

# Appendix A

## Multi-Municipal Trail Network

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### PART 1: OVERVIEW

This Appendix presents a concept for a multi-municipal pedestrian/trail network that would extend through Malvern Borough and into East Whiteland and Willistown Townships. It also presents a concept for two greenways, one at the north side of the Borough, and one to the southeast. The northern greenway would link existing forested and undeveloped areas along the West Branch of Warren Run in Malvern and East Whiteland. The southern greenway would link Randolph Woods to existing forested and undeveloped areas to the west and south in Willistown. Because these trail and greenway projects overlap and could be funded from similar sources, such as County, state or federal grants, they are being presented together in this memorandum.

This concept was initiated in coordination with the Borough comprehensive plan update. Research conducted for the Plan indicated that there were opportunities for trails and greenways to extend out from the Borough into surrounding municipalities. East Whiteland and Willistown Townships were then contacted, and both municipalities agreed to the development of a preliminary concept. This concept received input and review from the three municipalities. It has been prepared and formatted to serve as an appendix to the Borough Comprehensive Plan, and also as an approved stand-alone study for East Whiteland and Willistown Townships.

The following text presents preliminary concepts which could be used as the basis for determining the final locations of greenways and trail corridor alignments. It was developed based on reviews of adopted municipal comprehensive plans and interviews with municipal representatives. The information presented herein is not, nor should it be construed to be, a detailed trail or greenway master plan with a preferred alignment.

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### PART 2: TRAIL NETWORK CONCEPT

The proposed trail network would expand out from the shops, parks, and train station of Malvern's town center, which would serve as the network's central destination. The network in central Malvern would consist of the sidewalk grid. Outside of the grid, the network would consist of paved trails along roadways or off roadway, as well as unpaved primitive packed-earth paths, or low volume back roads. Key destinations that would be accessed by the network would include:

- Chester Valley Trail
- Downtown Malvern
- Historic Sugartown
- East Goshen Township Park
- Randolph Woods
- Greentree Park
- Sugartown Elementary School
- General Wayne Elementary School
- Natural Lands Trust Willistown Preserve
- Mill Road Park

Many of these sites relate to historic or educational resources. Thus, there is the potential for this trail network to become an extension of the Patriots Path which is proposed as a trail network that links Valley Forge National Historic Park to the Paoli Battlefield Site and Memorial Association Grounds. The Patriots Path is proposed as a way to integrate recreation and education relating to the Revolutionary War Campaign of 1777.

The great majority of the trails and sidewalks in this network would be expected to be compliant with the Americans with Disability Act (ADA). However, some segments would simply be too steep for use by the disabled. ADA guidelines provide flexibility for projects of this size and scope, as long as disabled users are provided with meaningful use experience. ADA accessibility is typically determined during the design and engineering stages of a project, but it should be part of the project planning even in the early stages of a project.

The proposed trail network would include a number of corridors, each of which is presented on Map A-1 and described in the text below. Many of these corridors extend through a “potential trail bed,” which is a naturally flat or graded area, often next to a roadway, that is well suited to be used as a trail corridor because it is clear of structures, major vegetation or other physical obstacles. This term should not be confused with “right-of-way.” A potential trail bed may or may not be within a roadway or utility right-of-way.

## Trail Network Corridor Options within Malvern Borough

The potential trail network corridors *within* Malvern Borough are as follows:

- **Malvern North Corridor** - The south and west side of Lincoln Highway from Lancaster Pike north to Bridge Street and north to East King Street has either sidewalks or potential trail beds that could be used for sidewalks.
  - ⇒ **Key Trail Opportunities:** This corridor could link downtown Malvern to the businesses along Route 29, and also to the Chester Valley Trail via the Patriots Path.
  - ⇒ **Key Trail Obstacles:** This corridor would require sidewalk construction; the unblocking of the tunnel beneath the Norfolk Southern line near the General Warren Inn; and pedestrian crosswalks at the intersection of Route 30 and Route 29.
- **Central Malvern Corridor** - This corridor includes the sidewalks of central Malvern along King Street from Powelton Avenue to just west of Ruthland Avenue. It also includes all of Powelton Avenue, Monument Avenue from Sugartown Road to Powelton Ave, and all of 2<sup>nd</sup> Avenue.
  - ⇒ **Key Trail Opportunities:** This corridor has existing sidewalks and road crossings linking downtown Malvern to the Paoli Battlefield Site and PMA Grounds.
  - ⇒ **Key Trail Obstacles:** This corridor has multiple street crossings and passes through areas with a large number of property owners.
- **Paoli Memorial Association Corridor** - This corridor includes the paved trails at the Parade Grounds and the pounded earth woodland trails in the south and east part of the Paoli Battlefield Site. These trails link to the Malvern sidewalk grid near Quann Park.
  - ⇒ **Key Trail Opportunities:** This corridor has existing walking paths linking a recreational park to the Paoli Battlefield Site and Memorial Association Grounds.
  - ⇒ **Key Trail Obstacles:** None.
- **Randolph Woods Corridor** - There are pounded earth trails within Randolph Woods which link to the proposed trail link that would extend east to Duffryn Avenue. There is also a proposed link that would extend north from Randolph Woods parking lot to King Street near the Malvern Fire Station.
  - ⇒ **Key Trail Opportunities:** This corridor has links to the Malvern sidewalk grid and a proposed link to Duffryn Avenue.
  - ⇒ **Key Trail Obstacles:** This corridor passes through areas with a large number of property owners.

## Trail Network Corridor Options extending into East Whiteland Township

There are also a few trail options that would extend *northward out of* Malvern Borough and into East Whiteland Township. These corridors include the following:

- **Summit Road Corridor** - There is an opportunity to establish a trail corridor that would link General Warren Village with Summit Road near Oak Hill Circle. This corridor could extend from the Sugartown Road/King Street Intersection west to Summit Road, then north to the intersection of Summit Hill Road and the north leg of Oak Hill Circle. An alternative route would take the corridor from the Sugartown Road/King Street Intersection, northward on Sugartown Road, then west and north through homeowner association open space to the intersection of Summit Hill Road and the northern leg of Oak Hill Circle.

From this intersection the corridor could extend north through an unused tunnel beneath the SEPTA R-5 Rail line. The north side of this tunnel is the access road to an industrial lot. If the proposed Malin Road extension were to be constructed in this area north of the railroad tract, there might be an opportunity to create a parallel trail that would link this tunnel to the General Warren Village street system in the vicinity of Fahnstock Road or Spring Road.

- ⇒ **Key Trail Opportunities:** This corridor has a potential to re-use an underpass of a rail line, and could be constructed as part of a roadway extension project.
- ⇒ **Key Trail Obstacles:** This corridor requires a rail underpass, and passes through steep sloping areas with a large number of property owners.

## Trail Network Corridor Options within Willistown Township.

There are a number of options for trail and walking path corridors within Willistown Township. Many of these corridors are conceptual and would require the acquisition of segments of right-of-way. Other segments already have some sort of trail or path. Corridors along roadway could essentially be trails along roads, much like sidewalks, which would extend away from the roadway when conditions were amenable.

- Map A-1 highlights the **Malvern-Willistown Greenway Trail**, which is a key initiative of Willistown Township. This trail would connect Malvern Borough and Willistown Township destinations and open space assets including the Paoli Battlefield Site, Paoli Memorial Association Grounds, Quann Park, Burke Park, Randolph Woods, Greentree Park, General Wayne Elementary School and Mill Road Park. This trail is in the beginning planning phases as of 2010, through a joint planning effort of Malvern Borough, Willistown Township, and the Willistown Conservation Trust.
  - ⇒ **Key Trail Opportunities:** This trail will connect both northern Willistown and Malvern Borough residents to recreational, educational and business destinations; would also connect into the Malvern Sidewalk Grid and the Central Malvern Corridor, Sugartown Road North Corridor, and the School to School Corridor.
  - ⇒ **Key Trial Obstacles:** This corridor has multiple street crossings, may require sidewalk construction, and passes through areas with many property owners.

Additional trail options for Willistown presented on Map A-1 include:

- **Sugartown Road North Corridor** - There are many potential trail beds in the vicinity of Sugartown Road, from Paoli Pike north to the Charleston Greene apartment complex. The east side of Sugartown Road from Paoli Pike north to Brampton Road, has ample potential trail bed. This area is mostly the old bridal path for what is now the Phelps School. The corridor along Sugartown Road from Brampton Road north to Charleston Greene contains residential

properties and has fewer potential trail beds, but has direct access to the Paoli Battlefield Site and Memorial Association Grounds in the vicinity of the Boy Scout Cabin.

⇒ **Key Trail Opportunities:** This corridor links residential areas to the Memorial Park.

⇒ **Key Trail Obstacles:** This corridor passes through areas with many property owners. It also would require pedestrian crossings at two major intersections.

- **West Branch Crum Creek Corridor** - There are opportunities to establish a trail corridor that would extend from Paoli Pike to Monument Avenue using a network of off-road paths west of Sugartown Road. This network would extend west along Monument Avenue from its intersection with Sugartown Road to its intersection with Druid Lane. At this location Monument Avenue is wide and could support a trail or path along its southern shoulder. As Map A-1 shows, there are a number of corridors that could link Monument Avenue at Druid Lane to the intersection of Paoli Pike and Sugartown Road. However, these corridors cross through residential and commercial properties, and so would require extensive coordination with landowners. As noted on Map A-1, many of these properties are designated as Proposed Township Parkland on the 2004 Official Map of Willistown Township.

⇒ **Key Trail Opportunities:** This corridor links residential areas to the Paoli Battlefield Site and Memorial Association Grounds.

⇒ **Key Trail Obstacles:** This corridor passes through some areas with a large number of property owners. It also crosses commercial properties.

- **Sugartown Road South Corridor** - There are many potential trail beds along Sugartown Road from Historic Sugartown north to Paoli Pike. For the most part there is potential trail bed along the west side of Sugartown Road from Spring Road (the site of Historic Sugartown) north to Firethorn Lane at the site of Natural Land's Trust's (NLT) Willisbrooke Preserve. From Firethorn Lane northward to Paoli Pike there are a number of residential properties which are not as well suited for trail use. However, there is an existing segment of built trail on the east side of Sugartown Road in the vicinity of Dovecote Lane.

⇒ **Key Trail Opportunities:** This corridor links Historic Sugartown and the Willisbrooke Preserve.

⇒ **Key Trail Obstacles:** This corridor crosses many un-signalized intersections.

- **School to School Corridor** - There are a number of existing low volume roads and informal "social trails" which could form a trail corridor linking Sugartown Elementary School (ES) with General Wayne Elementary School. This corridor would follow School Lane across the Sugartown ES property, east to Harvey Lane. From there it would follow an existing social trail, which appears to be an old farm road that ended at Long Lane. The corridor would continue east along McKinley Avenue, north on Marlin Drive, and east on Eisenhower Drive. From there the corridor would follow Warren Avenue South, then turn east along Pond Lane to where the pavement deadends. At this point the corridor would continue east through a wooded area which includes Crum Creek. From there, it would continue east and link up with Clearview Road where it would then cross Grubb Road. General Wayne ES is located on the east side of the intersection of Grubb Road and Clearview Road.

⇒ **Key Trail Opportunities:** This corridor links two schools.

⇒ **Key Trail Obstacles:** This corridor passes through some areas with a large number of property owners. It also crosses roadways, private properties, and undeveloped overgrown land.



- **Paoli Pike East Corridor** - In general, most of the southern side of Paoli Pike from Line Road west to South Warren Avenue has potential trail bed. The exception is from Woodland Drive east to Sugartown Road. Although there is room for a trail along this corridor, there are also heavy traffic volumes.
  - ⇒ **Key Trail Opportunities:** This corridor has a long segment of potential trail bed.
  - ⇒ **Key Trail Obstacles:** This corridor passes through some areas with a large number of property owners, and along a heavily traveled roadway.
- **Paoli Pike West Corridor** - The northern side of Paoli Pike from Sugartown Road to Warren Avenue has ample potential trail bed. Paoli Pike from Warren Avenue to Rambling Lane, and Rambling Lane itself, is lined with numerous residential properties on either side.
  - ⇒ **Key Trail Opportunities:** This corridor has a long segment of potential trail bed.
  - ⇒ **Key Trail Obstacles:** This corridor passes through some areas with a large number of property owners, and along a heavily traveled roadway.
- **Willisbrooke Preserve Corridor** - There is a potential trail bed along the south side of Paoli Pike from the East Goshen Park eastward to Line Road and from there south along the east side of Line Road to the area across the street from the Greater Chester Valley Soccer Association Fields. The corridor could cross Line Road at the soccer fields and follow an access trail that extends eastward through the NLT Willisbrooke Preserve, ending at Sugartown Road across from Firethorn Lane.
  - ⇒ **Key Trail Opportunities:** This corridor has potential trail bed that is off-road and passes through a natural preserve.
  - ⇒ **Key Trail Obstacles:** This corridor extends through serpentine barrens which are a sensitive natural resource.
- **Grubb Road North Corridor** - There is a sidewalk along the east side of Grubb Road from the driveway of General Wayne ES northward to Paoli Pike. From Paoli Pike northward to Greentree Park there is potential trail bed on the east side of the road. The corridor could then extend west along 3<sup>rd</sup> Avenue, then north along Duffryn Avenue to its intersection with 2<sup>nd</sup> Avenue. At this point, there is a planned trail link that would extend west into the internal trail network of Randolph Woods. Duffryn Avenue is a low volume roadway at this location, as are 2<sup>nd</sup> and 3<sup>rd</sup> Avenues.
  - ⇒ **Key Trail Opportunities:** This corridor has existing sidewalks along much of its length.
  - ⇒ **Key Trail Obstacles:** This corridor passes through areas with a large number of property owners.
- **Grubb Road South Corridor** - There is a potential trail bed along the east side of Grubb Road in front of the running track on the General Wayne ES fields. This corridor could cross Grubb Road at this point and extend south along Grubb Road a short distance to Mill Road. The corridor could extend west, then south along Mill Road, which has a potential trail bed on its east side. The corridor could then cross south and east through the open space south of the Veterans Way cul-de-sac, where it would intersect Grubb Road. There are options for continuing the corridor south along Grubb Road, but these would extend beyond the limits of this evaluation.
  - ⇒ **Key Trail Opportunities:** This corridor links a school with athletic fields.
  - ⇒ **Key Trail Obstacles:** This corridor passes through areas with a large number of property owners.

## PART 3: GREENWAY CONCEPT

The proposed greenway concept consists of two greenways located on either side of the ridgeline that somewhat parallels 1<sup>st</sup> Avenue and Monument Avenue in Malvern Borough. As shown on Map A-2, both of these greenways are composed of forest stands that are separated by areas that are undeveloped, and so have the potential to be reforested. Many of these undeveloped areas are steep slopes along stream corridors, which explain why they have not been developed. The goal with each of these greenways is to create a mass of forest that can function as a single ecological unit. Map A-1 shows how these greenways could relate to proposed trail corridors.

- **The General Warren Greenway** begins along the steep sloping forested headwaters of Warren Run, along North Warren Avenue. It follows Warren Run north to US Route 30 where it includes an area with residential development, but also large open lots. From there, the greenway extends west, including all of the West Branch of Warren Run and the steep slopes around it. This area also contains residential properties along with undeveloped lots. From this point, the greenway extends west along the north side of the SEPTA R-5 Rail Line, and a portion of the homeowner association (HOA) open space of the Charleston Green subdivision. This area is mostly industrial and commercial properties.

The reforestation and management of the General Warren Greenway will likely be a partnership effort involving residential landowners, HOA's, and industrial site managers. The multiple road crossing and the substantial rail rights-of-way eliminate the possibility of an unbroken forest floor. However, if mature trees become established within the greenway, their canopy and upper branches could be linked, permitting birds and other high dwelling animals to nest, forage, and travel as if they were in an unbroken forest. The multiple street crossings and steep slopes make this area poorly suitable for extensive trails. However, the headwaters environment within the greenway make it well suited for a riparian restoration project that could be implemented through the Act 167 Valley Creek Watershed Plan.

- **The Randolph Woods Greenway** links Randolph Woods to the rectangular-shaped wooded lot directly south of the Paoli Battlefield Site, and includes the wooded 1,000 foot segment of Massacre Run, which forms its headwaters. The greenway extends east across South Warren Avenue through the unbroken woodland that covers the northern third of St. Josephs Retreat. This woodland extends east across Ruth Run into the Randolph Woods property. From Randolph Woods, the greenway extends south along Ruth Run, through the HOA open space of the Rustmont Subdivision. It crosses Paoli Pike and continues into the wooded area where Ruth Run flows into the East Branch of Crum Creek. This greenway also has the potential to link to wooded areas further south along Crum Creek.

The Randolph Woods Greenway is remarkably unbroken given that it is located so close to a population center. It only crosses two roadways. Therefore, there are many opportunities to restore all levels of the forest ecosystem from the ground to the upper canopy. The level topography of this greenway make it well suited for trails. Such trails would likely be low-volume primitive packed-earth paths that would create opportunities for bird watching and nature appreciation. Given that the Borough has ample paved surfaces for bicycling and fitness walking, it would be appropriate to create unpaved paths in the greenway.

The reforestation and management of the Randolph Woods Greenway would likely involve a partnership of large lot landowners, including Malvern Borough. There are also opportunities for partnerships with the Willistown Conservation Trust (WCT) and the Crum Creek Watershed Association. While the WCT could pursue easements on wooded parts of properties, the

Watershed Association could help with coordinating community awareness and reforestation. Current ecological investigations have shown that good forest cover is a major factor in ensuring the quality of stream and streamside habitats. Thus, the reforestation of the entire greenway could have a watershed protection value.

## PART 4: FURTHER ACTIONS AND STUDIES

There are many different ways to establish a trail network, and the trail planning process can be simple or complex depending on features such as topography, available public land or the need for multiple street crossings.

In 2007, the Chester County Planning Commission published *Trail and Path Planning: A Guide for Municipalities*, which recommended the following steps, as a general guideline for trail planning:

**Guidelines for Municipal Trail Planning, 2007**

Step 1	Complete a Concept Memorandum		
Steps 2 & 3	Complete a Community Pedestrian & Bicycle Master Plan* and then amend the Comprehensive Plan	or	Update the Comprehensive Plan* and then complete a Community Pedestrian & Bicycle Master Plan
Step 4	Create an Official Map & Update the Subdivision and Zoning Ordinances*		
Step 5	Conduct design and engineering studies		
Step 6	Trail construction and establishment of management responsibilities		

The steps marked above with an asterisk ( \* ) are sometimes skipped on fast tracked demonstration projects, or projects such as short link trails that serve to connect existing trails/paths and do not warrant extensive design studies. What is not shown in this chart is the various coordination meetings with the public, nearby landowners, local governments and other stakeholders, which are essential even in the early stages of a trail project. A typical trail project can be expected to take 10 years to complete, leaving ample time for extensive public input.

Future actions or studies that could further the establishment of the trail network and multi-municipal greenways detailed in this appendix could include, but would not be limited to:

### Planning and Design Studies

- **Conducting a Trail Master Plan and Design Study** - A detailed trail master plan study could be completed, perhaps building on the study already underway for the Patriots Path.
- **Establishing a Greenway Reforestation Plan** - Because the two greenways are so similar in terms of ecology, they could be managed using one plan for restoration and reforestation.
- **Establishing an Identity consistent with the Patriots Path** - The trail network could establish an identity, which would include signs, paving, benches and other landscape architecture treatments, that match those of the Patriots Path.
- **Establishing an Identity for General Warren Greenway and Randolph Woods Greenway** - The greenways could have a matching identity, which would include signs, paving, benches and other landscape architecture treatments.

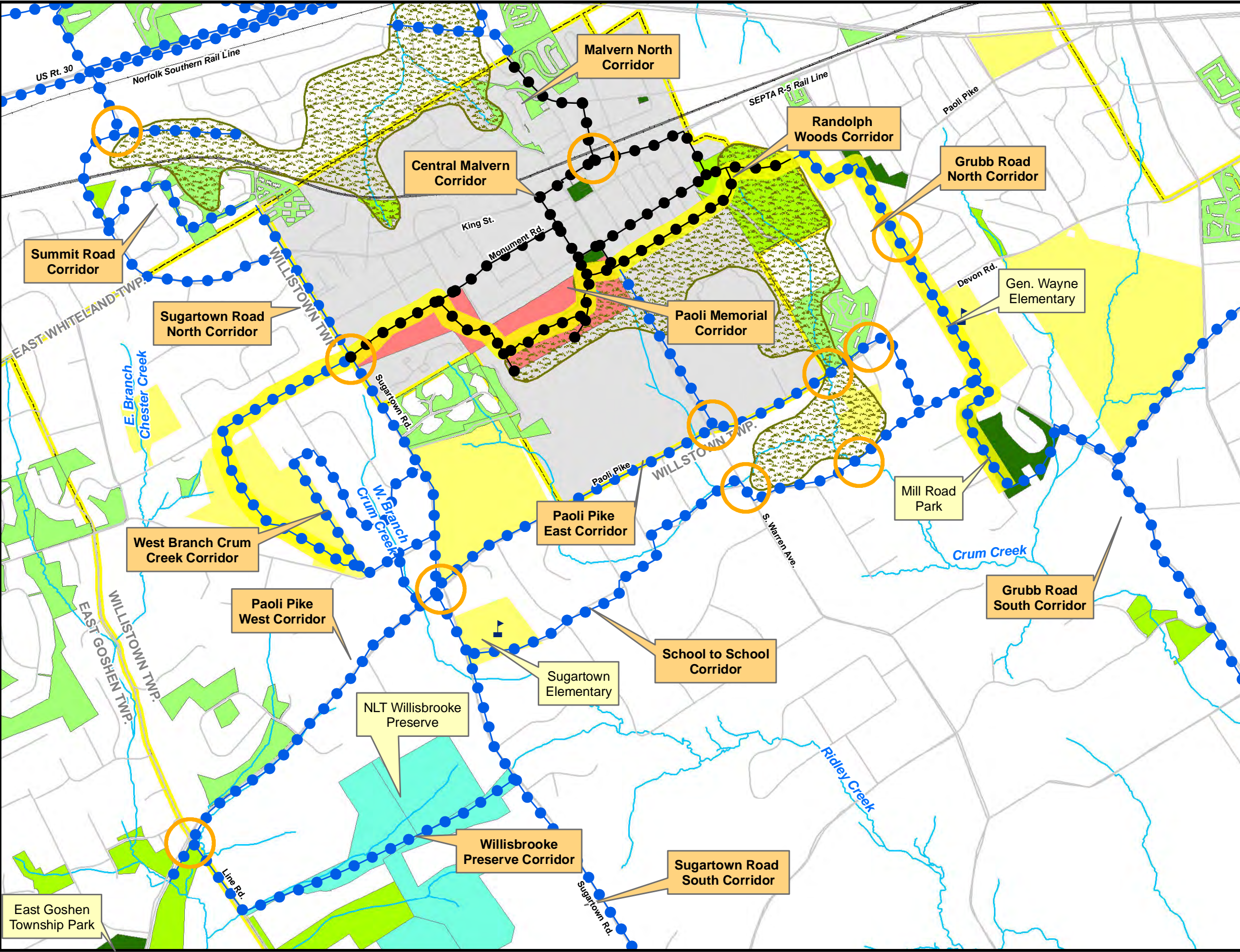
## Stakeholder Coordination

- **Coordinate with East Goshen Township** - Ongoing coordination could be conducted so that there would be appropriate trail connections linking to East Goshen Township Park.
- **Coordinating with Conservation Land Trusts** – The Willistown Conservation Trust and the Natural Lands Trust both ease land in Willistown Township. A partnership could be pursued between the local governments and these non-profits to establish trails and pursue greenway restoration funding.
- **Coordinating with Rail Companies** - Two of the corridors include crossings beneath rail corridors. Coordination with the companies that own these crossings could determine how the local municipalities could apply for a crossing permit. It is also possible that the township may already have right-of-way at these crossings from long ago when there were roads under these crossings.
- **Coordinating with Watershed Associations** - Watershed associations could serve as partners in the efforts to reforest and restore the greenways, since these greenways include the riparian buffers of headwaters.

## Infrastructure improvements

- **Intersection Improvements** - Many of the corridors require crossings of major intersections which are not currently well-suited for pedestrian use. Improvements to these intersections could include pedestrian crossing and other safety measures.
- **Malvern Sidewalk Grid Improvements** - Constructing the gaps in the Malvern sidewalk grid, especially along Old Lincoln Highway, would help create the central link in the trails network.





# Map A-1 Proposed Regional Trail Network

## Malvern Borough Comprehensive Plan

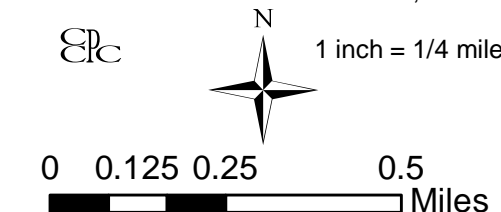
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### Map Features

- Public Schools
- Proposed Malvern Boro. Corridors
- Feasible Patriots Path South Links
- Malvern Willistown Greenway Trail
- Proposed Greenways
- Paoli Battlefield Site & Paoli Memorial Assoc. Grounds
- Municipal Parks
- Municipal Passive Open Space
- Land Trust Owned
- HOA Open Space
- Official Map Proposed Parklands\*
- Rail Corridors
- Roads
- Municipal Borders
- Key Road and Rail Crossings

Note: \* Designated in 2004 by Willistown Twp.  
1: 15,840



December 2011




Data Source: CCPC and Malvern Borough, 2011.

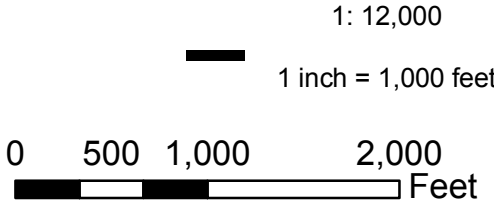


**Map A-2**  
**Proposed Regional**  
**Greenways Map**  
**Malvern Borough**  
**Comprehensive Plan**

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- Legend**
-  Proposed Greenways
  -  Streams
  -  Municipalities



December 2011

Data Source: CCPC and Malvern Borough, 2011

