle.

R-L-6 (See Map W-2) – The Norristown High Speed Line overpass offers the toughest obstacle on the Lancaster Avenue corridor. Its length between the abutments only allows for the existing four lanes of traffic, with no shoulders or median, and a narrow, five-foot wide sidewalk that is the end of the continuous sidewalk from King of Prussia Road. The distance between the curb line and the abutment on the north side is about 5'-6". The bridge and abutments themselves appear to need some maintenance work, but SEPTA has indicated there were no plans to replace the bridge or increase its length. During the meeting with SEPTA the idea of tunneling under the NHSL embankment received some positive feedback. Based on conditions east and west of the rail line and both sides of Lancaster Avenue, the best tunnel location would appear to be on the south side of Lancaster Avenue regardless of the existing sidewalk to the north. Accessing a tunnel location appears to require negotiating and purchasing some right-of-way or easement with land owners on each side of the rail line. This is also the area noted above with utility manholes. This approach would allow the development of a suitable multi-use trail through this location. It is expected that the cost of a tunnel in this location would be about \$475,000.

R-L-7 (See Map W-2) – Between the NHSL and the Villanova campus there are some existing sidewalks on both sides and conditions vary.

North side conditions

- The existing sidewalks vary in width, older sidewalks are about 4 feet wide and newer ones, constructed within the last few years, are about 6 feet wide.
- Utility poles and traffic signs are an issue as in many cases they fall within the width of the sidewalk. Where the new sidewalks have been constructed the poles have been relocated or the sidewalks have been located to allow for the pole location.
- The new construction between NHSL and Sproul Road dramatically improves conditions along the north side, and with a distance of between 18 and 21 feet between the curb line and the new parking lots offers potential for developing a multi-use trail ... but ...
- While the new sidewalks are a great improvement over previous conditions there is still a section where the continuity is interrupted by older commercial development that has off-street parking directly accessed from the roadway. The existing building locations offer little opportunity to change this condition without removing the parking. It may be possible to circumnavigate these properties along the edge of Villanova's campus if there are no proposed changes to this development in the near future.

- AND ... there is significant resistance to a multi-use trail on the north side from commercial property owners.

These conditions appear to further justify the south side tunnel location under the NHSL and construction of a south side multi-use trail in this section.

South side conditions

- There are no sidewalks between the NHSL and Sproul Road on the south side, but there appears to be no physical obstacle to constructing a suitable trail along this side. Presently this area is an undeveloped, wooded and landscaped land island formed by Lancaster Avenue, Sproul Road and the NHSL. Brown's Run passes through this area and there is a wetlands area that is fenced in. Most of this land is owned by PennDOT. There is narrow parcel immediately adjacent to the rail r/w that is owned by SEPTA.



Villanova University's development plans would do well to include the Trail and connections along Lancaster Avenue. Here are the current parking lots.

- A street crossing will need to be developed for the Sproul Road/Aldwyn Lane intersection which is rather complex. There are three points to cross. The three lanes of Sproul Rd. and the two lanes of Aldwyn Lane are separate pieces of the existing signalized intersection. The third crossing is the un-signalized, right turn lane from Lancaster onto Sproul.
- Beyond the Sproul Road intersection there is a continuous, four-foot wide sidewalk to the main portion of the Villanova University campus. While right-of-way or easements may need to be acquired along the first property at the easement, the remaining buildings along this section are all properties owned by Villanova University, and there appear to be sufficient lands on this side, between the roadway and existing development and parking, to construct a suitable multi-use trail of sufficient width. If timed properly, design and construction along this section could be coordinated with work already in planning and design for the south side of Lancaster through Villanova's campus.
- Utility poles and traffic signs, as noted before along Lancaster Avenue, will need to be addressed. On the south side they are right at the edge of the existing sidewalk, but there appears to be room to locate a wider sidewalk or multi-use trail without moving the poles.
- Use of the south side is impacted by discussions on developing the trail through the University campus. The University prefers an alignment to be developed on the north side of Lancaster Avenue.

R-L-8 (See Map W-3) – Along Lancaster Avenue through the Villanova University campus there are existing four-foot wide sidewalks on both sides of the road. The University is currently working with Radnor Township on plans to widen the south side sidewalk system and construct a pedestrian bridge across Lancaster Avenue to better serve the campus. Early alternatives for the Forge to Refuge Trail had been reviewed with Villanova University and it was initially thought the sidewalk improvement plans may accommodate a multi-use trail along the south side to Ithan Avenue, the present limit of this study. Further review of the approved plan for the campus improvements revealed a south side approach may result in use conflicts between those planned by the University and a multi-use trail. It was concluded that if a Lancaster

Avenue corridor was chosen for the route through the campus, the north side of Lancaster Avenue would be the preferred alternative. Issues in this area that would need to be addressed include:

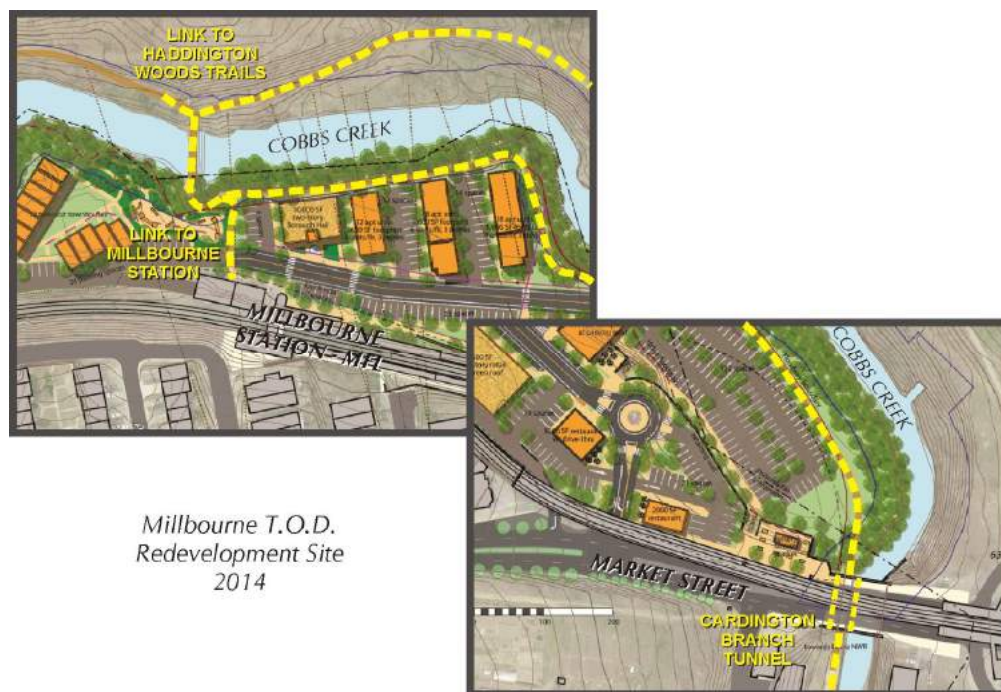
- Impervious cover. The University indicates that their development on the north side of Lancaster Avenue is very near the maximum allowable impervious cover. This total coverage will need to be closely evaluated. Alternative paving methods may need to be considered such as *Porous Pave*, manufactured by Porous Pave, Inc., a highly permeable poured paving product made in part of recycled rubber.

Extending the Cobbs Creek Trail west from 63rd and Market Streets – Approximately 4.5 miles

The study of the westward extension of the Cobbs Creek Trail was less a study of alternatives as it was an evaluation of the potential of existing trails and footpaths in place and of preferred alignments through existing parkland in Philadelphia and Haverford Township. The segments are noted on the map and identified as follows:

Through Upper Darby and into Millbourne Borough (M sections)

M-1 (See Map E-1) – Beginning at the Cobbs Creek Trail along 63rd Street at Market a potential extension is to continue west along the existing Market Street sidewalk (south side) on the bridge over Cobbs Creek. Once over the bridge a ramp could be developed to take a potential multi-use trail down to the former Cardington Branch railroad tunnel that is part of the Market Street Bridge. This ramp would be in Upper Darby Township and passing through the tunnel would link the Cobbs Creek Trail to the proposed transit oriented redevelopment site, the former Sears site, in Millbourne Borough.



M-2 (See Map E-1) – The proposed plans for the redevelopment site in Millbourne Borough presently include development of a multi-use trail at the perimeter of the site along Cobbs Creek. (See full plan in Appendix A)

M-3 (See Map E-1) – Constructing a multi-use trail bridge over Cobbs Creek, potentially near the existing dam, would allow a connection of a multi-use trail on the Millbourne site to the existing Philadelphia Parks trail system in the Haddington Woods area of Cobbs Creek Park(**P-3** and **P-4**).

These three potential trail segments would create a completely off-road link between the Cobbs Creek Trail at 63rd and Market and the existing trails in Haddington Woods. Presently, access to these trails from the south end of the Cobbs Creek Trail requires a rather challenging crossing of Market Street at 63rd Street in spite of the existing signalization.

Through Philadelphia (P sections)

P-1 (See Map E-1) – Again, beginning at the Cobbs Creek Trail along 63rd Street at Market, a potential extension is offered by crossing Market Street to the north. This is a challenging crossing and improvements should be made to facilitate crossings by trail users and alert drivers to the potential multi-use nature of the crossing, pedestrian and bicycle. An appropriate crossing at Market Street links the Cobbs Creek Trail to two trail routes that are noted in the Philadelphia Trails Plan that are, for the most, in place.

P-2 (See Map E-1) – The first trail route noted in the Philadelphia Trails Plan, north of Market Street, is an existing network of sidewalks and footpaths that generally follow the neighborhood streets, Arch to Race, to N. Daggett, to Vine and finally along Callowhill Street. Where the sidewalks do not exist, the “beaten path” is clearly evident. Rather than follow the Daggett Street sidewalk north of Vine, a route could be considered that generally follows Vine or passes around the bocce club then heads north to Callowhill along the west side of the ball fields at the corner of N. Daggett and Callowhill, and then due west along Callowhill. Improving this route as a paved multi-use trail would offer an alignment that is more closely related and useful to the surrounding neighborhood.



Although just a few minutes' walk from the Market-Frankford Line's 63rd Street Station, the Haddington Woods are surprising peaceful and remote. The Trail will re-open this part of the park to many. Here the Valley Forge-Heinz Refuge Trail Committee enjoys an exploratory walk.

P-3 (See *Map E-1*) – The second trail route noted in the Philadelphia Trails Plan north of Market is primarily an existing cleared foot trail through the Haddington Woods. At its furthest point it meets the edge of Cobbs Creek Golf Club. About halfway along its length is the dam in Cobbs Creek and shortly beyond that is a stream bed that flows into the creek from the north. This foot way could be the basis of an alignment for a multi-use trail and could be improved to better suit multi-use trail requirements or simply improved to provide a more stable, potentially accessible, walking route through the woods linking to the Millbourne Trail near the dam (See **M-2** and **M-3**).

P-4 (See *Map E-1*) – Along the stream bed noted above (See **P-3**) is a rather rugged foot path that leads north to Callowhill Street. The stream bed path could be linked to the surrounding neighborhood via Vine and Callowhill Streets. As with the foot way above this could be the basis of an alignment for a multi-use trail and could be improved to better suit multi-use trail requirements or simply improved to provide a more stable, potentially accessible, walking route that extends the Millbourne Trail (**M-2**) and the path through Haddington Woods (**P-3**) north to Callowhill Street and the surrounding neighborhood.

It should be noted that improving both of these routes (**P-2** and **P-3/P-4**) would be beneficial to the surrounding community and ultimately should be pursued. This is indeed the intent of the Philadelphia Trails Plan. Both are on lands wholly owned by the City of Philadelphia. Either or both could be suitable alignments for the Forge to Refuge Trail. The route through Haddington Woods offers the benefit of linking to the Millbourne trail segments and thus giving trail users the option of avoiding the street crossing at 63rd and Market.

At about 67th and Callowhill, the routes noted above lead to the Cobbs Creek Golf Club. In reviewing the potential trail alignments with both representatives of Philadelphia Department of Parks and Recreation and the golf club management, Casper Golf Management, a route around the perimeter of the course, to the north, seemed preferable to a route through the course or along Cobbs Creek for a number of reasons, not the least of which was safety of the trail users. Separation of the course and trail uses was a key concern. The golf club has two distinct halves on the east and west sides of Lansdowne Avenue, each with its own unique conditions at the perimeter. A field review of these conditions was conducted and the discussion of these potential alignment sections reflect the discussion during that review.

P-5 (See *Map E-1 and E-2*) – In the eastern half of the golf club there appears to be potential for a paved multi-use trail at the perimeter edge of the golf course along the remainder of Callowhill Street and then heading north to Haverford Avenue. There is an existing sidewalk along the south side of Haverford Avenue and most importantly a wide sidewalk at the Indian Creek Bridge. The sidewalks along Haverford could be increased in width to better accommodate a multi-use trail, but the character of these alterations could, and should, be done in a manner to maintain the appearance and formality of the existing urban streetscape.

P-6 (See *Map E-2*) – Turning generally south on to Lansdowne Avenue at the intersection with Haverford Avenue, the existing sidewalks continue to the intersection with 75th Street and then narrow beyond that point. As with Haverford Avenue, the sidewalks could be increased in width to better accommodate a multi-use trail, but again the character of these alterations should be done in a manner to maintain the appearance and formality of the existing urban streetscape. A trail crossing needs to be developed for Lansdowne Avenue. The existing crosswalk is at the controlled portion of the intersection, but only crosses to an island at the end of 75th Street. It is generally felt that the trail crossing needs to be farther south of the controlled intersection in order to better relate to the perimeter conditions of the western half of the golf club and be clear of the turning lanes at the 75th Street intersection.

P-7 (See *Map E-2*) – Starting from the crossing location, the route could continue, through the treed area just south of 75th Street. The issue here is one of grading and accessibility as there is a steep embankment along 75th and steep slope along Lansdowne Avenue. A trail alignment ultimately needs to attain the higher elevation of the golf course in order to maintain a route around the perimeter of the course.

P-8 (See *Map E-2*) – The perimeter of the course along Brockton Road is somewhat irregular as a result of encroachments onto the golf course property by adjacent property owners. Most of the encroachment seems to be minor, but there are some encroachments that are substantial involving construction of fences and storage structures with substantial foundations. During the field review of the conditions with the Philadelphia Department of Parks and Recreation it was agreed that a new fence line needs to be firmly established at the edge of the encroachments to end this process. Once the new fence line is established it was agreed that a multi-use trail could be constructed along this edge taking into consideration the remaining lands and re-planning being considered for the golf course itself.

P-9 (See *Map E-3*) – Once at the end of the Brockton Road perimeter, during the field review it was agreed that a multi-use trail could be easily constructed from that point through the wooded section of the golf club property to the point of the perimeter near the intersection of Woodbine Avenue and Ashton Road. The key concern in this area is safety along the route. Keeping it near the residential properties was seen as important from both a use and “observation” standpoint. It was noted that lighting might also be considered in this heavily wooded section.

P-10 (See *Map E-3*) – Between the Woodbine/Ashton corner of the property and City Avenue, conditions for creating a multi-use trail start out satisfactory and quickly become very tight as the golf course plays closer to the perimeter in this area. Conditions are at their tightest as the route nears the antenna farm, along the antenna farm and along much of the section along Ashurst Road. Once past these points conditions improve again. A number of options were discussed for addressing conditions in this area during the field review:

- Reducing the width of the trail and its shoulders to a 12 feet total width, 8 feet wide trail with 2 feet wide shoulders.
- Acquiring additional right-of-way from the owners of the antenna farm.
- Using Ashurst Road, as is, as the trail route with an on-road bike route and existing sidewalks.
- Replanning the golf course holes in this area to allow some more room for the trail within city property.

Of most importance along this section is trail user safety. No matter what solutions are chosen, this is the point where users will be at the most risk of being hit by errant golf balls. During the field review it was agreed that the trail would need to be essentially enclosed in a fencing or lattice work designed to keep golf balls from hitting the trail.

P-11 (See *Map E-3 and E-4*) – The City Avenue perimeter of the golf club appears to allow ample room for construction of a multi-use trail heading south parallel to the roadway. For most of its length it could be on the embankment along City Avenue, terraced into the embankment and likely requiring some structural elements like retaining walls for stability. This would be the condition for most of the length to the entrance to the present driving range. Once across the driveway entrance of the driving range, there is sufficient shoulder, between the roadway and the parking lot, to continue the trail construction to Cobbs Creek.

P-12 (See *Map E-4*) – At this point the preferred route heads through Carroll Park on the westerly side of City Avenue, the road crossing itself being a major issue. High traffic volumes and being a sufficient distance away from the Cobbs Creek Bridge were seen as having a heavy impact on the safety of a crossing in the vicinity of the driving range. Several alternatives were discussed:

- Crossing in the vicinity of the driving range at grade. This was viewed as too dangerous.
- Bridging City Avenue in the vicinity of the driving range. This was seen as impractical due to the lengths of the approach ramps needed to meet both ADA requirements and that of the new bridge’s clearance over City Avenue.
- Routing the trail north along City Avenue to cross at the controlled 77th Street intersection and returning to Carroll Park on the westerly side of City Avenue. The issue here is the width of the right-of-way

needed on the west side to create a reasonable trail width. Negotiations with multiple small private property owners would likely make this option impractical.

- Continuing parallel to City Avenue to Cobbs Creek, crossing the creek with a new bridge and then tunneling under City Avenue through the high portion of the embankment south of the existing Cobbs Creek Bridge. The primary issue here is the cost of the new bridge and the tunnel, approximately \$520,000. However, of all the options discussed with the steering committee, it was agreed this was mostly likely the safest option and, aside from the cost, the best alternative. It should be noted that the lands on the south side of Cobbs Creek and east of Township Line Road are located in Upper Darby Township.



Sections P-12 and P-13 – Crossing City Ave. and into Carroll Park

P-13 (See Map E-4) – Carroll Park is comprised of lands owned by the City of Philadelphia in Haverford Township. Assuming the tunnel option for Section P-12 is used, there is an existing footpath on the south side of Cobbs Creek from the SEPTA station at City Avenue to the rail overpass that once provided access to the Grange Estate. Lands on this side of the creek are firm and allow sufficient width to construct a multi-use trail to what could be a link to the Grange property through the existing railroad overpass. Lands to the north of the creek, while scattered with irregular footpaths, are generally wet and subject to flooding from the creek.

P-14 (See Map E-4) – Beyond the point of the Grange railroad overpass, Cobbs Creek shifts closer to the SEPTA rail embankment and there is insufficient width to continue a trail along the south side of the creek. The Creek was once bridged at the Grange to facilitate access to the property and that is the reason for the original construction of the rail overpass in the very early 20th century. A new bridge at this same general location would allow access to the larger area of Carroll Park on the north side of the Creek which, unlike the lands to the east of this point, appear drier and is replete with existing foot paths linking to Carroll Road and Manoa Road. Construction of a multi-use trail in this area following a number of alignments appears possible, providing good connections to the surrounding community.

Through Haverford Township (H sections)

As with the golf club, a field review of conditions through Haverford Township was conducted, aided in this location by representatives of the Friends of Haverford Trails and the steering committee. The discussion of the potential trail routing below reflects that discussion. Once out of Carroll Park the goal is to connect to the existing trail system along Karakung Drive and Cobbs Creek, eventually reaching the end of this study

section at Eagle/Wynnewood Road. For clarity, once through Carroll Park the Cobbs Creek, the SEPTA rail lines and Karakung Drive run generally north-south.

H-1 (See *Map E-4*) – The first issue out of Carroll Park is crossing Manoa Road. Depending on the specific alignment chosen through Carroll Park, the first crossing is likely a simple street crossing of Old Manoa Road. At Manoa Road the issue becomes the visibility for drivers coming through the SEPTA overpass from the south. It was generally felt a trail crossing should be somewhere north of the Karakung Drive intersection. With the exception of rush hour commuter traffic, traffic along Manoa Road is generally light, and it was felt a well-marked and signed street crossing should be sufficient.

H-2 (See *Map E-4 and E-5*) – Within the Karakung Drive/Park area there is an existing network of off-road footpaths. The drive is also closed on Sundays during the spring, summer and early fall for recreational use. Through the volunteer efforts of the Friends of Haverford Trails and other community groups, the off-road foot paths are maintained and resurfaced each year with wood chips. In this section these footpaths could serve as the basis for an alignment for developing a more permanent, paved multi-use trail. There are some spots where width may be an issue, as well as the need to grade for accessibility, but, for the most part, these areas are limited and appear manageable. The existing footpaths start out on the east side of Karakung Drive, then cross the drive to the west side at the point where the creek comes closer to the roadway. This street crossing would need to be clearly marked and signed to improve safety at the crossing. With the exception of the one crossing of Karakung Drive, the existing, off-road footpath is continuous from Manoa Road to Nitre Hall, about 700 to 800 feet south of Beechwood Drive.

H-3 (See *Map E-5*) – At Nitre Hall, an historic site along Karakung Drive, the footpath becomes a part of the entry way to the upper level of the building, providing an accessible entrance. The path then turns onto the vehicular driveway to the site for a short distance and then becomes an off-road trail again near where the driveway meets the roadway. This off-road footpath is continuous to a point about 250 to 300 feet south of Beechwood Drive and the Beechwood-Brookline Station of the Norristown High Speed Line where the distance between the roadway and the rail embankment reach its narrowest point. The footpath also narrows as it reaches this point. Between Nitre Hall and this ending point there appears to be sufficient lands to continue an off-road, multi-use trail alignment that still offers a shared access to Nitre Hall and avoids use of the site's vehicular driveway.

It is at this point, and frankly from this point to Eagle Road, that truly creative solutions appear to be needed if the goal is to create a continuous off-road multi-use trail. That should be the goal here. Short of that, the alignment needs to be reconsidered from Manoa Road. Looking to the west of the SEPTA rail lines the only immediate option along this general corridor is the empty track bays of the rail right-of-way itself. However these may be needed for SEPTA's own expansions as they consider options for service to King of Prussia from the Norristown High Speed Line. Even if this option were open for consideration, there are significant elevation differences that would have to be addressed along the right-of-way, such as the conditions on each side of Mill Road.

So, we are back to needing creative solutions, because Karakung Park really does offer a wonderful opportunities for an attractive trail for most of its length.

H-4 (See *Map E-5 and E-6*) – Again, as noted above, this curve (see map) represents some of the tightest conditions along Karakung Drive. It is the point where the creek flows closest to the rail embankment. The roadway is a relatively narrow two lanes with no shoulder at all on either side. The rail embankment defines the edge of the road to the west and a guiderail at the top of the creek bank sets the limit on the east. It should be kept in mind that this is a relatively short section and conditions improve immediately to the north and south of the curve. Thoughts to consider include:

- Can Karakung Drive be used as a one-way road? It's a low speed road that because of its narrow width and curves is already somewhat hazardous for two-way traffic, particularly at the speeds actually driven

by many drivers. It's closed on Sundays from the end of April to November. Its primary importance is at rush hour and for commuters using the Beechwood-Brookline Station.

- Would creation of an off-road multi-use trail offer commuters options that would reduce traffic on Karakung Drive sufficiently to increase the practicality of using the drive as a one-way road?
- In the area of this curve, could a structure, such as a low retaining wall, be introduced along the edge of the road to create a shelf along the existing embankment that would allow the construction of at least an 8-foot wide paved multi-use trail?



Sections H-3, H-4 and H-5 along Karakung Drive

H-5 (See Map E-6) – Once the above curve is negotiated, Karakung Drive turns away from the rail line and the embankment condition continuously increases in width to Mill Road. Once past the Beechwood-Brookline Station there is an existing sidewalk that starts at the stairs to the station and continues to and under the overpass at Mill Road. While conditions are rocky along this portion of the embankment, with some work there appears to be sufficient land to construct an off-road multi-use trail and once past the station stairs it is clear that there is sufficient land to both move the sidewalk away from the edge of the roadway and widen it. The primary issue is the stairs coming down to the roadway from the tunnel level below the tracks. The stairs are a straight run, with an intermediate landing and end five feet from the edge of the roadway. At the tightest spot the retaining wall adjacent to the stairs allows a short walkway that is only about four feet in width (curb line to wall). It is fairly clear that modifying the stair configuration could allow the development of an arrangement that would allow for construction of a multi-use trail or that the multi-use trail might be planned to help develop an accessible route to at least the tunnel level of the station. In meetings with SEPTA it was noted that the Beechwood-Brookline Station will eventually be under consideration for future replanning and renovations that would include developing an accessible route to the station.

Mill Road

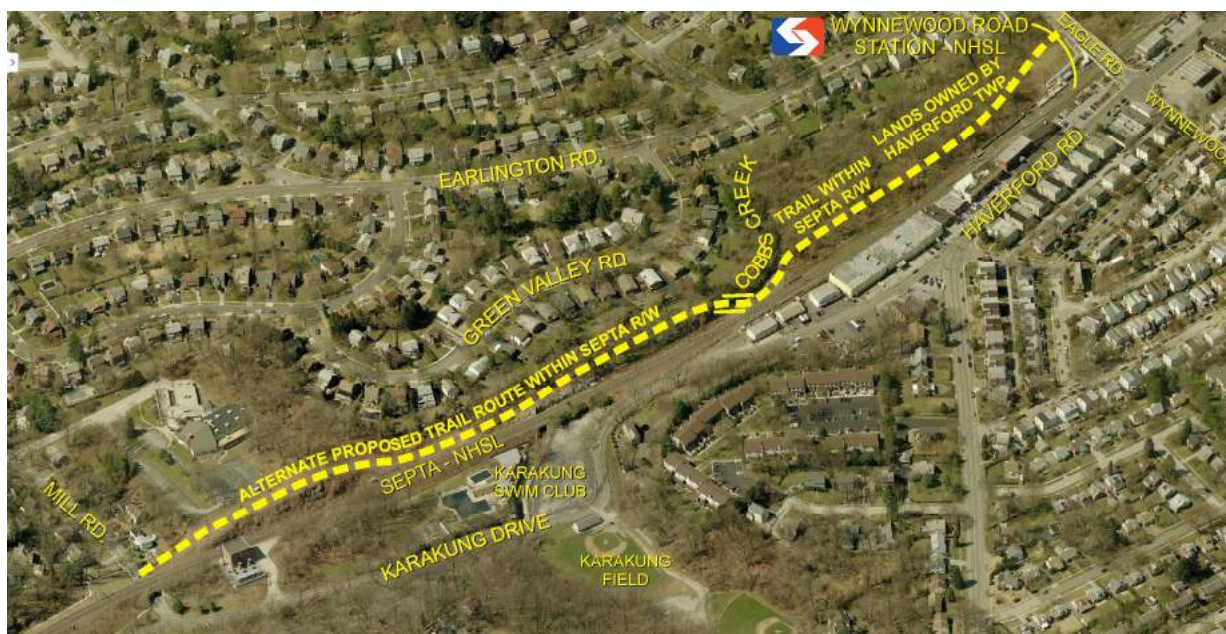
Mill Road is the point along Karakung Drive where options for an off-road trail clearly fade without substantial replanning. At points the best that can be achieved is a shared road route for bicycles and some improvements to the existing pedestrian sidewalk network and crossings.

H-6 (See Map E-6) – Between Mill Road and the bridge over Cobbs Creek there appears to be potential for a multi-use trail along the property at the power station on the west side of the roadway. Just beyond that, along Karakung Swim Club there is a grass shoulder between the paved roadway and the swim club fence

line that varies from about 11 to a little more than 12 feet wide. While this is narrow it does allow for continuation of a side path. The bridge over the creek only accommodates the present traffic lanes, but with the cooperation of the swim club there seems to be the potential to build a pedestrian bridge next to the road bridge over the creek which is in a concrete channel at that point.

H-7 (See Map E-6) – According to the Friends of Haverford Trails, the Karakung Trail system informally is permitted to go through the swim club parking lot. The grading, drainage and layout of the parking lot itself seems to be inefficiently and poorly planned, dumping massive amounts of runoff into the creek, and it has been used this way for many years. Looking at the parking lot as a unified project with the trail planning, reconsidering its grading and drainage, there may be an opportunity to create an asset for the community, such as a parking garage that provides more parking for the club and the adjacent ball fields. This might allow creation of a park-like setting around the parking facility that accommodates a true multi-use trail and provides a far superior solution to the sites drainage issues, not to mention mitigating the negative impacts of the present entirely paved and poorly graded site.

H-8 (See Map E-6) – Beyond the swim club parking lot site, existing development makes it impossible to develop a multi-use trail and only allows minimal ability to improve the pedestrian network, mainly to



Sections H-8 and H-9 between Mill Rd. and W. Wynnewood Rd. showing conditions along Karakung Dr. / Haverford Rd. and Alternate Route along SEPTA r/w.

improve continuity. Sharing the road or a bicycle lane seems to be the best option for the end of Karakung Drive and Haverford Road up to Eagle Road. This represents about the last quarter of a mile of the study section.

H-9 (See Map E-6) – At Mill Road there may be another option. While the overpass at Mill Road is only sufficient for the two lanes of traffic and a sidewalk, it may work as a short section of shared road for bicycles with the existing sidewalks for pedestrian use. The existing sidewalks on both sides are about four feet wide. The south side of the overpass offers more distance between the curb line and the abutment, about six feet, but there are head room issues on both sides as the spring point of the overpass arch varies from about six feet high down to four and a half feet from sidewalk elevation. Again this would be a very short distance, and most times of the day the traffic is a low volume. Once on the western side of the rail line there appears to be an opportunity to develop a multi-use trail along the west side of the rail right-of-way. Right at the overpass there is some private parking that appears to be an encroachment on the SEPTA right-of-way. Assuming the parking can be moved, the west track bays of the SEPTA right-of-way are unused. There are

also points where the right-of-way expands, creating even more potential for a rail-with-trail arrangement. As this section approaches the Wynnewood Road Station the station appears to fill the existing right-of-way, but there are a number of subdivided lots arranged around what appears to be a continuation of Dogwood Circle that has yet to be built. These properties are listed as owned by Haverford Township on the county tax database. These lots are irregular in shape and relatively small. Currently, as undeveloped wooded lands they preserve a portion of the riparian buffer along Cobbs Creek and provide a green buffer between the busy rail lines and Haverford Avenue corridor and the adjacent residential community. Again it should be noted here that SEPTA is reluctant at this point to commit to use of any of its lands until the planning for King of Prussia is resolved. There are also significant grading issues that would need to be resolved. Some of the slopes parallel to the rail line are fairly steep, particularly coming up from Mill Road.

H-10 (See Map E-5) – Another option for this area beyond Mill Road is to investigate developing a trail through Powder Mill Park. There are already foot paths along the creek, but since the route does not facilitate creating a multi-use trail through to Eagle Road any better than the Karakung Drive area, it might be better to preserve the present, more natural, footpath character in Powder Mill Park.

Analysis Summation

In summary, it can clearly be seen that there are wonderful opportunities for extending an off-road, multi-use trail east from the Radnor Trail and west from the Cobbs Creek Trail through both of the sections that are part of this study. Most of the sections considered are along publicly owned rights-of-way and through public park lands. There are virtually no continuity gaps within the sections themselves and they represent a substantial interconnection of local communities. The major issues in both sections occur as the end points of those sections approach Ithan Avenue and Eagle Road respectively.

In Radnor Township the P&W corridor option only reaches Sproul Road or Aldwyn Lane with relative ease. The Lancaster Avenue alternative reaches Ithan Avenue, but is not consistently feasible on either side and beyond that is a challenge unless the route shifts back to the Norristown High Speed Line corridor, whose use is dependent on future SEPTA plans and decisions.

In Haverford Township the route reaches the intersection of Mill Road and Karakung Drive before conditions again become difficult to negotiate. And once again, use of the NHSL corridor seems to offer the best options for continuation both beyond Mill Road and Eagle/Wynnewood Road.

E. Legal Feasibility (DCNR – B)

Extending the Radnor Trail East from Radnor Chester Road

Along the P&W Corridor

Sections R-PW-1 to R-PW-2 – The proposed route starts out crossing under Radnor Chester Road within the public right-of-way. The proposed right-of-way from Radnor Chester Road to I-476 is the former P&W Railroad right-of-way that is now owned by PennDOT. There appears to be some encroachment by adjacent property owners on this portion of the PennDOT owned right-of-way. A potential link to Lancaster Avenue is noted in this section that is through lands owned by the Radnor Township.

Section R-PW-3 – The long term proposal for a crossing of I-476 would be completely within the existing PennDOT right-of-way for I-476

Section R-PW-4 – Again the proposed alignment falls within the former P&W Railroad right-of-way owned by PennDOT. There are significant encroachments onto the PennDOT owned right-of-way along this section by adjacent property owners.

Section R-PW-5 – A bridge crossing of Sproul Road is proposed within the street right-of-way. Between Sproul Road and Aldwyn Lane the rail right-of-way becomes the unused south track bays of the SEPTA

owned right-of-way shared with PECO at this time. The trail would continue to Ltham Avenue through a park on lands owned by Villanova University.



This 1937 aerial photo shows Villanova University at the right hand side, and Villanova Junction on the P&W Railroad on the left. The rail line going to the top of the photo is still in operation to Norristown; the line to the left was abandoned in 1956. The railbed remains on both side of I-476 and is recommend for the Trail, but the bridge over Sproul Rd. will need to be replaced and a new bridge over I-476 constructed.

Along the Lancaster Avenue Corridor

Section R-L-1 – The link from the existing Radnor Trail to Lancaster Avenue is generally within the public right-of-way of Radnor-Chester Road. As noted, the link could be widened, or even rerouted, through adjacent parklands owned by Radnor Township to the Chew Lane crossing. From Chew Lane and around the corner on to the south side of Lancaster Avenue the trail work will need to be confined within the public right-of-way of both roads due to the adjacent private properties in the vicinity of that corner.

36-22-027:000 – 109 Radnor-Chester Rd. – C. M. Kline

36-22-028:000 – 105 Radnor-Chester Rd. – M. R. Mattern

Section R-L-2 and R-L-3 – The intent in these sections is to keep the trail generally within the public right-of-way of Lancaster Avenue and the PennDOT right-of-way of I-476. On both sides there are adjacent lands owned by the Radnor Township that could allow the trail to be better separated from the roadway. On the south side starting at Radnor-Chester Road there are three private property owners that may be impacted:

36-22-029:000 – 101 Radnor-Chester Rd. – C. L. Brebis III

36-22-030:000 – 604 E. Lancaster Ave. – C. L. Brebis III

36-22-031:000 – 69 Chew La. – C. L. Brebis III, LLC

36-22-035:000 – 113 Chew La. – J. J. Talucci

36-22-036:000 – 620 E. Lancaster Ave. – Radnor Township

36-22-036:001 – E. Lancaster Ave. – Radnor Township

36-22-037:000 – 634 E. Lancaster Ave. – C. W. Hanson III

Section R-L-4 – This alternative alignment would be on lands presently within the PennDOT right-of-way for I-476.

Section R-L-5 – As noted this section becomes more difficult, particularly on the south side in terms of right-of-way. The north side is limited more by topography, but it is within the I-476 PennDOT right-of-way. On the south the trail would be primarily in the Lancaster Avenue right-of-way. It would be beneficial to obtain a better separation from the roadway, but the adjacent wooded lands are privately owned. As the proposed

trail approaches the Norristown High Speed line overpass, privately owned lands on the south side would need to be crossed to allow access to the proposed tunnel. There are five property owners on the south side.

36-23 – No parcel no. – No Street Address – PennDOT?
36-23-158:002 – 100 Hillside Circle – Oakbourn Development, LP
36-23-152:000 – 101 Hillside Circle – Lopez (private home owner)
Map?-277/158 – No address – designated Rail R/W – SEPTA?
36-23-150:000 – 734 E. Lancaster – McShane Building, LP

Section R-L-6 – As noted, the overpass of the SEPTA Norristown High Speed Line is the most difficult section of the Lancaster Avenue Corridor to address. SEPTA is amenable to developing a tunnel under the line within their right-of-way for a south side alignment. Access to a proposed tunnel would need to be developed through the privately own properties on both sides of the rail road. The property owners are:

36-23-150:000 – 734 E. Lancaster Ave. – McShane Building, LP
36-23-004:000 – Lancaster Ave. – SEPTA
36-23-003:000 – Lancaster Ave. – PennDOT

Sections R-L-7 and R-L-8 – As noted, Villanova is planning improvements to the pedestrian access along the south side of Lancaster Avenue. This also seems to work best in terms of right-of-way for the trail. Most of the lands adjacent to the Lancaster Avenue right-of-way are owned by the University; they are amenable to working improvements suitable for a multi-use trail into their plans. There are three other property owners along the south side:

36-23-003:000 – Lancaster Ave. – PennDOT
36-24-058:000 – 2 Aldwyn Lane – Aldwyn Lane LP
36-24-057:000 – 1 Aldwyn Lane – Aldwyn Lane LP

Extending the Cobbs Creek Trail West from 63rd and Market Streets

Through Upper Darby and into Millbourne Borough

Section M-1 – The section starts within the public right-of-way of Market and 63rd Streets and continues in the public right-of-way to a proposed ramp to the former Cardington Branch tunnel. The ramp itself would be on lands in Upper Darby that are neither developed nor maintained at present. Three parcels may be impacted.

16-10-455:000 – Market Street – Barry J. Belmont (prior owner of the Public Storage property)
16-10-457:000 – 6326-28 Market Street – SEPTA (prior owner Barry J. Belmont)
16-10-458:000 – Market Street – City of Philadelphia

Section M-2 – This section of the trail is already included as part of the transit oriented redevelopment for the former Sears site in Millbourne. County tax records list the owner as **WRD-Sears LP (Willner Reality & Development Company)**.

Section M-3 – This section links the redevelopment site in Millbourne to park lands owned by the City of Philadelphia.

Through Philadelphia

Sections P-1 to P-11 – These sections are, for the most part, through park lands owned by the City of Philadelphia, an active planning partner in the project. Portions around the edges of these park lands and at street crossings may fall in the public rights-of-way of the following city streets:

Arch Street	Callowhill Street
Race Street	Haverford Avenue
North Daggett Street	Lansdowne Avenue
Vine Street	City Avenue

Section P-10 – It has been suggested that acquisition of additional right-of-way from the antenna farm at 77th Street and Brockton Road may be beneficial for this section. The antenna farm is owned by **Family Stations, Inc. 7701 Brookhaven Road, Philadelphia, PA.**

Section P-12 – The proposed crossing of Cobbs Creek at the end of this section takes the trail and the proposed tunnel into Upper Darby Township, but the lands on the southerly side of the creek are still parklands owned by the City of Philadelphia.

Sections P-13 and P-14 – These sections are, for the most part, in Carroll Park. Carroll Park is land owned by the City of Philadelphia, but actually located in Haverford Township. As the first section nears and makes the link to the Grange Estate, proposed alignment moves into and crosses the SEPTA right-of-way.

Through Haverford Township

Sections H-1 to H-5 – The proposed crossing will be within the public right-of-way of Manoa Road. Between Manoa Road and Mill Road the entire proposed alignment would be within township owned lands, Karakung and Powder Mill Valley Parks.

Sections H-6 and H-7 – These sections would be within the public right-of-way of Karakung Drive, but acquiring additional right-of-way and complete re-planning of the swim club parking area offer many benefits. The two property owners along these sections are:

Power station property – SEPTA

22-22-316:000 – Karakung Drive – Karakung Swim Club, Timothy Rafter Board President

22-22-317:000 – Karakung Drive – Karakung Swim Club

Section H-8 – The proposal here is to work the best scheme within the limits of the public right-of-way of Karakung Drive and Haverford Road. There are a number of adjacent private land owners here and the SEPTA right-of-way also is impacted.

Section H-9 – This alternative proposes to use part of the SEPTA right-of-way and potential acquisition of lands to the east of Wynnewood Station. There are 10 subdivided lots and street right-of-way that form the extension of Dogwood Circle that have not been developed or the road constructed. These parcels are designated on the county tax map as **22-22-032:003 through 22-22-032:012 inclusive and are listed as owned by Haverford Township**, one of the active planning partners to this study.



New stormwater management features and stream restoration in Carroll Park south of Manoa Road

III. RECOMMENDATIONS (DCNR – E)

A. Recommendations and Proposed Alignment for the West Section

Extending the Radnor Trail to the East – Again, the goal in the west section is to extend the existing Radnor Trail about one and a half miles east to Villanova University and Ithan Avenue, from its current termination at Radnor-Chester Road. There are two main alternatives, the former Philadelphia & Western Rail right-of-way owned by PennDOT or the Lancaster Avenue Corridor.

P&W Corridor – Based on the input during the study process the preferred route is the P&W corridor. The primary issues with this route, as noted in the section analysis, are (1) the time frame and cost issues with developing a bridge crossing I-476 and (2) presently there is still some question regarding to the use the rail corridor past Aldwyn Lane due to SEPTA’s planning for rail service to King of Prussia. In general this route is feasible to Aldwyn Lane. PennDOT is amenable to exploring and developing a design for a pedestrian bridge crossing I-476 and feels one can be developed that will meet their requirements, although time and cost are the issues. There is no proposed work for this interchange at the present time, and the bridge would likely be developed and built as an independent project. Until the bridge is developed, there are options for a temporary route to the south side of Lancaster Avenue from the rail right-of-way that would facilitate crossing beneath I-476 on the south side under the overpass. Aldwyn Lane becomes a rather awkward stopping point that seems to offer little potential for continuing the route east unless a “rail-with-trail” option can be developed with SEPTA.

Lancaster Avenue Corridor – Although the less favorable option based on public input, the Lancaster Avenue corridor seems to at least offer an option for continuing the trail eastward to the Villanova University Campus and to Ithan Avenue. Both sides of Lancaster Avenue would benefit from at least pedestrian access improvements. Developing a multi-use trail on one side or the other appears to be difficult, but a combination of the two, crossing Lancaster Avenue at one or multiple points seems feasible. After King of Prussia Road the south side is far preferable for development of a multi-use trail even with the need to develop a tunnel under the Norristown High Speed Line, which SEPTA sees as an acceptable option.



Some of the edges of Lancaster Avenue have ample space for the Trail

Unfortunately, once at the Villanova Campus, the university prefers use of the north side. A practical approach is to improve the side paths along Radnor-Chester Road to reach a crossing of Lancaster Avenue to the north side. A multi-use trail along the north side, preserving a cross country running path, would improve access to the Radnor High School campus. Crossing back to the south side at King of Prussia Road sets the route clear of the worst of the I-476 ramp conditions, the south bound on-ramp, and would allow for continuation of a multi-use trail along the south side of Lancaster, crossing the I-476 off-ramps under the SEPTA NHSL and to the Sproul / Spring Mill Road intersection. From this point on Villanova University prefers any trail development to be on the north side of Lancaster, necessitating another crossing.

Both of these options could and perhaps should be pursued, developing as much as possible of the P&W right-of-way as part of the trail section and linking it to pedestrian and potential trail improvements along both sides of Lancaster Avenue. This would preserve the P&W right-of-way as an actively used and maintained greenway, effectively linking it to the schools and businesses along Lancaster Avenue, in particular Villanova University. Initially the P&W corridor using parts of the Lancaster Avenue corridor to link the sections separated by I-476 is seen as the best route for the Forge to Refuge Trail through Radnor Township. The long term goal is a route that follows the P&W corridor and hopefully a rail-with-trail route along the SEPTA NHSL corridor becoming the official route as elements like the I-476 bridges are completed and access with SEPTA negotiated.

B. Recommendations and Proposed Alignment for the East Section

Extending the Cobbs Creek Trail to the West – Again, the goal in the east section is to extend the existing Cobbs Creek Trail about four and a half miles west, generally along Cobbs Creek, into Haverford Township and Eagle Road. As noted in the analysis, the study in this section was primarily exploration of the feasibility of preferred alignments and their potential.

At 63rd Street Station and into Millbourne – Section alternatives M-1 to M-3 discuss developing the trail through Millbourne, along Cobbs Creek, on the transit oriented redevelopment site (former Sears site) and developing access to it from two points: 1) from the Cobbs Creek Trail at 63rd and Market Street by way of a new ramp and the existing tunnel that serviced the Cardington Branch of the PRR; 2) from the Philadelphia trail network through Haddington Woods by way of a new bridge over Cobbs Creek in the general vicinity of the existing dam. This is the recommended alignment for the Forge to Refuge Trail since, as further explained below, it facilitates development of a substantial length of continuous off-road trail. Its location on and connections to the planned redevelopment site further integrate the trails system into the surrounding community. Furthermore, its planned location near and connection to SEPTA's Millbourne Station creates a link with regional transit that is already accessible (ADA compliant) via the station's elevator.

Through Haddington Woods and the Surrounding Neighborhood – Section alternatives P-1 to P-4 discuss the potential of the partially existing trails through and around Haddington Woods. Both of the alignments represented are from the City of Philadelphia Trails Master Plan and its update dated 2013 and 2014. It is important that the perimeter route, P-2, closely related to the neighborhood, be developed to serve the local residents and beyond, possibly even upgraded to multi-use trail standards. It could be the route for the Forge to Refuge Trail. However, the P-3/P-4 section, from Callowhill along the stream to the trail along Cobbs Creek's north bank, is far more interesting as the route for the Forge to Refuge Trail. While it is nice now as an earth walking trail, if the trail is upgraded to a paved multi-use trail and in combination with the Carroll Park section, the Golf Course perimeter route, the Millbourne route, the Cardington Branch tunnel ramp and the existing Cobbs Creek Trail, the redeveloped trail would become an off-road multi-use trail that has only one street crossing, Lansdowne Avenue, between Manoa Road in Haverford Township and the Cobbs Creek Recreation Center near 63rd and Spruce Streets in Philadelphia. This represents about a three mile section of the east study section trail route. The improvements to the P-3 creek side path should continue past the proposed bridge into Millbourne through to its termination at the sidewalk to 63rd Street.

Perimeter Trail around Cobbs Creek Golf Club – Section alternatives P-5 through P-11 form the preferred perimeter route around the Cobbs Creek Golf Club. These sections were reviewed in the field with the Philadelphia Department of Parks and Recreation and the Golf Course management. The route, as described in the section alternatives, forms the recommended route for the Forge to Refuge Trail.

Into and through Carroll Park – Section alternatives P-12 to P-14 discuss crossing City Avenue and the route through Carroll Park. Based on review and discussion, the proposal to develop a tunnel under City Avenue is the recommended approach to “crossing” City Avenue. While the cost is substantial, all of the other alternatives considered were seen as impractical or extremely problematic with regard to safety. This approach is a key piece in developing the continuous length of off-road trail noted above. As noted in the discussion of the alternatives, the route through Carroll Park will require new bridges over Cobbs Creek and facilitates connections to the Grange Estate and the surrounding neighborhood. This is the recommended trail route.

Through Karakung Park – Section alternatives H-1 to H-5 discuss the potential for development of a multi-use trail through Karakung Park, generally along the existing trail alignment. This is the recommended route for the Forge to Refuge Trail up to Mill Road. It is a route through a very scenic park in Haverford Township that is heavily used by the residents of the community.

Beyond Mill Road – Section alternatives H-6 to H-10 discuss the challenges and offer potential options along Karakung Drive between Mill Road and its junction with Haverford Road, and then from there to West Wynnewood Road. It would serve the community well to continue development of a multi-use trail as far as possible along Karakung Drive north of Mill Road. The potential for a multi-use trail in this area, for the most part, ends at Karakung Swim Club. Beyond that point “shared road” and pedestrian improvements were discussed, but again conditions are not optimal for this to be part of a long distance trail route. There may be other options west of the rail line, but decisions how best to handle this section are heavily dependent on further review of options that may develop as alternatives to complete the trail between Haverford Township and Villanova are further reviewed at some future point.

C. Recommendations for Trail Operations, Maintenance and Security (DCNR – F)

The trail sections discussed are generally located within the municipal entities participating in the study: Radnor Township, the City of Philadelphia, Millbourne Borough, and Haverford Township. All are supportive of the trail and its purpose and interested in pursuing its development and construction. Each entity has departments and forces that are already addressing operations, maintenance and security of similar facilities. Again, many of the sections are on lands already under the oversight of these departments and forces. It is recommended for continuity that these procedures be continued and extended to the new trail sections as they are completed. There are two very short sections of the proposed route that are in Upper Darby. As these sections are simply extensions of facilities within the other jurisdictions named, it is recommended that agreements be developed to allow the adjacent entities to manage these short sections in Upper Darby. The sections are:

Section M-1 – The trail section is the proposed ramp to the Cardington Branch Tunnel below Market Street and passes through Upper Darby Township. It is recommended that this section be managed by Philadelphia as part of the Cobbs Creek Trail since Philadelphia owns the largest parcel of land through which the ramp will pass.

Section P-12 – This section includes a proposed bridge over Cobbs Creek and the proposed tunnel under City Avenue. These lands north of the SEPTA Norristown High Speed Line are in Upper Darby, but are part of the Cobbs Creek Golf Club property owned by Philadelphia and should be managed as part of the Philadelphia trails network.

IV. IMPLEMENTATION RECOMMENDATIONS (DCNR – G)

A. Proposed Implementation/Phasing Strategy

There are a number of ways Phasing strategies can be developed. In many projects, funding takes precedence, and the least costly sections are pursued first to get as much trail in place as quickly as possible. Then as funding becomes available, development continues on the higher cost phases. In the case of the Forge to Refuge Trail, while funding is an issue in development, it is agreed that the more important aspect of the Phasing is the concept of extending the existing elements in place, the Radnor Trail and the Cobbs Creek Trail. The goal is to see that a continuous trail grows from both ends, closing the gap while maintaining continuity of those elements. To that end the following Phasing approach is proposed for consideration.

West Section – Extending the Radnor Trail East – Again, the preferred route is the P&W corridor and the proposed phasing is as follows:

Phase I – Sections R-PW-1 and R-PW-2 – This is the first logical extension of the Radnor Trail to the east. It includes removal of the existing ramp at Radnor-Chester Road, constructing the tunnel under Radnor-Chester Road and extending the trail east along the rail bed to I-476. This extends the recreational use of the existing trail, offers connection to the footways in Martha Brown’s Woods and a footpath link to Ithan Village.

Phase II – Sections R-PW-4 and R-PW5 – This would continue the trail along the P&W rail bed at least to Aldwyn Lane and includes a new trail bridge over Sproul Road. To maintain continuity the proposal here is to create a temporary connection of the west and east sections of the P&W right-of-way by developing a link to and along Lancaster Avenue, under the existing I-476 overpass and back to the right-of-way. Once at Aldwyn Lane a temporary “on-road” route can be signed to connect to the NHSL Villanova Station, the Villanova Campus and subsequently Ithan Avenue.



The north side of Lancaster Avenue at the High School already has a jogging path.

Phase III – Off-Road Section R-PW-5 – As time is needed to continue discussions, design and review with SEPTA, this section proposes to continue the R-PW-5 section from Aldwyn Lane, within the SEPTA NHSL right-of-way (behind the houses along Aldwyn Lane) to the Villanova Station as a “Pilot Rail-with-Trail” project. It’s hoped that this will be the future long-term route for the Forge to Refuge Trail.

Phase IV – Section R-PW-3 – Due to the time involved for design, review and approval by PennDOT and funding, the proposed bridges over I-476 are proposed as the last phase of the extension of the Radnor Trail section of this study. These will form the permanent link of the two sections of the former P&W right-of-way and the long-term route for the Forge to Refuge Trail.

East Section – Extending the Cobbs Creek Trail West

Phase I – Sections P-1 to P-5 – The first logical extension of the Cobbs Creek Trail is across Market Street at 63rd Street and through and/or around Haddington Woods. As previously noted there is value in developing/improving both the routes through the woods and along the neighborhood streets, and it is Philadelphia's intention to do so. The route through the woods (P-3 and P-4) offer the most benefit for the Forge to Refuge Trail in terms of a continuous "off-road" network with a minimum of heavy trafficked street crossings via linking to the Millbourne Trail route. This phase also includes the first leg around the golf club property. Completion of this phase extends the trail and its connections to Morris Park and the Overbrook and Overbrook Farms neighborhoods of Philadelphia.

Phase II – Sections M-1 to M-3 – The Millbourne Trail section is also a "first" logical extension of the Cobbs Creek Trail and can be executed independently as a separate phase. Its future seems to be linked to the development of the TOD site (former Sears location) but can and should be developed as a separate entity, even as a temporary alignment along the creek that will be modified, if needed, during the site development. As an extension of the Cobbs Creek Trail it can work independent of the completion of Phase I, but offers the most benefit if completed along with or after the completion of Phase I providing a link to the Millbourne Station and the start of the off-road section that will eventually cross only one street between Marshall Road on the Cobbs Creek Trail in Philadelphia and Manoa Road in Haverford Township.

Phase III – Sections P-6 to P-13 – This phase completes the route around the perimeter of the golf club and makes the first links in Haverford Township, the Grange Estate and Carroll Park. Offering another link to the NHSL at the Township Line Road Station, it includes the proposed tunnel under City Avenue.

Phase IV – Sections P-14 to H-7 – This phase essentially completes the extent of off-road trail that can be developed within the limits of this study without further discussion and investigation of a "rail-with-trail" with SEPTA. It continues from the Grange Estate link through Carroll Park, into Karakung Park and to the Karakung Swim Club, and to the vicinity of the Karakung Fields ball field area. It passes in the vicinity of the NHSL Penfield Station and offers an opportunity for a direct link with the Beechwood-Brookline Station.

Note: Section H-8 is not mentioned in the phasing. While it offers an opportunity to continue bike and pedestrian routes to Wynnewood Station and the end of the study section, W. Wynnewood Road / E. Eagle Road, the potential here is very limited by existing conditions and does not offer an appropriate route for an important long distance trail like the Forge to Refuge Trail.

Future Phase – Section H-9 – This section explores the possibility of linking the two rail stations, Brookline-Beechwood and Wynnewood, along lands west of the SEPTA NHSL right-of-way. This would be within the SEPTA right-of-way and on lands presently owned by Haverford Township. Any consideration or implementation of this potential alternative requires detailed survey of the existing conditions and further discussions with SEPTA to determine its feasibility.

B. Opinion of Probable Cost of Development

Opinion of Probable Cost of Construction – The following pages offer an opinion of probable cost of construction by section and by the proposed phases outlined above.

Right-of-way Acquisition – As previously noted, most of the proposed trail alignment for the Forge to Refuge Trail is within public rights-of-way, on lands owned by municipal entities (Radnor Township, Philadelphia, and Haverford Township) or in PennDOT and SEPTA rights-of-way. As such, no acquisition costs are anticipated in these sections. Agreements for operation, maintenance and management of the trail would need to be developed with PennDOT and SEPTA as needed.

The proposed ramp from Market Street to access the Cardington Branch Tunnel (Section M-1) will cross three properties in Upper Darby Township. A portion of the former Cardington Branch right-of-way leading to the tunnel is a tax-exempt property owned by SEPTA (current assessment \$25,000). The larger, adjacent parcel is a tax-exempt property owned by Philadelphia (0.7647 acres, current assessment \$802,080). The third is a small parcel (0.0807 acres), undeveloped or maintained and privately owned that fronts on Market Street. The tax account for this property is “deactivated” and the last assessment of \$2700 is dated 1986. According to the county tax records the ownership was last transferred for \$1.00. It seems appropriate that the City of Philadelphia consider purchasing both of these properties adjacent to their larger parcel.

The Millbourne Trail (Sections M-2 and M-3) is on lands owned by the site’s current developer; however construction of the trail is a condition of the potential site development approval. If the trail is built prior to the site’s development, an agreement would need to be negotiated with the owner for construction and operation of the trail that would include potential relocation of the trail, if needed for the new development, by the developer. The final disposition of the trail right-of-way or easement would likely be best determined after completion of the redevelopment project.

At the perimeter of the Cobbs Creek Golf Club there is a short section where acquisition of additional right-of-way from the adjacent antenna farm is recommended, but may not be necessary based on future planning for the golf course. This acquisition would be only about 8200 square feet, less than two tenths of an acre.



The connection from the Trail to Millbourne and its train station will be seamless.

Forge to Refuge Trail - Opinion of Probable Cost of Construction by Sections & Proposed Phase

Section/Construction Item	Approx. Quantity	Unit	Unit Cost	Item/Section Totals	Total by Prop. Phase	Approx. Cost/mile (mil\$)
Radnor Township - Radnor Trail Extension						
P&W Corridor owned by PennDOT						
R-PW-1					PHASE I R-PW-1 & R-PW-2	
Tunnel 1 @ Radnor-Chester Rd. (Including ramp removal & guide rails)	50 to 75 ft	LS		\$350,000		
Typical paved trail construction	300	LF	80	\$24,000		
Paved trail link to existing side path	450	LF	60	\$27,000		
Signage/fencing/Landscaping		ALLOW	30%	\$15,300		
R-PW-2					PHASE I R-PW-1 & R-PW-2	
Typical paved trail construction	1900	LF	80	\$152,000		
Potential Link to Lancaster Ave.	350	LF	60	\$21,000		
Signage/fencing/Landscaping		ALLOW	30%	\$51,900		
Total Radnor Trail Extension P&W - PHASE I						
					\$641,200	\$1.13
R-PW-3					PHASE IV R-PW-3	
Bridge 1 @ I-476 Ramp	300 ft	LS		\$750,000		
Bridge 2 @ I-476	600 ft	LS		\$1,800,000		
Typical paved trail construction	400	LF	80	\$32,000		
Signage/fencing/Landscaping		ALLOW	50%	\$16,000		
Total Radnor Trail Extension P&W - PHASE IV						
					\$2,598,000	
R-PW-4					PHASE II R-PW-4 & R-PW-5	
Typical paved trail construction	1250	LF	80	\$100,000		
Potential Link to Lancaster Ave. & Hillside Cir.	500	LF	60	\$30,000		
Temporary Route - Along Lancaster Ave./Under I-476	1500	LF	80	\$120,000		
Temporary Route - Street crossings @ I-476 ramps	4	EA	10000	\$40,000		
Signage/fencing/Landscaping		ALLOW	30%	\$75,000		
R-PW-5					PHASE II R-PW-4 & R-PW-5	
Bridge 3 @ Sproul Rd.	50 ft	LS		\$280,000		
Typical paved trail construction	500	LF	80	\$40,000		
Street Crossing w/ signage @ Aldwyn La.	1	EA	10000	\$10,000		
Signage/fencing/Landscaping		ALLOW	30%	\$15,000		
Temporary Route - Signed "on-road" Aldwyne Lane	2300	LF	5	\$11,500		
Total Radnor Trail Extension P&W - PHASE II						
					\$721,500	\$1.02
Final Route paved trail construction "rail w/trail"	1600	LF	80	\$128,000	PH. III R-PW-5	
Final Route - Signage/fencing/Landscaping		ALLOW	40%	\$51,200		
Total Radnor Trail Extension P&W - Phase III					\$179,200	\$0.59
Total Radnor Trail Extension - P&W Corridor				\$4,139,900		\$0.97

note: "Cost per mile" does not include Section R-PW-3, proposed bridges over I-476

Radnor Township - Radnor Trail Extension Lancaster Ave. Corridor (Alternative to the preferred P&W Corridor)

note: Based on the analysis, costs assume the multi-use trail construction will start on the south side of Lancaster Ave. at Radnor-Chester Rd. and cross to the north side of Lancaster in the vicinity of Sproul Rd. to continue along the north side through the Villanova University Campus.

R-L-1						
Increase width of exist. side path	1000	LF	60	\$60,000		
Improve street crossing @ Chew La.	1	EA	7000	\$7,000		
Signage/fencing/Landscaping		ALLOW	30%	\$20,100		
R-L-2						
Typical paved trail construction	3000	LF	80	\$240,000		
Street crossings @ I-476 ramps	6	EA	10000	\$60,000		
Signage/fencing/Landscaping		ALLOW	20%	\$60,000		
R-L-3 & R-L-5						
Typical paved trail construction	1200	LF	80	\$96,000		
Street crossing @ Hillside Cir.	1	EA	10000	\$10,000		
Driveway crossing	1	EA	5000	\$5,000		
Signage/fencing/Landscaping		ALLOW	20%	\$22,200		

Forge to Refuge Trail - Opinion of Probable Cost of Construction by Sections & Proposed Phase

Section/Construction Item	Approx. Quantity	Unit	Unit Cost	Item/Section Totals	Total by Prop. Phase	Approx. Cost/mile (mil\$)	
R-L-6 & R-L-7							
Tunnel 1 @ SEPTA NHSL	100 ft	LS		\$475,000			
Typical paved trail construction	650	LF	80	\$52,000			
Street crossings @ Sproul Rd./Aldwyn La.	5	EA	10000	\$50,000			
Signage/fencing/Landscaping		ALLOW	20%	\$20,400			
R-L-8 North Side - Villanova University							
Special paved trail construction	3100	LF	100	\$310,000			
Signage/fencing/Landscaping		ALLOW	30%	\$93,000			
Total Radnor Trail Extension - Lancaster Ave. Corridor				\$1,580,700		\$0.93	
Philadelphia, Millbourne, Upper Darby & Haverford Township - Cobbs Creek Trail Extension							
Millbourne Borough							
M-1							
Improve existing sidewalk	350	LF	30	\$10,500	PHASE II M-1 through M-3		
Ramp to existing tunnel	300	LF	400	\$120,000			
Trail Construction trough Tunnel	100	LF	80	\$8,000			
Signage/fencing/Landscaping		ALLOW	15%	\$20,775			
M-2							
Typical paved trail construction	2200	LF	80	\$176,000			
Signage/fencing/Landscaping		ALLOW	10%	\$17,600			
M-3							
Bridge 1 over Cobbs Creek near dam	50 to 75 ft	LS		\$300,000			
Typical paved trail construction	2200	LF	80	\$176,000			
Signage/fencing/Landscaping		ALLOW	10%	\$17,600			
Total Cobbs Creek Trail Extension - Millbourne Trail Section				\$846,475			
				Total CCT Ext. Millbourne Trail - Phase II	\$846,475	\$0.94	
Philadelphia - Haddington Woods (2 Alternate routes)							
P-1 & P-2							
Street crossing improvements	1	EA	10000	\$10,000	PHASE I P-1, P-3, P-4 & P-5		
Typical paved trail construction	3900	LF	80	\$312,000			
Signage/fencing/Landscaping		ALLOW	20%	\$62,400			
Total Cobbs Creek Trail Extension - Around Haddington Woods				\$384,400			\$0.52
OR							
P-1, P-3 & P-4							
Street crossing improvements	1	EA	10000	\$10,000			
Typical paved trail construction	3600	LF	80	\$288,000			
Signage/fencing/Landscaping		ALLOW	10%	\$28,800			
Total Cobbs Creek Trail Extension - Through Haddington Woods				\$326,800			\$0.48
Philadelphia - Cobbs Creek Golf Club Perimeter Trail							
P-5							
Typical paved trail construction	1400	LF	80	\$112,000			
Concrete "Urban" trail construction	1050	LF	100	\$105,000			
Signage/fencing/Landscaping		ALLOW	30%	\$65,100			
Total CCT Ext. (Through Haddington) - Phase I				\$608,900		\$0.53	
P-6, P-7 & P-8							
Street Crossings of Lansdowne Ave.	2	EA	10000	\$20,000	PHASE III P-6 through P-13		
Typical paved trail construction	2300	LF	80	\$184,000			
Concrete "Urban" trail construction	1060	LF	100	\$106,000			
Signage/fencing/Landscaping		ALLOW	30%	\$61,200			
P-9							
Typical paved trail construction	2000	LF	80	\$160,000			
Signage/fencing/Landscaping		ALLOW	10%	\$16,000			
P-10							
Typical paved trail construction	2200	LF	80	\$176,000			

Forge to Refuge Trail - Opinion of Probable Cost of Construction by Sections & Proposed Phase

Section/Construction Item	Approx. Quantity	Unit	Unit Cost	Item/Section Totals	Total by Prop. Phase	Approx. Cost/mile (mil\$)
Signage/fencing/Landscaping		ALLOW	40%	\$70,400	PHASE III P-6 through P-13	
P-11 & P-12						
Retaining wall along City Ave.	900	LF	400	\$360,000		
Tunnel 1 under City Ave.	50 to 75 ft	LS		\$280,000		
Bridge 2 over Cobbs Creek	50 to 75 ft	LS		\$240,000		
Driveway crossing	1	LS	5000	\$5,000		
Typical paved trail construction	1600	LF	80	\$128,000		
Signage/fencing/Landscaping		ALLOW	30%	\$39,900		
Total - Cobbs Creek Trail Extension - Cobbs Creek Golf Club Perimeter Trail				\$2,128,600		\$0.97
Haveford Township - Carroll Park (Owned by Philadelphia)						
P-13 & P-14						
Paved trail link to Grange Estate	150	LF	60	\$9,000		
Paved trail Link to SEPTA Station	150	LF	60	\$9,000		
Typical paved trail construction (P-13)	1000	LF	80	\$80,000		
Signage/fencing/Landscaping (P-13)		ALLOW	10%	\$9,800		
Total Cobbs Creek Trail Extension - Phase III					\$1,954,300	\$0.99
Bridge 3 over Cobbs Creek	50 to 75 ft	LS		\$240,000		
Bridge 4 over Cobbs Creek	50 to 75 ft	LS		\$240,000		
Typical paved trail construction (P-14)	1800	LF	80	\$144,000		
Signage/fencing/Landscaping (P-14)		ALLOW	10%	\$14,400		
Total Cobbs Creek Trail Extension - Carroll Park				\$746,200		\$1.27
Haveford Township - Karakung Park to Mill Road						
H-1, H-2 & H-3					PHASE IV P-14 & H-1 through H-5	
Street Crossing @ Manoa Rd.	1	EA	10000	\$10,000		
Street Crossings of Old Manoa and Karakung Dr.	2	EA	5000	\$10,000		
Typical paved trail construction	3400	LF	80	\$272,000		
Signage/fencing/Landscaping		ALLOW	10%	\$29,200		
H-4 & H-5						
Retaining wall at curve	200	LF	400	\$80,000		
New stair at B-B Station		ALLOW		\$30,000		
Street crossing Karakung Dr. for parking area	1	EA	10000	\$10,000		
Typical paved trail construction	600	LF	80	\$48,000		
Signage/fencing/Landscaping		ALLOW	20%	\$9,600		
Total Cobbs Creek Trail Extension - Karakung Park to Mill Rd.				\$498,800		\$0.63
				Total Cobbs Creek Trail Ext. to Mill Rd. - Phase IV	\$1,137,200	\$1.00

note: Based on the indeterminate nature of the feasibility beyond Mill Rd., Sections H-6 through H-9, these costs are not included.

C. Potential Funding Sources

Funding for the design and construction of the Forge to Refuge Trail may be available through a variety of sources that include Federal, State, local, Private Sources, and Foundation Grants.

FEDERAL FUNDING

Bicycle and pedestrian projects are broadly eligible for funding from almost all major federal-aid highway, transit, safety, and other programs. Bicycle projects must be principally for transportation, rather than recreation, purposes and must be designed and located pursuant to the transportation plans required of states and Metropolitan Planning Organizations (MPOs). Additional federal funding sources not directly related to transportation can be used creatively to enhance and restore open space, wetlands, and wildlife habitat along trails and also to fund interpretation of cultural and natural resources.



Eastern Federal Lands Access Program Project (FLAP) – USDOT

The Federal Lands Access Program (FLAP), a new program created under the "Moving Ahead for Progress in the 21st Century Act" (MAP-21), provides funds for projects on Federal Lands to access transportation facilities that are located on, adjacent to, or that provide access to Federal lands.

A Federal Lands access transportation facility is defined as a public highway, road, bridge, trail, or transit system that is located on, adjacent to, or provides access to Federal lands for which title or maintenance responsibility is vested in a State, county, town, township, tribal, municipal, or local government.

Eligible activities include transportation planning, research, engineering, preventive maintenance, rehabilitation, restoration, construction, and reconstruction of Federal Lands located on or adjacent to, or that: provide access to a Federal land (adjacent vehicular parking areas; acquisition of necessary scenic easements and scenic or historic sites; provisions for pedestrians and bicycles; environmental mitigation in or adjacent to Federal land to improve public safety and reduce vehicle-caused wildlife mortality while maintaining habitat connectivity; construction and reconstruction of roadside rest areas, including sanitary and water facilities); Operation and maintenance of transit facilities.

As noted this funding is aimed at improving access to Federal Lands, in the case of this project it would include the two endpoints, Valley Forge National Historical Park and the John Heinz National Wildlife Refuge. These sites are not within the two sections that are part of this current study.

Additional Information: www.fhwa.dot.gov/map21/guidance/guideflap.cfm

Transportation and Community Development Initiative (TCDI) – DVRPC

The Transportation and Community Development Initiative (TCDI) is an opportunity for the Delaware Valley Regional Planning Commission (DVRPC) to support growth in the individual municipalities of the Delaware Valley through initiatives that implement the region's long-range plan, Connections 2040 Plan for Greater Philadelphia. Central to this effort is to ensure greater quality of life choices by providing and maintaining essential infrastructure, supporting local and regional economic development, and linking land use and transportation planning, through:

- Supporting local planning projects that will lead to more residential, employment or commercial opportunities in areas designated for growth or redevelopment;

- Improving the overall character and quality of life within the region to retain and attract business and residents;
- Enhancing and utilizing the existing transportation infrastructure capacity to reduce demands on the region's transportation network;
- Reducing congestion and improving the transportation system's efficiency by promoting the use of transit, bike, and pedestrian transportation modes;
- Building capacity in our older suburbs and neighborhoods;
- Reinforcing and implementing improvements in designated Centers; and
- Protecting our environment through growth management and land preservation.

Through fiscal years 2002-2015, DVRPC has distributed \$14.6 million to over 120 different municipalities, county governments, and nonprofits throughout the region for TCDI planning grants.

Additional Information: <http://www.dvrpc.org/TCDI/>

Transportation Alternatives Program (TAP) – DVRPC

Transportation Alternatives Program (TAP) are Federal highway and transit funds set-aside under the Surface Transportation Program (STP) for community-based "non-traditional" projects designed to strengthen the cultural, aesthetic, and environmental aspects of the nation's intermodal transportation system. The Transportation Enhancements (TE) funding category, which has historically funded many pedestrian and bicycle supportive projects such as streetscape improvements, was originally established by Congress in 1991 under the Intermodal Surface-Transportation Efficiency Act (IS-TEA) transportation authorization legislation. The TE and CMAQ Programs have concluded and these project categories now fall under TAP via the Moving Ahead for Progress in the 21st Century Act (MAP-21).

Transportation Alternative Programs include construction, planning, and design of on-road and off-road trail facilities for pedestrians, bicyclists, and other non-motorized forms of transportation, community improvement activities, and environmental mitigation activities

TAP funds may also be used for the Recreational Trails Program; Safe Routes to School; and planning, designing, or constructing roadways largely in the right-of-way of former Interstate routes.

The current application period for this program is from November 2, 2015 to January 8, 2016.

Additional Information: <http://www.dvrpc.org/TAP/>

RTP – Recreational Trails Program – FHWA

The Recreational Trails Program (RTP) provides funds to the States to develop and maintain recreational trails and trail-related facilities for both non-motorized and motorized recreational trail uses. The RTP is an assistance program of the Department of Transportation's Federal Highway Administration (FHWA). Federal transportation funds benefit recreation including hiking, bicycling, in-line skating, equestrian use, cross-country skiing, snowmobiling, off-road motorcycling, all-terrain vehicle riding, four-wheel driving, or using other off-road motorized vehicles.

The Moving Ahead for Progress in the 21st Century Act (MAP-21) reauthorized the Recreational Trails Program (RTP) through Federal fiscal years 2013 and 2014 as a set-aside from the Transportation Alternatives Program.

The RTP funds come from the Federal Highway Trust Fund, and represent a portion of the motor fuel excise tax collected from non-highway recreational fuel use: fuel used for off-highway recreation by snowmobiles, all-terrain vehicles, off-highway motorcycles, and off-highway light trucks.

Additional Information: http://www.fhwa.dot.gov/environment/recreational_trails/index.cfm

US Dept of Housing & Urban Development Community Development Block Grants (CDBGs)

HUD provides these grants to communities for neighborhood revitalization, economic development and improvement of community facilities and services, especially in low and moderate income areas. These grants require no match of funds or services from the community. HUD provides entitlement to each of these communities annually and the community develops its own programs and sets funding priorities.

Recreation planning and development in low-income urban areas is an acceptable use of these funds. Seattle and Maryland have used these funds to develop rail-trails through urban areas. Such trails can greatly enhance the quality of life in these areas and potentially bring new economic vitality to neglected areas.

Additional Information:

http://portal.hud.gov/hudportal/HUD?src=/program_offices/comm_planning/communitydevelopment/programs

STATE FUNDING

Pennsylvania State funding supporting greenways and trails is primarily administered by the Pennsylvania Department of Conservation and Natural Resources (PA DCNR). DCNR's 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 and Community Conservation Partnership Program (C2P2).

Community Conservation Partnership Program (C2P2) – DCNR

Administered by the Pennsylvania Department of Conservation and Natural Resources (DCNR) - Bureau of Recreation and Conservation, the C2P2 program has been authorized to foster and facilitate conservation and recreation-focused projects and programs in the state

C2P2 grants are awarded to municipalities and authorized nonprofit organizations for recreation, park and conservation projects. These include the rehabilitation and new development of parks and recreation facilities (development projects); acquisition of land for active or passive park and conservation purposes (acquisition projects); and planning for feasibility studies, trails studies, conservation plans, site development planning, and comprehensive recreation, greenway and open space planning .

Most projects require a 50% match.

The next grant application period (2016/2017 funding) opens January 20, 2016 and closes April 13, 2016.

Additional Information: <http://www.dcnr.state.pa.us/brc/grants/index.aspx>

PennDOT Multimodal Fund – Act 89

The Multimodal Transportation Fund provides grants to encourage economic development and ensure that a safe and reliable system of transportation is available to Municipalities, Councils of Governments, Businesses, Economic Development Organizations, Public Transportation Agencies, and Ports-Rail/Freight.

Funds may be used for the development, rehabilitation and enhancement of transportation assets to existing communities, streetscape, lighting, sidewalk enhancement, pedestrian safety, connectivity of transportation assets and transit-oriented development. Grants are available for projects with a total cost of \$100,000 or more, but shall not exceed \$3,000,000 for any project.

The application deadline for the program is July 31, 2016 for consideration at the Nov. 2016 CFA board meeting.

Additional Information: www.dot.state.pa.us and click on Multimodal Transportation.

Coastal Resources Management Program (CRM) – PADEP

Administered through the PA Department of Environmental Protection, CRM receives an annual grant award from the National Oceanic and Atmospheric Administration (NOAA). This award provides for a portion of the funds to be used for eligible projects that address one or more of the priority areas of the CRM program. Applications are evaluated and awarded through a competitive process. The funds are distributed through sub-grant awards to state and local government agencies as well as nonprofit groups located in or having facilities in the Delaware Estuary or Lake Erie Coastal Zones.

This funding supports a wide variety of types of projects that facilitate restoration, management, infrastructure, protection and use of lands within the Coastal Zones. Specific to this study these funds can be used for such projects as

- Plans, studies or projects that enhance economic development within the coastal zone, including activities to help economically revitalize under-used coastal and/or port facilities.
- Studies for interpretation and enhancement of coastal features and habitats and restoration and preservation of historic coastal sites and structures.
- Land acquisition of coastal properties, including real estate appraisals, to improve or provide for public recreational access or open-space preservation.
- Preparation of designs, engineering plans and specifications for coastal recreational sites owned or legally controlled by a "government" applicant.
- Low-cost (defined by NOAA as no more than a total project cost of \$100,000) construction projects for recreational access facilities or for rehabilitating significant historic buildings and structures located within the designated coastal zones.

John Heinz National Wildlife Refuge is within the Delaware Estuary Coastal Zone but not part of the two sections included in this study.

Additional Information: www.dep.state.pa.us/river/grants/grants

Greenways, Trails, and Recreation Program (GTRP) – CED

Act 13 of 2012 establishes the Marcellus Legacy Fund and allocates funds to the Commonwealth Financing Authority for planning, acquisition, development, rehabilitation and repair of greenways, recreational trails, open space, parks and beautification projects using the Greenways, Trails and Recreation Program (GTRP).

Municipalities, Councils of Governments, Authorized Organizations, Institutions of Higher Education, Watershed Organizations, and For-Profit Businesses with projects which involve development, rehabilitation and improvements to public parks, recreation areas, greenways, trails and river conservation may apply for grants up to \$250,000 for any project. A 15% local match of the total project cost is required.

The application deadline for the program is June 30, 2016 for consideration at the Sept. 2016 CFA board meeting.

Additional Information: <http://www.newpa.com/find-and-apply-for-funding/funding-and-program-finder/greenways-trails-and-recreation-program-gtrp>

Pennsylvania Heritage Areas Program (PHAP)

The Pennsylvania Heritage Areas Program is a multi-tiered approach to the conservation, development and promotion of Pennsylvania's heritage. A state-sponsored initiative administered by the Department of Conservation and Natural Resources, the program offers support to grassroots efforts which capitalize on the benefits and opportunities of heritage development. The program is guided by five inter-related goals

including economic development, partnerships, cultural conservation, recreation and open space, and education and interpretation.

The program offers grant and loan opportunities for projects that continue and contribute to the goals of the state heritage area system within the twelve heritage areas established throughout the state. This includes the Schuylkill River National and State Heritage Area. Projects are evaluated on a case-by-case basis.

Portions of the Forge to Refuge Trail are within the counties included in the Schuylkill River Heritage Area.

Additional Information: <http://www.dcnr.state.pa.us/brc/heritageareas/>

PENNVEST

PENNVEST has been empowered by Pennsylvania state law, Pennsylvania Infrastructure Investment Authority Act 16 of 1988, to administer and finance the Clean Water State Revolving Fund (CWSRF) and the Drinking Water State Revolving Fund (DWSRF) pursuant to the federal Water Quality Act of 1987, as well as to administer the American Recovery and Reinvestment Act of 2009 (ARRA) funds. PENNVEST also finances, through the issuance of special obligation revenue bonds, water management, solid waste disposal, sewage treatment and pollution control projects undertaken by or on behalf of private entities.

While most PENNVEST funded projects are related to drinking water infrastructure and water quality, projects that may also be eligible include green infrastructure work such as:

- Best practice storm water management
- Installation of porous pavement, green roofs and other approaches to managing wet weather run-off
- Street tree and urban forestry programs
- Installation/restoration of riparian buffers and wetlands

Additional Information: http://www.portal.state.pa.us/portal/server.pt/community/about_us/9320

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 grantmaking history and philosophy. One of the most well-known directories is Environmental Grantmaking Foundations, published annually by Resources for Global Sustainability, Inc., which maintains 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. Foundations can also be located by searching the internet. Other resources for grant information include economic development agencies and trust officers at local banks who manage small family foundations and charitable trusts.

Regional Trails Program (RTP) – DVRPC – William Penn Foundation

Building the Circuit regional trails network, DVRPC's Regional Trails Program will benefit from a new \$7 million grant from the William Penn Foundation. These funds will be used for targeted investment in the planning, design, and construction of multi-use trails in Greater Philadelphia.

In earlier phases of the Regional Trails Program, also administered by the Delaware Valley Regional Planning Commission with funding from the William Penn Foundation, over \$9 million were awarded for 42 trail planning, design, and construction projects across Greater Philadelphia. DVRPC also provides technical assistance to trail developers, counties, municipalities and nonprofit organizations.

Additional Information: <http://www.dvrpc.org/RegionalTrailsProgram/>

Kodak America Greenways Grant

The Kodak American Greenways Awards Program, a partnership project of the Eastman Kodak Company, the Conservation Fund and the National Geographic Society, provides small grants of \$500 to \$2,500 to groups and individuals planning and designing greenways throughout the United States. Grants can be used to cover planning, technical assistance, legal or other costs associated with greenway projects. Grants may not be used for academic research, general institutional support, lobbying, or political activities.

The deadline for submitting applications is June 1 of each calendar year, and awards will be presented in early fall.

Additional Information: <http://www.conservationfund.org>.

PeopleForBikes Community Grant Program

The PeopleForBikes Community Grant Program provides funding to non-profit organizations with a focus on bicycling, active transportation, or community development, from city or county agencies or departments, and from state or federal agencies working locally. These projects include bike paths and rail trails, as well as mountain bike trails, bike parks, BMX facilities, and large-scale bicycle advocacy initiatives.

PeopleForBikes accepts requests for funding of up to \$10,000. They do not require a specific percentage match, but they do look at leverage and funding partnerships very carefully. They will not consider grant requests in which their funding would amount to 50% or more of the project budget.

Both spring and fall deadlines are available to applicants.

Additional Information: <http://www.peopleforbikes.org/pages/grant-guidelines>.

Home Depot Foundation

The Home Depot Foundation mission is to build affordable, efficient and healthy homes while promoting sustainability by supporting nonprofit organizations with funding and volunteers.

To better support its mission, The Home Depot Foundation will award most of its grants by directly soliciting proposals from high-performing nonprofit organizations with the demonstrated ability to create strong partnerships, impact multiple communities and leverage grant resources.

In order to identify potential future nonprofit partners or respond to unique community revitalization opportunities, a limited amount of funding is set aside to be awarded through a competitive process.

The Home Depot's core purpose is to improve everything we touch, including the communities where we live and work. The Home Depot Foundation, The Home Depot and the many suppliers who contribute to the Foundation recognize the importance of giving back to our communities by engaging associates in meaningful volunteer activities. We believe it is a shared responsibility to enhance our communities and protect the environment. Preference will be given to grant requests that offer volunteerism opportunities and encourage community engagement.

Specifically, the Foundation supports organizations that have demonstrated success within one of the following program areas:

- Affordable Housing, Built Responsibly
- Healthy Community and Wildland Forests

Additional Information: <http://www.homedepotfoundation.org/>

Pew Charitable Trusts

The Pew Charitable Trusts, based in Philadelphia, are a national philanthropy established 48 years ago. Through their grantmaking, 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.

Additional Information: [*http://www.pewtrusts.com/grants/*](http://www.pewtrusts.com/grants/)

Recreational Equipment, Incorporated (REI) Conservation and Recreation Grants

REI provides grants to select nonprofits for the protection and enhancement of natural resources for use in outdoor recreation. The process begins with their “store teams”, who establish meaningful partnerships with organizations and invite them to apply for funding. REI does not accept unsolicited grant applications. Grants have been offered that support the following:

- Preservation of wildlands and open space
- Advocacy oriented education for the general public about conservation issues
- Building the membership base of a conservation organization
- Direct citizen action campaigns on public land and water recreation issues
- Projects working to organize a trails constituency or to enhance the effectiveness of a trails organization’s work as a trails advocate at the state or local level

In addition to preserving and protecting the environment, REI also encourages people to get outdoors for recreation. Outdoor recreation grants have supported projects that:

- Increase access to outdoor activities
- Encourage involvement in muscle-powered recreation
- Promote safe participation in outdoor muscle-powered recreation and proper care for outdoor resources

Additional Information: [*http://www.rei.com/aboutrei/stewardship_community.html*](http://www.rei.com/aboutrei/stewardship_community.html)

Surdna Foundation

The Surdna Foundation is a national leader in funding greenway efforts and has 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 and advocating for environmental appreciation. One area of focus is alternative transportation, particularly reducing vehicle miles traveled and maximizing accessibility over mobility.

Additional Information: [*http://www.surdna.org/grants/*](http://www.surdna.org/grants/)

V. DOCUMENTATION OF PUBLIC PARTICIPATION PROCESS (DCNR – H)

A. Steering Committee Meetings

Participating members of the Steering Committee included representatives of the four municipalities; Radnor Township, Haverford Township, Millbourne Borough, and the City of Philadelphia; actively participating in the study, as funding partners and as other interested entities. Names of the individuals on the Steering Committee and the entities they represent are listed in section I-B, *The Study Team*, of this report. Agendas, attendance sign-in sheets and meeting minutes are included in Appendix C for the following meeting dates:

Steering Committee Meeting #1 – Monday, February 24, 2014

Steering Committee Meeting #2 – Monday, June 30, 2014

In addition to the Steering Committee Meetings, more focused Study Committees were convened for each section of the study. Agenda, attendance sign-in sheets and meeting minutes are included in Appendix C for the following meeting dates:

West Study Committee Meeting – Friday, June 13, 2014

East Study Committee Meeting – Wednesday, June 18, 2014

B. Stakeholder Meetings

Municipalities – On Tuesday, March 17, 2015 the proposed alternatives and the progress of the study was presented at a meeting of the Millbourne Borough Council.

PennDOT – The study team had two specific meetings with PennDOT, one regarding roadway interfaces and a separate meeting with the Bridges Unit. Attendance sign-in sheets and meeting notes are included in Appendix C for the following meeting dates:

Bridges Unit – Wednesday, June 10, 2015

Intersections – Thursday, June 18, 2015

SEPTA – The study team essentially met twice with SEPTA to review the project, once before the study was initiated to seek support for the study funding application and later as part of the work of the study. In addition, the team coordinated closely with SEPTA through phone calls and other communications as the study developed. The attendance sign-in sheet and minutes for the feasibility study meeting on Friday, October 31, 2014 are included in Appendix C and represent the most current discussions with SEPTA regarding conditions impacting the trail planning.

Villanova University – Two meetings were held with the University to review their development plans for University property along Lancaster Avenue and proposals for the Forge to Refuge Trail. Villanova was also invited to and participated in the West Study Committee meeting. Attendance sheets, meeting notes and meeting minutes are included in Appendix C for the meetings on the following dates:

Tuesday, September 23, 2014

Tuesday, September 22, 2015

Radnor Township School District – The study team met with the Facilities Committee of the Radnor Township School District on Tuesday, September 9, 2014. Notes from the meeting are included in Appendix C.

Cobbs Creek Golf Club – On Wednesday, November 19, 2014 the study team met with the Philadelphia Department of Parks and Recreation and Casper Golf Management, the management company for the golf club, at the golf club. This meeting included a golf cart/walking tour of the perimeter of the course to review specific conditions. Minutes of this meeting are included in Appendix C.



Public Trail Workshop at Historic Bartram's Garden

C. Public Workshops

Two Public Workshop presentations were conducted as part of the study. Attendance sign-in sheets and minutes for these workshops are included in Appendix C for the following dates:

Thursday, September 4, 2014 – Public Workshop, West Section

Monday, September 15, 2014 – Public Workshop, East Section

Appendix A – Full size Maps and Plans

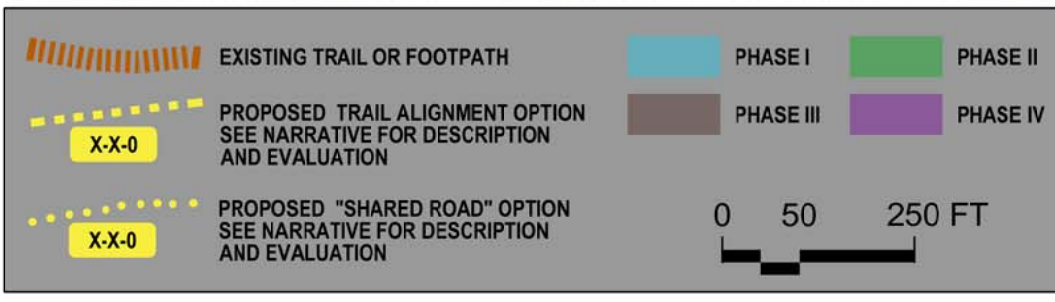


Possible Alignments Crossing I-476

Maps – Forge to Refuge Trail Feasibility Study – Western Section – W-1, W-2 and W-3

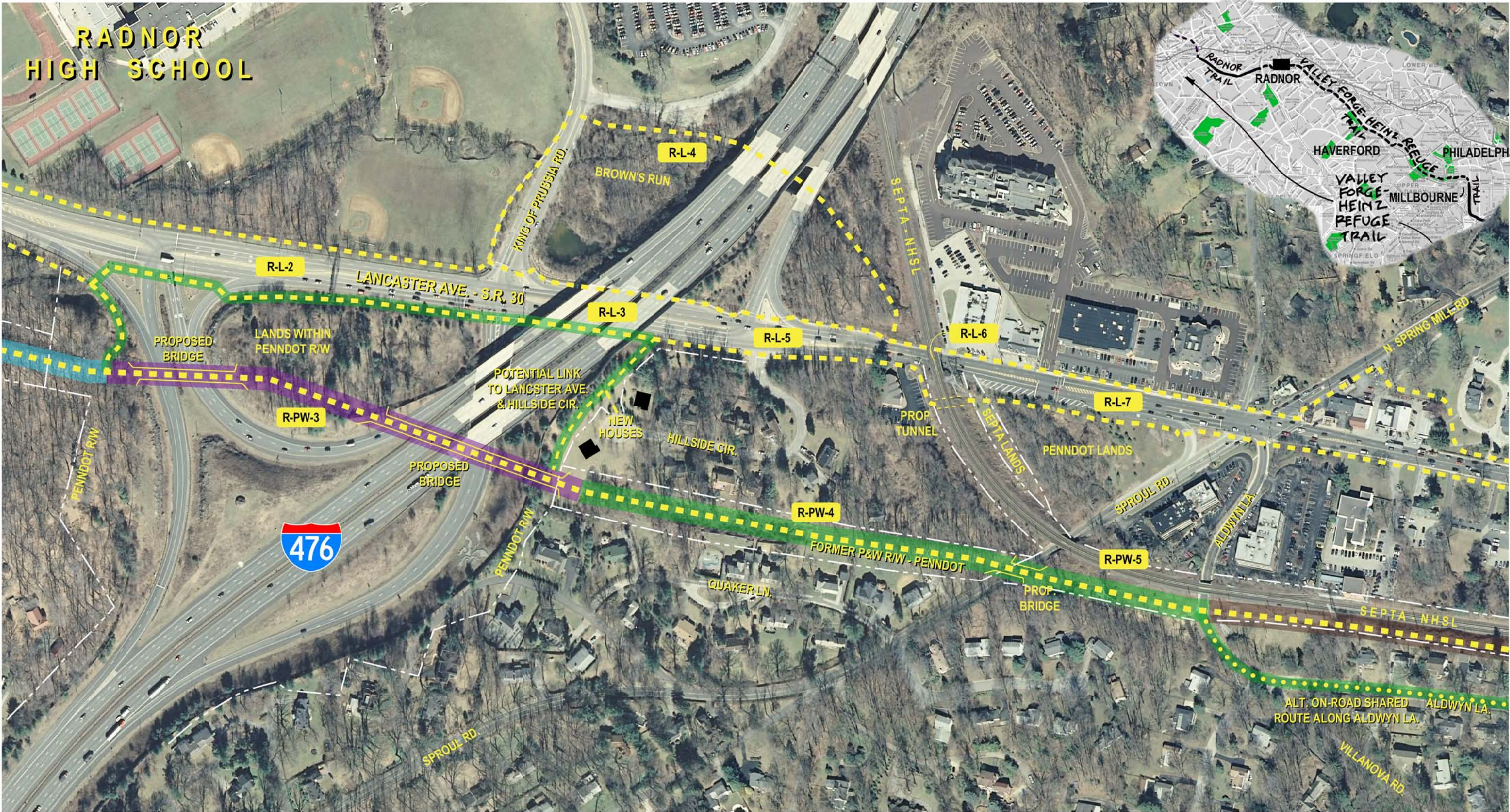
Maps – Forge to Refuge Trail Feasibility Study – Eastern Section – E-1, E-2, E-3, E-4, E-5 and E-6

Plan – Proposed T.O.D. Site Redevelopment Plan, Millbourne Borough



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PLOT SCALE: as noted		CHECKED BY	
		RPT	
REVISIONS	REMARKS	DATE	DATE
			11/30/2015
		PROJECT NO.	
		RAD-TINI	

Forge to Refuge Trail Feasibility Study				TITLE	
Radnor Township 301 Iven Avenue Wayne, Pennsylvania 19087-5297				Western Section	
Campbell Thomas & Company 1504 South Street, Philadelphia, PA 19146 215-545-1076				DWG NO.	
TPW Design Studios 310 Elmwood Boulevard, York, Pennsylvania 17403 717-843-1897				W-1	



EXISTING TRAIL OR FOOTPATH

X-X-0

PROPOSED TRAIL ALIGNMENT OPTION
SEE NARRATIVE FOR DESCRIPTION
AND EVALUATION

X-X-0

PROPOSED "SHARED ROAD" OPTION
SEE NARRATIVE FOR DESCRIPTION
AND EVALUATION

PHASE I

PHASE II

PHASE III

PHASE IV

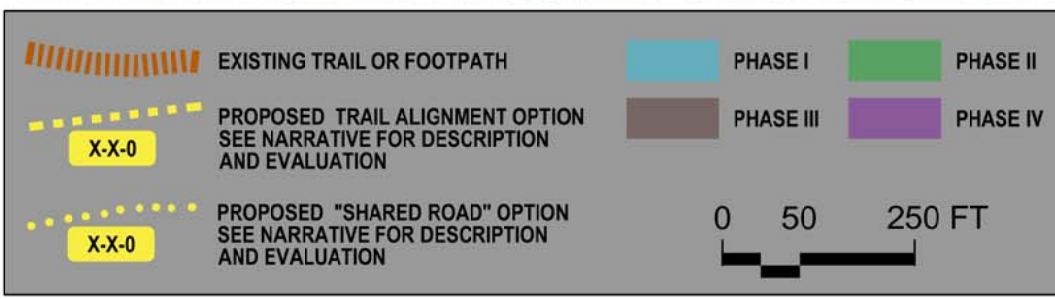
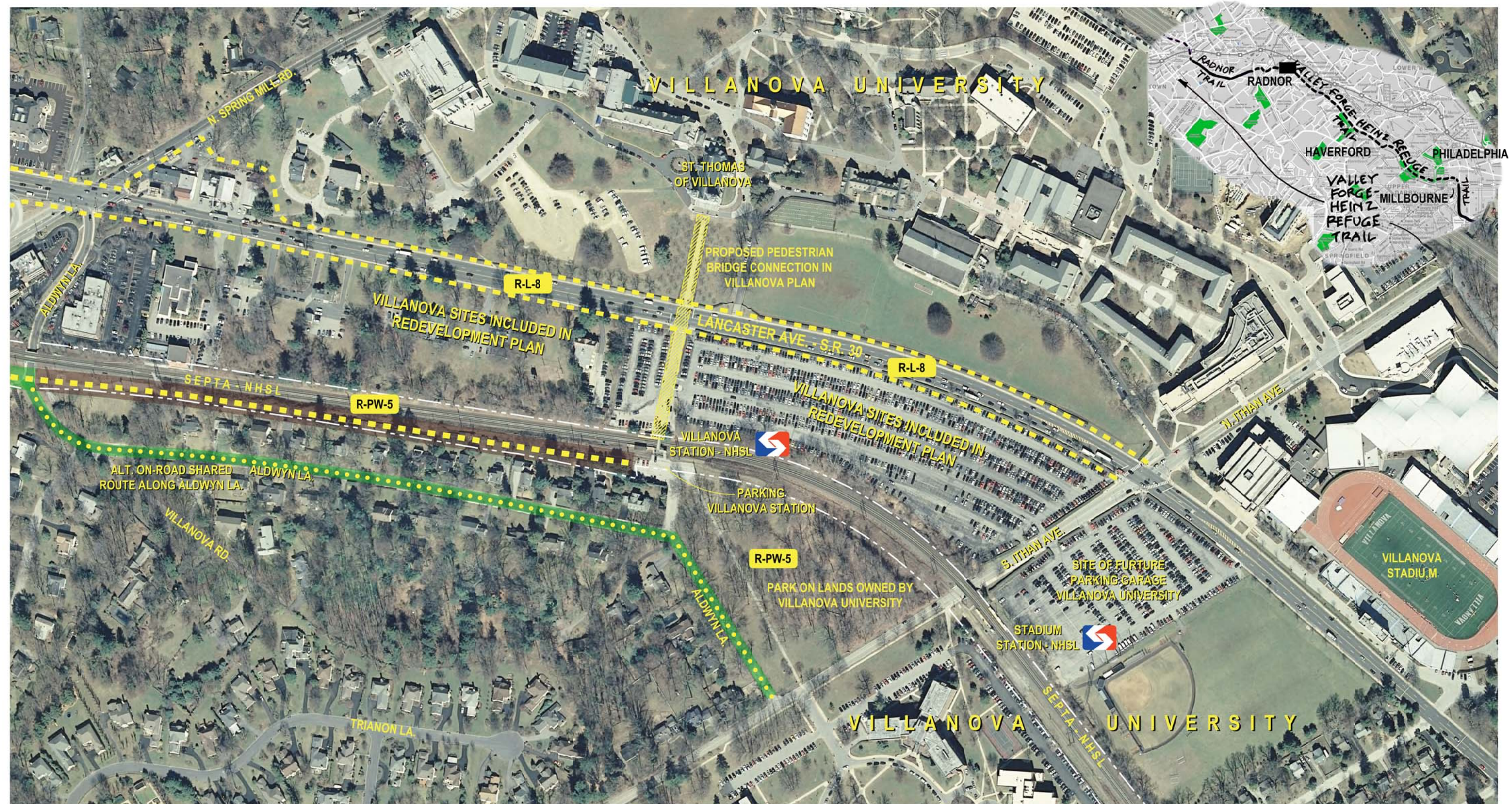
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		PROJECT NO.	
		RAD-TINI	

Forge to Refuge Trail Feasibility Study				TITLE	
Radnor Township 301 Iven Avenue Wayne, Pennsylvania 19087-5297				Western Section	
Campbell Thomas & Company 1504 South Street, Philadelphia, PA 19146 215-545-1076				DWG NO.	
TPW Design Studios 310 Elmwood Boulevard, York, Pennsylvania 17403 717-843-1897				W-2	



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REVISIONS	REMARKS	PROJECT NO.
DATE		RAD-TINI

Forge to Refuge Trail Feasibility Study

Radnor Township 301 Iven Avenue Wayne, Pennsylvania 19087-5297

Campbell Thomas & Company 1504 South Street, Philadelphia, PA 19146 215-545-1076

TPW Design Studios 310 Elmwood Boulevard, York, Pennsylvania 17403 717-843-1897

TITLE


Western
Section

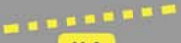
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W-3





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 EXISTING TRAIL OR FOOTPATH


 PROPOSED TRAIL ALIGNMENT OPTION
SEE NARRATIVE FOR DESCRIPTION
AND EVALUATION


 PROPOSED "SHARED ROAD" OPTION
SEE NARRATIVE FOR DESCRIPTION
AND EVALUATION

 PHASE I

 PHASE II

 PHASE III

 PHASE IV

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		11/30/2015	
		PROJECT NO.	
		RAD-TINI	

Forge to Refuge Trail Feasibility Study

Radnor Township 301 Iven Avenue Wayne, Pennsylvania 19087-5297

Campbell Thomas & Company 1504 South Street, Philadelphia, PA 19146 215-545-1076

TPW Design Studios 310 Elmwood Boulevard, York, Pennsylvania 17403 717-843-1897

TITLE	Eastern Section
DWG NO.	E-1



EXISTING TRAIL OR FOOTPATH

X-0

PROPOSED TRAIL ALIGNMENT OPTION
SEE NARRATIVE FOR DESCRIPTION
AND EVALUATION

X-0

PROPOSED "SHARED ROAD" OPTION
SEE NARRATIVE FOR DESCRIPTION
AND EVALUATION

PHASE I

PHASE II

PHASE III

PHASE IV

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250 FT

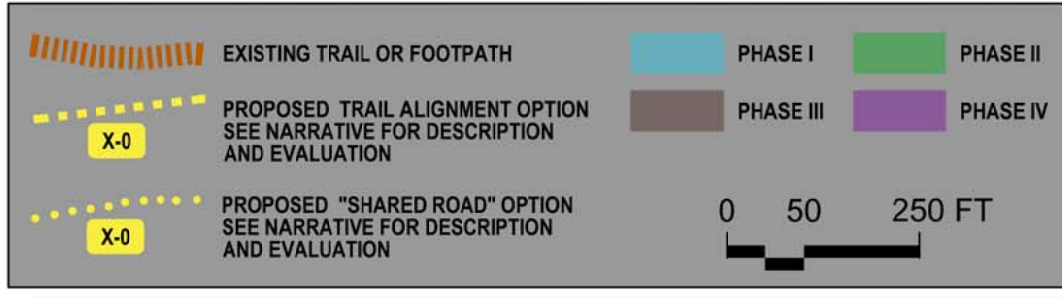
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		PROJECT NO.	RAD-TINI

Forge to Refuge Trail Feasibility Study

Radnor Township 301 Iven Avenue Wayne, Pennsylvania 19087-5297

Campbell Thomas & Company 1504 South Street, Philadelphia, PA 19146 215-545-1076
TPW Design Studios 310 Elmwood Boulevard, York, Pennsylvania 17403 717-843-1897

TITLE	Eastern Section
DWG NO.	E-2



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		PROJECT NO.	RAD-TINI

Forge to Refuge Trail Feasibility Study

Radnor Township 301 Iven Avenue Wayne, Pennsylvania 19087-5297


Campbell Thomas & Company 1504 South Street, Philadelphia, PA 19146 215-545-1076
TPW Design Studios 310 Elmwood Boulevard, York, Pennsylvania 17403 717-843-1897


TITLE
Eastern
Section


DWG NO.
E-3

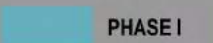


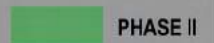
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 EXISTING TRAIL OR FOOTPATH


 PROPOSED TRAIL ALIGNMENT OPTION
SEE NARRATIVE FOR DESCRIPTION
AND EVALUATION


 PROPOSED "SHARED ROAD" OPTION
SEE NARRATIVE FOR DESCRIPTION
AND EVALUATION

 PHASE I

 PHASE II

 PHASE III

 PHASE IV

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REVISIONS	REMARKS	DATE	
		11/30/2015	
		PROJECT NO.	RAD-TINI

Forge to Refuge Trail Feasibility Study

Radnor Township 301 Iven Avenue Wayne, Pennsylvania 19087-5297

Campbell Thomas & Company 1504 South Street, Philadelphia, PA 19146 215-545-1076

TPW Design Studios 310 Elmwood Boulevard, York, Pennsylvania 17403 717-843-1897

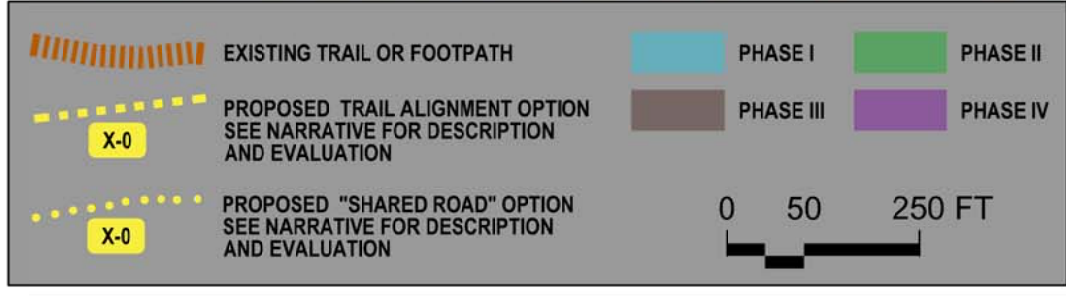
TITLE Eastern Section
DWG NO. E-4



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REVISIONS	REMARKS	DATE	11/30/2015
		PROJECT NO.	RAD-TINI

Forge to Refuge Trail Feasibility Study
Radnor Township 301 Iven Avenue Wayne, Pennsylvania 19087-5297
Campbell Thomas & Company 1504 South Street, Philadelphia, PA 19146 215-545-1076
TPW Design Studios 310 Elmwood Boulevard, York, Pennsylvania 17403 717-843-1897

TITLE
**Eastern
Section**
DWG NO.
E-5



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		PROJECT NO.	RAD-TINI

Forge to Refuge Trail Feasibility Study
Radnor Township 301 Iven Avenue Wayne, Pennsylvania 19087-5297
Campbell Thomas & Company 1504 South Street, Philadelphia, PA 19146 215-545-1076
TPW Design Studios 310 Elmwood Boulevard, York, Pennsylvania 17403 717-843-1897

TITLE
Eastern Section
DWG NO.
E-6



PROPOSED T.O.D. SITE REDEVELOPMENT PLAN
MILLBOURNE BOROUGH

Appendix B – Natural Features Data



Sensitively designed trail construction offers a solution to problems caused by flooding and erosion. Here is Cobbs Creek just downstream from Manoa Rd.

PNDI – Project Environmental Review Receipt pages 1 to 4 (Radnor Township)

PNDI – Project Environmental Review Receipt pages 1 to 4 (Philadelphia, Millbourne Borough, Haverford Township)

Map – National Wetlands Inventory (Radnor Township)

Map – National Wetlands Inventory (Philadelphia and Millbourne Borough)

Map – National Wetlands Inventory (Haverford Township)

1. PROJECT INFORMATION

Project Name: **Radnor Trail Western**

Date of review: **6/25/2014 8:55:16 PM**

Project Category: **Recreation, Trails & Trailheads (parking, etc.)**

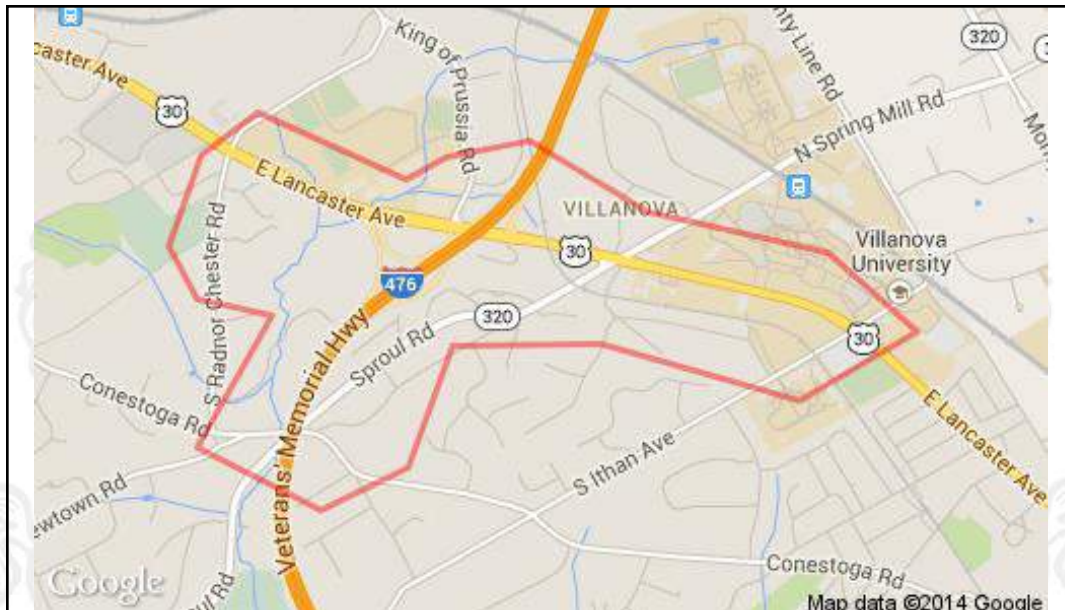
Project Length: **24241.0** feet

County: **Delaware** Township/Municipality: **Radnor**

Quadrangle Name: **NORRISTOWN** ~ ZIP Code: **19010, 19085, 19087**

Decimal Degrees: **40.036946 N, -75.354791 W**

Degrees Minutes Seconds: **40° 2' 13" N, -75° 21' 17.2" W**



2. SEARCH RESULTS

Agency	Results	Response
PA Game Commission	No Known Impact	No Further Review Required
PA Department of Conservation and Natural Resources	No Known Impact	No Further Review Required
PA Fish and Boat Commission	No Known Impact	No Further Review Required
U.S. Fish and Wildlife Service	No Known Impact	No Further Review Required

As summarized above, Pennsylvania Natural Diversity Inventory (PNDI) records indicate no known impacts to threatened and endangered species and/or special concern species and resources within the project area. Therefore, based on the information you provided, no further coordination is required with the jurisdictional agencies. This response does not reflect potential agency concerns regarding impacts to other ecological resources, such as wetlands.

Note that regardless of PNDI search results, projects requiring a Chapter 105 DEP individual permit or GP 5, 6, 7, 8, 9 or 11 in certain counties (Adams, Berks, Bucks, Carbon, Chester, Cumberland, Delaware, Lancaster, Lebanon, Lehigh, Monroe, Montgomery, Northampton, Schuylkill and York) must comply with the bog turtle habitat screening requirements of the PASPGP.

3. AGENCY COMMENTS

Regardless of whether a DEP permit is necessary for this proposed project, any potential impacts to threatened and endangered species and/or special concern species and resources must be resolved with the appropriate jurisdictional agency. In some cases, a permit or authorization from the jurisdictional agency may be needed if adverse impacts to these species and habitats cannot be avoided.

These agency determinations and responses are **valid for two years** (from the date of the review), and are based on the project information that was provided, including the exact project location; the project type, description, and features; and any responses to questions that were generated during this search. If any of the following change: 1) project location, 2) project size or configuration, 3) project type, or 4) responses to the questions that were asked during the online review, the results of this review are not valid, and the review must be searched again via the PNDI Environmental Review Tool and resubmitted to the jurisdictional agencies. The PNDI tool is a primary screening tool, and a desktop review may reveal more or fewer impacts than what is listed on this PNDI receipt. The jurisdictional agencies **strongly advise against** conducting surveys for the species listed on the receipt prior to consultation with the agencies.

PA Game Commission

RESPONSE: No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

PA Department of Conservation and Natural Resources

RESPONSE: No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

PA Fish and Boat Commission

RESPONSE: No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

U.S. Fish and Wildlife Service

RESPONSE: No impacts to **federally** listed or proposed species are anticipated. Therefore, no further consultation/coordination under the Endangered Species Act (87 Stat. 884, as amended; 16 U.S.C. 1531 *et seq.*) is required. Because no take of federally listed species is anticipated, none is authorized. This response does not reflect potential Fish and Wildlife Service concerns under the Fish and Wildlife Coordination Act or other authorities.

4. DEP INFORMATION

The Pa Department of Environmental Protection (DEP) requires that a signed copy of this receipt, along with any required documentation from jurisdictional agencies concerning resolution of potential impacts, be submitted with applications for permits requiring PNDI review. For cases where a "Potential Impact" to threatened and endangered species has been identified before the application has been submitted to DEP, the application should not be submitted until the impact has been resolved. For cases where "Potential Impact" to special

concern species and resources has been identified before the application has been submitted, the application should be submitted to DEP along with the PNDI receipt. The PNDI Receipt should also be submitted to the appropriate agency according to directions on the PNDI Receipt. DEP and the jurisdictional agency will work together to resolve the potential impact(s). See the DEP PNDI policy at <http://www.naturalheritage.state.pa.us>.



5. ADDITIONAL INFORMATION

The PNDI environmental review website is a **preliminary** screening tool. There are often delays in updating species status classifications. Because the proposed status represents the best available information regarding the conservation status of the species, state jurisdictional agency staff give the proposed statuses at least the same consideration as the current legal status. If surveys or further information reveal that a threatened and endangered and/or special concern species and resources exist in your project area, contact the appropriate jurisdictional agency/agencies immediately to identify and resolve any impacts.

For a list of species known to occur in the county where your project is located, please see the species lists by county found on the PA Natural Heritage Program (PNHP) home page (www.naturalheritage.state.pa.us). Also note that the PNDI Environmental Review Tool only contains information about species occurrences that have actually been reported to the PNHP.

6. AGENCY CONTACT INFORMATION

PA Department of Conservation and Natural Resources

Bureau of Forestry, Ecological Services Section
400 Market Street, PO Box 8552, Harrisburg, PA.
17105-8552
Fax: (717) 772-0271

U.S. Fish and Wildlife Service

Endangered Species Section
315 South Allen Street, Suite 322, State College, PA.
16801-4851
NO Faxes Please.

PA Fish and Boat Commission

Division of Environmental Services
450 Robinson Lane, Bellefonte, PA. 16823-7437
NO Faxes Please

PA Game Commission


Bureau of Wildlife Habitat Management
Division of Environmental Planning and Habitat Protection
2001 Elmerton Avenue, Harrisburg, PA. 17110-9797
Fax: (717) 787-6957

7. PROJECT CONTACT INFORMATION

Name: Timothy Paul Wilson, RLA, LEED AP
Company/Business Name: TPW Design Studios
Address: 310 Elmwood Boulevard
City, State, Zip: York, Penna. 17403
Phone: (717) 843-1897 Fax: () N/A
Email: twilson@tpwdesignstudios.com

8. CERTIFICATION

I certify that ALL of the project information contained in this receipt (including project location, project size/configuration, project type, answers to questions) is true, accurate and complete. In addition, if the project type, location, size or configuration changes, or if the answers to any questions that were asked during this online review change, I agree to re-do the online environmental review.


applicant/project proponent signature

6.25.2014

date

1. PROJECT INFORMATION

Project Name: **Radnor Trail Eastern**

Date of review: **6/25/2014 8:47:28 PM**

Project Category: **Recreation, Trails & Trailheads (parking, etc.)**

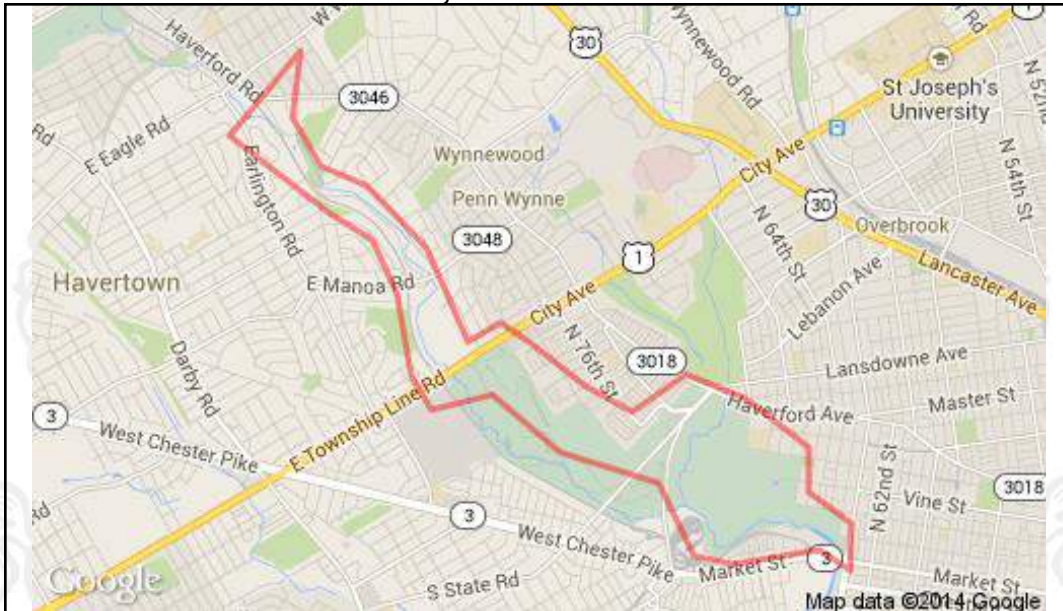
Project Length: **44599.8** feet

County: **Delaware, Montgomery, Philadelphia** Township/Municipality: **Upper Darby, Haverford, Millbourne, Lower Merion, Philadelphia**

Quadrangle Name: **LANSDOWNE** ~ ZIP Code: **19139, 19151, 19096, 19003, 19082, 19083, 19096**

Decimal Degrees: **39.977251 N, -75.272565 W**

Degrees Minutes Seconds: **39° 58' 38 N, W**



2. SEARCH RESULTS

Agency	Results	Response
PA Game Commission	No Known Impact	No Further Review Required
PA Department of Conservation and Natural Resources	No Known Impact	No Further Review Required
PA Fish and Boat Commission	No Known Impact	No Further Review Required
U.S. Fish and Wildlife Service	No Known Impact	No Further Review Required

As summarized above, Pennsylvania Natural Diversity Inventory (PNDI) records indicate no known impacts to threatened and endangered species and/or special concern species and resources within the project area. Therefore, based on the information you provided, no further coordination is required with the jurisdictional agencies. This response does not reflect potential agency concerns regarding impacts to other ecological resources, such as wetlands.

Note that regardless of PNDI search results, projects requiring a Chapter 105 DEP individual permit or GP 5, 6, 7, 8, 9 or 11 in certain counties (Adams, Berks, Bucks, Carbon, Chester, Cumberland, Delaware, Lancaster, Lebanon, Lehigh, Monroe, Montgomery, Northampton, Schuylkill and York) must comply with the bog turtle habitat screening requirements of the PASPGP.

3. AGENCY COMMENTS

Regardless of whether a DEP permit is necessary for this proposed project, any potential impacts to threatened and endangered species and/or special concern species and resources must be resolved with the appropriate jurisdictional agency. In some cases, a permit or authorization from the jurisdictional agency may be needed if adverse impacts to these species and habitats cannot be avoided.

These agency determinations and responses are **valid for two years** (from the date of the review), and are based on the project information that was provided, including the exact project location; the project type, description, and features; and any responses to questions that were generated during this search. If any of the following change: 1) project location, 2) project size or configuration, 3) project type, or 4) responses to the questions that were asked during the online review, the results of this review are not valid, and the review must be searched again via the PNDI Environmental Review Tool and resubmitted to the jurisdictional agencies. The PNDI tool is a primary screening tool, and a desktop review may reveal more or fewer impacts than what is listed on this PNDI receipt. The jurisdictional agencies **strongly advise against** conducting surveys for the species listed on the receipt prior to consultation with the agencies.

PA Game Commission

RESPONSE: No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

PA Department of Conservation and Natural Resources

RESPONSE: No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

PA Fish and Boat Commission

RESPONSE: No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

U.S. Fish and Wildlife Service

RESPONSE: No impacts to **federally** listed or proposed species are anticipated. Therefore, no further consultation/coordination under the Endangered Species Act (87 Stat. 884, as amended; 16 U.S.C. 1531 *et seq.*) is required. Because no take of federally listed species is anticipated, none is authorized. This response does not reflect potential Fish and Wildlife Service concerns under the Fish and Wildlife Coordination Act or other authorities.

4. DEP INFORMATION

The Pa Department of Environmental Protection (DEP) requires that a signed copy of this receipt, along with any required documentation from jurisdictional agencies concerning resolution of potential impacts, be submitted with applications for permits requiring PNDI review. For cases where a "Potential Impact" to threatened and endangered species has been identified before the application has been submitted to DEP, the application should not be submitted until the impact has been resolved. For cases where "Potential Impact" to special

concern species and resources has been identified before the application has been submitted, the application should be submitted to DEP along with the PNDI receipt. The PNDI Receipt should also be submitted to the appropriate agency according to directions on the PNDI Receipt. DEP and the jurisdictional agency will work together to resolve the potential impact(s). See the DEP PNDI policy at <http://www.naturalheritage.state.pa.us>.



5. ADDITIONAL INFORMATION

The PNDI environmental review website is a **preliminary** screening tool. There are often delays in updating species status classifications. Because the proposed status represents the best available information regarding the conservation status of the species, state jurisdictional agency staff give the proposed statuses at least the same consideration as the current legal status. If surveys or further information reveal that a threatened and endangered and/or special concern species and resources exist in your project area, contact the appropriate jurisdictional agency/agencies immediately to identify and resolve any impacts.

For a list of species known to occur in the county where your project is located, please see the species lists by county found on the PA Natural Heritage Program (PNHP) home page (www.naturalheritage.state.pa.us). Also note that the PNDI Environmental Review Tool only contains information about species occurrences that have actually been reported to the PNHP.

6. AGENCY CONTACT INFORMATION

PA Department of Conservation and Natural Resources

Bureau of Forestry, Ecological Services Section
400 Market Street, PO Box 8552, Harrisburg, PA.
17105-8552
Fax: (717) 772-0271

U.S. Fish and Wildlife Service

Endangered Species Section
315 South Allen Street, Suite 322, State College, PA.
16801-4851
NO Faxes Please.

PA Fish and Boat Commission

Division of Environmental Services
450 Robinson Lane, Bellefonte, PA. 16823-7437
NO Faxes Please

PA Game Commission

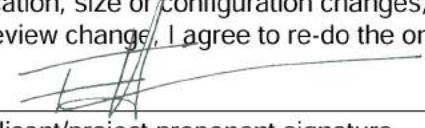
Bureau of Wildlife Habitat Management
Division of Environmental Planning and Habitat Protection
2001 Elmerton Avenue, Harrisburg, PA. 17110-9797
Fax: (717) 787-6957

7. PROJECT CONTACT INFORMATION

Name: Timothy Paul Wilson, RLA, LEED AP
Company/Business Name: TPW Design Studios
Address: 310 Elmwood Boulevard
City, State, Zip: York, Penna. 17403
Phone: (717) 843-1897 Fax: () N/A
Email: twilson@tpwdesignstudios.com

8. CERTIFICATION

I certify that ALL of the project information contained in this receipt (including project location, project size/configuration, project type, answers to questions) is true, accurate and complete. In addition, if the project type, location, size or configuration changes, or if the answers to any questions that were asked during this online review change, I agree to re-do the online environmental review.


applicant/project proponent signature

6.25.2014

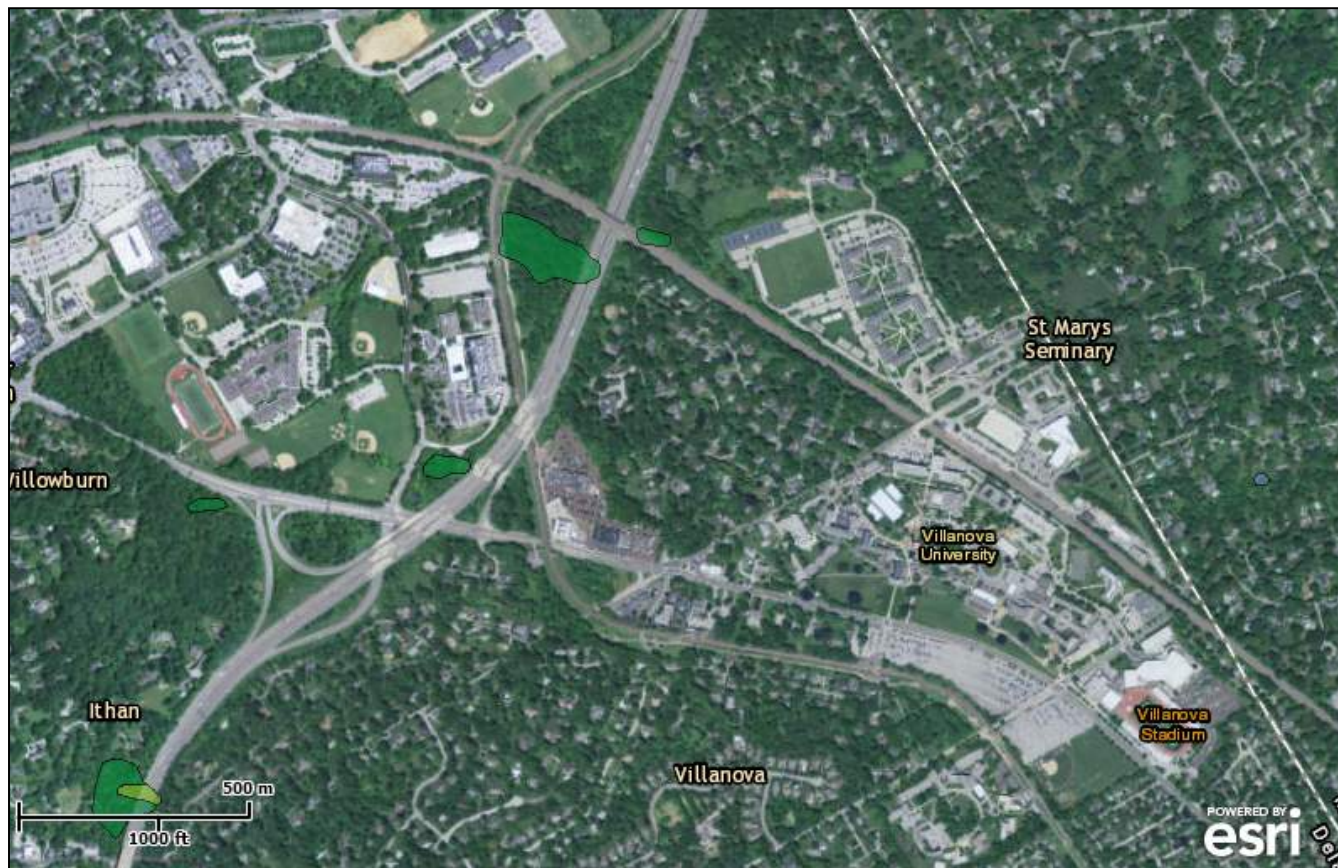
date



U.S. Fish and Wildlife Service

National Wetlands Inventory

Nov 18, 2015



Wetlands

- Freshwater Emergent
- Freshwater Forested/Shrub
- Estuarine and Marine Deepwater
- Estuarine and Marine
- Freshwater Pond
- Lake
- Riverine
- Other

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

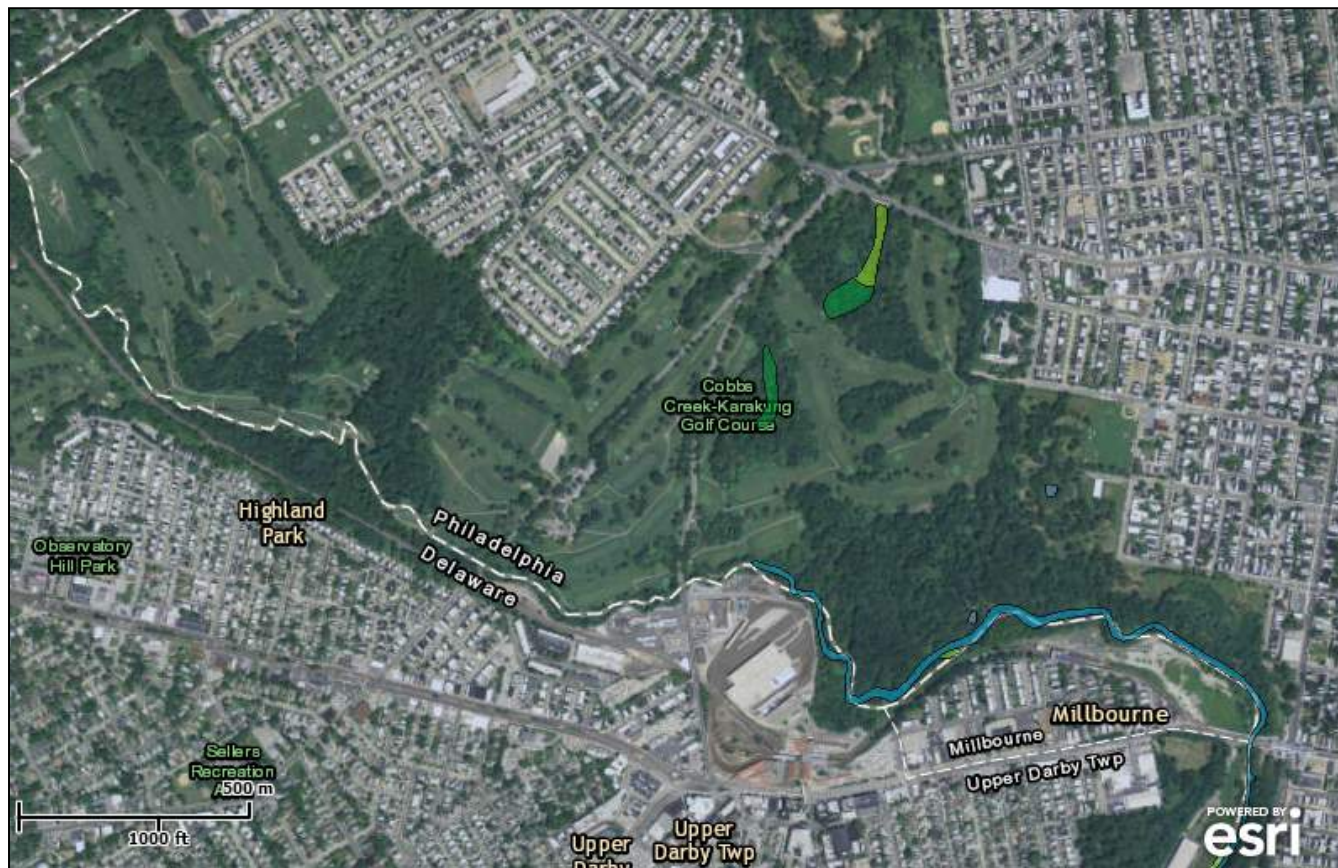
User Remarks:



U.S. Fish and Wildlife Service

National Wetlands Inventory

Nov 18, 2015



Wetlands

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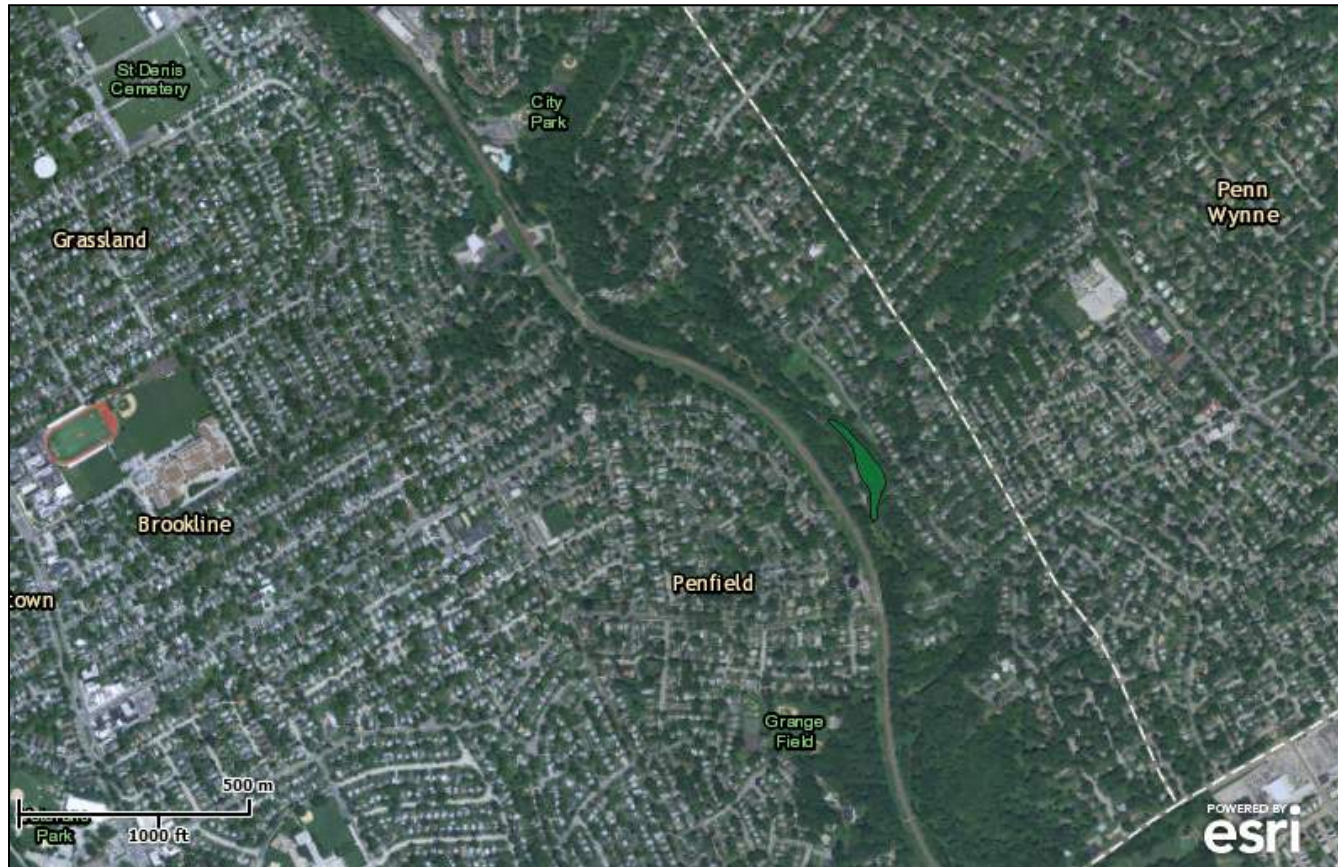
User Remarks:



U.S. Fish and Wildlife Service

National Wetlands Inventory

Nov 18, 2015



Wetlands

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User Remarks:

Appendix C – Meeting Minutes and Project Record Documentation



*This project has been characterized by a robust public involvement program.
Here is one meeting held at Historic Bartram's Garden.*

Steering Committee Meeting #1 – 2/24/2014 – Agenda, Attendance sign-in sheet, Meeting Minutes

Steering Committee Meeting #2 – 6/30/2014 – Agenda, Attendance sign-in sheet, Meeting Minutes

West Study Committee Meeting – 6/13/2014 – Agenda, Attendance sign-in sheet, Meeting Minutes

East Study Committee Meeting – 6/18/2014 – Agenda, Attendance sign-in sheet, Meeting Minutes

PennDOT Meeting – Bridges Unit – 6/10/2015 – Attendance sign-in sheet, Meeting Notes

PennDOT Meeting – Intersections – 6/18/2015 – Attendance sign-in sheet, Meeting Notes

SEPTA Meeting – 10/31/2014 – Attendance sign-in sheet, Meeting Minutes

Villanova University Meeting – 9/23/2014 – Meeting Notes

Villanova University Meeting – 9/22/2015 – Attendance sign-in sheet, Meeting Minutes

Radnor Township School District, Facilities Committee Meeting – 9/9/2014 – Meeting Notes

Cobbs Creek Golf Club Meeting – 11/19/2014 – Meeting Minutes

Public Workshop, West Section – 9/4/2014 – Invitation, Handout, Attendance sign-in sheet, Meeting Notes

Public Workshop, East Section – 9/4/2014 – Invitation, Handout, Attendance sign-in sheet, Meeting Notes

FORGE TO REFUGE TRAIL FEASIBILITY STUDY

STEERING COMMITTEE MEETING #1

Monday, February 24, 2014, 9am
Main Meeting Room, Radnor Township Office,
301 Iven Avenue. Wayne, PA 19087-5297

AGENDA

I. PROJECT OVERVIEW AND ORGANIZATION

- a. Review of the Feasibility Study Grant and its overall goals
- b. Team organization and responsibilities /
- c. Steering and Study Team members and resources
- d. Review resources for items to be covered in Inventory/Analysis
- e. Review of DCNR's requirements as set forth in the letter accepting the Steering Group's selection of Campbell Thomas and
- f. Review any additional input on project objectives and/or visions
- g. Review of Project Directory, and potential parties to be interviewed
- h. Review of mapping resources
- i. Approach to mapping of resources and land ownership
- j. Plans for approaching and meeting with the municipalities and landowners including PennDOT, Philadelphia Parks and Recreation, SEPTA and others

II. SCHEDULE / PROJECT MEETINGS

- a. Confirm current deadlines for tasks and deliverables
- b. Confirm Project Meetings / public information dates / Public Meetings
- c. Setting up a meeting with the Forge to Refuge *Coalition*.

III. OTHER ACTIVITIES FOR TODAY

- a. Sharing of mapping and information sources, and contacts with the project consultants
- b. Review of connectivity to other trails, The Circuit, other municipalities, and the "outside world"
- c. Review of possible compatible economic development
- d. Possible upcoming field visit to recommended sites/areas

IV. NEXT STEPS

SIGN-IN SHEET

CT
&C

Project: VFHKT

Date: 2-24-14

Meeting #: 1 - Steering Comm.

Campbell Thomas & Co.—1504 South Street—Philadelphia PA 19146-1636

Tel: 215-545-1076—Fax: 267-336-0209—Email: rthomas@campbellthomas.com

Architecture ❖ Preservation ❖ Community and Transportation Planning

	NAME / ADDRESS	ORGANIZATION	TELEPHONE # (If not already given)	FAX # (If not already given)	EMAIL (If not already given)
1	Richard Kerr	Friends of Hav. Trail	610-527-3725		rich.kerr@verizon.net
2	Karen Holm	DCPD	610-891-5213		holmke@co.delaware.pa.us
3	Steve Nascini	Radnor Township	610-688-5600x156		snascini@radnor.org
4	Melissa Conn	Radnor Township	610-688-5600x142		mconn@radnor.org
5	DENNIS O'NEILL	MILLBOURNE BOROWITZ	610-356-9550		hem.engineers@verizon.net
6	Robert P. Thomas	CT & C.	215-985-4354		rthomas@campbellthomas.com
7	Timothy Paul Wilson	TPW Design Studios	717-843-1897		twilson@tpwdesignstudios.com
8	Sarah C. Stuart	Bicycle Coalition	215-924-242-9253		sarah@bicyclecoalition.org
9	Rob Armstrong	Phila. Parks & Rec	215 683 0229		rob.armstrong@phila.gov
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FORGE TO REFUGE TRAIL FEASIBILITY STUDY

MINUTES OF STEERING COMMITTEE MEETING #1

Monday, February 24, 2014, Main Meeting Room, Radnor Township Office,
301 Iven Avenue. Wayne, PA 19087-5297

Attendance: Please see the attached sign-in sheet

1. **Explanation of Handouts:** The Kick-Off meeting started at 9:15 AM with an explanation of the hard copy handouts by Bob Thomas of Campbell Thomas & Co. Bob explained the agenda, the aerial maps of both the Radnor and Cobbs Creek segments of the Trail, and the area trail concept network map that featured the Valley Forge to Heinz Refuge general alignment.
2. **Slide Show:** Bob then presented a short slideshow that highlighted the feasibility study corridor, in particular, the crossing of the "Blue Route", the Cobbs Creek / Karakung Road Corridor, and the area near the 63rd Street Station and the Sears parcel in Millbourne
3. **Introductions:** After the slideshow, we went around the table with introductions. Steering Committee members gave their name, organization represented, and why they are involved with this project and why the completion of this project and its potential impacts are important to them (personally or professionally) and their community.
4. **Review of Agenda / Designated Project Contacts:** Bob promptly ran down the meeting agenda spurring discussions along the way. We reviewed the team organization and responsibilities, and clarified the project committee and points of contact. An overall project contacts list was discussed and it was conveyed that multiple points of project contact will be used based on the Municipality in which questions or issues reside, but all of the steering committee shall be copied on the correspondence. A master steering committee list will be developed.
5. **Other contacts suggested by the Steering Committee:** Other groups were suggested as project contacts that include, Jeff Knowles (the project representative at DCNR), the Friends of the Chester Valley Trail, Jake Michael at the Chester County Planning Commission, Cobbs Creek area community groups, Morris Park community group, the Golf Course, and involvement of Upper Darby as a very near-neighbor to the Trail's potential alignment.
6. **Project mapping and GIS data to be used:** Karen Holm of Delaware County Planning and Rob Armstrong of from Philadelphia Parks and Recreation offered to assure that CTC receives available mapping data as we need it. The consulting team just needs give them a list or let them know what we need.
(Follow-up 3-3-2014: CTC has contacted Delaware County and Philadelphia)
7. **Project Meetings and Schedule:** Public Meetings / Workshops were discussed, along with the advantages of having our public meetings in various places and location along the project corridor to reach out to the largest range of people. It was mentioned that a public walk would be incorporated into our public involvement process and would happen after the public meeting. It was mentioned that the Forge to Refuge Coalition could be a possible "focus group" meeting. A draft comprehensive project meeting schedule will be developed including our public meetings, walks, key person interviews, committee meetings and any other project meetings.
8. **Discussion of Corridor Improvements:** The meeting then turned toward a discussion on potential corridor improvements, plans and development project that may impact out study. It was mentioned that Villanova University has plans for development along Lancaster Avenue and that DVRPC has conducted walking studies around Villanova and Route 30. This could prove to be extremely helpful and relevant to our feasibility study, along with the Lower Merion Comprehensive Plan and the Radnor Open Space Plan (currently being undertaken).
9. **Conclusion / Next Meeting:** We concluded our meeting at approximately 10:45am. The next meeting is to be arranged as per Item 7 above.
10. **Links to Haverford Trails:** Following the meeting, Rich Kerr gave Bob Thomas an informal tour of possible links from Haverford Township's trail network to the VFHRT. This will be review in detail in a much more detailed site visit to be arranged.

FORGE TO REFUGE TRAIL FEASIBILITY STUDY STEERING COMMITTEE MEETING #2

Monday, June 30, 2014, 10am
Radnor Township Office
301 Iven Avenue. Wayne, PA 19087-5297

AGENDA

I. PROJECT OVERVIEW

- a. Introductions and Welcome
- b. Report on work accomplished and study committee meetings held so far during inventory phase
- c. Report on focus areas and alignment observations so far
- d. Review of enhanced slide show
- e. Approach to mapping of resources and land ownership
- f. Review additional resources for items yet to be covered in Inventory/Analysis
- g. Review any additional input/recommendations on Project Inventory/Analysis
- h. Update of Project Directory

II. SCHEDULE / INTERVIEWS / PROJECT MEETINGS

- a. Preparation for first Public Workshops, East and West to be held September 11 and 16
- b. Review Interview List
- c. Confirm upcoming site visits
- d. Confirm upcoming public exploratory walks
- e. Review publicity strategy and contact list for upcoming meetings, workshops and walks
- f. Upcoming meetings with the municipalities, agencies and large landowners

III. OTHER ACTIVITIES FOR TODAY

- a. Sharing of mapping and information sources, and contacts with the project consultants
- b. Review of connectivity to other trails, The Circuit, other municipalities, and the "outside world"
- c. Review of possible compatible economic development opportunities

IV. NEXT STEPS

SIGN-IN SHEET

CT
&C

Project:

Date: 6-30-2014

Meeting #: STEERING. COMM. # 2. FORGE TO REFUGE TR.

Campbell Thomas & Co.—1504 South Street—Philadelphia PA 19146-1636

Tel: 215-545-1076—Fax: 267-336-0209—Email: rthomas@campbellthomas.com

Architecture ❖ Preservation ❖ Community and Transportation Planning

	NAME / ADDRESS	ORGANIZATION	TELEPHONE # (If not already given)	FAX # (If not already given)	EMAIL (If not already given)
1	Harry S. Murray	CTC	256-223-1534	—	HSM@AOL.com
2	Tim Wilson	PAJ Design Studios	717-843-1897	—	twilson@pajdesignstudios.com
3	Mike Szilagyi	CTC	267-218-3208	—	MSZILAGYI@CAMPBELLTHOMAS.COM
4	John Fischer	Forge to Refuge	610-688-7288	—	j.fischer234@gmail.com
5	Richard Kerr	Friends of Hav. Trails	610-527-3725	—	rich.kerr@verizon.net
6	Karen Holm	DCPD	610-891-5213	—	holm.k@co.delaware.pa.us
7	Steve Nascini	Radnor Twp	610-685-5600 NISC	—	snascini@radnor.org
8	John Boyle	Bicycle Coalition	215-242-9253	—	John@bicyclecoalition.org
9	Tim Denny	Haverford Twp.	484-571-2815	—	TDenny@HavTwp.org
10	Elaine Schaefer	Radnor Twp	610-322-0618	—	epschaefer@comcast.net
11	DENNIS O'NEILL	MILLBOURNE BOROUGHS	610-356-9550	—	hem.engineers@verizon.net
12	JEFF KNOWLES	DCNR	215-560-1182	—	jeknowles@pa.gov
13	Robert P. Thomas	CTC	215-985-4354	—	rthomas@campbellthomas.com
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FORGE TO REFUGE TRAIL FEASIBILITY STUDY

Minutes - Steering Committee #2

Date & Time: Monday, June 30th, 2014, Radnor Township Office

Attending:

John Fischer	Forge to Refuge Str'g. Com.	Karen Holm	DCPD
Elaine Schaefer	Radnor Township	Jeff Knowles	DCNR
Steve Norcini	Radnor Township	John Boyle	Bicycle Coalition
Rob Armstrong	Phila. Parks & Rec. (by tel.)	Robert Thomas	Campbell Thomas & Co.
Tim Denny	Haverford Township	Harry Murray	Campbell Thomas & Co.
Richard Kerr	Friends of Haverford Trails	Mike Szilagyi	Campbell Thomas & Co.
Dennis O'Neill	Millbourne Borough	Tim Wilson	TPW Design Studios

Project Presentation

1. Meeting opened with introductions then R. Thomas updated the steering committee on the consulting teams work to date.
 - a. The work to date has involved research, mapping assembly and field views which have resulted in the mapping of route alternatives for consideration for the tw2 sections of the study.
 - b. The progress and alternatives have been presented and reviewed in two study committee meetings with representatives of stake holders from both the East and West ends of the study. Both meetings went well, offering support and positive inputs for the trail development.
2. R. Thomas presented the Study overview to date with the aid of a "slide show".
 - a. Presented an over view map of the entire route and the communities linked.
3. R. Thomas presented the West Section alternatives identified to date. Generally there are two corridors with a variety of options.
 - a. Former P&W Corridor:

Continue the Radnor Trail east along the former P&W right of way by introducing a new culvert under Radnor-Chester Rd. There are some encroachments along the r/w but generally it is clear. This is felt to be the preferred long term option for the Forge to Refuge Trail.

The major issue is "crossing" I-476 which makes this a more long term option. A future crossing of I-476 could be coordinated with potential future PennDOT improvements to the interchange. This will be reviewed with PennDOT.

In lieu of a I-476 crossing along the former rail r/w, a potential route has been reviewed that passes under I-476 at Conestoga Rd. by developing a trail through Martha Brown's Woods and using lower traffic roads such as Ithan Creek and Spring Mill Roads to reconnect to the r/w, but there are continuity, and property issues that may be problematic.

East of I-476 the existing rail r/w continues to Sproul Rd. and the former Villanova Junction. Bridging Sproul Rd. allows continuing the use of the r/w, now leased by PECO, to the Villanova Station and from there to South Ithan Ave.

- b. Lancaster Avenue Corridor:

This seems to be the most favorable option for a quick implementation of the trail and is seen favorable to at least some impacted based on the Study Committee meeting.

A link has already been constructed from the Radnor Trail to Lancaster Ave. Improving this link, widening if possible, should be reviewed.

From the existing link, there are a number of options for using both sides of Lancaster Ave. or even a “mix and match” approach. There are existing paths and sections of sidewalk on both sides of Lancaster from Radnor-Chester Rd. to the Villanova Campus. Each side has its benefits and drawbacks. The northerly side seems to offer the most continuous route and most readily links to the high school. The southerly side offers opportunities to link the P&W r/w and avoid some of the parking conflicts near the route 100 rail bridge.

It was noted that the lands at the cul-de-sac of Hillside Circle are part of the PennDOT r/w and were once offered to the township.

There also appears to be an opportunity on the northerly side to take the trail away from the roadway for a section using the wide I-476 and ramp overpasses at Brown’s Run. This land is part of the PennDOT r/w.

The SEPTA Rt. 100 bridge is the issue along Lancaster Ave. The limited length of the bridge “pinch point” in the roadway and only allows for a narrow sidewalk on the north side.

4. It was noted that Villanova University prefers use of south side of Lancaster Ave. and is planning sidewalk improvements through their campus. The proposal includes a pedestrian overpass for Lancaster Ave. in the vicinity of the campus. No additional at-grade crossings will be approved by PennDOT in this section. The overpass requires an elevator for ADA access. Radnor Township noted that there is a “Conditional Use” hearing being held regarding the proposed Villanova improvements on July 28th and a Special Township Planning Committee meeting on July 30th. It was recommended that the study team be represented at one or both these meetings, supporting the plans for the south side while also noting importance of keeping the north side available for pedestrian and/or mixed use circulation. It was reported that the north side of Lancaster is recommended on the new open space and greenways plan for Radnor Township.
5. R. Thomas noted that the SEPTA Rt. 100 “rail with trail” option is on hold until SEPTA completes its study on potential improvements regarding service to King of Prussia. Its meeting is in the process of being scheduled with SEPTA for this study. Simone-Collins has been meeting with SEPTA in regard to the Radnor Township Open Space and Greenway Plan.
6. Trail crossings on Lancaster Ave. were discussed. S. Norcini noted that crossings on Lancaster Ave. are currently part of a traffic study related to the proposed Villanova work. The study includes about 14 intersections. Radnor Township will provide information on the study.
7. Radnor Township also noted that work is proposed for the small shopping center on the north side of Lancaster Ave. east of the SEPTA Route 100 rail bridge. This is the property owned by PROVCO who was advocating the use of the south side of Lancaster and lengthening the Rt. 100 bridge at the West Study Committee meeting.
8. It was reported that use of the lands near the Brown’s Run overpass may involve crossing property owned by BioMed. BioMed will be contacted as part of the study.
9. Conditions at the High School were discussed. The existing cross-country path was noted and it was indicated that the crossing at Radnor-Chester Road is already a problem for students heading to the school. Light timing and the lack of an area of refuge at the median were noted. A wider, planted median was suggested for Lancaster Ave. to create more of a “boulevard” look.
10. R. Thomas noted that the public workshop for the west section is scheduled for September 4th. Radnor Township will facilitate property owner notification. The format for the meeting will be a brief presentation followed by a small group discussion sessions. It was noted that redevelopment of the BioMed site is being considered and it might be beneficial to invite representatives to the Sept. 4th workshop. It was further noted that the workshop for the east section is scheduled for

Sept. 11th and that public walks could be scheduled during the summer prior to these workshop sessions.

11. With regard to general public reaction, it was noted that as recent as 4 years ago there are some that are still vehemently opposed to the trail. It was also indicated that the potential impacted Alden La. residents seemed to be supportive of a potential trail on the section of the r/w behind their properties during the meetings regarding the PECO power line work on the SEPTA r/w.
12. During the discussion of the proposed work for Villanova and issues at the High School, differentiation of the trail surface by use (pedestrian, bike, etc.) was suggested. R. Thomas noted that sections of the East Coast Greenway through Manhattan have as many as 6 lanes to facilitate mixed usage and safety. Specific design issues such as setback from the road, appropriate trail surfacing, and maintaining or even enhancing the historic character were noted.
13. As an aside R. Thomas noted that the Forge to Refuge trail has been included as one of the trail guide brochure series being assembled for The Circuit and that the entire series will be available on the PA Environmental Council website.
14. Discussion of the meeting moved to the East Section. R. Thomas noted that the alternatives for this section are mostly on public park lands, most of which is owned by Philadelphia. The "East" section route, starts near the 63rd street station, proceeds through Millbourne Borough, then links with Philadelphia park lands and neighborhoods, following the perimeter of Cobbs Creek Golf course, to and potentially under City Avenue, then into Carroll Park (owned by Philadelphia) and through Haverford Township along the Karakung Drive trails with the goal of reaching Eagle/Wynnewood Rd. at Haverford Rd. An alternative alignment from 63rd and Market Streets would be along the perimeter of Cobbs Creek Park up to where the previous alternative would reach the Park's perimeter on its way north from Millbourne. The future proposal for completing the trail, connecting east and west sections is a "rail with trail" approach along the mostly unused track bays of the SEPTA Rt. 100 line.
15. It was noted that a few, relatively short sections of the proposed alternatives are in Upper Darby. The consultant team will contact Upper Darby as part of the study work.
16. At Millbourne, it was noted that:
 - a. The trail is part of the "transit oriented" development plan of the site at the Millbourne Station.
 - b. The site offers an opportunity to provide a continuous off-road link from the end of the existing Cobbs Creek Trail (63rd & Market) to the Philadelphia owned park lands to the north through the existing tunnel under Market St. (former Cardington Branch rail tunnel).
 - c. The new development site is accessible via elevators at the Millbourne Station.
 - d. The TOD site is owned by Wilmer Co. and the borough is working closely with the owner in a joint effort to build the trail. D. O'Neill reported that Borough owns the r/w for the trail and it is shown on the borough property map.
 - e. The trail along the creek is likely in the flood plain.
 - f. The proposed bridge is noted near the existing dam on the development plan. It was mentioned that R. Armstrong suggested the location be further studied based on the length of the crossing and cost at the East Study Committee meeting.
17. Through the Philadelphia park lands to the north and west of Millbourne it was noted that:
 - a. The proposed alternatives take advantage of existing foot paths and sidewalk networks already heavily used by neighborhood residents and link to a number of neighborhood streets.
 - b. The proposed alternatives offer a primarily off-road route and including a route around the perimeter of the Golf Course there is only one road crossing to be addressed between Millborne and City Ave.

- c. R. Armstrong noted that the guide rails along the neighborhood streets (such as Arch & N. Daggett) were placed to prevent illegal dumping in the park.
18. The proposed alternative follows the perimeter of the Golf Course generally starting at Callowhill St. There appear to be minimal conflicts with the course until after the crossing of Lansdowne Ave. In the discussions it was noted that:
- a. The Golf Course is operated on a lease agreement with the city and it was noted that the course manager is supportive of the trail.
 - b. There are some property encroachment issues primarily at the properties that front along Brockton Rd. that will need to be addressed.
 - c. Space between the course and the proposed trail becomes an issue for some sections after Brockton Rd. The issue is providing a safe distance between the two uses.
 - d. Alternatives to the perimeter route were discussed such as a route through Morris Park or along Cobbs Creek but neither seem viable for a number of reasons.
 - e. A trail along the City Ave edge of the course offers an opportunity to “clean-up” and enhance that edge.
19. It was agreed that one of biggest challenges for the east section is developing a safe crossing of City Ave. The consultant team proposes crossing the creek on the southerly side of City Ave. and a new tunnel west of the creek into Carroll Park. A number of concerns were mentioned:
- a. Cost of a new tunnel/culvert had been raised at the East Study Committee meeting. TPW reported that based on a similar previous installation the costs might range from \$600K to \$900K.
 - b. Traffic impact during construction was raised as a significant concern.
 - c. The age and condition of the existing bridge over Cobbs Creek was noted. The consultant team will review the potential for replacement with PennDOT.
20. Carroll Park discussion:
- a. It was noted that the preferred tunnel option places the trail on the west bank of the creek as it enters Carroll Park which is higher and more stable. It also offers better options to link to the rail station and the Grange Estate.
 - b. Once at the Grange Estate the proposal is to cross the creek and take advantage of, and improve the footpaths already being used to develop a route to Manoa Rd.
21. Karakung Drive discussion:
- a. With the exception of Beechwood-Brookline Station, the existing trail system generally works up to just short of the swim club. Aside from the swim club itself there are key links to community parks and other trails that should be considered in this area.
 - b. It was noted that through agreement with the swim club the trail system informally continues through the parking lot and the suggestion was made that “rationalizing the parking lot might help. There would still be issues at the bridge over the creek and after the parking lot.
 - c. Once at the intersection of Haverford Rd. true trail potential seems to die and the options fade into reinforcing pedestrian access through this area to the rail station.
 - d. Opportunities to use the empty Rt. 100 track bays were discussed as an alternative through this area. Opportunities to get to the westerly side of the rail r/w in this area appear to be Manoa Rd. and Mill Rd.
22. TPW reported that with regard to environmental analysis there were not “hits” at all on the PNDI search for the entire corridor. The consultant team will be coordinating with DEP and the County Conservation District.

23. R. Armstrong reiterated the point he made at the Study Committee meeting with regard to the importance of meeting with senior Phila. Parks & Rec staff to review the plans to date as soon as possible. The consultant team will coordinate with him to arrange this meeting. (*Follow-up – Meeting is scheduled for August 22nd*)

24. Next Steps:

- a. The next meeting of the Steering Committee will be scheduled after the Public Workshops in September.
- b. CTC noted they will be continuing with organizing stakeholder interviews and field views. They also noted they would be pleased to participate in “Public Walks” to promote the Trail project.
- c. The Eastern end is mostly public land except in Millbourne Borough. R. Armstrong will work on identifying stakeholders to reach out to for the Public Workshop sessions.
- d. Upper Darby will need to be contacted. Contact persons recommended – Dan Lutz, Township Engineer; Tom Judge, Township Manager.
- e. Contact for Millbourne site owner – Michael Weldon (Willner?) The consultant team will confirm with Millbourne Borough
- f. The consultant team will attend

The above constitutes CTC’s interpretation of the meeting and will become part of the permanent record unless corrected by any of the parties within ten (10) days of the distribution date.

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FORGE TO REFUGE TRAIL FEASIBILITY STUDY

STUDY COMMITTEE - WEST MEETING #1

Friday, June 13, 2014, 2pm
Radnor Township Building
301 Iven Avenue. Wayne, PA 19087-5297

AGENDA

I. PROJECT OVERVIEW

- a. Introductions / Study and Steering Committee Members and Resources
- b. Brief review of the Feasibility Study Grant and its overall goals
- c. Team organization and responsibilities
- d. Report on work accomplished and meetings held so far during inventory phase
- e. Report on focus areas and alignment observations so far
- f. Review of enhanced slide show focusing mostly on the Western end
- g. Approach to mapping of resources and land ownership
- h. Review additional resources for items yet to be covered in Inventory/Analysis
- i. Review any additional input/recommendations on Project Inventory/Analysis
- j. Update of Project Directory

II. SCHEDULE / PROJECT MEETINGS

- a. Confirm Next Study Committee Meeting / Public Information Dates Confirm location and time for first Public Workshops, East and West
- b. Review Interview List
- c. Confirm upcoming site visits
- d. Confirm upcoming public exploratory walks
- e. Review publicity strategy and contact list for upcoming meetings, workshops and walks
- f. Plans for approaching and meeting with the municipalities, agencies and large landowners

III. OTHER ACTIVITIES FOR TODAY

- a. Sharing of mapping and information sources, and contacts with the project consultants
- b. Review of connectivity to other trails, The Circuit, other municipalities, and the "outside world"
- c. Review of possible compatible economic development opportunities

IV. NEXT STEPS

SIGN-IN SHEET

Project: **FORGE TO REFUGE TRAIL**Date: **6-13-2014** Meeting #: **WEST STUDY COMM. MTA #1**CT
&C

Campbell Thomas & Co.—1504 South Street—Philadelphia PA 19146-1636

Tel: 215-545-1076—Fax: 267-336-0209—Email: rthomas@campbellthomas.com

Architecture ❖ Preservation ❖ Community and Transportation Planning

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10	RICHARD CARLSON	PROVCO	610-225-9315	610-520-1905	RCARLSON@PROVCOGROUP.COM
11	LEO BERNGAZI	Radnor Twp. S.D.	610-688-8100	610-902-0207	LEO.BERNGAZI@RTSD.ORG
12	Richard Kerr	Friends of Haverford Trail	610-527-3725		rich.kerr@verizon.net
13	Chris Kovolski	Villanova Univ	610-519-7450		christopher.kovolski@villanova.edu
14	John Fischer	Forge to Refuge Steering	610-688-7288		j.fischer234@gmail.com

VILLANOVA
UNIVERSITY

IGNITE CHANGE GO NOVA.

RAD-TINI 6-13-14

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FORGE TO REFUGE TRAIL FEASIBILITY STUDY

Minutes - Study Committee – West Meeting #1

Date & Time: Friday, June 13th, 2014, 2:00 pm

Attending:

John Fischer	Forge to Refuge Str'g. Com.	Bob Morro	Villanova University
Carolyn Wallis	Radnor Trail Committee	Chris Kovolski	Villanova University
Steve Norcini	Radnor Township	Dan Palazzo	Brandywine Reality
Leo Bernabei	Radnor Twp. School Dist.	Richard Caruso	PROVCO Group
Karen Holm	DCPD	Robert Thomas	Campbell Thomas & Co.
Tim Denny	Haverford Township	Harry Murray	Campbell Thomas & Co.
Richard Kerr	Friends of Haverford Trails	Tim Wilson	TPW Design Studios

Project Presentation

1. J. Fischer opened the meeting with a general description of the study noting:
 - a. The Forge to Refuge Trail is part of a 50 to 60 mile loop trail that will link the Valley Forge National Historic Park to the John Heinz National Wildlife Refuge at Tinicum, one way on the Forge to Refuge Trail and the return route on the Schuylkill River Trail.
 - b. Funding for the present study sections was obtained through DCNR with matching funds through DVRPC from the William Penn Foundation.
 - c. The general route proposed in the funding application was use of the SEPTA Route 100 corridor to link the Radnor Trail to the Cobbs Creek Trail. In most areas only two track bays of the Rt. 100 are in use often leaving two additional bays empty for possible other uses. However, study for use of the SEPTA r/w for trail purposes is currently on hold.
 - d. The two sections being evaluated for this study are extending the Radnor Trail east to Villanova and extending the Cobbs Creek Trail west from 63rd Street in Philadelphia to Eagle/Wynnewood Rd. in Haverford Township.
 - e. He emphasized that this is a feasibility study and the purpose of the meeting was primarily to solicit input.
2. R. Thomas presented the Study overview to date with the aid of a "slide show".
 - a. Presented an over view map of the entire route and the communities it would link.
 - b. Noted that the SEPTA Rt. 100 "rail with trail" option was on hold until SEPTA completes its study on potential improvements regarding service to King of Prussia.
 - c. Indicated that the planning goals for the trail included three primary criteria ... continuous – safe – delightful.
 - d. Briefly presented the "East" section route, starting near the 63rd street station, proceeding through Millbourne Borough, then linking with Philadelphia Park lands and neighborhoods, following the perimeter of Cobbs Creek Golf course, to and potentially under City Avenue, then into Carroll Park (owned by Philadelphia) and into Haverford Township along the Karakung Drive trails with the goal of reaching Eagle/Wynnewood Rd. at Haverford Rd.
 - e. The slide show offered a more detailed presentation of the "West" section of the study area.
3. R. Thomas presented the West Section alternatives identified to date. Generally there are two corridors with a variety of options.

a. Former P&W Corridor

Extend the Radnor Trail east along its present course, the former P&W right of way, starting with a new culvert under Radnor-Chester Rd. There are some encroachments along the r/w but generally it is clear.

The major issue is crossing I-476 making this a long term option. A future crossing of I-476 could be coordinated with any future PennDOT improvements to the interchange.

In lieu of a I-476 crossing along the r/w, there is a potential to develop a route crossing under I-476 at Conestoga Rd. by developing a trail through Martha Brown's Woods and using lower traffic roads such as Ithan Creek and Spring Mill Roads to reconnect to the r/w, but there are continuity, property and "neighborhood character" issues that may be problematic. There also appear to be opportunities, pending ownership research, to link the existing rail r/w to Lancaster Ave. and developing a side path under the I-476 overpass.

East of I-476 the existing r/w continues to Sproul Rd. and the former Villanova Junction. At Sproul the existing r/w becomes part of a PECO utility r/w to Villanova Station and from there the existing park path leads to South Ithan Ave.

b. Lancaster Avenue Corridor

A link has already been constructed from the Radnor Trail to Lancaster Ave. Improving this link, widening if possible, should be reviewed.

From the existing link, the proposal is to develop side paths along either or both sides of Lancaster Ave. Each side has its benefits and drawbacks. The northerly side seems to offer the most continuous route from a crossing standpoint and most readily links to the high school. The southerly side offers the opportunities to link the P&W r/w and avoid some of the parking conflicts near the route 100 rail bridge.

The I-476 overpass offers ample room on both sides for a suitable side path.

There also appears to be an opportunity on the northerly side to take the trail away from the roadway for a section using the wide I-476 and ramp overpasses at Brown's Run.

The primary problem along Lancaster Ave. is the SEPTA Rt. 100 bridge. Its limited length creates a "pinch point" in the roadway and only allows for a minimal sidewalk on the north side.

Once past the Rt 100 crossing there are parking and crossing issues that would need to be carefully addressed up to the area of Sproul Rd., but conditions improve once at the Villanova campus to South Ithan Ave.

4. It was noted that these are preliminary observations and that issues of ownership, safety and access need to be reviewed as well as services for trail users and appropriate links to community resources. The consultant team will start developing recommendations after the public meetings scheduled in September and interviews beginning this summer.

Comments/Public Input

5. The representative from PROVCO Group noted that using the north side of Lancaster would result in a lot of "stopping cars" for trail users (at parking) whereas the south side is clearer of these types of conflicts. He noted that the Rt. 100 bridge seems to be the biggest problem both for the existing roadway and potential side trail development. He noted a concerted effort should be made to get the bridge lengthened. He also mentioned that the "off-road" area at the Brown's Run over pass is subject to a lot of water/flooding during storms and it takes a while for the water to drain.
6. The Township Engineer asked if the alternatives were an either/or question. CTC answered no and noted that the alternatives noted to date are just options that have been identified. The final recommendations could be the pieces of each that seem to work best. It was noted the Villanova is considering a pedestrian overpass.

7. The need for trail parking facilities was noted. It was reported that many people drive to the trail areas to use them and parking is a big issue on days of high usage.
8. Representatives of the School District noted that any effort to connect the school to “nature” is welcomed, but safety of the students is a major concern with these links. They also noted that many students are commuting by bicycle and favored the Lancaster Ave. side trail approach.
9. Representatives of Villanova University noted that the proposed alternatives complemented their thinking particularly with regard to side paths along Lancaster Avenue. They favored the south side and noted their plans included developing a fence and wide green space along the roadway then a wide sidewalk. They noted that bicycle usage on campus is low and felt local roads were not conducive to bicycle travel.
10. It was noted that the Aldwyn Lane Neighborhood Association will need to be contacted, particularly with regard to potential use of the r/w between Aldwyn Lane and Villanova Station. Radnor Township will provide contact information.
11. Brandywine Reality noted the connections seemed viable for their tenants and also suggested that the sidewalk at the crossing of Radnor Chester Rd. be extended north past Lancaster Avenue along Radnor Chester Rd.
12. It was noted that the Radnor Township Greenway and Open Space Plan, presently being developed, noted some additional trail alternatives that might be appropriate. CTC is coordinating with Simone-Collins.
13. There was a brief discussion of “Compatible Economic Development”, both in terms of providing services for trail users and allowing users better access to business along the trail route.

The above constitutes CTC’s interpretation of the meeting and will become part of the permanent record unless corrected by any of the parties within ten (10) days of the distribution date.

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FORGE TO REFUGE TRAIL FEASIBILITY STUDY

STUDY COMMITTEE - EAST MEETING #1

Wednesday, June 18, 2014, 10am
Bartram's Garden
5400 Lindbergh Boulevard, Philadelphia, PA

AGENDA

I. PROJECT OVERVIEW

- a. Introductions / Study and Steering Committee Members and Resources
- b. Brief review of the Feasibility Study Grant and its overall goals
- c. Team organization and responsibilities
- d. Report on work accomplished and meetings held so far during inventory phase
- e. Report on focus areas and alignment observations so far
- f. Review of enhanced slide show focusing mostly on the Eastern end
- g. Approach to mapping of resources and land ownership
- h. Review additional resources for items yet to be covered in Inventory/Analysis
- i. Review any additional input/recommendations on Project Inventory/Analysis
- j. Update of Project Directory

II. SCHEDULE / PROJECT MEETINGS

- a. Confirm Next Study Committee Meeting / Public Information Dates Confirm location and time for first Public Workshops, East and West
- b. Review Interview List
- c. Confirm upcoming site visits
- d. Confirm upcoming public exploratory walks
- e. Review publicity strategy and contact list for upcoming meetings, workshops and walks
- f. Plans for approaching and meeting with the municipalities, agencies and large landowners

III. OTHER ACTIVITIES FOR TODAY

- a. Sharing of mapping and information sources, and contacts with the project consultants
- b. Review of connectivity to other trails, The Circuit, other municipalities, and the "outside world"
- c. Review of possible compatible economic development opportunities

IV. NEXT STEPS

SUBJECT

FOREFE → REFUGE FEASIBILITY STUDY
EAST STUDY COMMITTEE MEETING

DATE 6/18/14

NAME _____

John Boyle

Richard Kerr

John Fischer

Rob Armstrong

Tim Wilson

Tim Denny

Mike S.

Harry M.

ORGANIZATION

Bicycle Coalition

Friendly of Haverford Trails

Forge & Refugee Coalition

Phila. Parks & Rec

TPW Design Studio

Haverford Twp

CTC

CTC

Sign In

PHONE / E-MAIL

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Rob. armstrong@ptila.gov

twilson@tpwdesignstudios.com

TDenny@Havtwp.org

FORGE TO REFUGE TRAIL FEASIBILITY STUDY

Minutes - Study Committee – East Meeting #1

Date & Time: Wednesday, June 18th, 2014, 10am

Attending:

John Fischer	Forge to Refuge Str'g. Com.	John Boyle	Bicycle Coalition
Rob Armstrong	Phila. Parks & Rec.	Harry Murray	Campbell Thomas & Co.
Tim Denny	Haverford Township	Mike Szilagyi	Campbell Thomas & Co.
Richard Kerr	Friends of Haverford Trails	Tim Wilson	TPW Design Studios

Project Review and Comment

1. All attendees were generally familiar with the overall project so the meeting moved into a somewhat detailed review of the East section of the study.
2. The First section starts at 63rd St. station, accesses Millbourne redevelopment site from the Market St. sidewalk through the Cardington Branch tunnel under Market St. The Route crosses Cobbs Creek into Philadelphia Parks lands via a new bridge proposed near the dam.
 - a. R. Armstrong questioned the ownership of the tunnel. Tunnel is in the Market St. r/w and below the Market-Frankford El. Ownership will be verified.
 - b. R. Armstrong asked about the width of the creek at the proposed crossing. Review creek width to finalize crossing location.
3. The proposal for the second section is along the two trail routes proposed in the Philadelphia Trails Master Plan. The first, improving existing foot paths through Philadelphia Parks lands along the north bank of Cobbs Creek and a stream bed from the area of 63rd St. Station to Callowhill St. The paths also link to Vine St. west of Daggett St. The second proposes developing a side path network that follows and expands the existing sidewalk network north from the 63rd St. station to and along Arch, Race, Daggett and Vine Streets to Callowhill St.
 - a. This section seemed generally straight forward. There may be some ADA issues on the route through the park leading up to Callowhill.
4. The third section is proposed to follow the edge of the golf course from Callowhill north to a proposed side path on Haverford Ave. that crosses Indian Creek on the wide sidewalk of the existing bridge and turns down Lansdowne Ave. to 75th St.
 - a. Clearance along the edge of the golf course was noted here, but there seems to be sufficient City owned property to work with. This will be verified.
5. The fourth section proposes to cross Lansdowne Ave. at the controlled intersection at 75th Street and develop a trail to the perimeter of the Golf Course.
 - a. Slope conditions at 75th become a concern and need to be reviewed with regard to ADA issues.
6. The fifth section, as initially recommended at a previous presentation to the city, proposes to follow the edge of the Golf Course along Brockton, Farrington and Ashurst Roads. There are a number of issues here one of which is encroachment by adjoining property owners.
 - a. R. Armstrong questioned the extent of the encroachment issues and asked if they could be avoided. H. Murray noted that the encroachment seemed extensive and (*incorrectly*) noted it being along all three perimeter roads. (*Update: Following the meeting M. Szilagyi reviewed the mapping to further evaluate the encroachment issue. The Bulk of the encroachment*

appears to be limited to Farrington Rd. properties. There is a wooded area between Farrington and Ashurst that offers more room for a trail and the issue that develops along the perimeter at Ashurst is one of space between the fairways and greens and the edge of the city property. This condition seems to ease as the proposed route approaches City Ave.)

- b. A route through Morris Park, from Haverford Ave. to City Ave, was discussed as an alternative. R. Armstrong noted that while trails are proposed at Morris Park, they are soft surfaced trails and the neighborhood residents prefer that they stay a closed circuit and not become part of a larger network of connected trails. He noted he would review the issue further with the Parks Dept. It was also noted that developing a side path along City Ave. becomes difficult with the number of street and parking lot entrances that would need to be crossed.
 - c. Other options through the Golf Course were briefly discussed, but the layout of the course and the conflict of the uses didn't seem to offer any other opportunities.
7. The sixth section is City Ave., heading due west from the corner of the Golf course to Carroll Park. The general proposal is a side path along the south side to a point somehow crossing City Ave. Several options have been considered:
- Crossing at grade before the Cobbs Creek overpass.
 - Bridging City Ave. at some point.
 - Directing users east to the controlled intersection at 77th Street and improving the sidewalks on the north side to provide a link to Carroll Park.
 - Introducing another controlled crossing at some point.
 - A tunnel under City Ave. to Carroll Park.

From the Design Team's view, the preferred approach is the tunnel and there appears to be a good location that provides a link to the west bank of the creek near Carroll Park and offers a connection to the Grange Estate.

- a. R. Armstrong questioned the feasibility of the tunnel option based on cost. Not only is there the cost of the tunnel, Cobbs Creek also needs to be crossed to reach what seems to be the best location for the tunnel, between the creek and SEPTA. T. Wilson to investigate costs based on a similar project.
 - b. In the discussion, while the tunnel seems to be the most costly option, the options for safely crossing City Ave. in this area seem to be limited, at best. An off-road crossing in this area seems to be the best option
 - c. J. Fischer raised the possibility of using the existing bridge over the creek. There appears to be some height issues with hanging a walkway because of the curve of the arch. The walkway would be best in the middle of the arch. Concerns about permit issues and costs were raised.
 - d. It was noted that the bridge over Cobbs Creek is old, may be up for replacement. The bridge status will be reviewed with PennDOT to see if a new tunnel or longer bridge can be included as part of any proposed work.
8. The seventh section is through Carroll Park (owned by Philadelphia) to Manoa Rd. The proposed approach is to use the route of existing footpaths along the west bank of the creek to the link to the Grange Estate driveway, then cross the creek with a new bridge to existing footpath routes on the east side of the creek to Manoa Rd. There are some continuity issues that need to be addressed in reaching Manoa Rd. to cross at grade east of Karakung Drive.
- a. It was noted that crossing Manoa Rd. west of Karakung Dr. may be too close to the SEPTA overpass.
 - b. R. Kerr suggested a flashing beacon would be appropriate for the at grade crossing of Manoa Rd.

- c. It was reported that SEPTA plans to construct more commuter parking in the area of the Karakung Dr. Manoa Rd. intersection.
9. The eighth section is along Karakung Dr. The proposal is to use the route of the existing trail system being maintained by the Township and the Friends of Haverford Trails. This route is a part of the Haverford Heritage Trails and, for the most part is continuous in one form or another to Beechwood/Brookline Station. The Station access itself is a major pinch point and the trails effectively end at the Swim Club. There are two other trails in the section to consider links to, the Powder Mill Trail and the trail through Karakung Fields to the Guest Tract.
- a. At this point there are no obvious solutions at the SEPTA station, but on each side a side path is workable at least to the swim club.
10. The ninth and last section discussed was the section from the swim club to Eagle Rd. The street crossing at the swim club provides the link to Karakung fields. Issues here include the bridge over Cobbs Creek at the swim club, it's narrow and only has minimal sidewalk to one side. There is also no room for a side trail on either side of Karakung Dr. without encroaching on private property and once past the swim club, the existing commercial area seems to offer little more in options than improving the sidewalk network. Kids are reported to use this section regularly to get to the fields and the swim club and it is by far the worst section of the road.
- a. R. Kerr noted what they refer to as the "Karakung Trail Extension". It's basically an agreement to use the swim club parking lot as a part of trail to access a foot path along the top of an embankment along the SEPTA rail line. It was suggested that this route through the parking lot might be formalized by painting one of the parking aisles as a bike lane.
- b. A paper road to the west of the rail line and creek was also noted that may offer an option and needs to be further investigated.
- c. It was noted that with the exception of the Beechwood Station "pinch" a Karakung drive side path basically works up to Mill Rd. and that Mill Rd. might offer a point to cross under the rail line and access the west side of the r/w at that point or lands to the west of the rail line. This option needs further investigation.
11. R. Armstrong indicated that he felt the project should be presented to senior Parks & Rec Staff at this point and he would help to set up a meeting.
12. Upcoming meetings scheduled/to be scheduled:
- Steering Committee: Monday, June 23, 2014 (*rescheduled to Monday, June 30, 2014*)
- Phila. Parks Senior Staff Presentation: To be scheduled
- Interviews and Committee Field Views: To be scheduled over the summer
- Public Workshops: September 11th and 16th

The above constitutes CTC's interpretation of the meeting and will become part of the permanent record unless corrected by any of the parties within ten (10) days of the distribution date.

Distribution

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SIGN-IN SHEET**Project:** VALLEY FORGE HEINZ REFUGE TRAIL**Date:** 6-10-15**Meeting #:** MTG. W PADOT BRIDGE UNIT**CT
&C**

Campbell Thomas & Co.—1504 South Street—Philadelphia PA 19146-1636

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Architecture ❖ Preservation ❖ Community and Transportation Planning

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PROJECT LOG

☐ Partner _____
☐ _____
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☒ Log _____

**CT
&C**

Campbell Thomas & Co.—1504 South Street—Philadelphia PA 19146-1636
 Tel:215-545-1076—Fax:215-545-8397—Email:campbellthomas@campbellthomas.com
 Architecture ❖ Preservation ❖ Community and Transportation Planning

Client/Project Code: RAD-TINI/ PLY-TRAI Date: 06-10-2015 Client:

<input type="checkbox"/> Telephone	CT&C: Robert Thomas	Other: Ryan Gallagher	Agency: PennDOT
<input type="checkbox"/> Site Visit	CT&C: Doug Maisey	Other: John Markus	Agency: PennDOT
<input checked="" type="checkbox"/> Meeting	CT&C: _____	Other: John Fischer	Agency: Forge to Ref. Trail
<input type="checkbox"/> Hearing	CT&C: _____	Other: Bill Sabey	Agency: Ply Twp. Env. Ad.
<input type="checkbox"/> Other: _____	CT&C: _____	Other: Dean N. Eisenberger	Agency: Ply. Twp. Council
		Other: Steve Narcini	Agency: Radnor Twp

Phase _____

Subject: PennDOT Bridges Unit meetings to coordinate with the Forge to Refuge Trail and Cross County Trail regarding proposed bridges.

1. Valley Forge-Heinz Refuge Trail (CTC Proj Code RAD-TINI): This feasibility study is aimed at the creation of two sections of the Trail. The southern section under study would connect from the Cobbs Creek Trail at 63rd and Market Street in Philadelphia to the intersection of Haverford Rd. and Wynnewood Rd. The northern section under study would link the existing Radnor Trail at Radnor-Chester Road with Villanova University
 - Bob Thomas outlined the project for those who may not be knowledgeable about the Radnor Trail and potential to be part of the Valley Forge to Heinz National Wildlife Refuge Trail.
 - Today's focus is on the northern section of trail that links the southern terminus of the Radnor Trail at Radnor Chester Rd with the PECO/SEPTA right of way at the Villanova Station.
 - It has been determined through public meetings and outreach that the ideal trail would be a completely separated trail with bridges across 476, rather than a sidepath along Lancaster Ave.
 - Bob presented a number of examples of pedestrian bridges that have successfully created trail connections over major roads and highways in the region.
 - John Markus works in the Bridges Unit at PennDOT and is not aware of any future changes to I-476 currently planned in this area. Any bridge structures over highways are held to stringent PennDOT requirements that would have to be worked out during the design stage, but he believes that a feasible bridge could be designed to carry the trail through this area.
 - In addition to PennDOT, the FHWA would most likely need to approve the bridge over 476.
 - PennDOT requires that new bridges over highways have at least a 17'6" clearance and should be structurally capable of sustaining a potential impact.
 - The section between the Radnor Trail and Villanova Station includes a proposed culvert under Radnor Chester Rd to the old rail bed, a bridge over the 476 on/off

[Cross filed in both RAD-TINI and PLY-TRAI]

ramp, a bridge over 476 to another portion of old rail bed, and a bridge over Sproul Rd into the SEPTA right of way.

- The lead time for constructing a bridge over 476 is typically over a year. Ryan Gallagher noted that in order for this project to move into design and construction, ROW needs to be under agreement for SEPTA, the old rail bed and for the PennDOT bridges, funding needs to be in place, and SEPTA needs to be on board with the continuation of the trail.
- Also, management would need to be determined, but there could potentially be an option to add the bridge to the PennDOT inspections list. PennDOT may or may not take actual ownership of the bridge.

2. Cross County Trail (PLY-TRAI): This feasibility study is aimed extending the Cross County Trail from its existing terminus at Germantown Pike and Chemical Road, to Flourtown Rd. and Joshua Rd. in Whitmarsh Township, linking with other portions of the Trail being developed by Montgomery County.

- Bob Thomas outlined the project for those who may not be knowledgeable about the Cross County Trail.
- Today's focus is on the proposed bridge over Germantown Pike and Plymouth Creek from the Cross County Trail terminus to the Brandywine campus.
- Similar to that of the I476 highway bridge, this would need to have at least a 17'6" clearance.
- John Markus again believes that this is feasible, but the location presents difficulties as it is a "geological mess" with the limestone geology.
- The process would be the same as that of the I-476 highway crossing and would require coordination with traffic light sight clearances, utilities, environmental concerns, and others.
- John Markus recommends working with a structural designer who is familiar with the PennDOT process.
- Bill Sabey asked if there is anything that can be done to approve the feasibility of this bridge in advance of the design stage. PennDOT cannot approve designs until a later stage, but "conceptually" it was agreed that the bridge is possible.
- Being that this crossing has a number of constraints and potential "red flags" regarding sight lines, utilities and bridge footings in the limestone geology, Bill Sabey would like to follow up with Ryan Gallagher. He would like to identify the "red flags" and build them into the cost estimate that will be used for getting design/construction funding.
- John Markus believes that the project will most likely require "piles" vs. "spread footings".
- Plymouth is also beginning to study a connector bridge from the Plymouth Meeting Mall to Butler Pike and Plymouth Road. This would require a crossing beneath I-476 and a bridge over I-276. This bridge would have to go through the same PennDOT process.

➤ **Both the Valley Forge-Heinz Refuge Trail bridge over I-476 and the Cross County Trail bridge over Germantown Pike are conceptually feasible. Right of way needs to be under agreement and funding needs to be in place before moving to the design and construction stages.**

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Project:

Date: _____ Meeting #: _____

Campbell Thomas & Co.—1504 South Street—Philadelphia PA 19146-1636

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Architecture ♦ Preservation ♦ Community and Transportation Planning

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PROJECT LOG

Page 1 of 2

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Architecture ❖ Preservation ❖ Community and Transportation Planning

Client/Project Code: RAD-TINI

Date: 06-18-2015

Client: Radnor Twp on behalf
of all the trail municipalities

Telephone	CT&C: Robert Thomas	Other: Ryan Gallagher	Agency: PennDOT/DVRPC
<input type="checkbox"/> Site Visit	CT&C: Doug Maisey	Other: Paul Lutz	Agency: PennDOT
<input checked="" type="checkbox"/> Meeting	CT&C: Harry Murray	Other: Janet Vogel	Agency: PennDOT
<input type="checkbox"/> Hearing	CT&C: _____	Other: Maggie Sweeney	Agency: PennDOT
<input type="checkbox"/> Other: _____	CT&C: _____	Other: Steve Dunlop	Agency: PennDOT
		Other: Nipul Patel	Agency: PennDOT
		Other: Richard Kerr	Agency: Haverford Trails
		Other: Nancy Baulis	Agency: Millbourne Boro.
		Other: Steve Norcini	Agency: Radnor Township
		Other: Brian Wenrich	Agency: PCPC

Phase _____

**Subject: PennDOT meeting to coordinate trail/road crossings and intersection
recommendations with the Valley Forge to Heinz Refuge Trail**

Valley Forge-Heinz Refuge Trail (CTC Proj Code RAD-TINI):

1. Bob Thomas outlined the project for those who may not be knowledgeable about the Radnor Trail and its potential to be part of the Valley Forge to Heinz National Wildlife Refuge Trail.
2. Just south of 476 in Radnor, the trail would need to utilize SEPTA right-of-way for the Valley Forge-Heinz Refuge Trail. SEPTA is still studying a connection to King of Prussia to determine if an unused section or right-of-way could be available for trail development.
3. This feasibility study is aimed at the creation of two sections of the trail for now while SEPTA completes its study. The southern section under study would connect from the Cobbs Creek Trail at 63rd and Market Street in Philadelphia to the intersection of Haverford Road and Wynnewood Road. The northern section under study would link the existing Radnor Trail at Radnor-Chester Road with Villanova University.
4. CTC met with the PennDOT Bridges Unit last week to discuss a trail bridge option for crossing Interstate 476 and its on/off ramps in Radnor Township. Today's meeting will focus on how the trail interfaces with PennDOT roads and future plans along the proposed alignment.
5. The Radnor Trail currently ends at Radnor Chester Road. A tunnel is proposed under Radnor Chester Road to connect to the trail route on the old rail bed that would in turn connect to a new trail bridge over 476.
6. An alternative or additional connection could be developed along Radnor Chester Road to link to Lancaster Avenue which could see pedestrian improvements on one or both sides of Lancaster Avenue to Villanova University. Signalized intersections would bring the trail across Lancaster Avenue at Radnor Chester Road.
7. Once across Lancaster Avenue, one trail option is to follow Brown's Run which would bring the trail along King of Prussia Road to connect beneath 476 using a large culvert opening.
8. Further east, Villanova University plans a bridge connection across Lancaster Avenue to the St. Thomas of Villanova Church from the Villanova Station.
9. Bob Thomas asked if PennDOT has any plans for Lancaster Avenue or any crossings along the trail alignment in Radnor Township.

Page 1 of 3

- a) It was stated that the existing grade crossing at St. Thomas of Villanova Church is planned to be removed when a bridge is developed. Complete plans can be found on the Radnor Township website.
 - b) There are no plans to change the historic SEPTA bridge over Lancaster Avenue. Currently there is just enough room to fit a pedestrian sidewalk under the bridge on the north side of the road, but there is not enough room for a multiuse path. There is no room for a path on the south side.
 - c) Lancaster Avenue has space to fit a trail on both sides of the road in the section beneath Interstate 476.
 - d) It was noted that Villanova University's redevelopment discussion did not have any mention of bicycle improvements.
 - e) Radnor Township noted that their "Open Space Connectively Network Plan" was approved and can be found online.
10. Discussion of the southern section of trail in Haverford Township:
- a) Starting at the Wynnewood Road train station, heading south along Karakung Drive, it was noted that the northern section of Karakung Drive has a lot of activity, tight conditions and minimal room for pedestrian and bicycle infrastructure. Dressing up the pedestrian area could create a more accommodating environment for walking and biking.
 - b) The Karakung Swim Club is hard to access by foot or bike. The trail could be incorporated along the edge of the swim club parking lot. Rich Kerr reports that the Friends of Haverford Trails are working hard to promote bike/pedestrian access the swim club and adjacent baseball fields.
 - c) The trail is proposed to continue through Karakung Park and currently exists as a footpath that could be upgraded and be linked to the Cobbs Creek Trail at Manoa Road.
 - d) Karakung Drive is a PennDOT highway, but does not have excessive traffic.
 - e) The trail also provides easy access to public transit at a number of Norristown High Speed Line train stations.
 - f) At Mill Road and Karakung Drive there is a bridge under SEPTA Norristown High-Speed Line. There are no PennDOT plans for future improvements to this crossing at Mill Road.
 - g) It was recommended that the PennDOT Bridge Unit be notified of the trail alignments at the bridges along the trail, so that when the bridges are redone, a separated trail crossing can be incorporated as part of the work. This includes bridges that carry SEPTA over the roadway, as well as bridges that carry Karakung Drive over Cobbs Creek.
11. Discussion of the trail corridor from Karakung Drive and Manoa Road to the Cobbs Creek Golf Course in Philadelphia:
- a) A footpath already exists through parts of Carroll Park.
 - b) A bridge crossing of Cobbs Creek would connect the trail at the Grange where an existing underpass of the SEPTA railroad exists, providing access to the Grange Field and adjacent residents.
 - c) The trail continues through Carroll Park to connect beneath City Avenue via a proposed tunnel. It has been determined that there is no option to make a safe at-grade crossing of City Avenue in this location.
 - d) The trail then follows the edge of Cobbs Creek Golf Course and crosses Lansdowne Avenue at 75th Street.
12. Discussion of the trail corridor in Millbourne Borough and the connection to the Cobbs Creek Trail:
- a) The trail enters Millbourne Borough via a proposed bridge of Cobbs Creek at the Sellers Dam.
 - b) Following the southern bank of Cobbs Creek, the trail passes beneath Market Street via the existing and unused Cardington Branch railroad tunnel before re-joining with the Market Street sidewalk and connecting to Cobbs Creek Trail at the 63rd Street elevated station of the Market-Frankford Line.

- c) This tunnel will enable a completely off-road route from the at-grade crossing at 75th and Lansdowne Avenue to 63rd St. and Marshall Avenue.
 - d) It was noted that there is controversy with the Sears property and the proposed development in Millbourne. PennDOT does not want to activate a traffic signal into the property until development is in place, but the Sears property owner does not believe development will occur without an activated traffic signal in place. There is discussion that the Sears site will be used to park SEPTA busses while the pope is in town.
13. Bob Thomas opened up the discussion to any additional concerns or comments regarding the trail alignment.
- a) It was noted that a previously studied connection from the Radnor Trail to Ithan Village is no longer being considered. Instead, the trail is looking to cross Interstate 476 via the railroad corridor as depicted in this study.
 - b) Additionally the Bio-Med/Penn Medicine development on King of Prussia Road in Radnor is still in discussion and may not occur.
14. Ryan Gallagher asked Bob Thomas to go through all of the at-grade crossings that may be used for this trail. This includes the crossings in Radnor Township that may be used in place of the Bridges over Interstate 476 if funding is unavailable.
15. At-Grade Crossings include:
- South Section:
- a) Intersection crossing at 75th St. and Lansdowne Avenue.
 - b) Intersection crossing at Manoa Rd and Karakung Drive utilizing and improving an existing at-grade crossing with a pedestrian signal.
 - c) Mid-block crossing of Karakung Drive where the existing footpath improvements would require a crosswalk and signal.
 - d) Intersection crossing proposed at Mill Road and Karakung Drive.
- North Section (many crossings are only necessary in place of the proposed bridges over Intersection 476:
- e) Intersection crossing at Radnor Chester Road and Lancaster Avenue.
 - f) Crossing of Interstate 476 on/off ramps on the south side of Lancaster Avenue (**This crossing was not seen as the best option by PennDOT**).
 - g) Intersection crossing at King of Prussia Road and Lancaster Avenue.
 - h) Existing crossing at intersection of Hillside Circle and Lancaster Avenue.
 - i) Intersection crossing at Spring Mill Road and Lancaster Avenue.
16. In closing, Bob Thomas noted that the report for the Valley Forge-Heinz Refuge Trail will be wrapped up in the coming months, then funding and right-of-way will be acquired.

SIGN-IN SHEET

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Project:

Date: 10-31-2014 Meeting #: VF-HRT - Meeting w SEPTA

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FORGE TO REFUGE TRAIL FEASIBILITY STUDY

Minutes – Meeting with SEPTA

Date & Time: Friday, October 31, 2014 - SEPTA Offices

Attending:

Byron Comati	SEPTA	Lydia Grose	SEPTA
Liz Smith	SEPTA	John Fischer	Forge to Refuge Str'g. Com.
John Calnan	SEPTA	Robert Thomas	Campbell Thomas & Co.
Gerald Maier	SEPTA	Harry Murray	Campbell Thomas & Co.
Leo Byrne	SEPTA		

Project Review & Comment

1. Project organization was clarified for SEPTA. As the grant recipient Radnor Township is the client and J. Fischer, as chair of the steering committee, represents the township with regard to the trail. The Municipalities directly involved in the study are Radnor Twp., Haverford Twp., Millbourne Borough, and Philadelphia. Upper Darby will be contacted as proposed alternatives currently extend minimally into Upper Darby in two locations.
2. It was noted that the idea for the Forge to Refuge Trail grew out of interest in extending the existing 2.4 mile Radnor trail east to the Cobbs Creek Trail and the John Heinz Refuge, with the logical extension to the west being through Tredyffrin to Valley Forge Park, most likely following the Patriots Path. Philadelphia's Cobbs Creek Trail officially extends from City Ave. to the Heinz Refuge. Along the route a number of other local trails "co-locate" with it, including the East Coast Greenway, the September 11th National Memorial Trail and the Washington-Rochambeau Revolutionary Route (W3R).
3. The question became how to connect all the way from Villanova to Haverford Township. In the previous meeting with SEPTA in late 2011, the idea of using some of the then unused portion of the Norristown High Speed Line r/w (former Rt. 100) was proposed. See the attached letter of December 13, 2011. Shortly thereafter, the idea was put on hold due to considerations by SEPTA for extending service to King of Prussia. Based on that concern, the grant application and study were limited to include two sections: (1) extending the Radnor Trail east to Villanova and (2) the Cobbs Creek Trail west, from 63rd and Cobbs Creek to Manoa Road in Haverford Township.
4. It was noted that a route linking the local college campuses, as an alternative to the SEPTA Alignment, was presented to DCNR. However DCNR primarily funds off road trail routes as opposed to sidewalks and bike lane arrangements, and would not fund such a study.
5. RPT reported that the current study focuses on two sections:

West Section – Extend the Radnor trail to Villanova. Two primary routes were presented at public meetings, the first using the former P&W r/w (owned by PennDOT) to link to the Norristown High Speed Line Corridor, the second along Lancaster Ave. In the public meetings use of the rail r/w was preferred even though it includes the long term development issue of crossing the Blue Route, I – 476. At the time of the highway's construction, no culvert or bridge was provided for a possible trail utilizing the former rail line.

East Section – A route along primarily publicly owned lands from Havertown to Philadelphia through Karakung Park, Carroll Park, Cobbs Creek Golf Course, Haddinton Woods, and Millbourne Borough to link to the existing Cobbs Creek Trail. There is also interest in using the former Cardington Branch to extend route through Upper Darby to the 69th Street Terminal.

The long term proposal of the Forge to Refuge Steering Committee has been a spur to connect the two sections potentially using unused track bay area along the High Speed Line. At the present time, SEPTA does not concur with such usage.

The sections proposed in both study areas are generally in lands publically owned and would be implemented and maintained by local government entities.

The High Speed Line bridge over Lancaster Ave. was briefly discussed. Its short length doesn't permit a sidewalk on the south side of Lancaster Ave. This bridge was built around 1912 as part of what was a branch line to Norristown from the main route to Strafford. This line is now the Norristown High Speed Line. No work is proposed on the bridge, it's "not even on the list". Tunneling under the High Speed Line's embankment seems like a potential solution on the south side.

6. It was noted that the West Section of the current study begins to impact the SEPTA Norristown Line at Aldwyn Lane where the route is proposed to locate on the section for the corridor used by PECO.
7. SEPTA noted that there is work in planning for both Villanova Stations. Work for the Regional Rail station is in design stage for both the station and a new interlocking that would permit the turning of trains here instead of at Bryn Mawr. Plans for the High Speed Line station include work to coordinate with the University's plans, a new bridge connection, accessibility and parking expansion. Plans for the Regional Rail station would be most similar to work in place at the Fort Washington Station, in regard to an accessible pedestrian "subway".
8. SEPTA noted that they are not interested in giving up any r/w along the High Speed Line:

They want to retain the flexibility of the full r/w width.

There are both operational and safety concerns.

The proposed service to K. of P. will create a new demand curve which may still require a third track in the future.

They do not want pedestrians and bicyclist that close to the rail line.

SEPTA prefers the use of a Lancaster Ave. route through Radnor to Villanova, including potentially tunneling under the Norristown High Speed Line on the south side of Lancaster Ave.

SEPTA prefers the extra width for maintenance access for both their equipment and PECO equipment.

It was also noted that there are political issues with giving up some of the r/w. It was noted that it would seem inconsistent considering future plans.

9. The location of the PECO towers was noted as an issue for the third track. SEPTA noted if they have to be relocated, SEPTA will pay for the relocation. This seems to be a standard arrangement between PECO and SEPTA where either's equipment impacts the other.
10. CTC noted that the corridor is 100 feet wide and even with a third track there may be room for a rail-with-trail arrangement. SEPTA is not in favor of a rail with trail in the High Speed Line corridor.
11. SEPTA asked if there was reaction from the neighbors along Aldwyn Ln. and noted there were some issues with the neighbors during the PECO power line work. J. Fischer noted that the neighbors hadn't been directly approached with regard to the trail section at Aldwyn Ln. and that the idea was being presented to SEPTA for input first.
12. CTC noted that in past coordination with PECO they accepted trails in their rights of way. The trails were designed to accommodate and facilitate their maintenance access and the activity reduced vandalism along their rights of way.

13. It was noted that the current feasibility study focuses only on the two sections noted. How to extend it further and link the two will be part of a next phase study. J. Fischer noted that the colleges are very interested in a route connecting the campuses but there are many issues with regard to continuity.
14. It was noted that the primary purpose for this meeting was to follow-up with SEPTA from the previous meeting and keep them apprised of the progress. In addition it was to get an update on the progress of plans for the KoP service. SEPTA noted that work is still proceeding on the KoP study and they will understand operations better in mid 2015.
15. SEPTA offered some suggestions:

The Ardmore Busway route to which SEPTA would be "much more amenable".

Brookline Blvd was noted for its sufficient width to accommodate a trail route and still have ample room for bus and parking.

The Newtown Square Branch. CTC noted this was already being considered for inclusion in the Circuit.
16. SEPTA would like to review a draft of the report prior to its being issued to assure that their current position is accurately represented and stated.

The above constitutes CTC's interpretation of the meeting and will become part of the permanent record unless corrected by any of the parties within ten (10) days of the distribution date.

Distribution

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 Architecture ♦ Preservation ♦ Community and Transportation Planning

Client/Project Code: RAD-TINI. Date: 9-23-2014 Client: _____

<input type="checkbox"/> Telephone	CT&C: <u>RT</u>	Other: <u>J. Fischer</u>	Agency: _____
<input type="checkbox"/> Site Visit	CT&C: _____	Other: <u>Kris Kowalski</u>	Agency: _____
<input checked="" type="checkbox"/> Meeting <u>@ Villanova</u>	CT&C: _____	Other: <u>Liesel Schwartz</u>	Agency: <u>Sustainability</u>
<input type="checkbox"/> Hearing	CT&C: _____	Other: <u>Mariou Smith</u>	Agency: <u>@ Villanova.edu</u>
<input type="checkbox"/> Other: _____	CT&C: _____	Other: _____	Agency: <u>610.721.9779</u>

Phase _____ Subject Meeting w Villanova

- ① Now in conditional use approval process - conditions likely to be set by Twp.
- ② Next step - land development
- ③ N. side sidewalk festival. - but concern about imperious coverage of temporary
- ④ On south side of R100 Station - do not go thru Villanova U's land. but use Aldwyn lane.



**VILLANOVA
UNIVERSITY**

IGNITE CHANGE GO NOVA

LIESEL SCHWARZ, LEED AP O+M
 SUSTAINABILITY MANAGER
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SIGN-IN SHEET

CT
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Project:

Date: 9.22.2015

Meeting #:

Mtg. w. Villanova U / Coordination of Trail & Campus Plan

Campbell Thomas & Co.—1504 South Street—Philadelphia PA 19146-1636

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FORGE TO REFUGE TRAIL FEASIBILITY STUDY

Minutes – Meeting with Villanova University

Date & Time: Tuesday, September 22, 2015 – Connelly Center, Villanova University

Attending:

Chris Kovolski Villanova University (VU)
Marilou Smith Villanova University
Bob Morro Villanova U, Facilities

John Fischer Forge to Refuge Str'g. Com.
Robert Thomas Campbell Thomas & Co.
Harry Murray Campbell Thomas & Co.

Project Review & Comment

1. Villanova reviewed their plans approved by Radnor Township to date. The plans are essentially for redeveloping their properties on the south side of Lancaster Ave. that are presently used for parking and sites of university facilities in existing small buildings and houses. Redevelopment includes developing new parking and an area for new residence facilities with some commercial uses along Lancaster Ave. itself. A walkway and bridge linking St. Thomas to the Villanova HSL Station is included in the work. The schedule for construction was outlined as follows:
 - New parking – Start Fall of 2015
 - New parking garage at the south corner of Ithan and Lancaster – Start January of 2016
 - Bridge, in review process with PennDOT – Construction completion target December 2017.
 - Residence and Commercial redevelopment area – Start December 2017.
2. CTC briefly reviewed the routes being considered for the Forge to Refuge Trail through Radnor and Villanova. The preferred route based on the Public meetings is the former P&W rail corridor owned by PennDOT. Developing a crossing of I-476 makes this a longer term option. The alternate or short term routes being looked at are both sides of Lancaster Ave.
3. CTC noted that the proposed further extension of the route is the SEPTA NHSL right of way using a presently unused track bay to develop a rail w/ trail plan. Meetings with SEPTA have put a hold on consideration of this extension due to consideration of potential use of the bay for additional trackage to serve King of Prussia. The meetings also indicated that SEPTA has plans for some improvements to the Villanova NHSL station. VU indicated they were aware of potential improvements to the station, but not the potential for additional trackage. Follow-up: Bob Thomas will check again with SEPTA for an update on the status of their plans.
4. It was noted that there are some new houses being built on Hillside Circle around the cul-de-sac that seem to suggest PennDOT has sold, or is selling some excess r/w along I-476. This impact on the use of the P&W r/w is uncertain at this point. Follow-up: CTC will check with PennDOT on the status of this ROW. As a back-up John Fischer suggested CTC check with the Township for subdivision and/or site plans associated with these new homes.
5. One of the issues along the Lancaster Ave. corridor discussed is the existing NHSL bridge. Its length only accommodates the roadway and a 4 foot wide sidewalk on the north side.
6. Conditions along both sides of Lancaster through Villanova's campus were discussed.
 - A major issue for the university in the redevelopment and on much of the campus is the fact that the impervious cover is at or near the maximum. J. Fisher offered the idea of using a product called "Porous Pave" (a recycled rubber, highly porous, poured paving product) as an idea for addressing impervious cover. It was noted in the past Radnor Twp. has been resistant to use of products such as pervious asphalts to address impervious cover issues. This product is substantially more pervious than products such as pervious asphalt.

- The new residence area development includes 12 foot wide sidewalks along and separated from Lancaster Ave. The University is concerned that introducing a trail use to the planned development might result in congestion considering the proposed “storefront” development.
 - West of the proposed bridge and along the sidewalk condition will not change and will remain the existing 4 foot width.
 - On the north side there is no proposed change to the 4 foot sidewalk width. Impervious cover and the slopes along Lancaster Ave. are an issue.
7. Villanova also expressed concerns about costs, maintenance issues and liability to the university. J. Fisher indicated the trail should be considered a “cost neutral” issue for the University. Funds for planning and construction would be raised through the township or other trail related entities interested in its development. CTC noted that from a legal standpoint an easement agreement could be entered into with the university that both protected it with regard to land development issues and liability concerns. In addition a maintenance agreement could be negotiated with a trail management entity, as yet to be determined, for maintenance of the trail and other issues.
 8. The meeting concluded that if the trail were to pass through the Villanova campus along Lancaster Ave., the north side would be preferable. Construction of a trail on the north side would of course be dependent on the developing a design that satisfies the concerns of the university and also addresses development issues and requirements of Radnor Twp. such as impervious cover, drainage and grading issues.
 9. CTC indicated they would be wrapping up the draft of the report in about a month and would send a copy to the university as part of the review process before it is finalized.

The above constitutes CTC’s interpretation of the meeting and will become part of the permanent record unless corrected by any of the parties within ten (10) days of the distribution date.

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PROJECT LOG

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**CT
&C**

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Architecture ❖ Preservation ❖ Community and Transportation Planning

9.9.2014

Mtg w Facilities Comm. of School District
Palmer PA.

Rt/ J. Fischer

① We presented the work being done in the
Feas. Study

② Concerns:

Ⓐ Would ex'g Palmer Trail become too crowded

Ⓑ Can bucolic character of n. side of Banc. Pk

Ⓐ High School be preserved ——— can path
be soft surface (yes to both)

Ⓒ Getting students from E. side of Twp
across I-476 to the H.S. — walkway would
help.

Ⓓ Concern about taking Sch. Dist land @ M. Brown's
Woods (I explained RR ROW is owned by
PA DOT)

FORGE TO REFUGE TRAIL FEASIBILITY STUDY

Minutes – Meeting with Cobbs Creek Golf Course & Phila. Parks & Rec.

Date & Time: Wednesday, November 20, 2014 – 12:30PM – On site

Attending:

Rob Armstrong	Phila. Parks & Rec.	Robert Thomas	Campbell Thomas & Co.
Steve Dutil	Phila. Parks & Rec.	Harry Murray	Campbell Thomas & Co.
Cliff Easum	Casper Golf Management	Mike Szilagyi	Campbell Thomas & Co.
Rich Sweeny	Casper Golf Management	Tim Wilson	TPW Design
John Fischer	Forge to Refuge Str'g. Com.		

Project Review & Comment

1. R. Thomas presented the overall plan for the trail, explaining that the general plan is to extend the existing Radnor Trail east from Radnor Chester Rd. and the Cobbs Creek trail west from 63rd & Market St. so they eventually link. The route generally follows Cobbs Creek and the Norristown High Speed Line Corridor.
2. It was noted that per a previous meeting a few years ago with PPR and the golf course management, a route along the creek was not possible through the course and the preferred route around the perimeter of the golf course property to the north.
3. Casper Management noted that efforts to restore/rebuild the course seem to be picking up more and more interest. The plan is generally to restore the course similar to its original layout. This layout may or may not open up an opportunity for a trail alignment along the creek through the course. It was noted that proposed plans are available online on the Friends of Cobbs Creek Golf course blog site. *(Follow-up – Two plans are on the site, one labeled 2012 Historic Course the other 2012 Championship Course.)*
4. It was noted that the plans include a significant amount of work along the creek and it was suggested that there might be an opportunity to plan the trail in as part of the new plan. *(Follow-up – Looking at the proposed plan there appears to be significant changes to the water course itself but the course layout still “plays” crossing the creek in a few spots. This would seem to eliminate a potential alignment along the creek.)*
5. No matter where the trail is located the issue will still be protection of the trail users from stray golf balls and the potential liabilities that represents. This issue will need to be reviewed by the city’s legal department.
6. Relandscaping and proper regrading along City Avenue was discussed to be included in the design of the trail. Developing the trail in the existing embankment will likely require retaining walls.
7. The proposed crossing of Cobbs Creek just south of City Ave. and tunneling under City Ave. to a trail along Cobbs Creek met with conceptual approval along with a trail through Carroll Park to link with Karakung Drive. Details will need to be developed during a preliminary design phase.
8. In reviewing the perimeter route around the golf course four sections were identified that may have issues: 1) Along the property line at Brockton Rd.; 2) Along the property line at Ashurst Rd. between W. Woodbine Ave. and Brookhaven Rd.; 3) Along the Property line at the radio antenna site; 4) Along the property line at Ashurst Rd. between Sherwood Rd. and Overbrook Ave.. The four sections were reviewed in the field. Discussion in reviewing these field conditions was based on the feasibility of constructing an off-road, 12 foot wide trail with two four foot wide shoulders.

9. Section 1 – Brockton Rd.: The issue in this area is that adjoining property owner's have significantly encroached on city property with sheds, fences and in one case a pool. It was concluded that there is enough flexibility in the use of this area, in the new plan for the golf course, to allow the encroachments to remain and still construct the preferred twelve foot wide trail. The approach discussed included establishing a new fence line along the rear of the encroachment and planning the trail along the new "edge".
10. Section 2 – Ashurst Rd.: The issue is the relationship between the line of the course and the property line reduces between Woodbine and Brookhaven. For most of the length there appears to be sufficient area to construct a 12 foot wide trail near the fence line (assumed property line). Conditions are tightest as the proposed trail approaches the radio antenna site. Concerns for safety of the trail users need to be addressed. High fencing, high netting, "cage"/trellis (fence with top enclosure), and landscape barriers were discussed as potential solutions. It was generally agreed with good planning and aesthetics the situation was workable.
11. Section 3 – Radio Antenna Site.: This appears to be the location where the distance between the line of the course and the property line are the tightest. There appears to be potential to develop an easement along the antenna site. R. Armstrong noted that it might be appropriate for the city to initiate the discussion with the adjoining property Owner. CTC has the name of the owner. (Follow-up: CTC found the name of the property owner listed as Greater Philadelphia Radio, Inc. which operates as a subsidiary of Greater Media Philadelphia, Inc. of Boston – Local Phone 610-667-8500)
12. Section 4 – Ashurst Rd.: Again the issue is the limited distance between the line of the course and the fence line (assumed property line) with the worst conditions being at the end near Sherwood Rd., but conditions remain "tight" along the entire section. Once past Overbrook conditions improve dramatically in terms of the amount of space to work with. High fencing, high netting, "cage"/trellis (fence with top enclosure), and landscape barriers were discussed as potential solutions. In addition it was suggested an on-road route through the local neighborhood along Ashland might be considered. It was generally agreed with good planning and coordination with the new golf course planning a workable solution could be developed within the golf course perimeter.

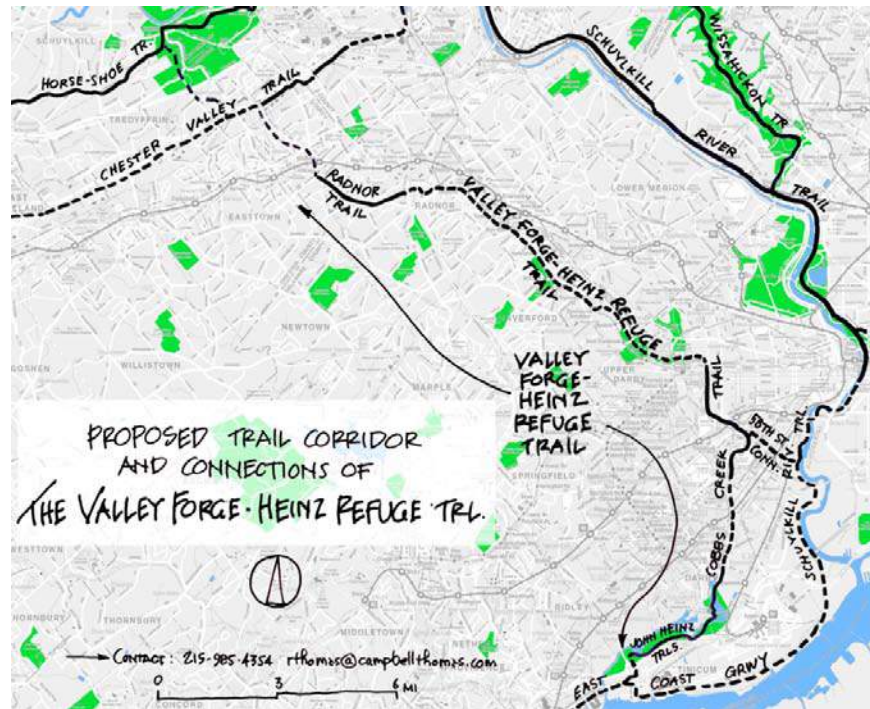
The above constitutes CTC's interpretation of the meeting and will become part of the permanent record unless corrected by any of the parties within ten (10) days of the distribution date.

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The Public Is Invited to Help Plan the Valley Forge to Heinz Refuge Trail

What: The Valley Forge to Heinz Refuge Steering Committee invites the public to participate in one or both Planning Workshops to be held in September, 2014. These public workshops will focus on the proposed trail sections between (1) Radnor and Villanova, and (2) between Karakong Park and Cobbs Creek Park. The Valley Forge to Heinz Refuge Trail is part of the 750-mile long “Circuit,” Greater Philadelphia’s 9-county trail network.

When: West Workshop: Thursday, September 4, 2014 from 7:00 PM - 9:00 PM

Where: Radnor Township Municipal Building, 301 Iven Ave, Radnor, PA 19087

When: East Workshop: Monday, September 15, 2014 from 7:00 PM - 9:00 PM

Where: Historic Bartram’s Garden, 5400 Lindbergh Blvd, Philadelphia PA 19143

Who should attend: Everyone is welcome! Residents, business owners, homeowners associations, health care providers, school representatives, hikers, bicyclists, dog-walkers, nature-lovers - anyone who is interested in outdoor recreation, active transportation, and improving bicycle-pedestrian access in the Trail-Corridor.

Sponsorship: This trail project is now in the feasibility stage, and is sponsored by the following municipalities: City of Philadelphia, Millbourne Borough, Haverford Township and Radnor Township. Half the funds for the study have been provided by the Pennsylvania Department of Conservation and Natural Resources.

For more information contact:

John Fischer, Chair, Valley Forge to Heinz Refuge Trail Committee jfischer234@gmail.com

Robert P. Thomas, AIA, Campbell Thomas & Co. rthomas@campbellthomas.com

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The **FORGE TO REFUGE TRAIL** Feasibility Study

“Ideas” Public Workshops

Thursday, Sept. 4, 2014 from 7:00 PM - 9:00 PM
Radnor Township Municipal Building, 301 Iven Ave., Radnor, PA 19087

Monday, Sept. 15, 2014 from 7:00 PM – 9:00 PM
Historic Bartram’s Garden, 5400 Lindbergh Blvd, Philadelphia, PA 19143

Welcome to the “Ideas” Public Workshop. To assist the project team to understand your personal needs, concerns, ideas, interests and other thoughts about the potential Forge to Refuge Trail and possible trails, paths, and sidewalks that would connect to it, we ask you to take a copy of the maps, sit at one of the tables, mark them up with the following information, and participate in the discussion at your table. A member of the project team will be glad to assist you.

1- Where and how do you want to go? Please draw a line(s) on the map linking starting and ending points of trips you make, or would want to make on foot, bicycle, jogging or other Fitness Activity, or even horseback. Please use the letter next to your lines to indicate how you travel, or would like to travel:

B - Trips by **bicycle**

F - Trips on **foot**

H - Trips by **horseback**

J – **Jogging** or other Fitness Activity

2- What are your destinations? Please mark your 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 and other Cultural
and Arts Institutions

P = Park or Recreation Site

T = “Park & Ride” or Transit

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

4- Existing off-road trails you know. To help us plan a possible system, please mark in existing trails you know or use which are off-road, and make travel possible on foot, bicycle or horseback.

Project Description as of September, 2014

The Valley Forge to Heinz Refuge Steering Committee is conducting study to determine the feasibility of constructing portions of a proposed trail network linking Valley Forge National Historic Park with the John Heinz National Wildlife Refuge. This study will focus on the proposed trail sections between (1) Radnor and Villanova, and (2) between Karakung Park and Cobbs Creek Park. When complete, the Valley Forge to Heinz Refuge Trail will be part of the 750-mile long “Circuit,” Greater Philadelphia’s 9-county trail network. This trail project is sponsored by the following municipalities: the City of Philadelphia, Millbourne Borough, Haverford Township and Radnor Township. Half the funds for the study have been provided by the Pennsylvania Department of Conservation and Natural Resources.

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SIGN-IN SHEET

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Project:

Date: 9-4-2014

Meeting #: VFHRT - West Public Mtg # 1

Campbell Thomas & Co.—1504 South Street—Philadelphia PA 19146-1636

Tel: 215-545-1076—Fax: 267-336-0209—Email: rthomas@campbellthomas.com

Architecture ♦ Preservation ♦ Community and Transportation Planning

John Fischer

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18	Robert F. Thomas			
19	Harry S. Murray			
	Michael Szilagyi			
	etc			

THE FORGE TO REFUGE TRAIL

Feasibility Study

“Ideas” Public Workshops

West Section - Thursday, Sept. 4, 2014 from 7:00 PM - 9:00 PM
Radnor Township Municipal Building, 301 Iven Ave., Radnor, PA 19087

Notes from Meeting:

1. J. Fischer introduced the project to the attendees noted how the project came about, arising from discussions of the “landlocked” completed section of the Radnor Trail, and the proposed Forge to Refuge Trail’s significance as part of the “Circuit” trail system in the Greater Philadelphia region.
2. R. Thomas presented the slide show reviewing the alternatives mapping to date and photographs of the existing conditions in the areas of the proposed alternatives.
3. R. Caruso (Attendee – local business owner PROVCO) noted concerns from “his perspective” during the slide presentation.
 - The trail route should be the former P&W rail r/w (owned by PennDOT) and Lancaster Avenue should be avoided.
 - If Lancaster Ave. is used, the trail route or sidewalks should be on the south side of Lancaster.
 - The SEPTA RT. 100 overpass should be lengthened to accommodate the trail on the south side. He noted the bridge is the original overpass (nearly 100 years old) and only minimal, cosmetic repairs have performed over the years. He suggested this should have been done as part of the work of widening Lancaster Ave. over the years. He insisted this work should be paid for “by the USA” (Federal Funding) and that funds shouldn’t have to come from local tax dollars. As an alternative to lengthening the bridge, R. Thomas proposed a tunnel through the rail embankment on the south side of Lancaster.
 - Where sidewalks exist on the north side of Lancaster they are right at the curb line and unsafe. He suggested there is more land to work with on the south side, much of which is owned by the township or already public r/w.
 - Supported the construction of the proposed pedestrian bridge at Villanova’s campus to allow safe crossing from the south side. Discussion ensued on uses that need to be considered in Villanova’s plan particularly at the proposed bridge crossing. Does it include elevators? How will bikes cross?
4. After the side show the meeting moved into discussion groups at the tables for about 30 minutes than each group presented their thoughts.
5. Table 3 Report
 - Acknowledging the long term issues with crossing I-476, it was reported that the preferred main route for the Forge to Refuge Trail is the existing P&W rail r/w. As a trail route it is generally remote and furthest away from the traffic of Lancaster Ave.

- It was also noted that pedestrian access along BOTH sides of Lancaster Ave. is important and the section between Radnor-Chester Rd. and Spring Mill represents a significant break. These improvements should be addressed as part of the “Greenways” plan being developed (they are noted in the plan). The importance of coordination with the new “Greenways” plan was also noted.
- Providing a temporary connection between the two sections of the rail r/w (separated by I-476) is a major issue, but there does appear to be PennDOT r/w and township owned land that allow connections from the rail r/w to the south side of Lancaster Ave. There is a safety issue crossing the I-476 ramps that are not part of the two controlled ramp locations on the south side that will need to be reviewed with PennDOT.
- People at the table were somewhat familiar with Villanova’s proposed improvements at their campus along Lancaster Ave. It was generally felt that their plan does not consider bicycle travel at all, in particular the proposed pedestrian bridge. This issue should be raised with Villanova. It was noted that Villanova University has a cycling club.
- Access to a trail on the rail r/w was noted as a concern. Easy access points noted were Radnor-Chester Rd. (current trail access point), Aldwyn Ln. and Ithan Ave. Community connections were noted as an important concern.

6. Table 6 Report

- The P&W r/w was the preferred route for the Forge to Refuge Trail. Again the issue identified was crossing the ramps for I-476 on the south side of Lancaster Ave.
- A side path on the north side of Lancaster was seen as an important link to the school.
- The Browns Run option was seen as attractive in its relation to other aspects of the “Greenways” plan.
- It was noted that “Bio-Med” has some plans in consideration that should be coordinated with.

7. Table 1 Report

- The benefit of a trail on the north side of Lancaster Ave. again was noted in its relation to the “Greenways” plan in allowing the trail to connect to undeveloped parcels noted.
- A r/w along the side of I-476 was mentioned (between 476 & SEPTA RT. 100) north of Lancaster Ave. that links to other parks and areas in the township. This r/w is noted in the Greenways plan.

8. Table 2 Report

- Response similar to other tables
- P&W r/w is the preferred trail route. It forms an ideal off road route and crossing I-476 is the major issue.

SIGN-IN SHEET

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Project:

Date: 9/15/14

Meeting #: RAD-TINI "East"

Campbell Thomas & Co.—1504 South Street—Philadelphia PA 19146-1636

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16	Steven Goldring	"	610 649-2417	you know.
17	MARTINE DEAMP	Phila City PLANNING Com	215 683 4631	martine.decamp@phila.gov
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19				

SIGN-IN SHEET

CT
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Project:

Date:

9/15/14

Meeting #:

RAD-TIME 'EAST'

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THE FORGE TO REFUGE TRAIL

Feasibility Study

“Ideas” Public Workshops

East Section - Monday, Sept. 15, 2014 from 7:00 PM - 9:00 PM
Historic Bartram’s Garden, 5400 Lindbergh Blvd, Philadelphia PA 19143

Notes from Meeting:

1. J. Fischer introduced the project to the attendees noted how the project came about, arising from discussions of extending the presently “landlocked” Radnor Trail, and the proposed Forge to Refuge Trail’s significance as part of the “Circuit” trail system in the Greater Philadelphia region. In addition he noted:
 - The initial idea was to use as much of the unused track bays of the SEPTA route 100 line, but then SEPTA put a hold on that idea until they completed their study of proposed rail service to King of Prussia.
 - The current project is funded by a grant to study the east and west ends of the route, extending the Cobbs Creek trail west into Haverford Township and the Radnor Trail east through Villanova.
 - The Forge to Refuge Trail in conjunction with the Schuylkill River Trail would form a major “loop” system in the Greater Philadelphia area.
 - This meeting will focus on the east section.
2. All attendees were offered an opportunity to introduce themselves to the group and note their reasons for attending. Generally it was a group very supportive of the trail’s development.
3. R. Thomas presented the slide show reviewing the alternatives mapping to date and photographs of the existing conditions in the areas of the proposed alternatives. He also noted that:
 - SEPTA has contacted CTC and is ready to review the project.
 - The general format of the meeting was a workshop session to gather ideas from those attending.
4. With regard to the east section route alternatives reviewed to date R. Thomas noted:
 - The creation of a completely off-road link to the redevelopment site in Millbourne utilizing the former Cardington Branch tunnel and the links via elevator and stair from the 63rd St. Station.
 - Use of the existing trails through and the proposed bridge to the Haddington Woods.
 - The potential of a perimeter trail system around the woods and the golf course providing links to the surrounding neighborhoods.
 - The difficulties in crossing City Ave. and the potential for tunneling under to provide an off road alternative.

- Conditions for a route through Carroll Park providing an opportunity to link to the Grange Estate.
 - The potential for improving existing trails in Karakung Park and the challenges that develop between the Beechwood/Brookline Station and Eagle Rd.
5. After the side show the meeting moved into discussion groups at the tables for about 45 minutes, and then each group presented their thoughts.
6. Table 4 Report
- They noted a major interest in incorporating the 69th St. Terminal on the trail route and not as just a side route connection.
 - The felt access to the golf course, being publicly owned land, should be for more than just golf and the golfers. A direct trail route through the course and along the creek was preferred to the perimeter route approach considered to date.
 - The idea of permanently closing one lane of Karakung Dr. and making the road one-way so the other half could be used as the trail route was presented as both a way to resolve “thorny” issues at the pinch points and a traffic calming measure through the park.
7. Table 3 Report
- Clear connections to points of interest and daily community use were noted as important, such as Center City, the Environmental Center, a supermarket near West Phila. Charter School was noted, the rec. center at Marshall Rd. (via the Cardington Branch corridor).
 - The bridge link to Millbourne at the dam was seen as attractive.
 - It was noted that lands to the west of the creek along 63rd St. (where the storage facility is) are Philadelphia Park lands and that the storage facility land does not extend to the creek.
 - It was noted that the Cardington Branch corridor again could provide a link to the rec., beyond that under Marshall Rd. to the Environmental center and link to the Cobbs Creek trail at the same grade elevation.
 - It was felt the route could provide access for students to the local colleges.
8. Table 1 Report
- They noted they felt the community connections were important.
 - Concern was noted that tunneling under City Ave. is a major expense.
 - E. Wilson (EAC/EFNC) took a moment to express his support for the trail and noted that he felt the trail from Heinz Refuge to Valley Forge was a “definite plus” for the communities and people along the trail route.
 - It was noted the steep slopes at the Manoa Rd. end of Carroll Park might require another crossing of the creek before reaching the road.
 - A “dirt” service road was noted along the south side of the rail bed between Brookline/Beechwood and Penfield Stations.
 - It was asked if markers would be placed along the trail so people could identify their location on the trail in case of emergencies.

9. Table 2 Report

- They noted that they talked more about “philosophical” issues regarding the nature of what the trail should be.
- Some concern was expressed for creating simply “another highway system” for bicycles.
- Raised questions:
Should the trail be more walker oriented as opposed to a multi-use trail?
Should the surface be crushed stone vs. hard paving or pervious paving?
- It was felt that accessibility (in terms of users with limitations) was important along with good emergency access.

10. Some additional points were raised based on the table reports:

- A recent emergency at Bartram’s Gardens was noted as an example of the importance of access
- It was noted that sections of the Schuylkill River trail have mile makers that are the actual mile makers from the former rail service.
- It was mentioned that Radnor Trail is pervious paving to control run-off. (Note: This is not correct. The gravel shoulders on both sides for Radnor Trail are actually drainage features to control and contain run-off from the paved trail.)
- It was noted that crushed stone trails can be ADA compliant.