Delaware County Open Space, Recreation, and Greenway Plan

Conserve | Enhance | Connect

Volume II

Countywide Greenway Plan

APRIL 2015

Delaware County Open Space, Recreation, and Greenway Plan

Conserve | Enhance | Connect

Volume II:
Countywide Greenway Plan

APRIL 2015

Prepared By:

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A RESOLUTION of the DELAWARE COUNTY COUNCIL
Park, Open Space and Greenway Plan
Community Conservation Partnerships Grant
PROJECT (BRC-TAG-16-58)

WHEREAS, the County of Delaware, with assistance from TPW Design Studios, has prepared a Countywide Open Space, Recreation, and Greenway Plan; and,

WHEREAS, the purpose of the Plan is to create an overarching vision for the protection and enhancement of natural and cultural resources, open spaces, and greenways in Delaware County; to provide guidance for decision-making regarding open space and greenways; and increase public benefit while ensuring environmental quality and,

WHEREAS, the Plan was financed in part by a Community Conservation Partnerships Program grant under the administration of the Pennsylvania Department of Conservation and Natural Resources, Bureau of Recreation and Conservation, under contract number **BRC-TAG-16-58**

NOW, THEREFORE, BE IT HEREBY RESOLVED by Delaware County Council that:

a. The project was completed in accordance with the Grant Agreement.
b. All project expenditures have been made and were in accordance with the Grant Agreement.
c. The Plan and related materials are acceptable to the County.
d. The Plan and related materials will be used to guide future recreation and conservation decisions.
e. The Plan and related materials shall be adopted as a component of the Delaware County Comprehensive Plan in accordance with the Pennsylvania Municipalities Planning Code (Act 247 of 1968, as amended).

ADOPTED THIS 22 DAY OF APRIL, 2015, by Delaware County Council.

Mario J. Civera, Jr., Chairman

Attest: Anne M. Coogan
Anne Coogan, County Clerk

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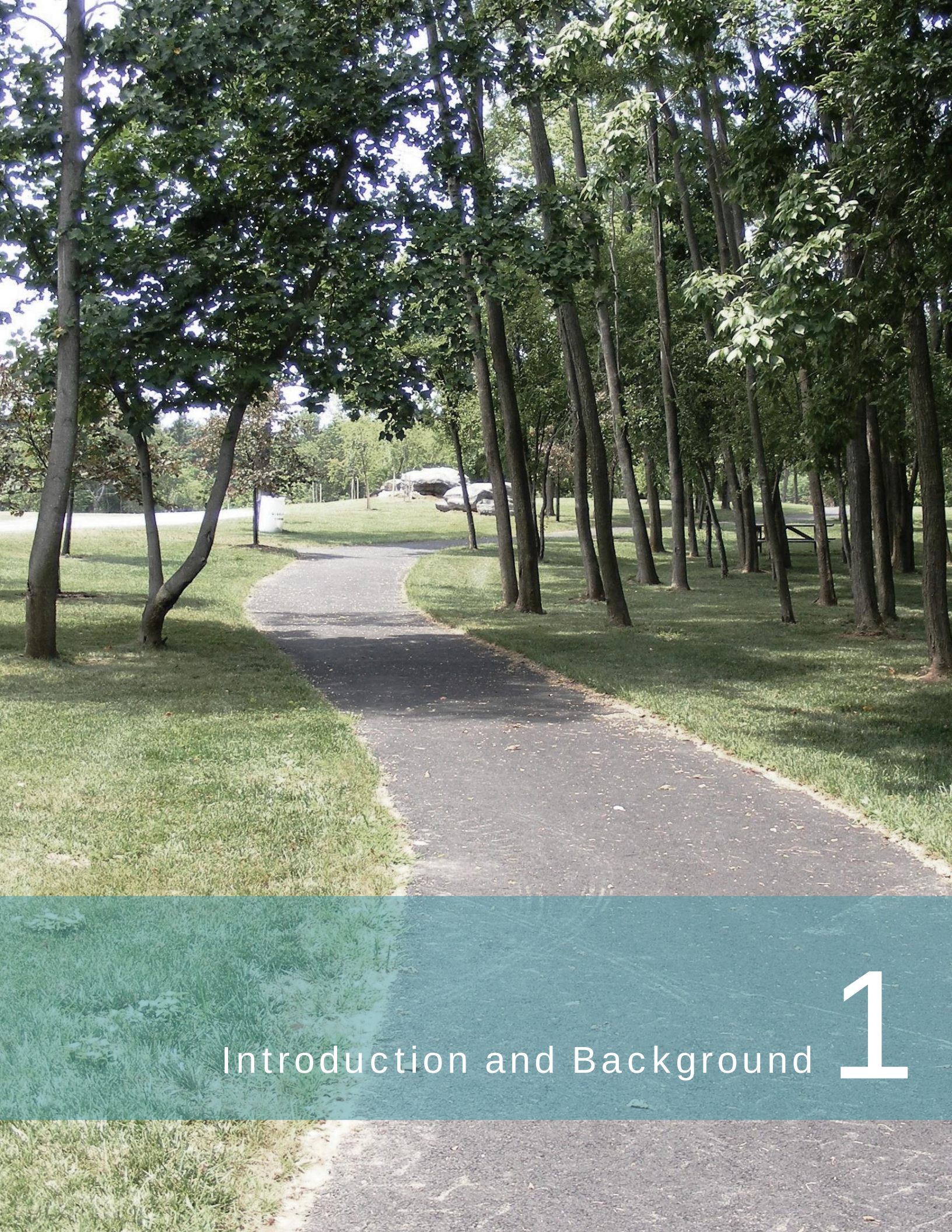


1 Introduction and Background

Chapter 1: Introduction and Background

INTRODUCTION

Delaware County's landscape has undergone enormous change over the last century. Open land, which once constituted much of the County, has now given way to development, particularly over the last fifty years. This was primarily due to social, economic, technological, and industrial shifts. What remains of this important resource, so crucial to our quality of life, is in short supply and under a great deal of development pressure. The outcome of public meetings and surveys undertaken as part of the open space planning effort reveal that open space and recreational facilities are a priority to citizens Countywide. The public, as a whole, has expressed interest in recreational parks, trails, open spaces, and the re-greening of urban areas, all with a heightened sensitivity for natural resources.

The County is taking a proactive planning approach to identify current needs and opportunities, as well as to address the challenges facing the County during the early part of the 21st century. The first major step in this process is the completion and adoption of the County's comprehensive plan, *Delaware County 2035*, which was adopted in the fall of 2013.

DELAWARE COUNTY 2035

Delaware County 2035 is a comprehensive policy framework plan that establishes an overall vision for the future of the County through the year 2035. It also sets policies for development, redevelopment, conservation, and economic initiatives, and establishes a policy framework for the strategic use of public resources to improve the quality of life for all its residents. This framework, which, in accordance with the Municipalities Planning Code (MPC), "establishes objectives of the municipality concerning its future development, including, but not limited to, the location, character, and timing of future developments."

Delaware County 2035 consists of a central Land Use Policy Framework Plan and a number of related, interconnected, but more detailed component plans. Some of these component plans, addressing additional planning-related elements within the County, have already been developed, such as the County Bicycle Plan; more are being developed. All will use the same framework and build off of the Land Use policies laid out in the Framework Plan. Individual municipal plans serve as a basis for these plans. This Open Space, Recreation, and Greenway plan will serve as the open space component plan of *Delaware County 2035*.

Delaware County 2035 is organized by the key themes of Delaware County, including the Land, People, and Places. The Places are further ordered into Character Areas and Central Places, which have similar community characteristics and qualities. For a more detailed summary of *Delaware County 2035*, see Volume I: Open Space, Recreation, and Greenway Plan, Chapter 1: Introduction and Background.

OPEN SPACE COMPONENT PLAN

As stated above, the County Open Space, Recreation, and Greenway Plan, of which this document is a part, is a component plan of *Delaware County 2035*. As such, it follows the framework and builds off the Land Use policies established therein. The intent of the Open Space Component Plan is to serve as a guide and resource for countywide, multi-municipal, and municipal open space planning efforts. It examines the policies and trends identified in the *Delaware County 2035* Land Use Framework Plan with

specific regard to open space, recreation, and greenway needs and opportunities throughout the County.

It is important to note that plan implementation relative to planning and zoning remain the responsibility of municipal officials. The County's powers are limited to suggesting refinements to local actions that reflect the common issues, goals, and strategies shared by the municipalities.

The Open Space Component Plan is the result of widespread public participation, which included surveys, stakeholder interviews, focus groups, input from a task force, and several public meetings. The public participation efforts, conducted in conjunction with the framework from *Delaware County 2035*, influenced the goals and objectives established throughout this plan. The document also benefited from the work of design and planning consultants contracted by Delaware County to examine the open space needs and opportunities for Delaware County, particularly with regard to the County Parks system.

In order to integrate all of the information, analysis, and goals of this plan in a manageable arrangement, the Open Space Plan was organized into four separate volumes:

Volume I: Delaware County Open Space, Recreation, and Greenway Plan
Volume I provides a complete review of municipal, county, state, and federal open space within Delaware County. It includes an inventory of existing open spaces and natural resources, analysis of open space and recreational needs and opportunities, and an overview of implementation methods for municipalities and the County to utilize.

Volume II: Countywide Greenway Plan (this document)
Volume II is Delaware County's first ever countywide greenway plan. It identifies a Countywide Primary Trail Network which connects recreational and cultural hubs via trails, as well as conservation greenways along stream corridors.

Volume III: County Parks and Recreation
Volume III specifically examines the Delaware County Parks and Recreation system, including long range site development drawings and accompanying narratives for six of the major County parks.

Volume IV: Public Participation
Volume IV is the accumulation of public participation materials from the planning process of the component plan. This includes public presentation documents, public comments, meeting agendas and minutes/comments, stakeholder interview lists, and online survey results.

Connection with *Delaware County 2035*

As a component of *Delaware County 2035*, it is important to consider how the open space plan correlates with and reinforces the County land use strategy established by that framework plan. The intent of this plan is to build upon the objectives established in the comprehensive plan with specific regard to open space. As such, the *Delaware County 2035* objectives helped shape the specific goals, objectives, and actions of this Open Space Plan. For more details on the objectives and themes of *Delaware County 2035*, see Volume I: Open Space, Recreation, and Greenway Plan, Chapter 1: Introduction and Background.

GOALS

As part of the planning process, three overarching goals were identified to guide the open space planning efforts in the County. They are the result of public participation, consultation with the Open Space Task Force, and an analysis of existing open space needs and opportunities. They also take into account the objectives identified in *Delaware County 2035*, along with their respective policies and actions. The goals of the Open Space Plan are:

Goal 1: Conserve

Conserve the natural and cultural resources of the County.

Goal 2: Enhance

Increase and enhance the environmental and/or recreational value of developed and undeveloped lands.

Goal 3: Connect

Develop a greenway network that connects natural features and people to community and regional destinations.

These interrelated goals represent a three-pronged approach to addressing the open space needs and opportunities of the County and long term sustainable quality of life in the 21st century. The goals are indicative of widespread opportunities to continue to conserve, enhance, and connect various features of Delaware County's open space system. As such, they serve as the basis for both discussion and recommendations made in this plan.

DEFINING GREENWAYS

DEFINITION

For the purpose of Delaware County's greenway planning efforts, a greenway is defined as: ***A linear system of connected natural and man-made elements that function together for public benefit.*** Greenway connections, and the open spaces and other features that they link, could be accessible via publicly owned parks and trails, or they may also be privately owned, with limited or no public access. The primary goal of the greenway network is to ensure protection of natural resources; a secondary goal is to make accessible connections via trails or other means. The County recommends that municipalities work closely with property owners to promote the protection of streamside buffers through the acquisition of conservation easements, stewardship education, and partnerships with landowners.

Figure 1-1, a graphic from the Pennsylvania Greenways Partnership Commission, is helpful for understanding greenways from a statewide perspective.

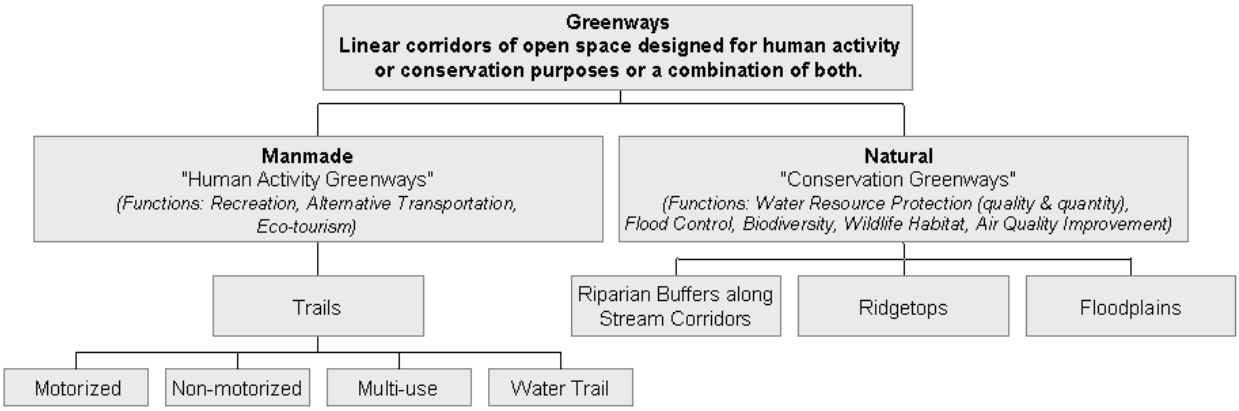


Figure 1-1: Greenway Types in the Statewide Greenway Network
Source: Pennsylvania Greenways Partnership Commission

CONCEPT AND PURPOSE OF A GREENWAY NETWORK

In 1998, Governor Ridge issued Executive Order 1998-3, charging state agencies to develop an action plan to advance a Pennsylvania greenways partnership into the 21st Century, which resulted in *Pennsylvania Greenways: An Action Plan for Creating Connections.* The plan contains four main goals and twelve strategies for implementation. One key strategy was that each county prepare and adopt a greenway plan by 2007. For more information, see www.dcnr.state.pa.us/brc/conservation/greenways/.

Greenways can serve many purposes and be defined several ways depending on the scope of the particular planning effort and the proposed functions of the greenway. For example, some greenways are recreational corridors or scenic byways that may accommodate motorized or non-motorized vehicles. Land-based trails in greenways usually follow linear features such as abandoned rail beds, stream valleys, or utility lines. Water-based trails use streams and waterways for canoeing, kayaking, rafting, or any other non-motorized water recreation use. Some greenways (conservation greenways) are designed solely for environmental protection with limited or no human access.

Greenways differ in their locations and functions, but overall, a greenway will protect natural, cultural, and scenic resources; provide recreational benefits; enhance natural beauty and quality of life in neighborhoods and communities; and stimulate economic development opportunities.

Watersheds, also referred to as drainage basins, often serve as functional units within which to plan a greenway or greenways. A watershed is defined as an area of land that drains water to a common water body. Watershed boundary lines are drawn by connecting the highest elevations, or ridgelines, between streams.

TYPES OF GREENWAYS

There are five main types of greenways that are applicable to Delaware County; they are defined in this section:

- Greenspace connections (including conservation greenways and recreation greenways)
- Road-based greenways
- Transit-oriented greenways
- Water trails (blueways)
- Combination greenways

It is important to remember that all greenways function with conservation elements to some degree.

The Countywide Greenway Network identified in this plan emphasizes greenspace connections and identifies two (often overlapping) sub-networks for conservation greenways and recreation greenways (trails). However, the Greenway Network, as a whole, includes road-based greenways, transit-oriented greenways, and water trails. Existing and potential greenways of all types can also be found at the local level, such as those within municipalities and their parks, but not necessarily mapped as they are beyond the level of detail of this countywide plan.

Greenspace Connections

Greenway corridors, both natural and man-made, can contain a high concentration of ecological attributes and natural features. They may range in width from feet to miles. Generally speaking, greenways located along watercourses contain more of these features. The greenspaces contained in a conservation greenway can help to moderate climate and provide locations for education and native species protection.

Riparian buffers within a greenway can provide a number of direct water quality benefits. They can help to filter pollutants and sediments from runoff, thereby preventing potentially toxic substances from reaching a watercourse. Riparian buffers can also provide protection for rare and endangered plant and animal species. Water quality protection and shade provided by riparian buffers help to support cold-water habitat essential for trout, an important species for recreational fishing. Buffers can also help to mitigate flooding by improving the function of floodplains, which helps to reduce the risk of personal injury and property damage in the event of a flood.

The landscape ecology of an area can be an important consideration for the identification of corridors to consider for greenspace connections. Landscape ecology is the study of complex relationships between the changing elements that make up a geographic area. These relationships exist between open space and developed areas connected by corridors such as stream valleys. Landscapes are dynamic, a result of the seasons, succession, environmental stresses such as introduced species, and disturbances such as development or flooding. Because the environment is not static, it is necessary to try to understand how these changes will affect a greenspace connection greenway. Influences, such as adjacent land uses, can often cause unforeseen and sometimes dramatic changes in the greenway corridor. It is a challenge to make sure that such changes do not negatively affect resources in the greenway corridor. One way to ensure greenspace connections protect sensitive natural areas is to establish a wide buffer between the corridor and other land uses.

Some less highly developed watersheds in Delaware County contain extensive acreage (e.g., along Brandywine Creek) that is preserved for its sensitive natural features, often with no public access to minimize disturbance. The following are two types of greenspace connections:

Conservation Greenways

Conservation greenways are corridors where little or no public access is envisioned, often for the protection of environmentally significant features. They can be either publicly or privately held, and can include floodplains, stream buffers, wildlife habitat, bird migration corridors, and other areas of environmental and ecological significance. Public conservation greenways in Delaware County are found mostly in municipal, County, and State parks and open space. Private conservation greenways are often found on residential lots, farmland, and commercial, institutional, or industrial properties. Private conservation greenways include homeowners' association, golf and recreation club, and institutional

land (i.e., private schools, colleges, cemeteries, and religious uses). Private landowners often do not understand the important role that their land plays in protection of greenway corridors, but when they do, they are more likely to protect their land with a conservation easement and seek management guidance from the County or a land trust.

Two sub-categories of conservation greenways are:

- **Conservation Greenways with No Trail Development –** Greenspace connections on private land, with no public access, can be preserved through volunteer actions (which may include a conservation easement) or through municipal regulation (zoning and subdivision codes). Functions of conservation greenway corridors may include floodplain management, water quality protection, and conservation of important wildlife habitat. Public access is generally restricted on private property. Public greenways may consist of several parks or non-recreational open space connected together. Public greenways benefit from signage that educates the public on natural and historic features.
- **Conservation Greenways with Low-Impact Trail Development –** Though a rare occurrence, certain private, corporate, or institutional landowners may allow public trail access across their properties. This is usually accomplished through an access easement or an agreement between the landowner and the community. This type of trail is often (but not always) of the low-impact variety, consisting of unpaved paths. Public conservation greenways often have trails, both formal and informal, throughout. One of the most popular examples is a trail located alongside a stream within a preserved riparian buffer. It can also include a trail connection between several parkland parcels via conservation lands.

Recreation Greenways

One of the major differences between a conservation greenway and a recreation greenway is ownership. While conservation greenways are generally under private ownership, recreation greenways tend to be either publicly-owned parkland, land along a private transportation or utility right-of-way, or on private property, with the latter three requiring a negotiated easement agreement for public recreation uses.

Recreation greenways often contain trails and other means of access for human use. Recreation greenways are generally designed for low-impact, non-motorized recreation activities such as hiking, fishing, nature watching, and cycling, and, if along a stream of other waterbody, may include such amenities as a canoe launch or fishing pier. Recreation corridors can include single-use trails, such as those that allow only hiking, or multiple-use trails, which accommodate a wide range of non-motorized uses.

Three sub-categories of recreation greenways are:

- **Recreation Greenways with Paved Multiple Use Trail Development –** Greenways with paved multi-use trails are better suited to withstand the heavier use typically found in urban and suburban locations. A paved surface is more accessible to users of various abilities since it can accommodate wheelchairs, strollers, cyclists, and inline skaters. Paved recreational trails can also serve as alternative transportation routes because they often link destinations. However, due to high usage and proximity of nearby attractions, paved trails often create a greater need for signage, properly developed trailheads, and amenities than with unpaved trails.
- **Recreation Greenways with Unpaved Multiple Use Trail Development –** Unpaved multiple use trails are generally less expensive to install than those paved with bituminous asphalt; however, they may require more maintenance depending on the amount of use they receive. Unpaved

trails should not be developed in areas where heavy use is expected or in areas prone to flooding because the surfacing materials used in constructing them, usually crushed stone, wood chips, grass, or earth, are not suitable for heavy use and are easily damaged by flood waters. If the trail is expected to become popular, it is recommended that it be installed in a way that that allows it to be paved in the future. Users of unpaved trails include pedestrians, cyclists, nature observers, and equestrians. Equestrians may require a separate trail to minimize conflicts with other trail users. In urban areas, users can access these greenways at smaller, more frequent trailheads, whereas those in suburban settings will need larger-sized trailheads at fewer locations and with more parking facilities. Signage need only be installed at the trailheads and in areas where it is needed for the safety of trail users.

- **Recreational Greenways using Utility or Railroad Right-of-Way Corridors –** Provided that there is an easement or title to a public entity, it may be both convenient and appropriate to use railroad and utility right-of-way corridors for establishing greenway connections. These corridors can include sewer, petroleum pipeline, power line, and abandoned railroad line rights-of-way. Some utilities have indicated that they would welcome a permanent trail within their respective right-of-way since it would make it easier for the company to service its line or pipe. Federal, state, and local guidelines should be applied in the design and implementation of improvements on these right-of-way corridors.

Road-Based Greenways

Where off-road public access cannot be achieved, the next best option may be to designate a road-based greenway from one hub or trailhead to another. Road-based greenways can often be combined with greenspace connections. The terms “green road” or “green street” can also be used to describe any of the following sub-types or combinations thereof.

Pedestrian Sidewalk Greenway

A pedestrian sidewalk greenway is a sidewalk along a street that connects two greenway hubs in the larger network. Streets with sidewalks can become pedestrian greenways by installing trees, landscaped medians, and other measures that are both attractive and ecologically sustainable. Some greenway streets also contain urban stormwater BMPs, allowing them to provide a secondary environmental function.

Bicycle Friendly Roadways or Bicycle Boulevards

The Bicycle Coalition of Greater Philadelphia’s Greater Philadelphia Regional Bicycle Map shows bicycle routes on roadways, and designated them as “bicycle friendly,” “average,” and “below average.” Even the below average routes are used by cyclists, since they are often the most direct routes between two points of interest in a locality. Some of these bike routes are ideal for linking greenspace hubs when there is no public off-road access between them. A “bicycle boulevard” is a shared roadway that has been optimized for bicycle traffic. Though bicycle connections and bike lanes are not comprehensively addressed in this greenway plan, they are covered in the *Delaware County Bicycle Plan* (adopted May 2009). The *Bicycle Plan* states that any road in the Delaware County On-Road Bicycle Network should be considered for improvements. Bike lanes are one of the types of improvements listed.

Scenic Roads

Scenic roads can be designated at the municipal, state, or federal level with the intent to recognize a corridor’s beauty and cultural legacy. At the state and federal level, officially designated roads are called “scenic byways,” and require specific criteria to be met for approval. Scenic roads are an automobile-oriented connection; they often have signage to notify drivers of this status. Scenic roads offer travelers

a route that incorporates pleasing pastoral landscapes, wilderness, or cultural and historic resources. The scenic road designation in a municipal plan can help to generate appreciation and awareness of the route's scenic qualities and help obtain grant funding for improvement of the road and its surrounding landscape. Visual clutter on adjoining open spaces can be limited through easements or other conservation efforts.

Transit-Oriented Greenways

Light rail or trolley lines can sometimes serve as transit-oriented greenways. Woodlands and other types of green spaces that can be viewed along the transit route can provide visual relief for by passengers. Transit-oriented greenways can also serve as a means to connect greenways to one another. One such example is the Route 101 trolley, which connects municipal open spaces in the Darby, Crum, and Ridley Creek watersheds. Greenway managers should consider partnering with SEPTA to market and promote public transit as a means to access the greenway corridor.

Water Trails

Water trails, also called "blueways," are water-based recreation routes, often through scenic areas where the corridor is located within a river or another navigable waterway. Blueways can often allow for access to protected habitat areas along their shorelines. Public or private marinas and boat launches are the hubs. Water trails, like recreational greenway trails, often have a user map that shows the services and amenities available at each boat launch or marina. Public education components for this type of greenway inform users about safe and responsible boating. The entire length of the water trail may not be available at all times of the day because low water levels caused by tidal fluctuations could prohibit boating.

Combination Greenways

The most effect greenway networks are those composed of various types of greenways that combine to provide a more comprehensive network. As such, the County Greenway Network is comprised of different types of greenways linked together. Common conservation greenways include conservation greenways along streams which also have trail access (combining both conservation and recreational greenways.

IMPORTANCE OF GREENWAYS

The potential benefits of a greenway are significant, especially when understood in the context of an urbanized environment. Generally, a greenway can help residents to feel more connected to nature, enhance quality of life in the area, and promote conservation of the natural environment. Greenways can server a number of important functions, as noted below.

Resource Protection

Natural Resource Protection

Greenways are places to protect and interpret natural features. The various plants and trees in greenways serve as natural sponges for various forms of pollution. Trees are an important part of the urban infrastructure, and a greenway is one of the few places where trees have space to grow large and healthy enough to provide maximum water and air quality benefits. Greenways provide opportunities to protect and manage wildlife, forests, and ecological systems. Communities with greenways receive many direct and indirect ecological benefits. Preserved natural features present an opportunity to build support for protection through interpretive signage.

Protection of Water Resources

Greenway trees, shrubs, and grasses, particularly along streams, help to protect water resources by acting as buffers to slow the flow of water and prevent urban runoff (containing pollution) from reaching the stream. Tree cover around streams keeps the water temperature at a level crucial for a healthy stream. Cleaner and cooler water in a stream can help to support small aquatic organisms and the fish that eat them.

Stormwater Management and Protection of Floodplains

A greenway stream buffer that encompasses most or all of the floodplain will provide a place for a stream to overflow during a storm (which is the natural function of floodplains). This can help to limit property damage due to flooding. When streamside greenways are kept open, without buildings, they can serve as spaces to infiltrate runoff that would otherwise go directly into the stream, thus helping to reduce their "flashy" nature after storms. This infiltration is important to help recharge groundwater, which is critical for maintaining base flow in the stream.

Conservation of Historic and Cultural Resources

Greenways serve to promote the unique history and culture of an area and provide access to buildings and landscapes of historic and archaeological significance in a community. Lenni-Lenape Indians used the County's stream corridors for water, food, recreation, and transportation. Beginning in the mid-1600s, European settlers began to use the creeks for power and manufacturing. Historic homesteads, mills, and other resources began to develop along water bodies. Many of these bygone settlements, such as the Morton Morton House in Norwood, can be forever linked with preserved greenway corridors.

Alternative Transportation

Greenways with land-based trails improve bicycle and pedestrian connections, which help to reduce gasoline consumption and traffic on roadways. These trails can provide an alternative to automotive transportation, reducing the number of cars on roadways. Air pollution levels will be reduced with fewer automobile trips. Improved physical fitness of travelers is also a nice side effect.

Quality of Life

One of the most important functions of greenways is quality of life in a community. Greenways create more attractive communities to live in, provide opportunities for much-needed recreation, and contribute to the health of the residents. Greenway connections via public transportation reduce noise and air pollution associated with automobiles, and trail connections provide opportunities for residents to interact with one another, creating a sense of community. A high quality of life in a community helps to sustain existing and attract new residents and businesses.

Public Recreation, Health, and Wellness

Greenways have the potential to provide diverse recreational, health, and fitness opportunities for families and individuals of all ages and abilities, helping to foster health and general well-being. Greenway buffer vegetation can help to reduce urban noise, improve air quality, and mitigate the heat island effect, while creating serene places for passive diversions such as walking, running, and bicycling. Since a local greenway can improve physical fitness, it can thereby lower health care costs.

Greenways can create a sense of connectedness between communities and their residents that cannot be experienced by automobile. Pedestrian connections help to create a sense of kinship with others in

the greenway, particularly if they provide a link to other areas in the region. Stream-based greenways that run through different municipalities provide opportunities for creeks to bring communities together for common goals and benefits.

Economic Health of the Community

Greenways can help improve the economic health of a community. Greenways contribute to quality of life, which attracts and maintains people and business. As visitors flock to enjoy recreation in the greenway open space, they will spend money at businesses in the surrounding urban areas, helping to support the local economy and reinforce economic revitalization efforts underway in local towns. Lodging, food, and running and bicycling equipment sales are a few economic sectors that will benefit from outdoor tourism associated with greenways. Studies have also shown that real estate values are higher when closer to open space or a pedestrian or bicycle corridor. This is because people are often willing to pay more money for homes located near or adjacent to greenways.

Educational Opportunities

Greenways can function as outdoor classrooms and laboratories for school science programs. Students at all levels can learn about native trees and plants, hydrology, geology, biology, soil science, geography, and the study of everything related to watersheds. As noted above, a greenway's historic and cultural resources offer great opportunities for historic interpretation as well.

RELATED GREENWAY AND TRAIL PLANNING EFFORTS

STATEWIDE MOVEMENTS AND PROGRAMS

Before developing Volume II: Countywide Greenway Plan, it was important for the County to review the state model for creating greenways. The Pennsylvania Greenways Partnership Commission (PGPC) with the Pennsylvania Environmental Council (PEC), recognizing the wealth of opportunity present to preserve greenway corridors, released *Creating Connections: The Pennsylvania Greenways and Trails How-To Manual* in 1998. This was followed by the PGPC's 2001 *Pennsylvania Greenways: An Action Plan for Creating Connections*. The purpose of the plan was to provide goals and strategies for greenway creation in the Commonwealth.

The 12 Pennsylvania Greenway Strategies

The 12 goals and strategies outlined in the Pennsylvania Greenway Action Plan were prepared for the purpose of establishing a greenway network for the entire Commonwealth. The plan devoted an entire chapter to explaining how each of the 12 goals and strategies can be applied to local needs. The following is a summary of the goals and strategies contained in the chapter.

Plan and Establish Greenway Connections

1. Hubs and Spokes – A Statewide Network of Greenways

Greenways can be used as a tool to revitalize downtown centers and provide greater access to parks, commercial areas, and cultural destinations. As such, the statewide greenway concept consists of linking hubs (destinations) via spokes (greenways and trails) to provide greater access. Local land use tools such as overlay zoning, official maps, coordination with neighboring municipalities (intergovernmental agreements), and subdivision and zoning regulations that support incorporating green infrastructure elements are specifically mentioned.

2. Greenway Plans: Greenprints for Growth

County greenway plans can establish the local planning foundation upon which a statewide network of Greenways is ultimately to be constructed. County plans should recognize and connect with greenway planning and development that has been undertaken by municipalities.

3. Places for All People

Greenway plans should address the recreational needs and demands of all constituencies and user groups and strive to connect with and engage underserved populations.

4. Pennsylvania Wellness

Local greenway efforts will benefit from new constituencies in the health care sector. Regional greenways task forces should conduct wellness events and encourage greenway connections with health facilities and providers and with schools to support the statewide initiative.

5. Alternative Transportation

Participation by local greenways task forces can support PennDOT transportation planning to identify opportunities for community connections that utilize greenways. Local and regional greenways task force membership should include members who advise the Delaware Valley Regional Planning Commission (DVRPC) and local development districts' transportation committees.

6. Natural Resource Protection

County and local greenway plans should be used as a vehicle to protect natural resources and connect open spaces with mechanisms such as riparian buffers and municipal zoning, subdivision, and floodplain ordinances. Municipalities should take advantage of state programs (through DEP and DCNR), that offer training or other assistance in protecting natural resources through greenways implementation.

Create a Greenways Organizational Network

7. Greenways Organizational Structure

The Pennsylvania Greenways Partnership Advisory Committee (PGPAC) and the PA Greenways Interagency Coordination Team will continue to advise and support the statewide effort with representation from local and regional greenway leaders. Municipalities committed to greenways development should strongly consider designating a staff person to champion and coordinate the exchange of information between statewide initiatives and local greenways advocates.

Provide Funding for Greenways

8. Greenways Funding

The Pennsylvania Greenways Funding Resources page on the Greenways Toolbox website was developed as an important tool to connect local sponsors with funding sources. Municipalities should explore the use of development impact fees and other strategies. A greenways trust or endowment can direct private funding to address special needs or opportunities when local resources are inadequate. Funding incentives can be structured to encourage local governments to endorse greenway plans or participate in owning or maintaining greenways. (For more information on greenway funding and technical assistance, refer to Chapter 4 of this plan).

Provide Technical Assistance and Outreach

9. Greenways Toolbox

Develop a "Greenways Toolbox" as a resource for all those involved in greenways planning and implementation. The purpose for the Toolbox is to have centralized online library of resources consisting of manuals, handbooks, studies, example plans, and an inventory of best practices. The Greenways Toolbox was previously available at the DCNR Greenways Clearinghouse website (offline as of 2014). Materials contained within DCNR's current (2014) website serve some of the same purpose.

10. Greenways Education and Training

Local partners should take advantage of education and training programs and assist in informing local constituencies of educational opportunities. Local governments can benefit from training programs offered through some of the government agencies and organizations in the Interagency Coordination Team such as DCED and PEMA, which support the use of greenways in floodplain management and residential and commercial development.

11. Greenways Promotional Campaign

Local greenways project sponsors should assist in distributing the publicity materials for the statewide greenway public promotional campaign and conduct media events in coordination with statewide promotional events. Existing greenways that have tourism potential will benefit from the promotional materials developed as part of this initiative.

12. Greenways Volunteer Network

Local project sponsors and greenway managers should take advantage of the statewide volunteer network initiative. Through volunteer participation, new constituencies are formed that will offer the necessary public support for greenways implementation.

Rivers Conservation Plans

The Pennsylvania Rivers Conservation Program was developed to conserve and enhance river and stream resources through preparation and implementation of locally initiated plans. With funding assistance from the Rivers Conservation Program, Rivers Conservation Plans (also known as Watershed Conservation Plans) have been created for all of the major watersheds in Delaware County.

- Ridley Creek Conservation Plan (1997)
- Chester Creek Conservation Plan (2001)
- Schuylkill Watershed Conservation Plan (2001)*
- Brandywine Creek Watershed (included in Chester County's *Watersheds* plan) (2002)*
- Darby Creek Watershed Conservation Plan (2004)
- Crum Creek Watershed Conservation Plan (2005)Delaware River Watershed Conservation Plan (2014)

*Prepared by Montgomery and Chester Counties, respectively

Due to the environmental benefits of a conservation greenway and the recreational value of trails, all of the plans call for development of greenways and trails. More background on these plans is provided in Volume I: Open Space, Recreation, and Greenway Plan, Chapter 1: Introduction and Background.

REGIONAL MOVEMENTS AND PROGRAMS

Early Planning for Greenways in the Region

Nature's *Plan for Parkways - Recreational Lands*, Regional Planning Federation of the Philadelphia Tri-State District (1932). The document proposed that Delaware County's stream valleys serve as part of "an interior network of parks and parkways along the sparkling watercourses placed there by Nature." The plan prioritized these and seven other Pennsylvania streams because they flowed through the most densely populated areas of the region and could serve as both parks and buffers through urbanized areas (Regional Planning Federation of the Philadelphia Tri-State District 1932).

Leisure in Our Time: A Survey of Recreational Opportunities in Delaware County Pennsylvania, Delaware County Park Board and Delaware County Welfare Council (1934). The plan reads: "There is a movement on foot, sponsored by the Park Board, to secure borderline land along the creeks and rivers and around the lakes for parkways and boulevards. Naturally, these valleys are inviting spots; economically, they are of low land value, and culturally they can be saved from unsightly and unsanitary conditions and turned to beautiful retreats for the people" (Cole 1934).

1985 Regional Plan for Parks and Recreation Areas, Regional Open Space Plan Supplement, Delaware Valley Regional Planning Commission (August 1971). The plan stated the following: "Many urban sections of the region now lack adequate recreation areas. To meet these currently critical needs, it is important that the highest priority be given to the acquisition and development of stream valleys in the urbanized portion of the region." The Darby, Crum, Ridley, and Chester Creeks are listed among specific recreation areas that offer 'catch-up opportunities' for investment." (Delaware Valley Regional Planning Commission 1971).

DVRPC

DVRPC is the Philadelphia area's Metropolitan Planning Organization (MPO). It is federally mandated to update its long range plan for Greater Philadelphia every four years. DVRPC's *Connections 2040* Plan for Greater Philadelphia was adopted by the DVRPC Board on July 25, 2013. The Plan focuses on four core principles: creating livable communities; managing growth and protecting the environment; building the economy; and establishing a modern multimodal transportation system.

The plan's GreenSpace Network map identifies an interconnected open space and greenway network across the region. This map evolved from the *Regional Open Space Priorities Report,* which was first incorporated into DVRPC's long range plan in *Destination 2030* (2005). The GreenSpace Network includes an interconnected system of parks, forests, meadows, stream corridors, and floodplains. This regional plan is especially useful in showing where connections across the County border should be made.

The Circuit

In 2012, there was a regional effort to coordinate trail building efforts and promote and market a trail regional network. A coalition was formed, which branded the Greater Philadelphia regional trails network "the Circuit." When complete, the Circuit will be a regional network containing over 750 miles of bicycle and pedestrian trails.

The Delaware County Planning Department is an agency partner of the Circuit Coalition, which also includes many non-profit and foundation partners. DVRPC's Regional Trails Program, which was funded

by the William Penn Foundation (a Circuit Coalition member), used incorporation into and connection with the Circuit as a way to evaluate applications for trail funding in the region. Building the network and filling its gaps is the Coalition's first priority. The goal is to make the Circuit the premier regional trail network in the nation.

Tidal Delaware Water Trail

In addition to land based trails in the region, Pennsylvania Environmental Council (PEC) proposed a 56-mile water trail along the Delaware River. The trail spans from Trenton, New Jersey in the north to Marcus Hook Borough in the south. The water trail connects several destinations, including natural features, such as John Heinz National Wildlife Refuge, with cultural destinations like PPL Park in the City of Chester.

DELAWARE COUNTY GREENWAY PLANNING

Delaware County Open Space, Parks, and Recreation Study

The *Delaware County Open Space, Parks, and Recreation Study* (1978), was the County's first official open space plan. A large portion of the plan was devoted to the planning, administration, and coordination of recreational services. It contained a physical overview of the County, an overview of the County Parks system, and an inventory of state, municipal and federal parks.

Despite the fact that greenways and trails were not as popular for recreational activities as they are today, the plan addressed open space conservation and acquisition for each creek valley. The study's planning process was the basis for County and municipal stream valley acquisition, with County acquisitions in subsequent years aimed primarily at Darby Creek in the east.

Delaware County Bicycle Plan

The *Delaware County Bicycle Plan* was completed in 2009 by the Delaware County Planning Department in order to support and coordinate improvements to the safety and effectiveness of bicycle transportation in the County. The plan focuses on improving access to and use of bicycle facilities. Trails are examined as potential opportunities to supplement on-road bicycle facilities. The plan was developed in line with the complete streets concept and promotes increasing usability of roads for both pedestrians and bicyclists. The *Delaware County Bicycle Plan* can be viewed on the Planning Department's website at http://www.co.delaware.pa.us/planning/.

Greenway Plan for the Darby Creek Watershed

The *Greenway Plan for the Darby Creek Watershed* was completed by the Delaware County Planning Department in 2010. The study area was comprised of the Darby Creek watershed in Delaware County. It was developed to examine linkages between resources and people; to promote wellness, providing/utilizing alternative modes of transportation; and to direct focus on preservation and enhancement of the natural, cultural, and historic resources in the watershed. It uses the concept of hubs and spokes as a basis for establishing a greenway network within the watershed. The network consists of both conservation and recreational greenways.

The *Darby Creek Stream Valley Park Master Plan* was completed in 2009 as an update to a 1987 park master plan, and prepared as a "pilot greenway segment plan" of the *Greenway Plan for the Darby Creek Watershed*. As with the 1987 plan, the update recommends development of a trail along the stream valley and protection of the floodplain, steep slopes, and wooded vegetation in the area. The

plan update identified potential trail alignment, as well as connections to destinations and necessary stream and road crossings. The updated plan can be viewed on the Planning Department's website at http://www.co.delaware.pa.us/planning/.

Individual Trail Planning in the County

The County has participated in a several multi-municipal trail planning efforts. Two of the most well-known are the Darby Creek Trail and the Chester Creek Trail; they both rely heavily on partnerships with municipalities and a friends group. Segments of these trails are currently under various stages of study, design, and development. For more details on these trail planning efforts, see Chapter 3: Primary Trail Network, which discusses these and other trails in the County as part of the Primary Trail Network.

Municipal Greenway and Trail Planning Efforts

Many of the municipalities in Delaware County have implemented trails and greenway conservation corridors in parks and other public open space lands. Middletown Township, in particular, has had tremendous success in implementing numerous trails within public open spaces. Radnor Township opened the 2.4 mile long Radnor Trail in 2005 after extensive planning and public participation. Haverford and Upper Darby Townships have each progressed the development of the Darby Creek Trail. For more details on existing trails and greenways in Delaware County, see Chapter 3: Primary Trail Network and Volume 1: Open Space and Recreation Plan, Chapter 4: Trails as a Recreation Facility.

GREENWAY PLANNING IN SURROUNDING COUNTIES

Chester County

Chester County's open space plan, *Linking Landscapes* (2002), identified "Regional Recreation Corridors" that are potential trail locations. The Plan recommends 24 corridors that traverse Chester County to link its population and recreation hubs. Several of the Regional Recreation Corridors in Chester County are home to the popular Chester Valley Trail, Schuylkill River Trail, and Struble Trail.

Linking Landscapes also identified "Wildlife Biodiversity Corridors" which are linear areas of open space preserved for conservation purposes. These corridors were identified after considering multiple natural features such as habitats, large woodlands, water features, and flyways.

For more information on *Linking Landscapes* and its trail and greenway planning efforts, visit: http://www.chesco.org/DocumentCenter/View/18659.

Montgomery County

Montgomery County completed its *Open Space, Natural Features, and Cultural Resources Plan* in 2005. This plan identified a greenway network intended to connect and preserve natural and cultural resources while also providing recreational opportunity. The majority of the greenways proposed follow waterbodies throughout the county.

Montgomery County's open space plan also identified a Primary Trail Network, which includes trails of countywide and regional significance. The County has implemented significant portions of the network, with plans to continue constructing more trail miles. Several of the most prominent trails in Montgomery County include Chester Valley Trail, Perkiomen Trail, Power Line Trail, Schuylkill River Trail, and Wissahickon Green Ribbon Trail.

For more details on the Montgomery County Open Space Plan, visit: http://www.montcopa.org/index.aspx?NID=1106.

Philadelphia

The City of Philadelphia completed the *Philadelphia Trail Master Plan* in 2013. It is intended to help facilitate and coordinate the planning and construction of trail systems throughout the City. The Master Plan proposed 75 trails and developed the Philadelphia Trail Committee to spearhead the coordinated implementation of these trails. As part of the planning process, the trails were prioritized according to the needs and desires of the City. This plan will be regularly updated in response to developments and changing priorities.

The Master Plan can be viewed in full on the City's website at: http://www.phila.gov/CityPlanning/plans/Pages/TrailsMasterPlan.aspx.

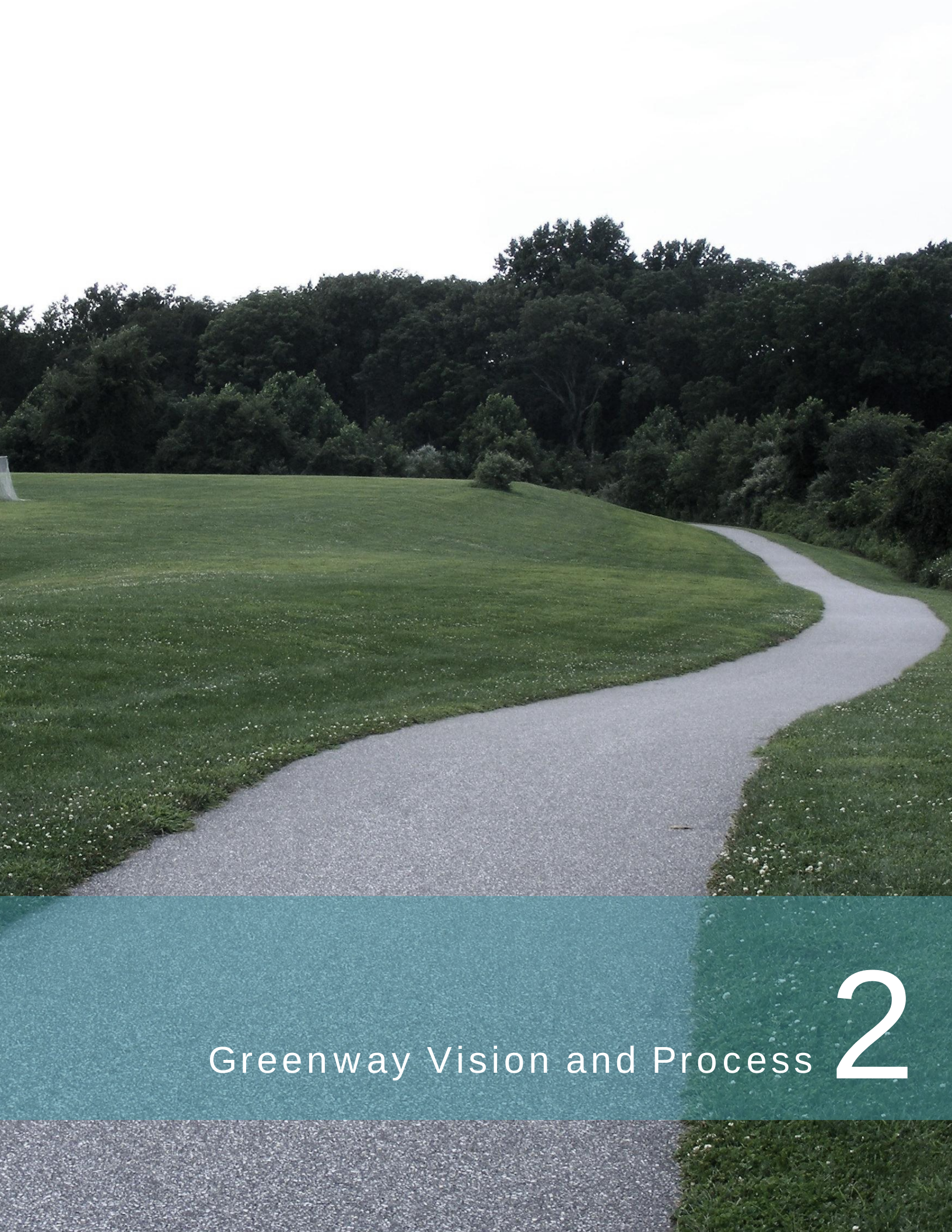
EXISTING TRAILS

Pedestrian access is limited throughout the County's wide range of landscapes. However, trails do exist in some places, usually built specifically for recreation in parks, and others for connection between adjoining parks and other destinations. Both costs for planning and development, as well as a fragmented pattern of open space, often limit opportunities for a fully developed trail system. However, there are still opportunities to link existing open spaces in the County. Please note that off-road bicycle trails and on-road bicycle routes were examined at a countywide scale in the in the *Delaware County Bicycle Plan*.

Existing trails in Delaware County are largely located within parks or other recreation area. Many of these trails are simple earthen paths that have developed from desire paths. They can vary from simple loop trails within a park, such as at the Concord Township Park, to a more elaborate web of trails such as the network found at Ridley Creek State Park. Another type of trail in the County is classified as the connector trail, which links parks or open spaces with other areas of interest. This type of trail is typically formalized with paved pathways and amenities along the trail. The Radnor Trail, for example, connects Encke Park, the Wayne Arts Center, and the Wayne/St. Davids downtown area via a former rail right-of-way. For more information on existing trails in Delaware County, see Volume I: Open Space and Recreation Plan, Chapter 4: Trails as a Recreation Facility. For a complete listing of existing trails, see Appendix II-D.

LOOKING AHEAD

It is important to consider the recommendations of Volume II: Countywide Greenway Plan in the context of the entire Delaware County Open Space, Recreation, and Greenway Plan. Volume II specifically addresses regional greenways and trails. This document describes the framework used to identify potential conservation and recreation greenways, providing a detailed profile of each, and various implementation tools and strategies to realize the potential of these corridors. As described above, Volume I establishes broad countywide objectives which are often reinforced by the specific greenway objectives and actions identified in this document. In conjunction with Volume III: County Parks and Recreation Plan, these documents outline a comprehensive approach to identification of open space and recreation needs and opportunities.



Greenway Vision and Process 2

Chapter 2: Greenway Vision and Process

DELAWARE COUNTY'S GREENWAY NETWORK

This Plan recognizes two overarching, yet interrelated purposes of greenways. The first purpose is to conserve contiguous areas of natural features such as stream valley and woodlands in order to prevent further fragmentation of remaining natural corridors. The second purpose is to develop a countywide trail network for recreation and alternative transportation that connects destination hubs and enhances the quality of life for County residents. The two purposes were the basis for identification of two associated greenway networks: Conservation Greenways and Recreation Greenways.

CONSERVATION GREENWAYS

Conservation Greenways emphasize the protection and connection of environmental features. Conservation Greenways may follow specific linear natural features, such as a stream, or may connect other open spaces, such as woodlands; they can also serve as wildlife corridors. Stream corridors were the primary resource used to designate the Countywide Conservation Greenway Network. Map 2-1 shows this network. In addition to the stream corridors identified in this plan, it is also important to consider more locally based conservation greenways to connect natural features and other open spaces.

RECREATION GREENWAYS

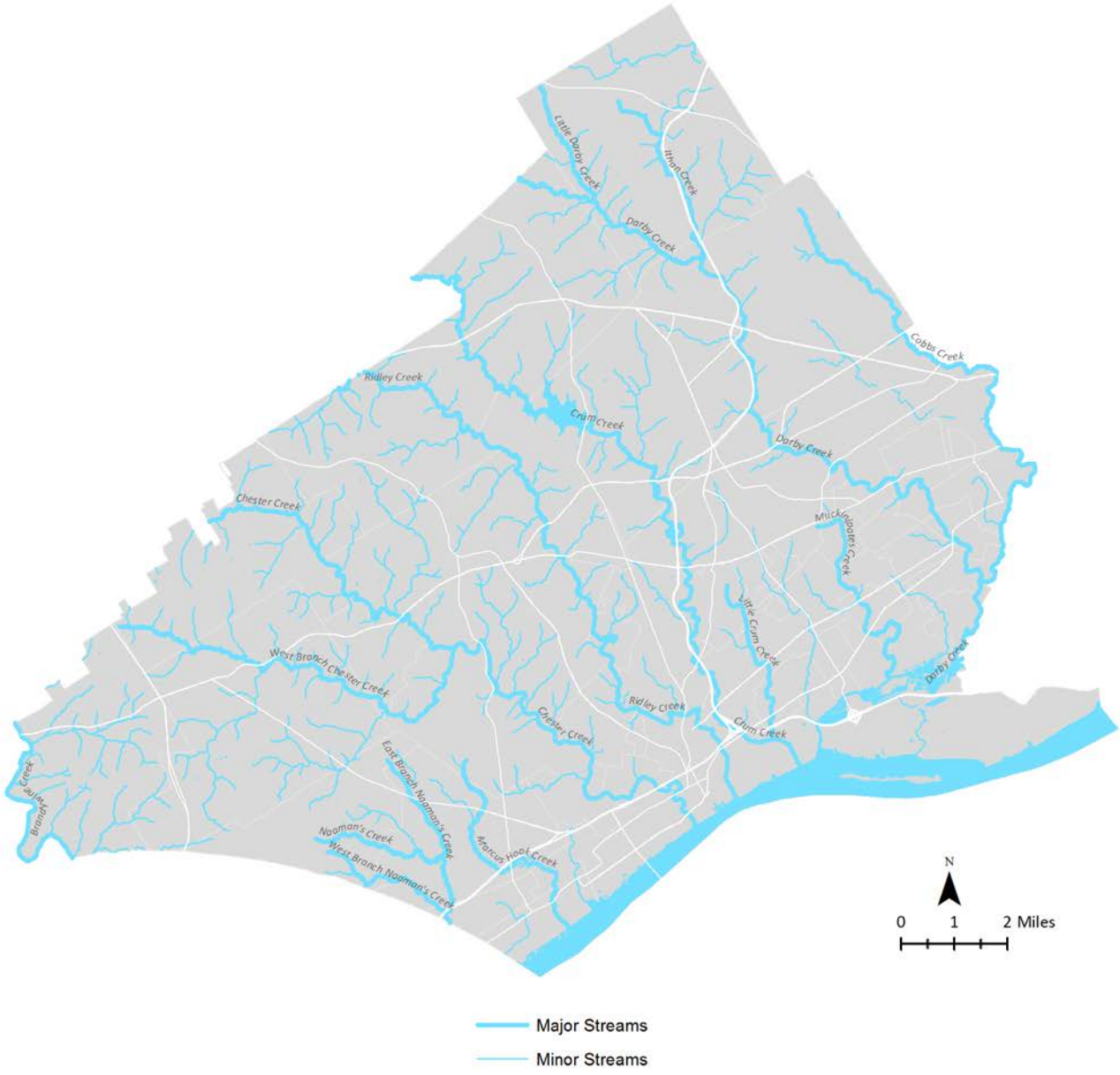
Recreation Greenways provide access to, on, and between natural features and other destinations. These Greenways are generally classified as trails. Recreation Greenways may overlap with Conservation Greenways or follow a separate route. Recreation greenways serve as the spines of a network that connect other recreation greenways, parks, open spaces, central places, and points of interest. The Recreation Greenways identified in this plan are referred to as the Countywide Primary Trail Network.

GREENWAY NETWORK VISION

The intent of the Delaware County Greenway Network is to two-fold: combine Conservation and Recreation Greenways to conserve and enhance natural features of environmental significance, and to connect them to other open spaces and destinations. As such, the planned Greenway Network includes intersecting ribbons of open space along natural and man-made recreational and greenspace corridors across the County. It is envisioned that all of the publicly accessible trail networks in the County will be connected to each other. For example, it is hoped that trails along the County's major Delaware River tributaries (Chester, Ridley, Crum, and Darby Creeks), will all be able to connect to the East Coast Greenway, which is proposed to run along the Delaware River waterfront. Other connections between watersheds could be made on public bikeways and trails constructed on or near unused railway, utility and pipeline corridors, and other rights-of-way, including roads. The Primary Trail network is a tool that can be used to help fulfill this vision.

The results of the public survey and other public participation outreach efforts emphasized a desire for recreational trails in the County. Over 80% of respondents identified walking/hiking as a desired experience when visiting parks or recreation areas while more than 60% of respondents selected "Experience Nature" and "Fitness/Wellness" for the same question. These results were echoed across public meetings and comments. For this reason, the Greenway Network, particularly the Primary Trail Network, is highlighted in this Plan.

Map 2-1: Streams



Sources for all maps throughout this document can be found in the Appendix II-C: Map Data Sources

ANALYSIS AND PLANNING

When developing the Countywide Greenway Network, emphasis was placed on identifying corridors that have the potential to create a connected web, with the goals being to promote green connections along streams and other non-water-based corridors to connect destinations. These connections provide places for recreation and alternative transportation routes such as walking and bicycle trails. Natural corridors, or corridors on private property that appear to be unsuitable for public use, are still recommended for environmental protection.

HUBS AND SPOKES CONCEPT

Pennsylvania's number one strategy, as defined in the 2001 Pennsylvania Greenways Action Plan is use of the "Hubs and Spokes" concept for greenway design. Hubs, or nodes, are destinations or open spaces to be connected, while spokes, or corridors, are the linear strips used to connect them. Hubs are public or private places of interest (i.e., parks, historic sites, downtowns, Central Places, etc.). They can be large open space tracts, such as community and regional parks or nature preserves, but can also include smaller destinations like schools and neighborhood parks.

The spokes in the network would be the linear corridors between the hubs currently under or recommended for some form of long-term protection. While it may take decades for an envisioned greenway network to be permanently protected, it is important to identify the areas of interest on a map so that the many municipalities, organizations, and residents can begin to work toward a common goal of preserving these corridors. A spoke can include a trail, but it does not need to. Depending on the type of greenway, a spoke can be a road, public transit line, utility or sewer right-of-way, stream, linear parkland, or any combination of the above. In some cases, cultural, commercial, or institutional resources may be close enough to link to the greenway via sidewalks or other infrastructure.

Map 2-2 shows overhead transmission lines (PECO) and pipelines (National Pipeline Mapping System) in the County. Pipeline companies sometimes allow trails to be constructed on their rights-of-way. There are also examples in other counties where PECO and other electric companies have allowed trails to be built next to their transmission lines. Map 2-3 shows railroads in the County, including inactive and abandoned rights-of-way and railbeds. These lines are additional potential greenway spokes for "rail-to-trail" or "rail-with-trail" projects. Stations on active trolley and rail transit lines can also be trail hubs.

When building a greenway, the key is to establish some form of long-term protection for the spokes. Protection for the hubs needs to be secured as well. Hubs and spokes should be protected for both "conservation" and "recreation" where appropriate. Even though these concepts are often considered separately, one can see how they go hand-in-hand.

INFLUENTIAL COUNTY AND REGIONAL GREENWAY PLANNING

The following planning initiatives, which were also discussed in Chapter 1, were considered particularly important background information when preparing Delaware County's Greenway Plan.

The Greenway Plan for the Darby Creek Watershed

Delaware County's first greenway planning effort resulted in the preparation of the *Greenway Plan for the Darby Creek Watershed*, which was completed in 2010. This document contains a number of major findings, identifies opportunities, and makes recommendations for greenways in the Darby Creek watershed, making it an important resource for municipalities and stakeholders in the watershed. The

Map 2-2: Utility Corridors

***811 should always be called prior to any digging job regardless of the location.
Disclaimer: National Pipeline Mapping System (NPMS) data is compiled by the United States Department of Transportation, Pipeline and Hazardous Materials Safety Administration, Office of Pipeline Safety. The data is compiled from mandatory submissions made by pipeline and LNG plant operators and voluntary submissions made by breakout tank operators. The data is processed by private contractors. Neither the United States government nor any party involved in the creation and compilation of NPMS data and maps guarantees the accuracy or completeness of the product. NPMS data should be considered no more accurate than +/- 500 feet and must never be used as a substitute for contacting the appropriate one-call center prior to digging.

Map 2-3: Rail Rights-of-Way

plan was developed at a very fine level of detail. Although the trails identified were not specifically evaluated as part of a countywide network (at the time), today it is incorporated into this plan by reference, and should be considered the primary reference for trails within the Darby Creek watershed portion of the County.

Delaware County Bicycle Plan

The *Delaware County Bicycle Plan* (2009) contains a map titled "Existing, Proposed, and Possible Shared Use Paths," which labels several corridors as "rail trail possibilities;" they were re-explored for this greenway plan. It also includes a long list of roads in Delaware County that were prioritized for their potential for bicycle improvements and evaluated as possible road-based greenways.

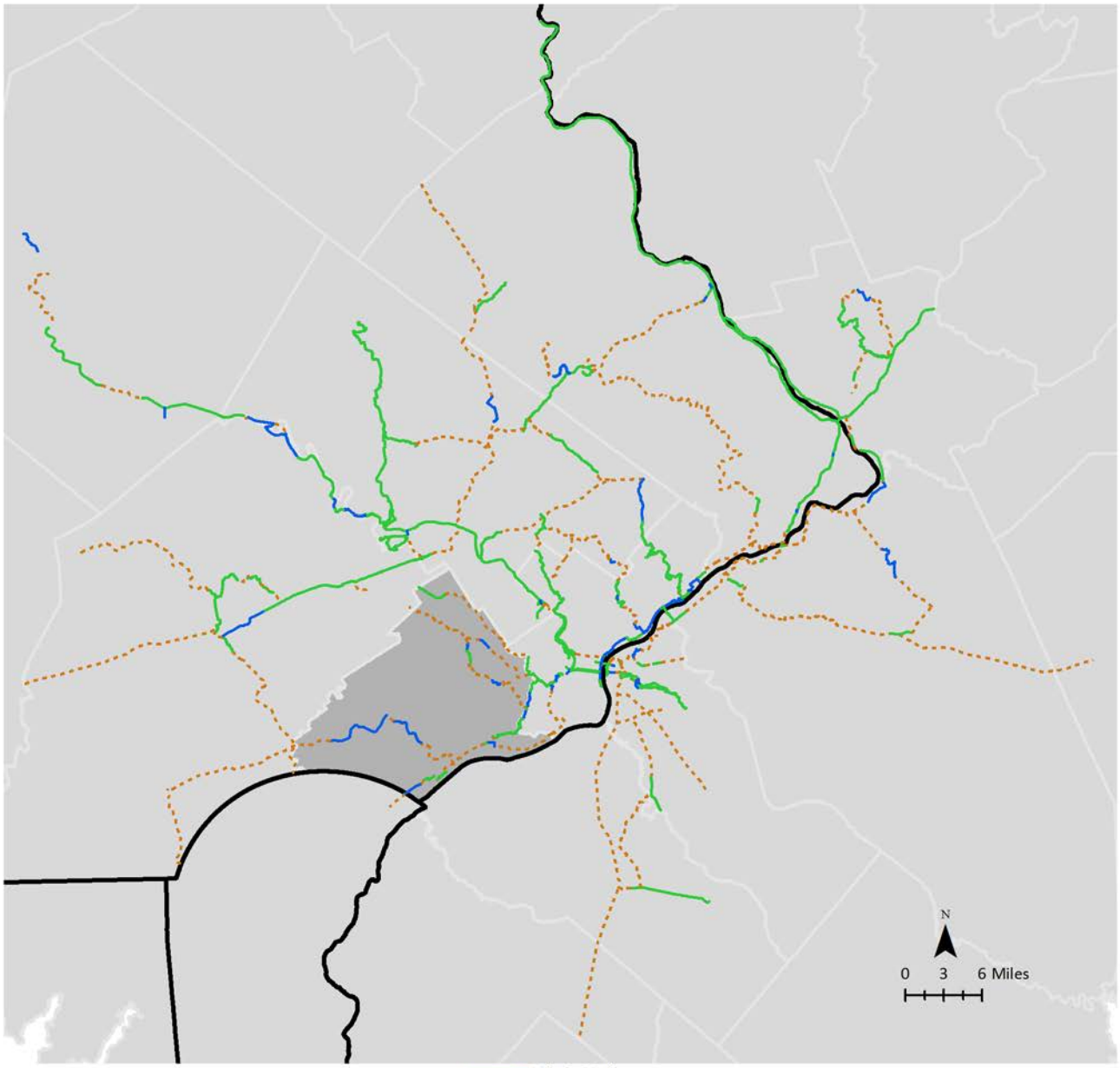
Delaware County's Place in The Regional Trail Network

Increased interest in local trail planning efforts has led to the formation of a regional coalition of stakeholders whose purpose is to identify and promote priority trail corridors and opportunities for connections. As discussed in Chapter 1, the Circuit is a regional effort to coordinate trail planning and building efforts. Several Circuit trails have already been constructed; many are only in the planning and design phases. Therefore, when developing Delaware County's vision for a trail network, consideration was given to multi-municipal and regional connections. The Circuit map of existing, planned, and in-progress trails that are part of the network is continually being updated. Planners in the region periodically talk with Circuit leadership to make sure that County trail network plans reflect regional plans. See Map 2-4 for the adopted Circuit trails as of 2014.

OVERLAY MAPPING

The use of Geographic Information System (GIS) technology to layer spatial data on a map is a commonly used planning tool. Map layering was used to help determine the general locations of the spokes in the County Greenway Network. The following maps (2-5 to 2-9) show a progression of map layers. Each layer was added to the previous map to analyze the potential for greenways. Along with existing trails, the features shown in the layers were the basis for delineating the locations for the spokes of the recommended countywide recreation greenways, to be referred to in this document as Primary Trails (see Chapter 3 for a detailed discussion on the Countywide Primary Trail Network). In essence, the Countywide Primary Trail Network represents County-level planning for trails.

Map 2-4: The Circuit



Existing Trails
Trails in Progress
Planned Trails

Circuit designations as of October 2014

the Circuit
Greater Philadelphia's Regional Trail Network

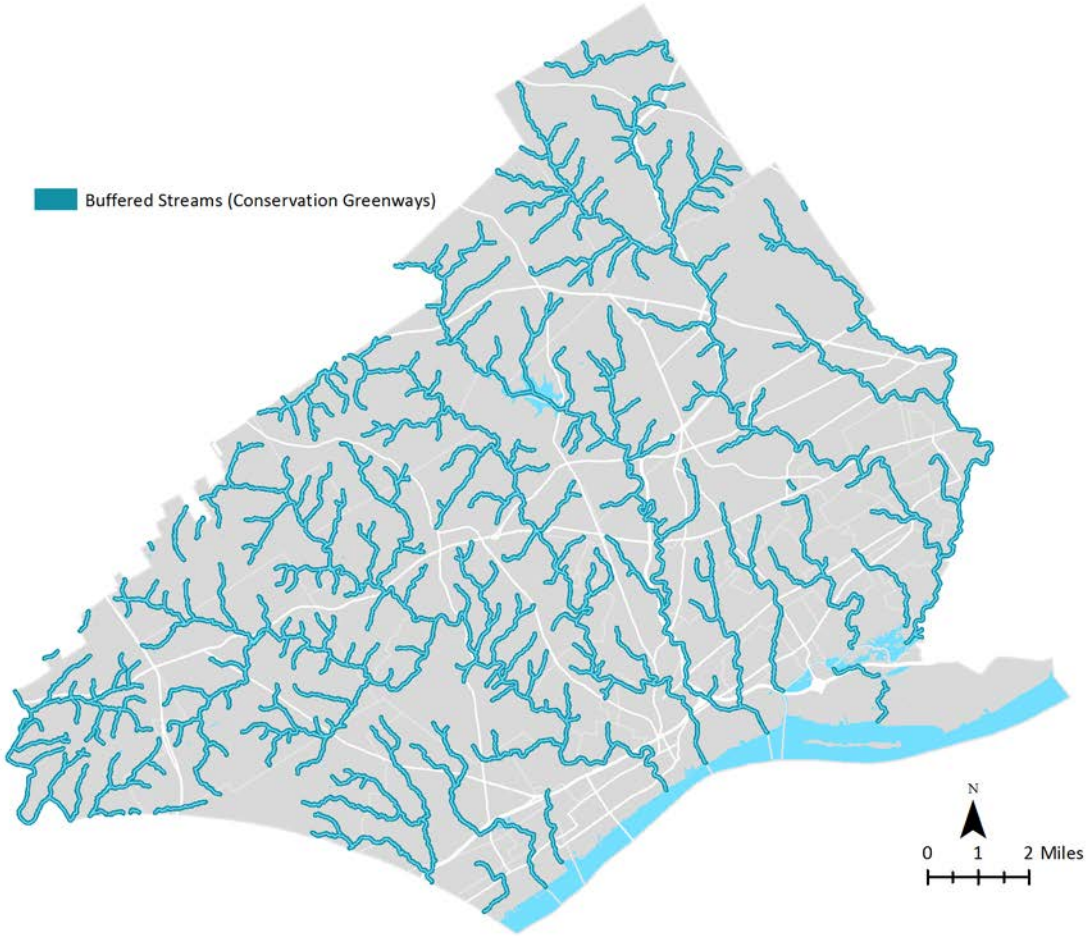
Layer 1: Streams as Conservation Greenways

In order to begin identifying potential greenways in the County, stream valleys were identified. As shown in Map 2-5, these greenways run primarily north to south along the main stems of Delaware County's streams, terminating in the south at the Delaware River. There are numerous east-west tributaries. Stream valleys are existing linear features that have high potential for environmental significance; therefore, they serve as the base layer for much of the Countywide Greenway Network.

In order to provide maximum benefit as a conservation greenway, stream valleys should contain riparian buffers. Riparian buffers are vegetated open spaces along the stream valley that help to stabilize the stream bank and prevent pollutants from reaching the water. For more information on riparian buffers and the benefits they provide, see Volume I: Open Space and Recreation Plan, Chapter 2: Natural Features.

Note: The width of the stream buffer shown on the map is for visual clarity. The realistic width of a stream buffer varies depending on the level of surrounding development.

Map 2-5: Framework Overlay – Streams as Conservation Greenways

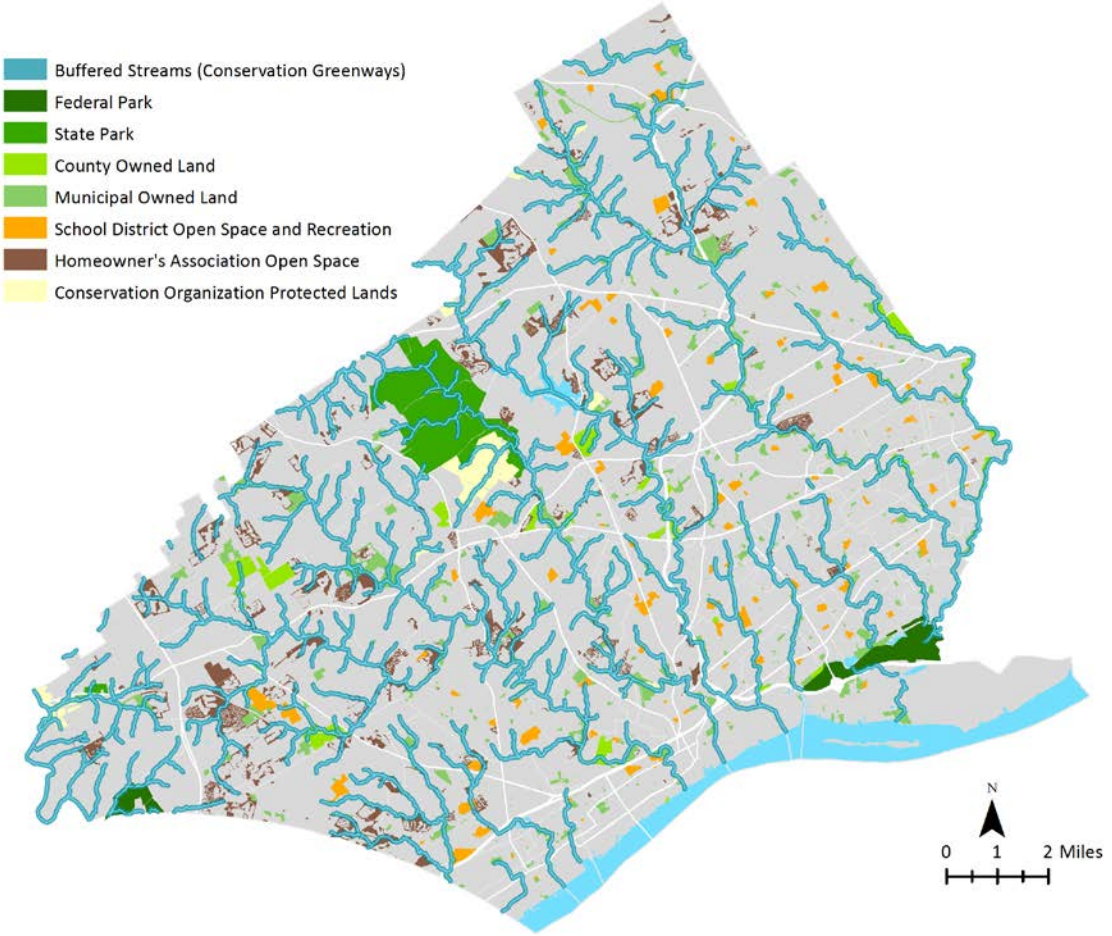


Layer 2: Protected Open Space

After starting with buffered streams, the next layer of information added to the map was protected open space in Delaware County. Protected open space consists of all public open space (federal, state, county, and municipal), quasi-public (school district and HOA lands), and conservation organization lands.

Map 2-6 indicates that there is significant overlap between the buffered streams, which serve as the conservation greenways, and protected open space. There are also several open spaces which provide potential links between conservation greenways. While there are a number of larger open spaces in Delaware County, it is clear that much of it exist in smaller, fragmented pieces. This is particularly evident in the Mature Neighborhoods.

Map 2-6: Framework Overlay - Protected Open Space

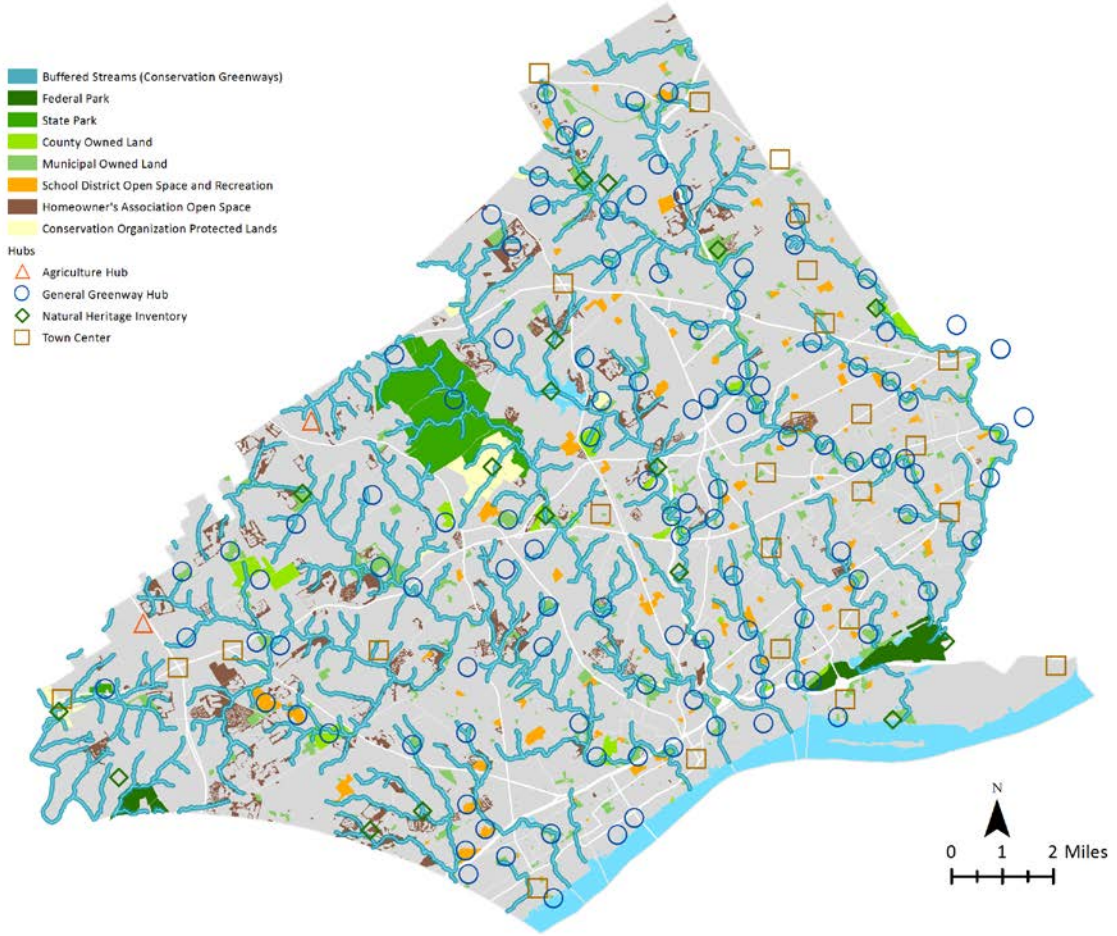


Layer 3: Potential Greenway Hubs

The next layer of information added to the map consisted of hubs (destinations). The hubs were identified through analysis of existing uses and public participation at meetings. Hubs were organized into four separate categories: Agriculture, General Greenway, Natural Heritage Inventory, and Town Centers. Agriculture hubs include the largest areas of agriculture land use in the County. General greenway hubs largely consist of parks, schools, and other entertainment/tourist destinations. Natural Heritage Inventory hubs are sites identified based on the information in *A Natural Heritage Inventory of Delaware County* (2011), and include the most significant environmental features in the County. Town center hubs include activity centers, such as a central business districts or main streets.

The hubs, as shown on Map 2-7, are scattered across the County. While many general greenway and natural heritage inventory hubs are located along greenways, most town center hubs are not.

Map 2-7: Framework Overlay - Potential Greenway Hubs

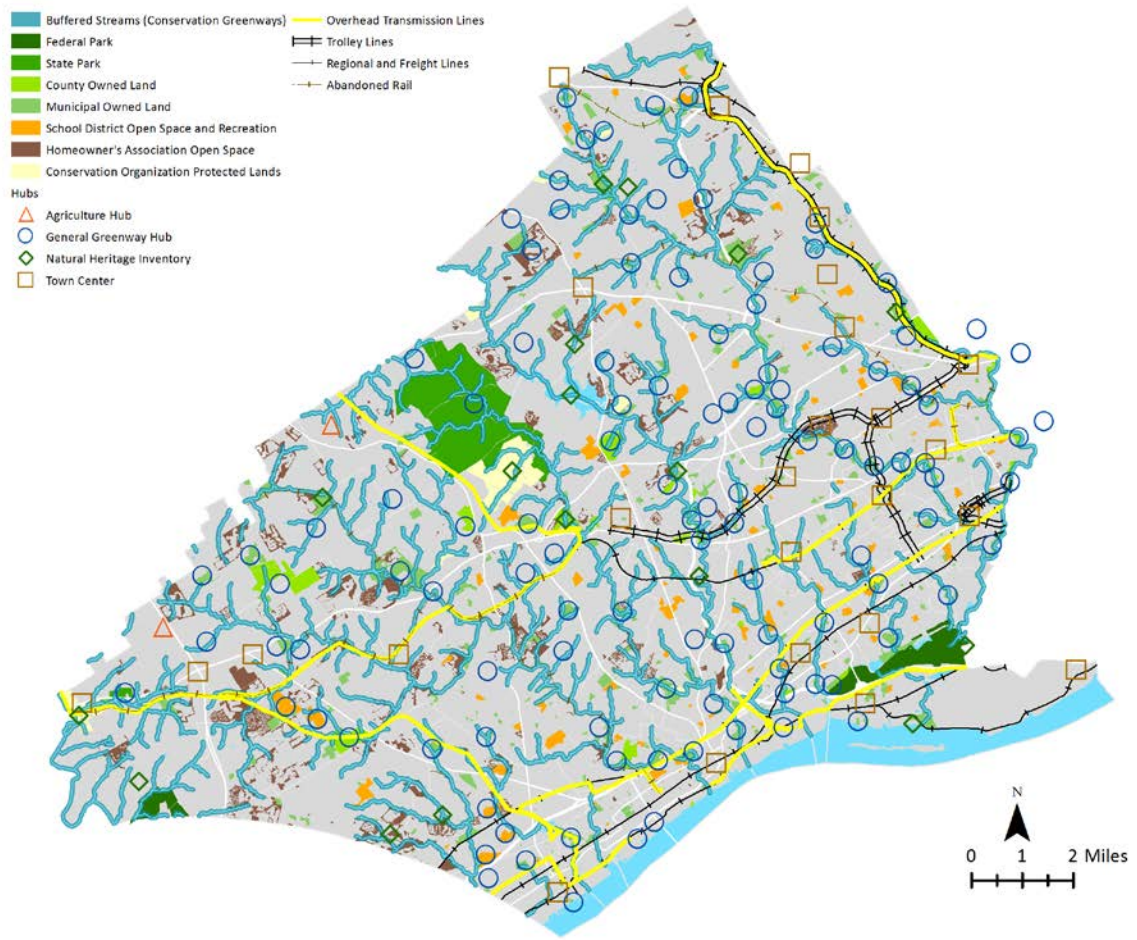


Layer 4: Active and Inactive Transportation and Overhead Utility Corridors

In order to analyze potential spokes connecting conservation greenways, protected open space, and hubs, transportation and utility corridors were added to the map. The transportation corridors consist of active and inactive rail lines (including trolley, regional and freight, and abandoned rail lines), and utility corridors were comprised of overhead transmission lines. Due to the linear connections these corridors provide, and the fact that they have existing rights-of-way, they are of tremendous significance when identifying potential spokes.

As shown in Map 2-8, the identified corridors offer east-west connections that are not provided by the conservation greenways. Overhead transmission lines and inactive rail corridors are of particular interest for making connections. With the exception of the occasional structure, overhead transmission lines do not use the ground level but require it to be accessible for maintenance. Inactive rail corridors, while no longer in use, still maintain many of the characteristics of active lines (relatively flat, open terrain) which make it ideal for trails.

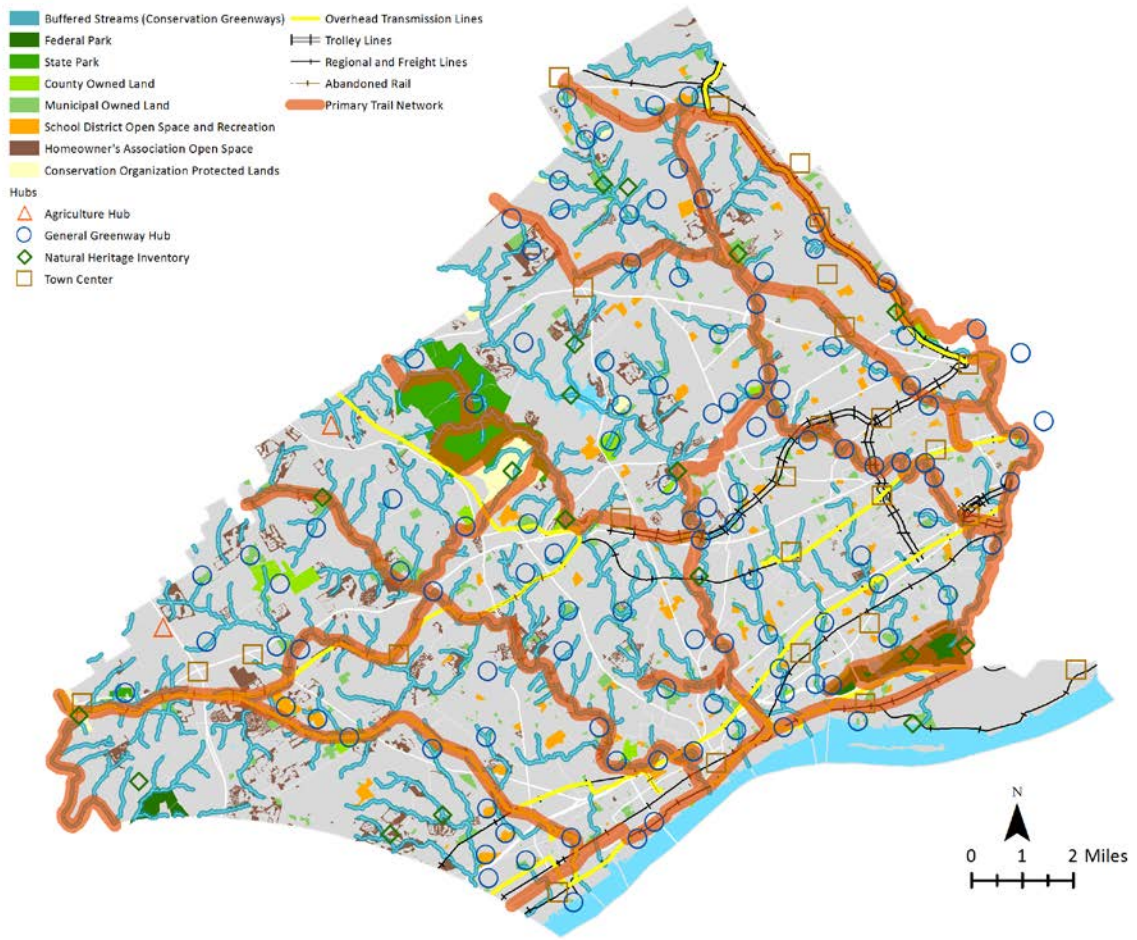
Map 2-8: Framework Overlay - Transportation and Overhead Utility Corridors



Layer 5: Countywide Primary Trails

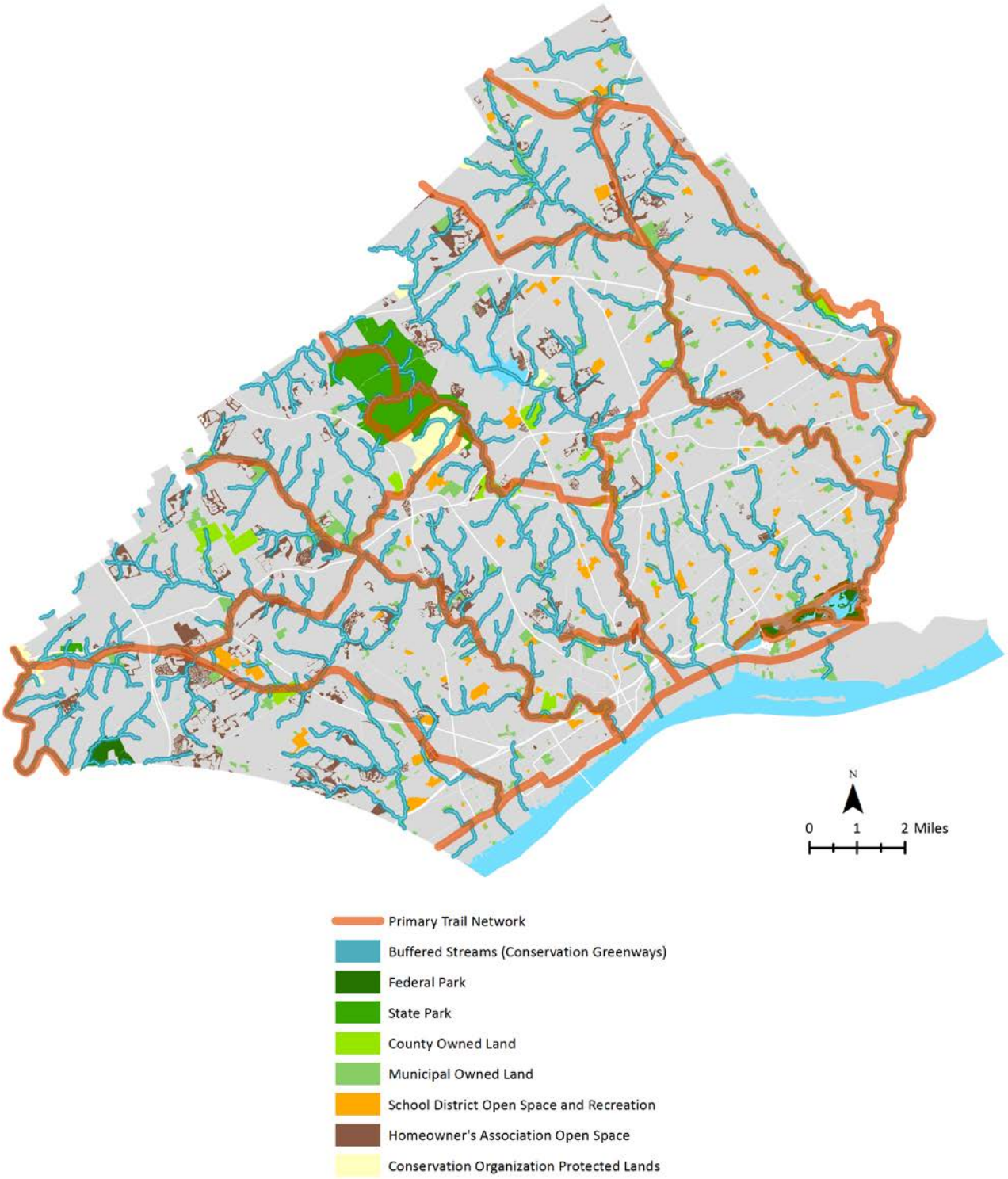
After overlapping conservation greenways, protected open space, hubs, and transportation corridors, the County identified recreation greenways, known as the Countywide Primary Trail Network. The Primary Trail Network, as shown in Map 2-9, is intended to represent a countywide network of multi-use trails capable of connecting to both regional and municipal trail systems. These trails utilize conservation greenways, transportation corridors, and other potential links to establish connections between protected open spaces and the hubs identified. For more information on the Primary Trails, see Chapter 3: Countywide Primary Trail Network.

Map 2-9: Framework Overlay - Countywide Primary Trails



Map 2-10: Conservation Greenways and Primary Trails

Map 2-11: Delaware County Open Space and Greenway Network



Primary Trail Network 3

Chapter 3: Primary Trail Network

OVERVIEW

The Countywide Primary Trail Network is comprised of the Recreation Greenways identified through the process described in Chapter 2 of this Plan. They were identified at a large scale; as such, they show potential segments, but not specific alignments. The Primary Trails can be considered "planning corridors" for more detailed trail studies in the future. While several Primary Trails have already been constructed, many are just conceptual. As more detailed studies are completed on these trails, alternate routes may need to be considered.

The Primary Trails identified in this plan (see Map 3-1) are intended to be Type I and Type II (hard-surface) off-road connector trails owned or managed at the County, municipal, or multi-municipal level. Existing earthen and/or crushed stone trails that represent long-distance routes or continuations of paved trails are included in this category, and should be considered for paving as degree of use warrants. It is recommended that newly developed Primary Trails be designed to meet ADA standards where feasible (exceptions may include extremely sensitive natural features or limited use). If an entirely off-road trail is not feasible, some sections may be sited on sidewalks, roadsides, and/or roadway in the interim.

The Primary Trails serve as the main spokes in the countywide network of trails. The purpose behind creating the Primary Trail Network is to direct the energies of the County and municipalities into developing their trail systems in such a manner that they either construct segments of the Primary Trail Network or design their internal trail network to connect to Primary Trails. As such, municipalities should consider making local trail connections to the Countywide Primary Trail Network when possible. This can be accomplished through a local planning process involving identification in a comprehensive plan, open space plan, or both. Local trails should link into downtowns, housing developments, and other hubs in a municipality, and trails and paths should be planned as an interwoven network.

When combined, the 25 Primary Trails identified form a network of interconnected, non-motorized travel and recreation connections near and between all corners of Delaware County, as well as to existing and proposed trails in adjacent counties. This network will provide County residents, some of which live in the most densely populated urban centers, with non-motorized access to major publicly-owned recreation land and facilities. Such access can help to spur economic development in the County's urban centers in two ways. First, the network will draw trail users into existing downtown commercial districts, creating the possibilities for increased recreation-based commerce. Second, the existence of regional trails in densely developed areas will also provide their residents with increased access to open space and recreational facilities, a feature which has been shown to increase the value of residential housing and increase municipal tax revenues (GreenSpace Alliance; Delaware Valley Regional Planning Commission 2011).

The 25 Primary Trails identified in this plan are presented as the general locations for possible links in a countywide network of trails, and should not be regarded as a detailed plan for all future trail or municipal trail alignments in the County. Primary Trail Corridors are not presumed to be the only logical locations for multi-municipal multi-use trails. In fact, unforeseen changes in land use in the County may make some of these recommended Primary Trail Corridors impractical or infeasible to implement.

Map 3-1: Countywide Primary Trail Network

1 - Brandywine Creek Greenway
2 - Octoraro Rail Trail
3 - PECO Right-of-Way Trail
4 - Chester Creek Trail - North Extension
5 - Rocky Run Trail
6 - Chester Creek Trail
7 - Chester Creek Trail - East Coast Greenway (ECG) Connector
8 - East Coast Greenway
9 - Blue Route Bikeway - East Coast Greenway (ECG) Connector
10 - Blue Route Bikeway - Leiper to Kinder Connector
11 - Blue Route Bikeway - Leiper-Smedley Trail
12 - Media-Smedley Connector Trail
13 - Ridley Creek Greenway (North & South Sections)
14 - Ridley Creek State Park Trails
15 - Blue Route Bikeway - Smedley to Darby Creek
16 - Darby Creek Trail - Haverford Township
17 - Darby Creek Trail - Drexel Hill Connector
18 - Newtown Square Branch Rail Trail
19 - Route 252 Bicycle Route
20 - Blue Route Bikeway - Ithan-Darby Creek Valley
21 - Radnor Trail
22 - Forge to Refuge Trail
23 - Darby Creek Stream Valley Park Trail
24 - Cobbs Creek Trail
25 - Heinz Refuge Trails

PROFILES OF COUNTYWIDE PRIMARY TRAIL CORRIDORS

The following trail profiles are intended to provide an overview for each of the proposed trails in the Network. The details provided include a brief description (general direction, relevant history, physical characteristics, and key hubs), as well as other relevant information provided in the sidebar on the right-hand side of this page. Each description is immediately preceded by a map highlighting the corridor and points of interest along the route.

Note: For readability, the map only displays potential destinations within 2,000 feet of the trail corridor. As such, it is important to recognize that there are numerous destinations not identified on the map. For example, the map for Trail 8: East Coast Greenway does not display Market Square Memorial Park and Governor Printz Park. These are incredibly important destinations that should be considered in more detailed planning of these trail corridors.

Countywide Primary Trail Corridors

The 25 County Primary Trails are identified on Map 3-1. The trail profiles on the following pages are ordered according to the trail numbering of this map. For a list of which trails are in each municipality, see Appendix II-E.

Status:
Potential: General corridor has been identified, but not further studied
Proposed: Corridor was studied for feasibility, and alignment or study is in progress
Design: Detailed design and construction document in progress or complete
Construction: Is currently under construction
Existing: Has been constructed and is open

Surface Type(s):
Paved; Crushed Stone; Boardwalk; Earthen; and/or Undetermined

Ownership:
The owner(s) of the land through which the trail traverses

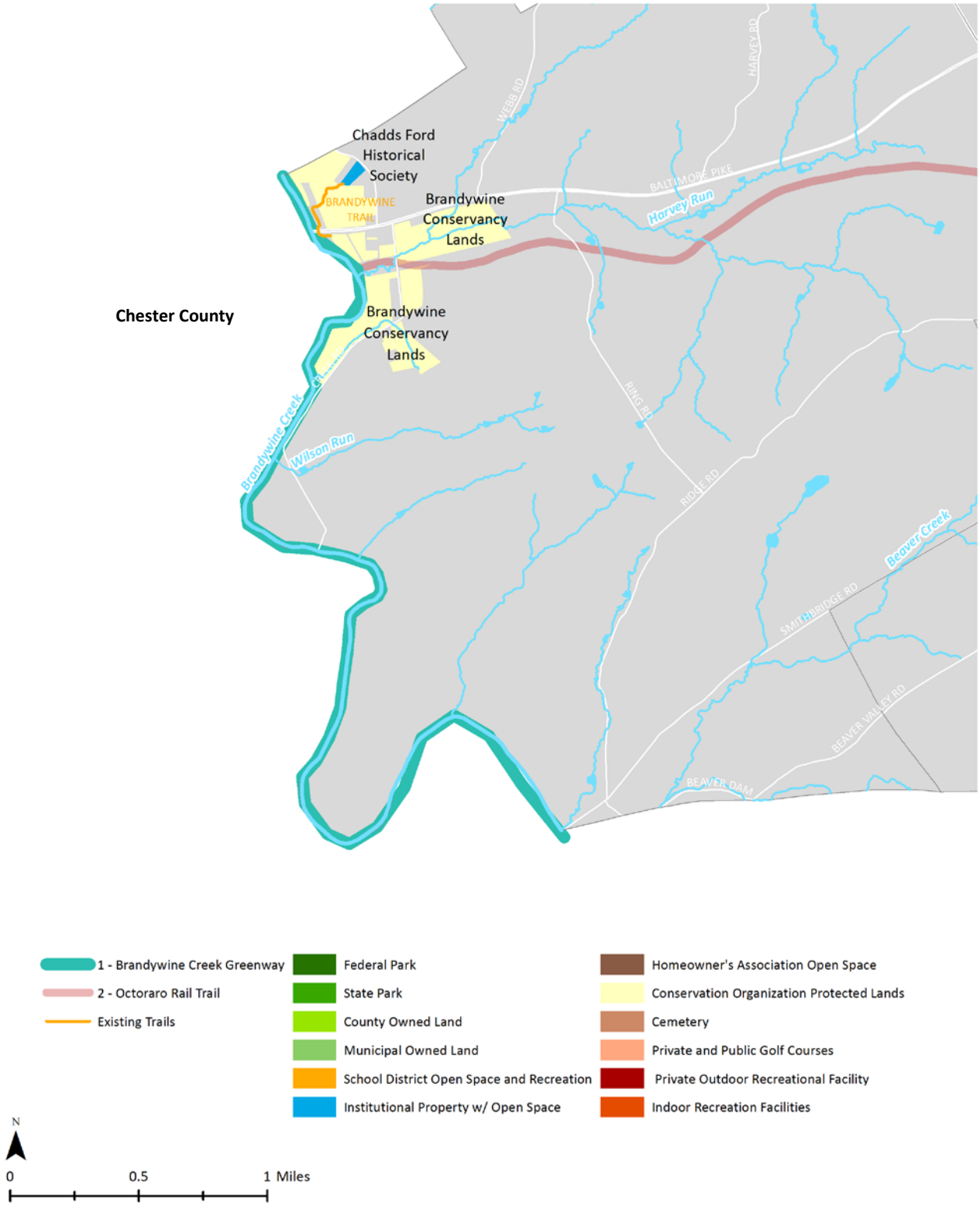
Municipalities:
The municipalities through which the trail traverses

Potential Links:
Municipalities which have potential to connect to this trail

Primary Trail Connections:
Primary Trails that connect to or have potential to connection this trail

Hub Connections:
Hubs/Destinations (parks, schools, commercial centers, etc.) to which this trail connects

Map 3-2: Brandywine Creek Greenway



1: BRANDYWINE CREEK GREENWAY

DESCRIPTION

The Brandywine Creek Greenway (BCG) is a regional planning initiative of the Brandywine Conservancy and twenty-four municipalities, including Chadds Ford Township in Delaware County. The study area extends northwest into Chester County along the creek valley.

The Brandywine Creek Greenway is a pedestrian trail and bicycle route from Chester County through Chadds Ford Village to the Delaware state line along the Brandywine Creek. A trail and bikeway connection along or roughly parallel to the Brandywine Creek provides a key connection between Chester County's and Delaware County's trail networks and an interstate connection to Delaware and the First State National Monument. Additional easements on private property may be necessary.

The Concept Plan for the Brandywine Creek Greenway (2014) includes a scenic river corridor and major corridor around Brandywine Creek as well as part of the Octoraro Rail Trail corridor (specific possible trail alignments, where applicable, are yet to be determined). Chadds Ford Township is working closely with the Brandywine Conservancy on strategies to implement conservation and trail development initiatives from that concept plan. BicyclePA Route L is a state designated bicycle route located on Creek Road and Rocky Hill Road, paralleling Brandywine Creek.

Refer to www.brandywinegreenway.org for more information on planning for the Brandywine Creek Greenway.

Status:
Potential; Existing

Surface Type(s):
Boardwalk; Earthen; Undetermined

Ownership:
Brandywine Conservancy; PennDOT (road rights-of-way); Private Property Owners

Municipality:
Chadds Ford Township

Potential Links:
Birmingham Township (Chester County)
Pennsbury Township (Chester County)
State of Delaware

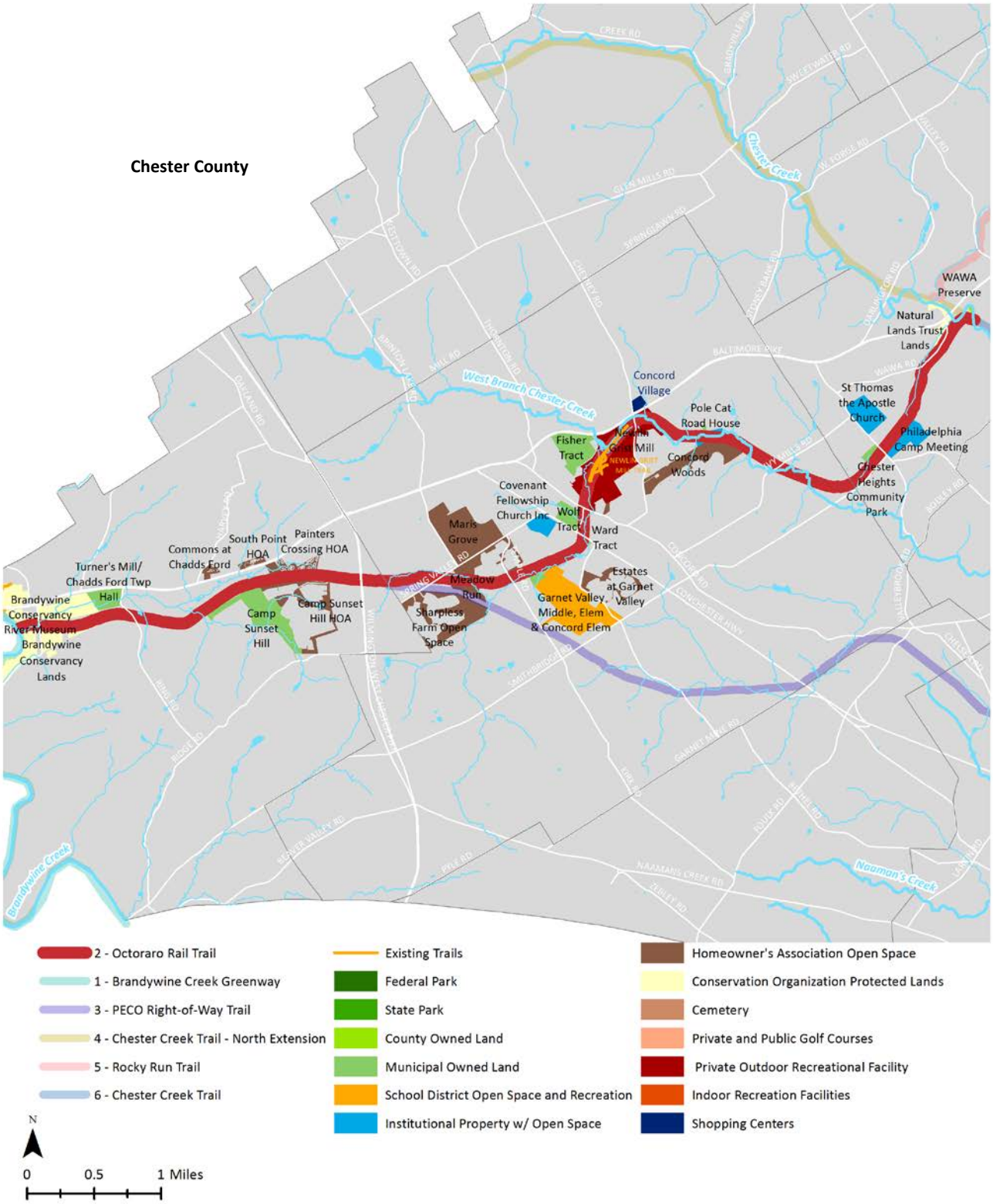
Primary Trail Connections:
2 - Octoraro Rail Trail

Hub Connections:
Brandywine Battlefield State Park
Brandywine Conservancy Lands
Brandywine River Museum of Art
Chadds Ford Historical Society
Chadds Ford Village

BRANDYWINE CREEK Greenway

the Circuit
Greater Philadelphia's Regional Trail Network
Official Segment

Map 3-3: Octoraro Rail Trail



2: OCTORARO RAIL TRAIL

DESCRIPTION

The Octoraro Rail Trail is a potential multi-use trail that utilizes portions of a rail right-of-way through parts of western Delaware County and into Chester County. The Octoraro right-of-way is currently owned by SEPTA, and it is shared and leased in some locations for overhead and underground utilities. The right-of-way is in good condition with few obstacles; many of the tracks remain in place. Although the right-of-way runs near housing developments at times, most of the rail bed runs through undeveloped land, including former farmland.

Concord Township and Chester Heights Borough are currently preparing a joint feasibility study of the right-of-way (not including the portion in Chadds Ford Township) for potential as a trail.

Concord Township has previously proposed the Octoraro right-of-way for use as a trail. It has been included in the Township's comprehensive plan since 1988. The trail is also being included in the Township Comprehensive Recreation Open Space and Greenways Plan, which is under development as of 2015. The trail was also shown as a long term opportunity in Chester Heights Borough's 2013 Comprehensive Plan.

As of 2015, Chadds Ford Township is pursuing development of the Harvey Run Trail in the corridor between the Brandywine Conservancy headquarters and the Township Building (Turners Mill/Pyle's Studio historic structure). This trail is parallel to the Octoraro right-of-way on land owned by the Township, the Conservancy, and PECO.

Status:
Potential; Proposed

Surface Type(s):
Undetermined

Ownership:
SEPTA (Octoraro right-of-way); Chadds Ford Township; Brandywine Conservancy; PECO (Harvey Run Trail; Private Property Owners

Municipalities:
Chadds Ford Township (potential)
Chester Heights Borough (potential)
Concord Township (proposed)

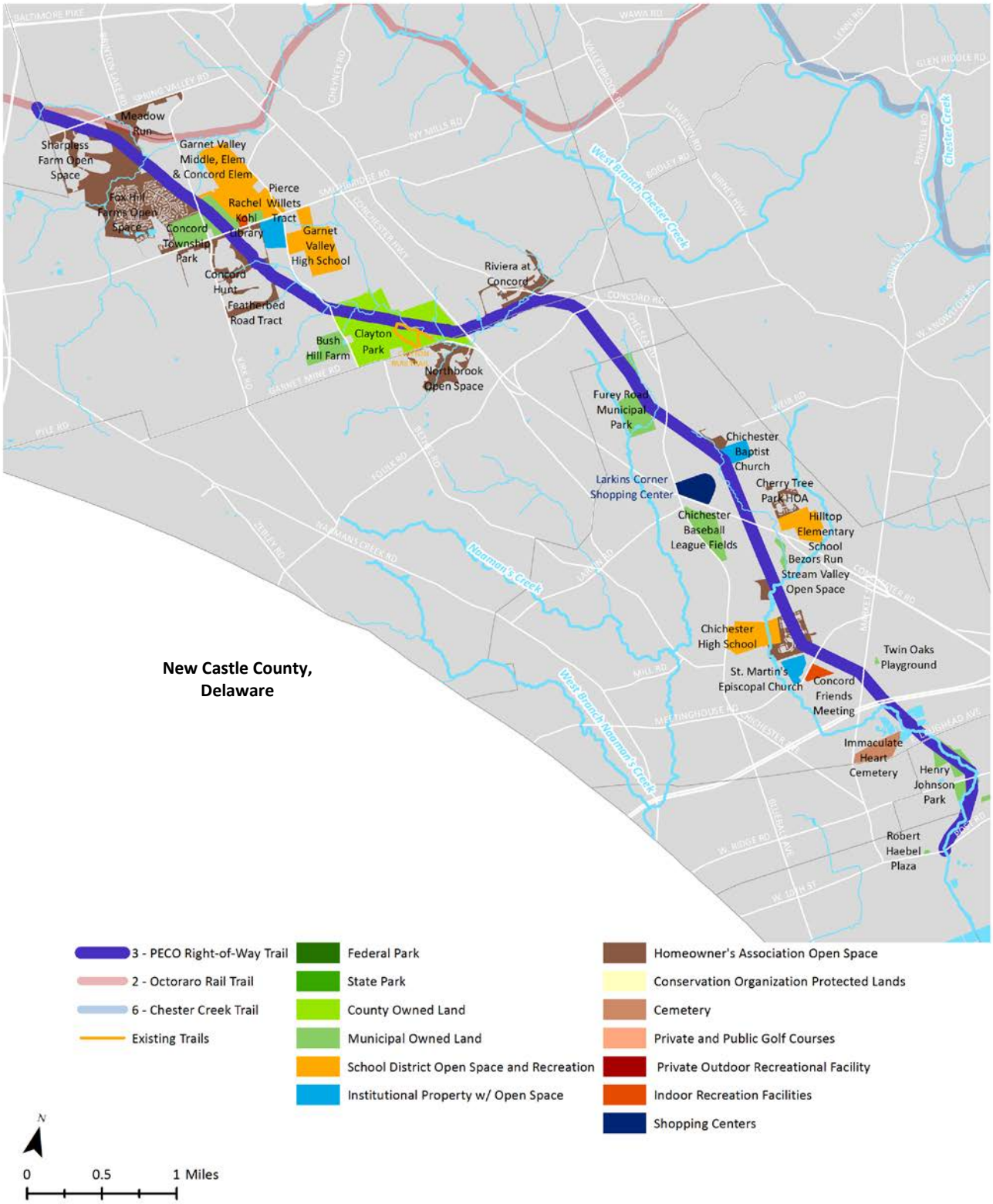
Potential Links:
Thornbury Township
Pennsbury Township (Chester County)

Primary Trail Connections:
1 - Brandywine Creek Greenway
3 - PECO Right-of-Way Trail
4 - Chester Creek Trail – North Extension
6 - Chester Creek Trail

Hub Connections:
Brandywine River Museum
Chester Heights Community Park
Concord Township Elementary School
Garnet Valley Middle School
Newlin Grist Mill Park
Wawa SEPTA Regional Rail Station (planned)

the Circuit
Greater Philadelphia's Regional Trail Network
Official Segment

Map 3-4: PECO Right-of-Way Trail



3: PECO RIGHT-OF-WAY TRAIL

DESCRIPTION

Like the Chester Creek Trail, the PECO Right-of-Way Trail connects the Octoraro Rail Trail to the East Coast Greenway. The right-of-way, owned by PECO, contains high tension electrical wires. Underground utilities have also leased parts of the right-of-way.

There is limited information about the overall feasibility of a trail in this right-of-way, as no feasibility study has been completed for a trail over its entire length. Concord has included it in past Township-wide planning and is exploring it again in its current Comprehensive Recreation Open Space and Greenways Plan. PECO could be an amenable partner, as the company has welcomed paved trails on its rights-of-way in other places in the region, such as the Powerline Trail in Horsham Township, Montgomery County.

The PECO right-of-way connects a number of large parks with schools and housing developments. Obstacles include crossing Conchester Road (US 322) twice, Route 452, and routing the trail through the industrial area south of Meetinghouse Road in Upper Chichester and to the other side of Interstate 95 in order to access Trainer Borough's Henry Johnson Park.

Concord Township Park on Smithbridge Road contains a paved looped trail in the right-of-way under PECO high-tension lines. The conceptual plan for Clayton County Park also shows an internal multi-use trail network in the park along the right-of-way.

Status:
Potential

Surface Type(s):
Undetermined

Ownership:
PECO; Others that PECO may have leased or sold portions to; Delaware County; Municipalities; Private Property Owners

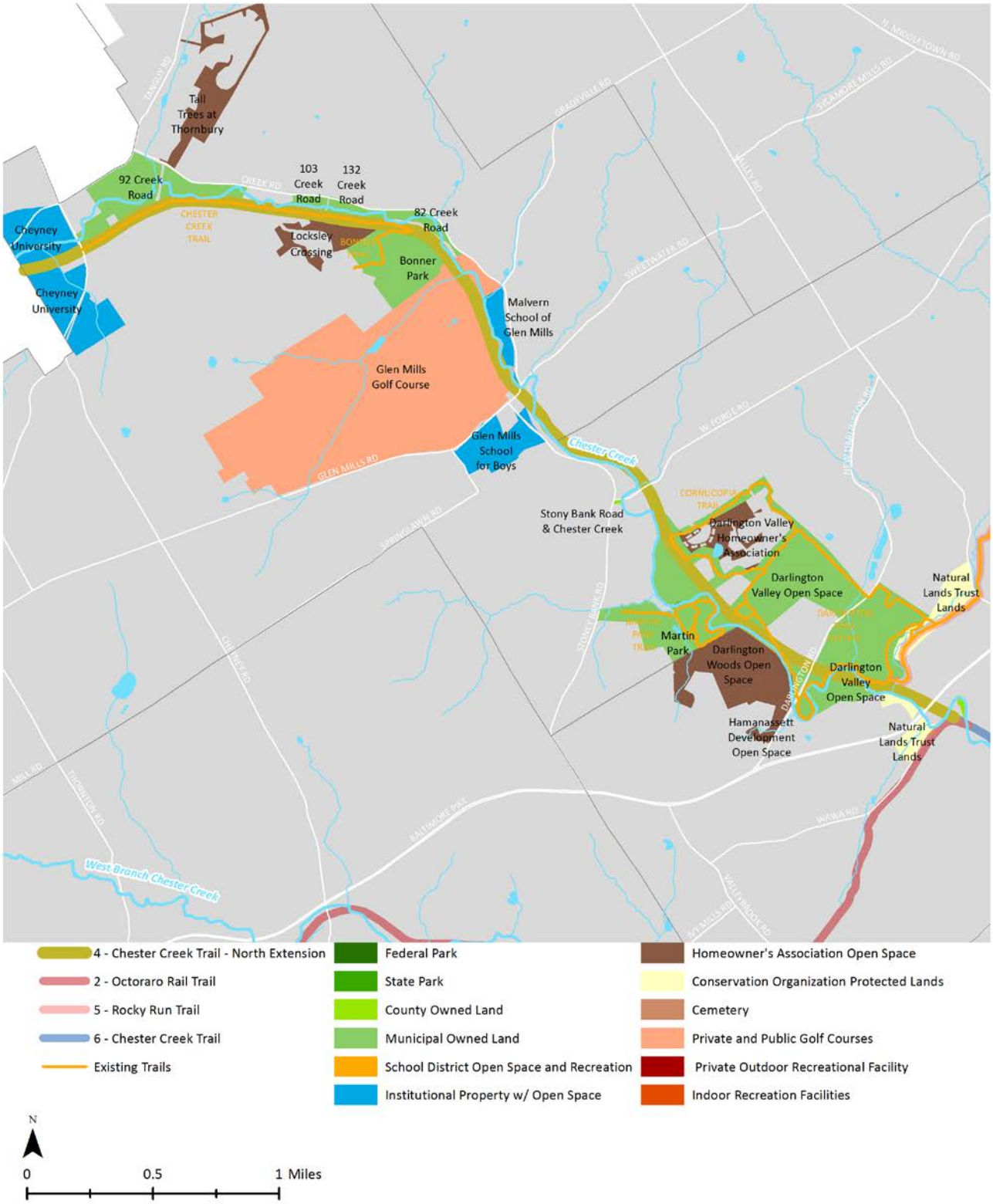
Municipalities:
Bethel Township
Concord Township
Trainer Borough
Upper Chichester Township

Potential Links:
Aston Township
Chadds Ford Township
Marcus Hook Borough

Primary Trail Connections:
2 - Octoraro Rail Trail
8 - East Coast Greenway

Hub Connections:
Clayton County Park
Chichester High School
Concord Township Park
Furey Road Municipal Park
Garnet Valley Middle School
Henry Johnson Park

Map 3-5: Chester Creek Trail – North Extension



4: CHESTER CREEK TRAIL – NORTH EXTENSION

DESCRIPTION

The Chester Creek Trail – North Extension continues where the northern end of the Chester Creek Trail leaves off. It follows the Chester Creek valley northward to the Cheyney University campus located at the County boundary. The surrounding Glen Mills area is scenic and contains interesting natural features and is rich with cultural history.

Thornbury Township has acquired small properties along Chester Creek for the purpose of securing this greenway and installing an earthen hiking path. After crossing Baltimore Pike north of the Chester Creek Rail Trail, the trail traverses through Darlington Valley Open Space in Middletown Township, and can use portions of the existing trail network within this park.

Status:
Potential; Proposed; Existing,

Surface Type(s):
Earthen; Undetermined

Ownership:
Thornbury Township; Middletown Township; Darlington Woods; Private Property Owners

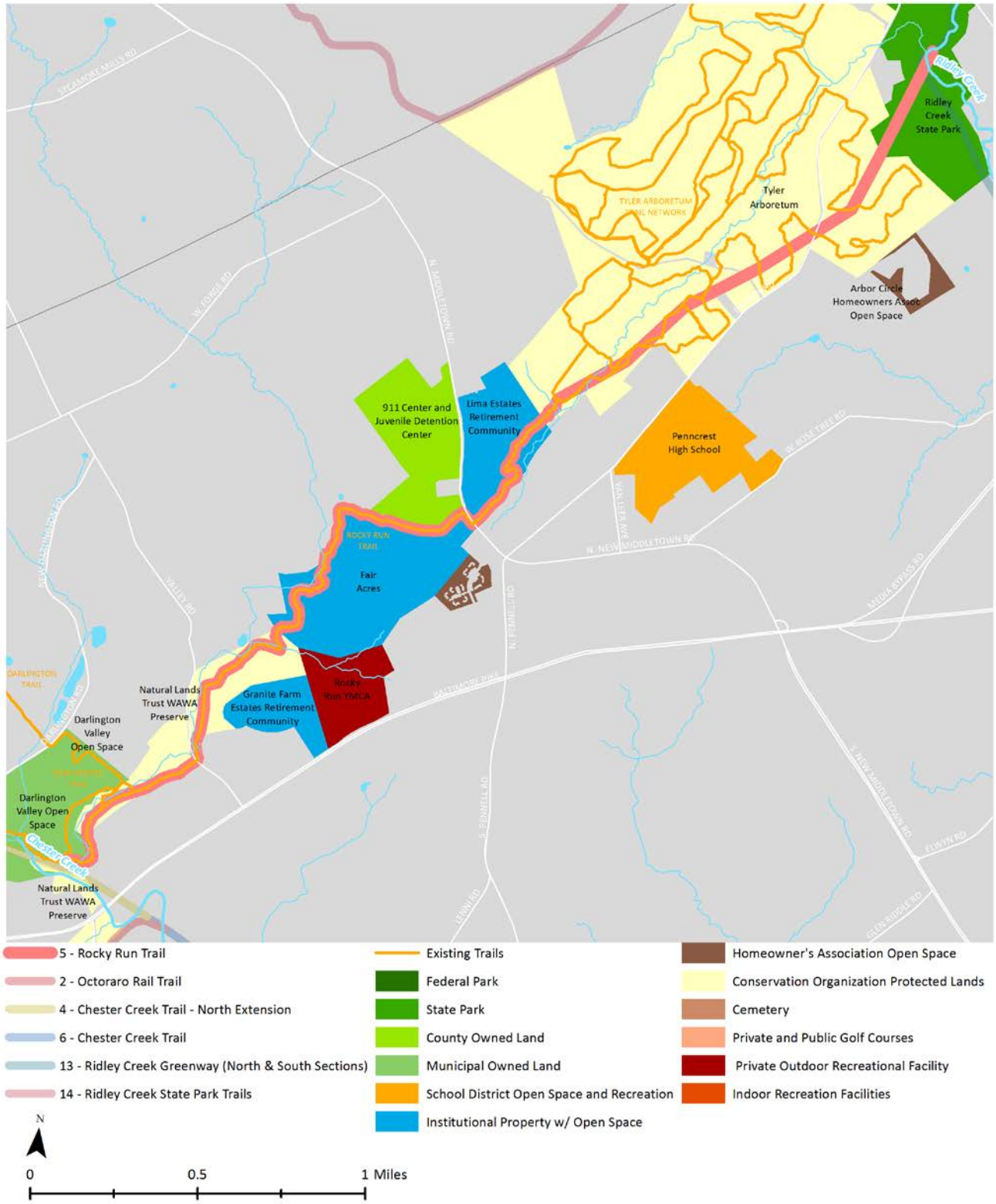
Municipalities:
Chester Heights Borough
Middletown Township
Thornbury Township

Potential Links:
Edgmont Township
Thornbury Township (Chester County)

Primary Trail Connections:
2 – Octoraro Rail Trail
5 - Rocky Run Trail
6 - Chester Creek Trail

Hub Connections:
Bonner Park
Cheyney University
Glen Mills Station (historic site)
Martin Park
Wawa SEPTA Regional Rail Station (planned)

Map 3-6: Rocky Run Trail



5: ROCKY RUN TRAIL

DESCRIPTION

The Rocky Run Trail is situated in an area north of and generally parallel to Baltimore Pike. The approximately 2.5-mile, 10-ft wide earthen hiking trail traverses Middleton Township along Rocky Run, a tributary of Chester Creek. Parking lots on Valley Road (mid-trail) and Darlington Road (western end, on the connecting Darlington Trail) serve users of the trail.

In unforested sections at Fair Acres and Lima Estates, lawn comprises the surface of the trail, which has no defined edge. The only at-grade road crossings occur at Valley Road, which has low volume, and Middletown Road at a signalized intersection.

The upstream (eastern) portion of the trail runs east from Valley Road, first behind the Wawa dairy farms, through meadows and forest behind the Granite Farms Estates retirement community, along the edges of Delaware County's Fair Acres Geriatric Center, along Lima Estates retirement community, ending at a connection with one of the Tyler Arboretum's hiking trails. A spur of the Rocky Run Trail connects to the parking lot of the Rocky Run YMCA.

The downstream (western) portion runs through a densely wooded area before connecting to Middletown Township's Darlington (2 ¾ mile loop) and Cornucopia (1 ¼ mile loop) Trails near Chester Creek. This trail could also potentially connect to the planned Chester Creek Trail and its potential northern extension.

This plan proposes that the existing trail be extended, in some fashion, through or alongside Tyler Arboretum to Ridley Creek State Park. Such a trail could make a connection to Penncrest High School.

Status:
Potential; Existing

Surface Type(s):
Earthen; Undetermined

Ownership:
Middletown Township; Delaware County; Natural Lands Trust; Lima Estates; Tyler Arboretum

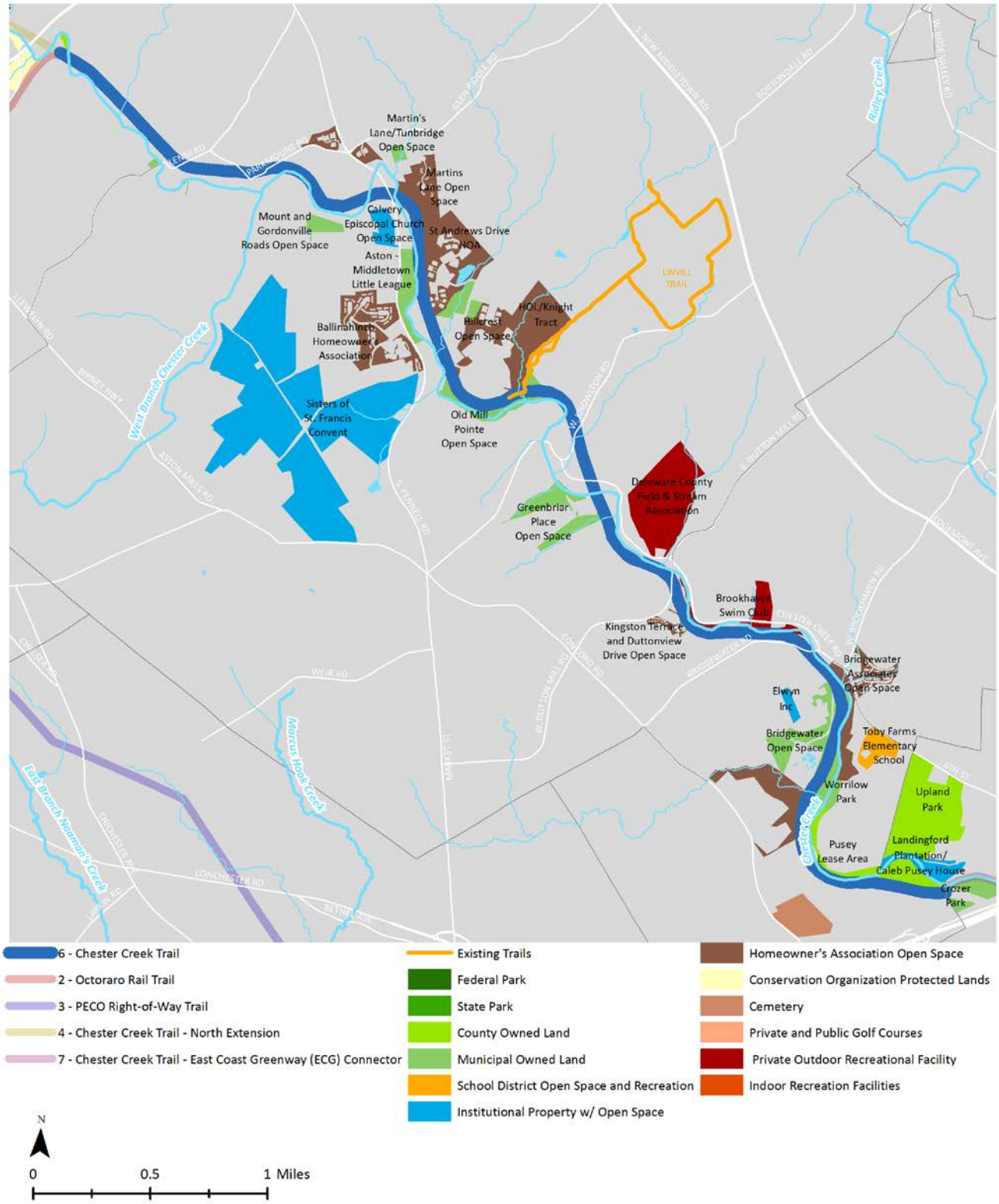
Municipality:
Middletown Township

Potential Links:
Chester Heights Borough
Edgmont Township
Thornbury Township
Upper Providence Township

Primary Trail Connections:
4 - Chester Creek Trail – North Extension
13 - Ridley Creek Greenway (North)

Hub Connections:
Fair Acres Geriatric Center
Lima Estates
Penncrest High School
Rocky Run YMCA
Ridley Creek State Park
Tyler Arboretum
Wawa SEPTA Regional Rail Station (planned)

Map 3-7: Chester Creek Trail



6: CHESTER CREEK TRAIL

DESCRIPTION

The 6.5-mile Chester Creek Trail follows a former rail line, the Chester Creek Branch, which parallels Chester Creek north to south in central Delaware County. It has the potential to be a major route joining the Chester Heights/Middletown/Glen Mills area to Crozer Park and Upland County Park areas. A feasibility study for the Chester Creek Trail was completed in 2002 for the Friends of the Chester Creek Branch. The study identified 3 phases for construction.

The middle section of the trail (Phase I), consists approximately 2.70 miles through Middletown and Aston Townships. It will be the first to be completed, with construction to begin in 2015. The route stretches between Lenni Road and Creek Road with potential connections to Middletown Township's trail system at Linvilla Orchards, located at the southern end of this phase.

The southernmost section (Phase II) continues for 2.90 miles from Creek Road, south along Chester Creek to the trail's southern terminus at Incinerator Road in Chester Township. The southernmost point is near the Caleb Pusey Historic Site and Upland County Park. A connection can be made across Incinerator Road into Chester City's Crozer Park (see #7-Chester Creek Greenway Trail in the City of Chester).

Phase III, located at the northern end, will be a 0.80-mile rail with trail from Lenni Road to the planned Wawa SEPTA Regional Rail Station near Baltimore Pike which will accommodate an extension of the existing Media/Elwyn line.

Status:
Phase I: Construction
Phase II: Proposed
Phase III: Proposed

Surface Type(s):
Paved; Crushed Stone

Ownership:
SEPTA right-of-way (Phase I segment leased to Delaware County and subleased to the Friends of the Chester Creek Branch)

Municipalities:
Aston Township
Chester Heights Borough
Chester Township
Middletown Township

Potential Links:
Brookhaven Borough
Chester City
Upland Borough

Primary Trail Connections:
2 - Octoraro Rail Trail
4 - Chester Creek Trail – North Extension
7 - Chester Creek Trail – East Coast Greenway (ECG) Connector

Hub Connections:
Crozer Park
Linvilla Orchards
Neumann University
Upland County Park
Wawa SEPTA Regional Rail Station (planned)

the Circuit
Greater Philadelphia's Regional Trail Network
Official Segment

Map 3-8: Chester Creek Trail – East Coast Greenway (ECG) Connector

7: CHESTER CREEK TRAIL – EAST COAST GREENWAY (ECG) CONNECTOR

DESCRIPTION

Chester Creek Trail – East Coast Greenway (ECG) Connector is a continuation of the Chester Creek Trail, roughly following the creek until making a connection to the East Coast Greenway.

The trail extends downstream along Chester Creek from Incinerator Road into Chester City's Crozer Park, through a few other City parks and school properties, connects across the Creek into Deshong Park, and terminates at the East Coast Greenway. A trail alignment along this route would help to revitalize the area near Deshong Park and allow for a connection to the City's central business district.

From Deshong Park and Eyre Drive Recreation Area, a safe street side route could be planned southward paralleling the Creek and Penn Street. There is a County-owned property (151 Fifth Street) that fronts Penn Street and Rt. 291, which could potentially be utilized for this trail alignment. From there a safe crossing of Route 291 (Third Street) is needed to connect to the East Coast Greenway at Ethel Waters Park.

At the western edge of Crozer Park, the Chester Creek Branch right-of-way turns south toward Interstate 95. This corridor presents the potential for an additional connection to neighborhoods, Crozer Park, and the East Coast Greenway in Chester City. The Concord Road bridge over the Chester Creek Branch was recently replaced with a bridge in order to preserve the underpass for future trail use. The corridor continues southward between Carla's Lane and Lamokin Street until 7th Street. It could then connect to the East Coast Greenway via City streets between 7th street and the 2nd Street corridor.

Status:
Potential

Surface Type(s):
Crushed Stone; Earthen; Undetermined

Ownership:
Chester City; Delaware County Industrial Development Authority; Delaware County

Municipality:
Chester City

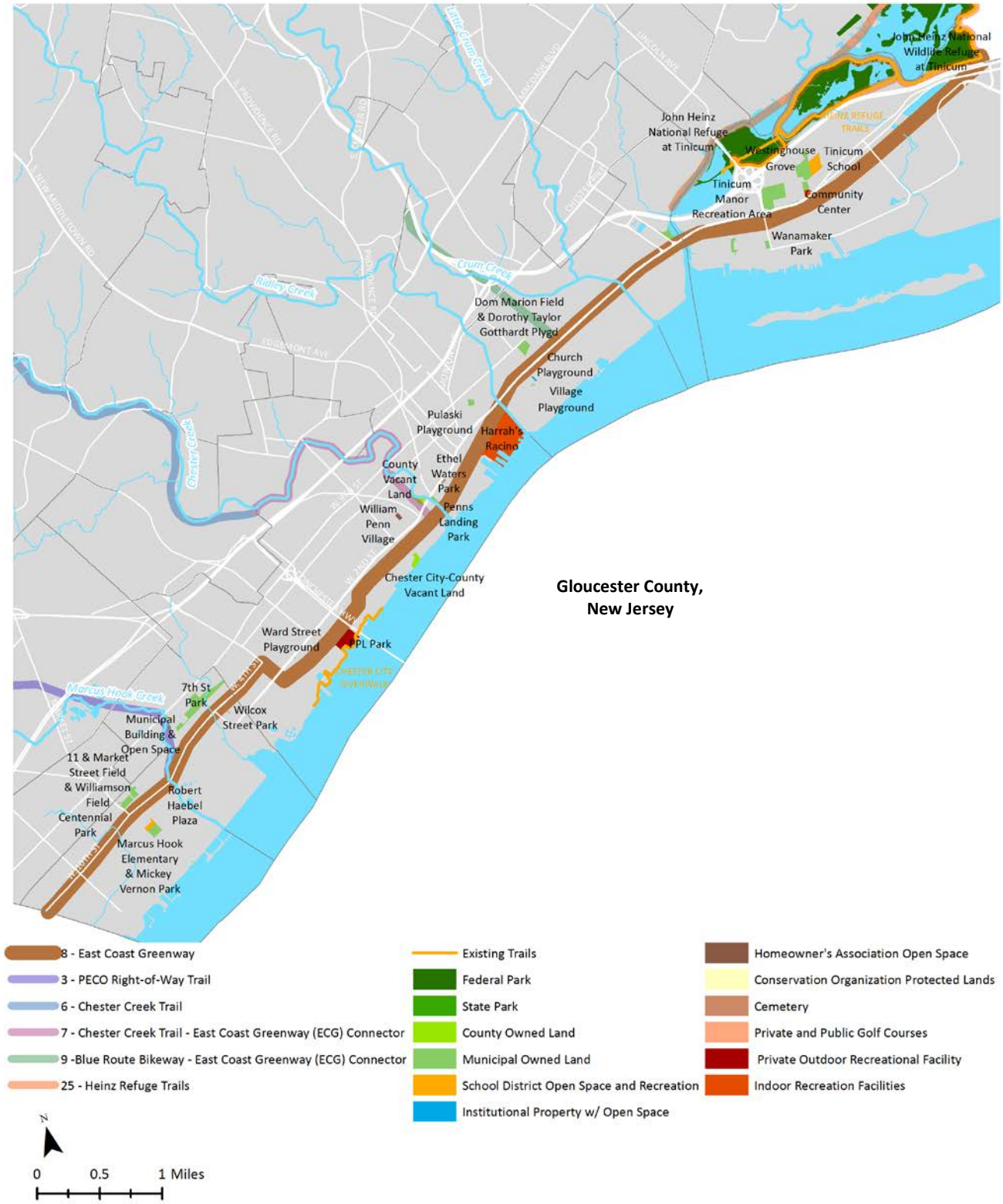
Potential Links:
Chester Township
Upland Borough

Primary Trail Connections:
6 - Chester Creek Trail
8 - East Coast Greenway

Hub Connections:
Chester City CBD
Chester City Hall
Chester High School
Crozer Park
Deshong Park
Ethel Waters Park
Eyre Drive Recreation Area

the Circuit
Greater Philadelphia's Regional Trail Network
Official Segment

Map 3-9: East Coast Greenway



8: EAST COAST GREENWAY

DESCRIPTION

The East Coast Greenway (ECG) will be a continuous, paved, mainly off-road, bicycle route from Maine to Florida connecting major urban areas. DCPD staff has been working with the East Coast Greenway Alliance (ECGA, www.greenway.org) to map out a route for the Greenway through Delaware County. The corridor roughly follows BicyclePA Route E, a state designated bicycle route that is delineated through the Delaware River Corridor along portions of Route 13 and Route 291. The Trainer Borough portion of the ECG (bicycle lanes) was completed in 2012.

The East Coast Greenway travels through six Delaware County municipalities, connecting the City of Philadelphia and the State of Delaware. It passes by several significant regional amenities, including PPL Park in the City of Chester, Philadelphia International Airport, and John Heinz National Wildlife Refuge in Tinicum. There are also a number of north-south Primary Trails which connect to the ECG.

The *Delaware County Industrial Heritage Parkway, Route 291/13 Beautification and Greenway Plan* (2002) makes recommendations for beatifying the corridor and constructing a multi-use path along this route. The plan included consistent landscaping and signage guides, among other amenities, for communities to develop a consistent corridor. A bridge was recently rebuilt along this route over Darby Creek and included a portion of the road surface reserved for a multi-use path. A more recent study researched ownership history of potential off-road corridors, particularly active and inactive rail corridors.

Status:
Proposed; Existing

Surface Type(s):
Paved

Ownership:
Municipalities; PennDOT; Private Property Owners

Municipalities:
Chester City
Eddystone Borough
Marcus Hook Borough
Ridley Township
Tinicum Township
Trainer Borough

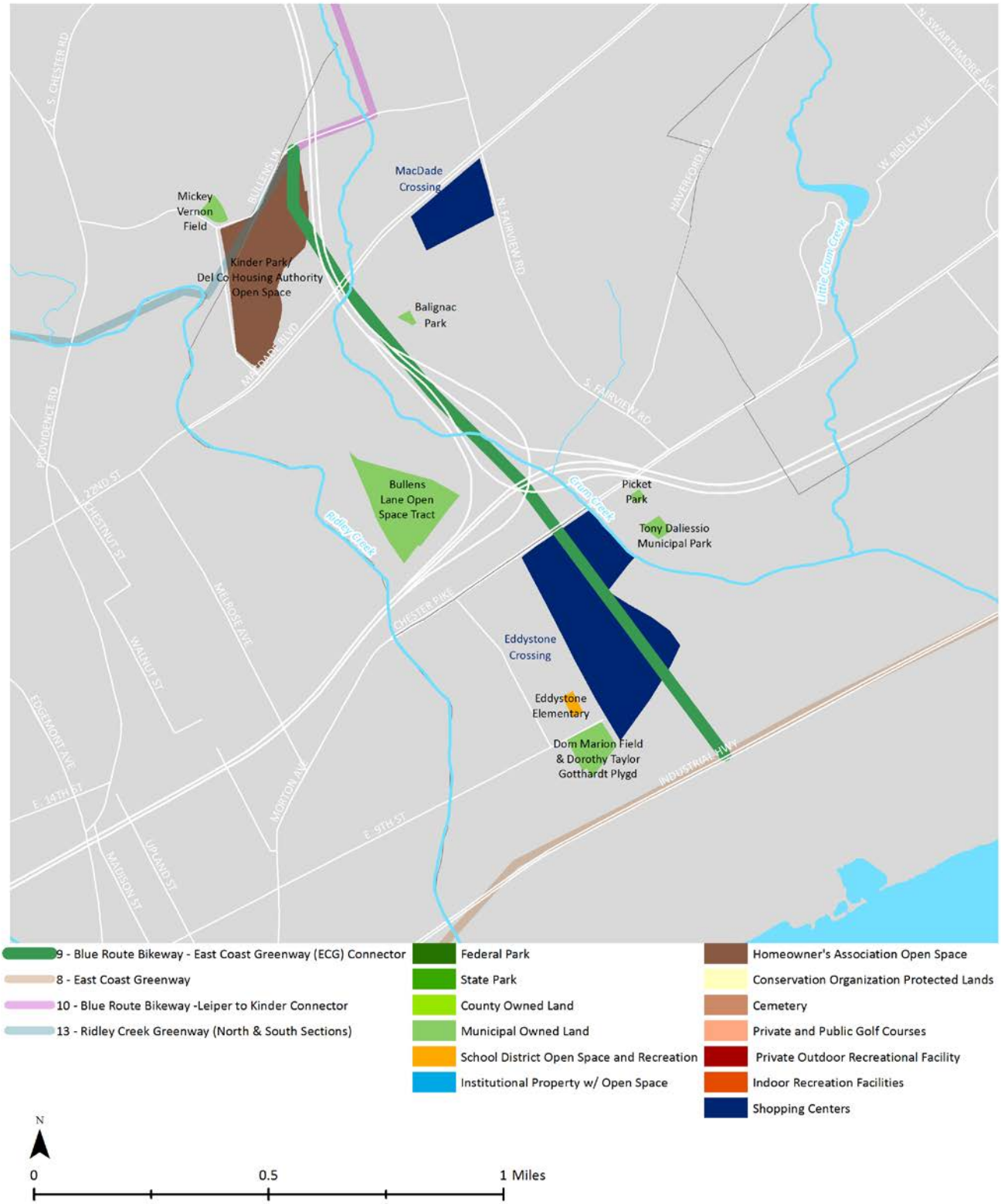
Potential Links:
Darby Township
Glenolden Borough
Lower Chichester Twp.
Norwood Borough
Prospect Park Borough
Ridley Park Borough
Upper Chichester Township
State of Delaware

Primary Trail Connections:
3 - PECO Right-of-Way Trail
7 - Chester Creek Trail – East Coast Greenway (ECG) Connector
9 – Blue Route Bikeway – East Coast Greenway (ECG) Connector
25 - Heinz Refuge Trails

Hub Connections:
Governor Printz Park
John Heinz NWR
Market Sq. Memorial Park
Philadelphia Int'l Airport
PPL Park/Barry Bridge Park
Wharf at Rivertown

the Circuit
Greater Philadelphia's Regional Trail Network
Official Segment

Map 3-10: Blue Route Bikeway – East Coast Greenway (ECG) Connector



9: BLUE ROUTE BIKEWAY – EAST COAST GREENWAY (ECG) CONNECTOR

DESCRIPTION

The Blue Route Bikeway – East Coast Greenway Connector ties the Blue Route Bikeway – Leiper to Kinder Connector (#10) to the East Coast Greenway (#8) with a multi-use trail. This involves the development of a trail from Bullens Lane near MacDade Boulevard in Ridley Township, south through the Borough of Eddystone, to a location near to the Delaware River waterfront where the final East Coast Greenway alignment will be.

Due to the relative proximity of the Blue Route Bikeway – Leiper to Kinder Connector and the East Coast Greenway, it makes sense to connect these corridors. However, a feasibility study is necessary to identify the exact route of a trail. Obstacles include the crossing of Interstate 95, Chester Pike, and a freight rail line. Alternate or spur connections could include Sun Village Park in Chester City and the Smiley Street Area of Ridley Township. The Baldwin Tower complex and Eddystone Crossings (Wal-Mart) shopping center would be great trail partners and would also benefit greatly from a completed trail.

Status:
Potential

Surface Type(s):
Undetermined

Ownership:
Undetermined

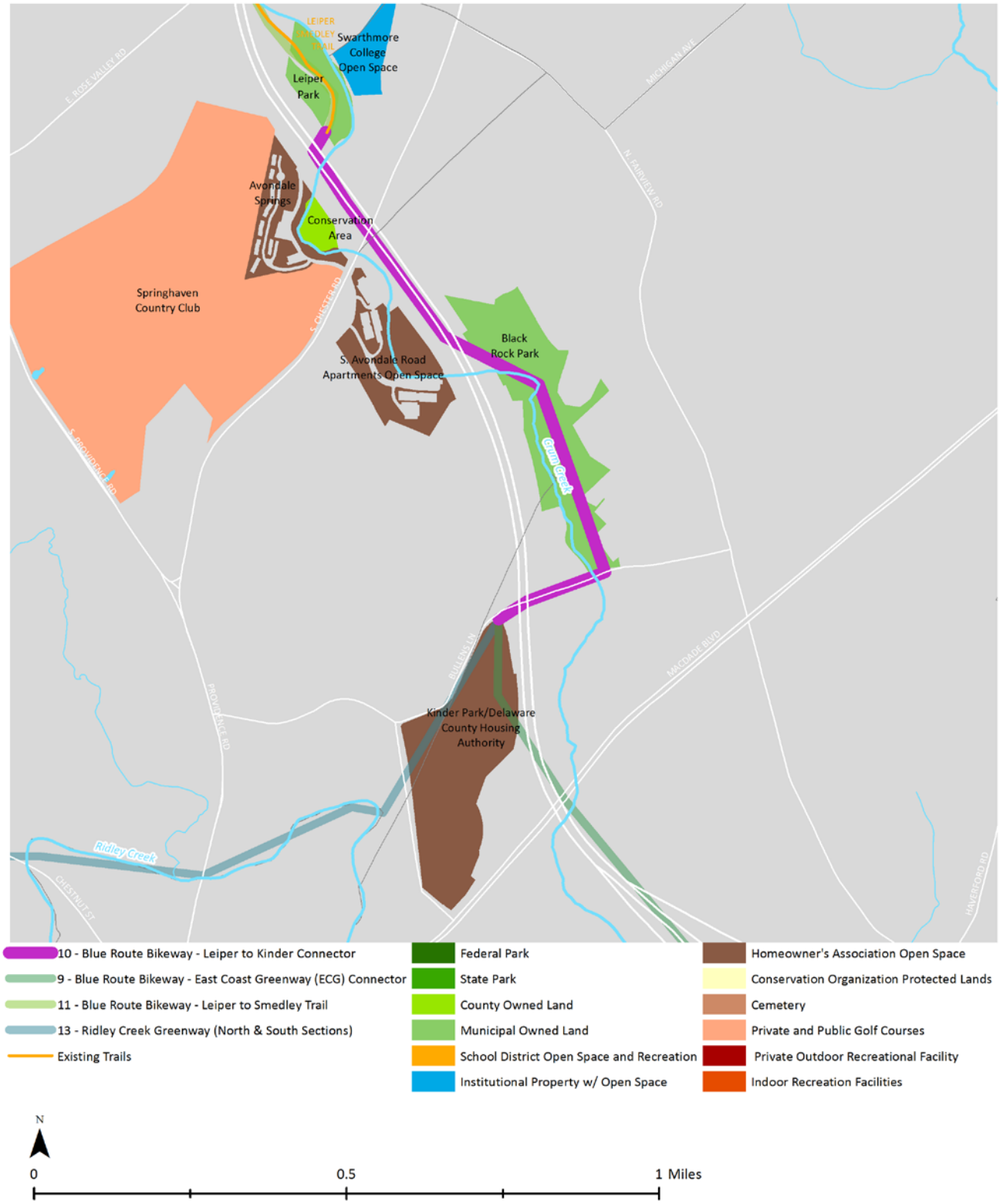
Municipalities:
Chester City
Eddystone Borough
Ridley Township

Potential Links:
Chester City

Primary Trail Connections:
8 - East Coast Greenway
10 - Blue Route Bikeway – Leiper to Kinder Connector

Hub Connections:
Baldwin Tower complex
Bullens Lane Open Space Tract

Map 3-11: Blue Route Bikeway – Leiper to Kinder Connector



10: BLUE ROUTE BIKEWAY – LEIPER TO KINDER CONNECTOR

DESCRIPTION

This Blue Route Bikeway – Leiper to Kinder Connector connects the southern end of the Blue Route Bikeway – Leiper-Smedley Trail in Nether Providence Township to Bullens Lane near MacDade Boulevard in Ridley Township.

The northwest side of Ridley Township near Black Rock Park is a densely populated area that would greatly benefit from connection to a major trail network. A multi-use trail can be built where desire paths currently exist from Avondale Road, past an apartment complex, and then under I-476 to Black Rock Park. A path from Black Rock Park south through Township-owned woods on a sewer right-of-way could also be formalized.

A multi-municipal feasibility study is necessary to identify the most feasible route to connect the three primary corridors that join in the area near where Bullens Lane crosses over I-476: the Bikeway – Leiper to Kinder Connector, the Blue Route Bikeway – East Coast Greenway (ECG) Connector, and the south end of the Ridley Creek Greenway.

Status:
Potential

Surface Type(s):
Undetermined

Ownership:
PennDOT; Ridley Township

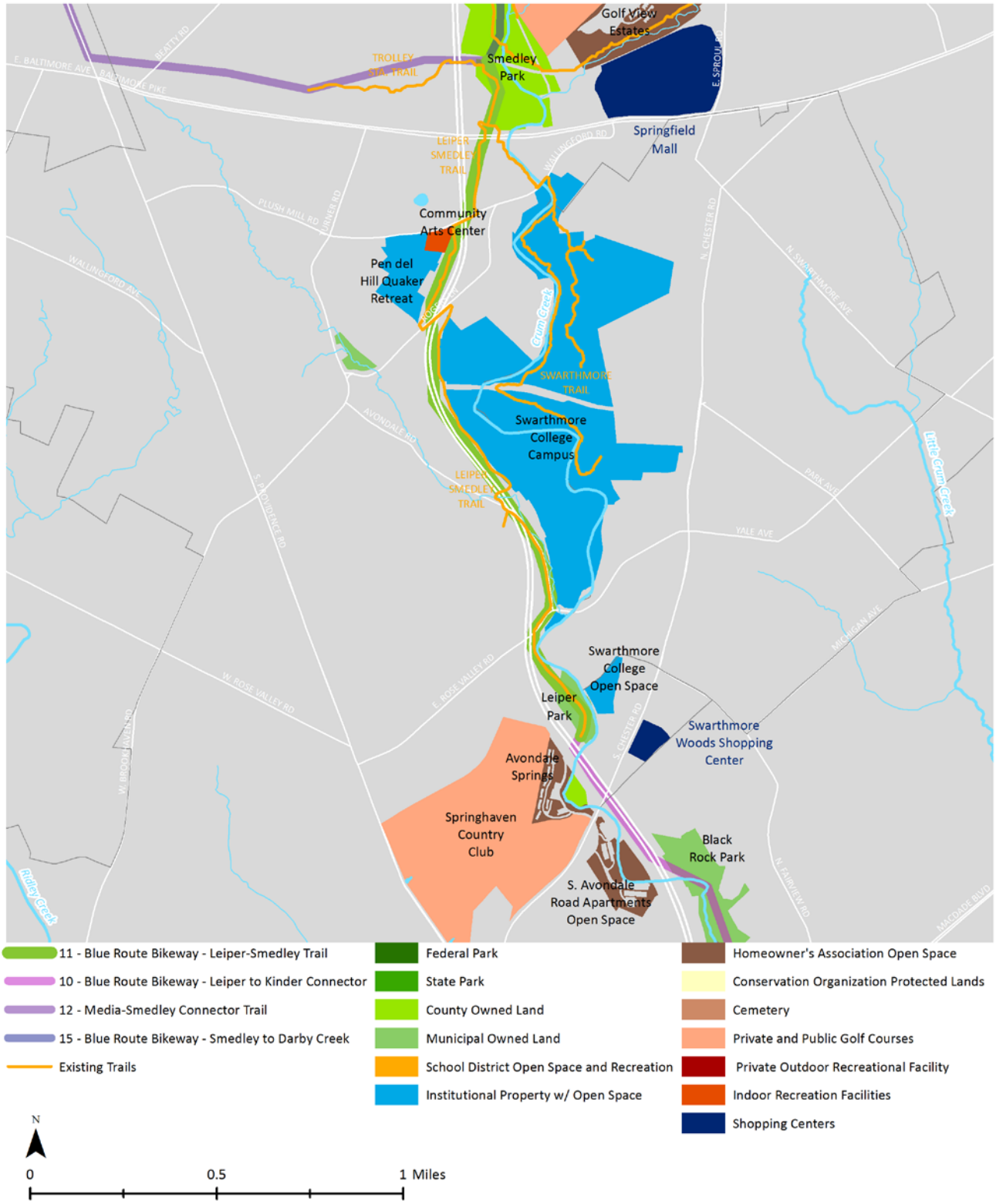
Municipalities:
Nether Providence Township
Ridley Township
Swarthmore Borough

Potential Links:
Chester City
Swarthmore Borough

Primary Trail Connections:
9 - Blue Route Bikeway – East Coast Greenway (ECG) Connector
11 - Blue Route Bikeway – Leiper-Smedley Trail
13 - Ridley Creek Greenway

Hub Connections:
Apartment complexes on Avondale Road
Black Rock Park
Delaware County Housing Authority

Map 3-12: Blue Route Bikeway – Leiper-Smedley Trail



11: BLUE ROUTE BIKEWAY – LEIPER-SMEDLEY TRAIL

DESCRIPTION

The Blue Route Bikeway – Leiper Smedley Trail is a 2.2-mile paved trail that runs roughly parallel to I-476 and Crum Creek. The width ranges between five and ten feet, which is adequate in most portions for a multi-use trail of this type. It is used by many people for walking and jogging. The trail alignment was first planned as part of the "Blue Route Bikeway" by the Delaware County Planning Department in the 1970s and 1980s. It was built in conjunction with the construction of Interstate 476, locally known as the "Blue Route," which opened in December of 1991.

The two endpoints of the Trail are at Smedley County Park (via a crossing of Baltimore Pike at a traffic light) and the historic Leiper House in Nether Providence Township. The Trail may also be accessed from a small parking lot at Avondale Road under an overpass of I-476.

Rogers Lane and Plush Mill Road serve as overpasses over I-476, allowing trail users to get from one side of the highway to the other. One key destination along the trail is the Community Arts Center of Wallingford. In 2013, a sidewalk was completed from the Wallingford train station to Rogers Lane and Turner Road, providing safe access to transit and more residential areas from the Trail. Further spur trails and paths are planned to interconnect the Trail with more neighborhoods in the Township.

Status:
Existing

Surface Type(s):
Paved

Ownership:
PennDOT; Nether Providence Township

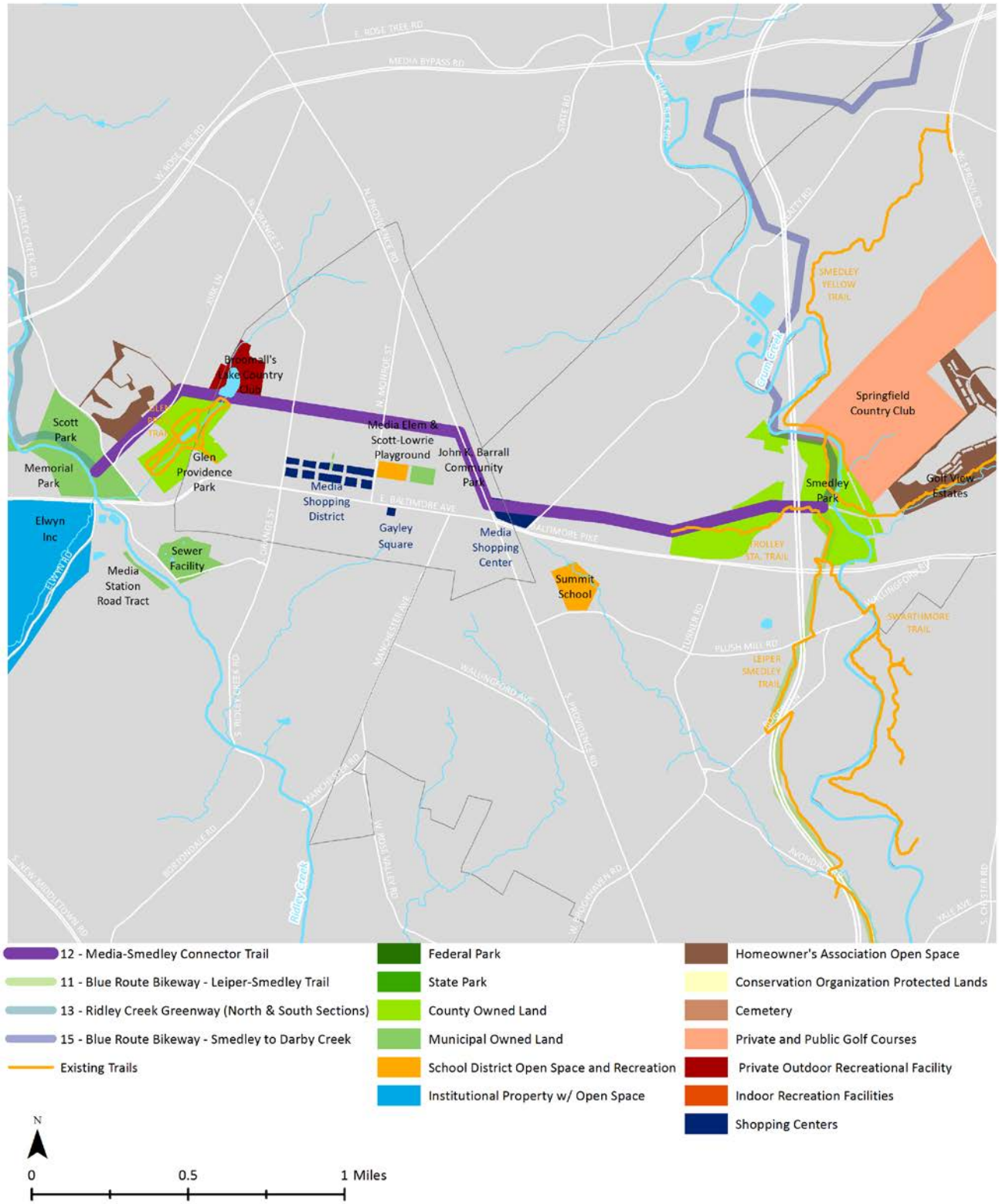
Municipality:
Nether Providence Township

Potential Links:
Ridley Township
Swarthmore Borough
Springfield Township

Primary Trail Connections:
10 - Blue Route Bikeway – Leiper to Kinder Connector
15 - Blue Route Bikeway – Smedley to Darby Creek

Hub Connections:
Leiper Park
Smedley County Park
Wallingford Community Arts Center

Map 3-13: Media-Smedley Connector Trail



12: MEDIA-SMEDLEY CONNECTOR TRAIL

DESCRIPTION

The Media-Smedley Connector Trail provides the opportunity for an easy, safe, and legal route for bicyclists and pedestrians to travel from Media Borough east through Smedley County Park (Pine Ridge/Penza Tract entrance), and from the Borough west to Scott Park and the Mineral Hill Area. A multi-use trail within the west side of Smedley Park (Penza Tract) has been proposed in a long range plan by the County.

Media Borough's Comprehensive Plan (adopted in 2014) recommends a designated on-road east-west route through the Borough. Media and Nether Providence can work together on a study to connect the east end of this route to Smedley County Park. This should include coordination with stakeholders such as the owner of the Media Shopping Center, the Chesley Office Campus (Henderson Group), and other private landowners and residents.

The western terminus of the trail is in Scott Park in Middletown Township which was addressed as part of a group of parks along Ridley Creek in the *Mineral Hill Area Park Master Plan* (2014). In addition to Scott park, the study area is comprised of Mineral Hill County Park and Middletown Township's Memorial Park on the west side of the creek, and the Lavin Tract in Upper Providence on the east side of the creek. The plan calls for a trail network throughout the parks and makes recommendations for possible pedestrian connections beyond the site, including a safe route connecting to the Borough and the County's Glen Providence County Park which is situated in Media Borough and Upper Providence Township.

Status:
Potential; Proposed

Surface Type(s):
Paved; Undetermined

Ownership:
Municipalities; Delaware County; Private Landowners

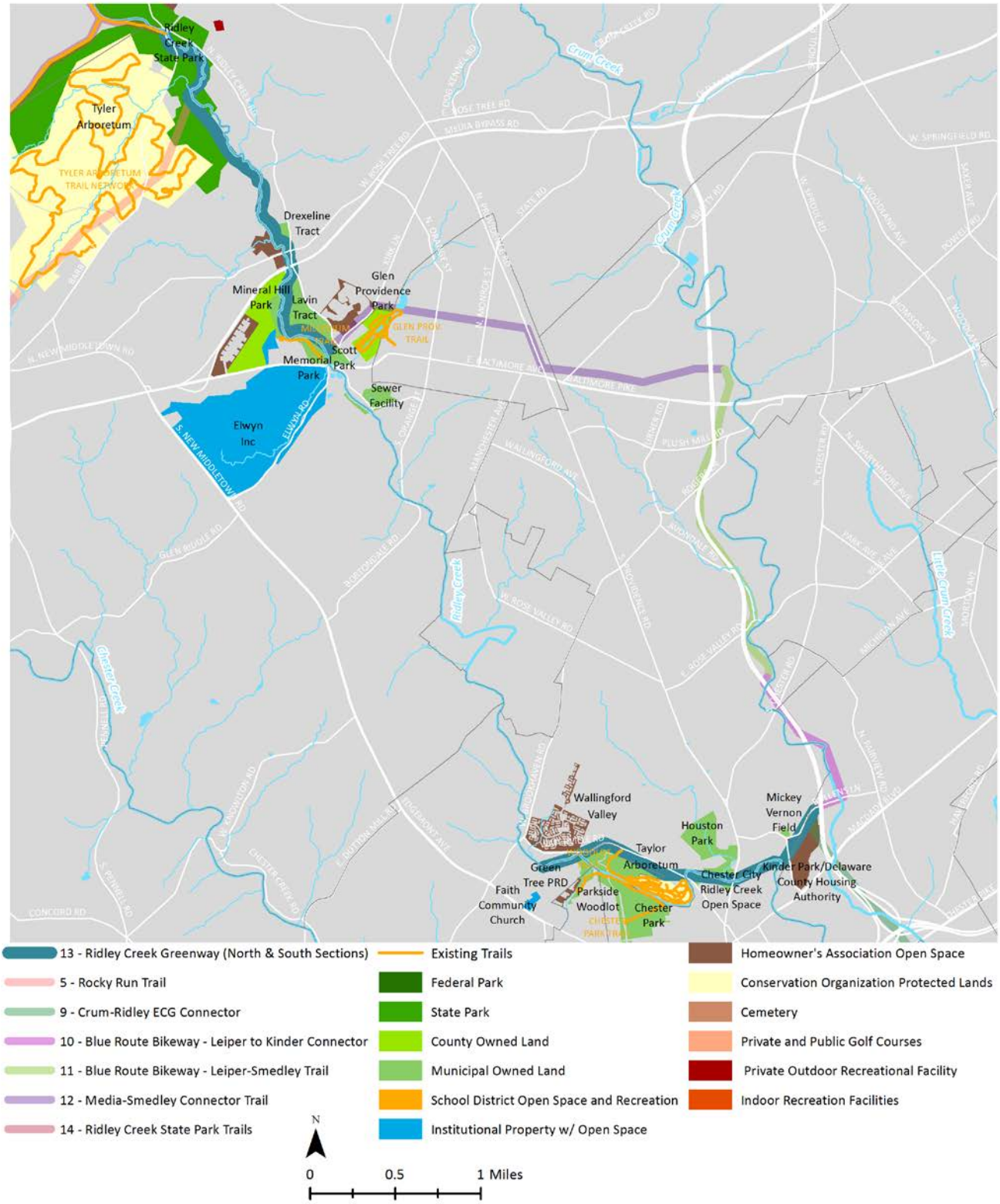
Municipalities:
Media Borough
Nether Providence Township
Upper Providence Township

Potential Links:
Middletown Township
Springfield Township

Primary Trail Connections:
11 - Blue Route Bikeway – Leiper Leiper-Smedley Trail
13 - Ridley Creek Greenway (North)
15 - Blue Route Bikeway – Smedley to Darby Creek

Hub Connections:
Downtown Media
Memorial Park
Mineral Hill County Park
Scott Park
Smedley County Park

Map 3-14: Ridley Creek Greenway (North and South Sections)



13: RIDLEY CREEK GREENWAY (NORTH AND SOUTH SECTIONS)

DESCRIPTION

The Ridley Creek Greenway has two Primary Trail sections: north and south.

The northern section of the Ridley Creek Greenway connects Ridley Creek State Park's paved multi-use trail to areas to the south of the Park. The Greenway travels southward along the stream valley leading to Mineral Hill Area Parks (Mineral Hill County Park, Memorial Park in Middletown Township, and Scott Park in Upper Providence Township) and Primary Trail #12 – Media-Smedley Connector Trail.

The south section of this corridor connects the Ridley Creek and Crum Creek stream valleys. It connects Parkside and Brookhaven Boroughs to the Network through the City of Chester and Nether Providence Townships. The southern section travels through several municipal parks and open space, but alignment would need to be determined in a more detailed feasibility study.

At this time, there does not appear to be a feasible route for a trail along the Ridley Creek stream valley between the northern and southern sections.

Status:
Proposed; Potential

Surface Type(s):
Undetermined

Ownership:
Municipalities;
Commonwealth of Pennsylvania

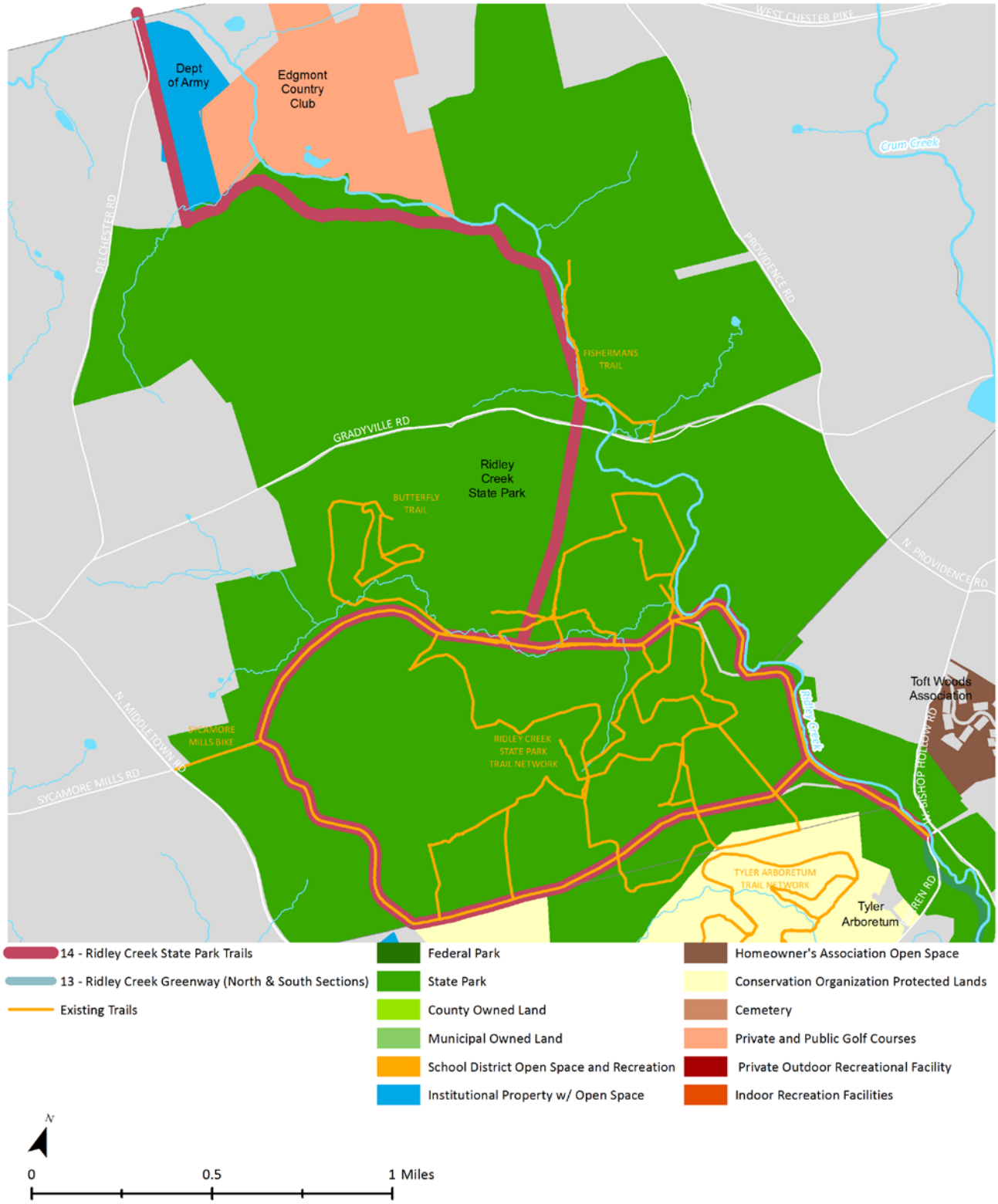
Municipalities:
Brookhaven Borough
Chester City
Middletown Township
Nether Providence Township
Parkside Borough
Upper Providence Township

Potential Links:
Media Borough
Ridley Township
Rose Valley Borough

Primary Trail Connections:
5 - Rocky Run Trail
9 - Blue Route Bikeway – East Coast Greenway (ECG) Connector
10 - Blue Route Bikeway – Leiper to Kinder Connector
12 - Media-Smedley Connector Trail
14 – Ridley Creek State Park Trails

Hub Connections:
Chester Park
Houston Park
Glen Providence County Park
Mineral Hill Area Parks
Parkside Woodlot
Ridley Creek State Park
Taylor Arboretum

Map 3-15: Ridley Creek State Park Trails



14: RIDLEY CREEK STATE PARK TRAILS

DESCRIPTION

One of the most popular recreational trail systems in the County exists at Ridley Creek State Park. The 5-mile multi-use loop consists of a wide paved trail, also used for limited vehicular access for park personnel. There are both flat sections and long hills. Due to the popularity of this trail and the State Park, it is both a Primary Trail, providing a key north-south connection, and a significant destination in the Countywide Network.

Part of this trail, which is alongside Ridley Creek, is very popular for running, walking, bicycling, in-line skating, and pushing strollers. The park contains many more miles of earthen hiking trails of various levels of difficulty and accessibility. They run throughout the woods in the southern portion of the park and intersect at many points with the multi-use trail. They are identified by different colored blazes. The trails are maintained by park staff and volunteers from the Friends of Ridley Creek State Park.

The portion of the park north of Gradyville Road includes trails designated only for horses. A feasibility study could be developed to identify a route for a paved creekside trail at the northwestern end of the park to Delchester Road and the U.S. Army Reserve property. The trail could be a potential inter-county multi-use connection when combined with a safe crossing of West Chester Pike at the traffic light. This would not only be a stream valley trail, but also a key trail connection on the route of the Revolutionary War Campaign of 1777 or "Brandywine Battle Path." It would connect to the Okehocking Preserve on the other side of West Chester Pike in Willistown Township, and potentially connect to Chester County's planned trail network.

At the southern end of the park, there is long-range demand for an off-road multi-use trail on State Park property in Middletown Township. This potential route would connect trails and destinations in the park (such as the multi-use loop) to points south in the stream corridor, such as the Mineral Hill Area parks and Media Borough (See Primary Trail #13).

Status:
Proposed; Existing

Surface Type(s):
Paved; Earthen

Ownership:
Commonwealth of Pennsylvania

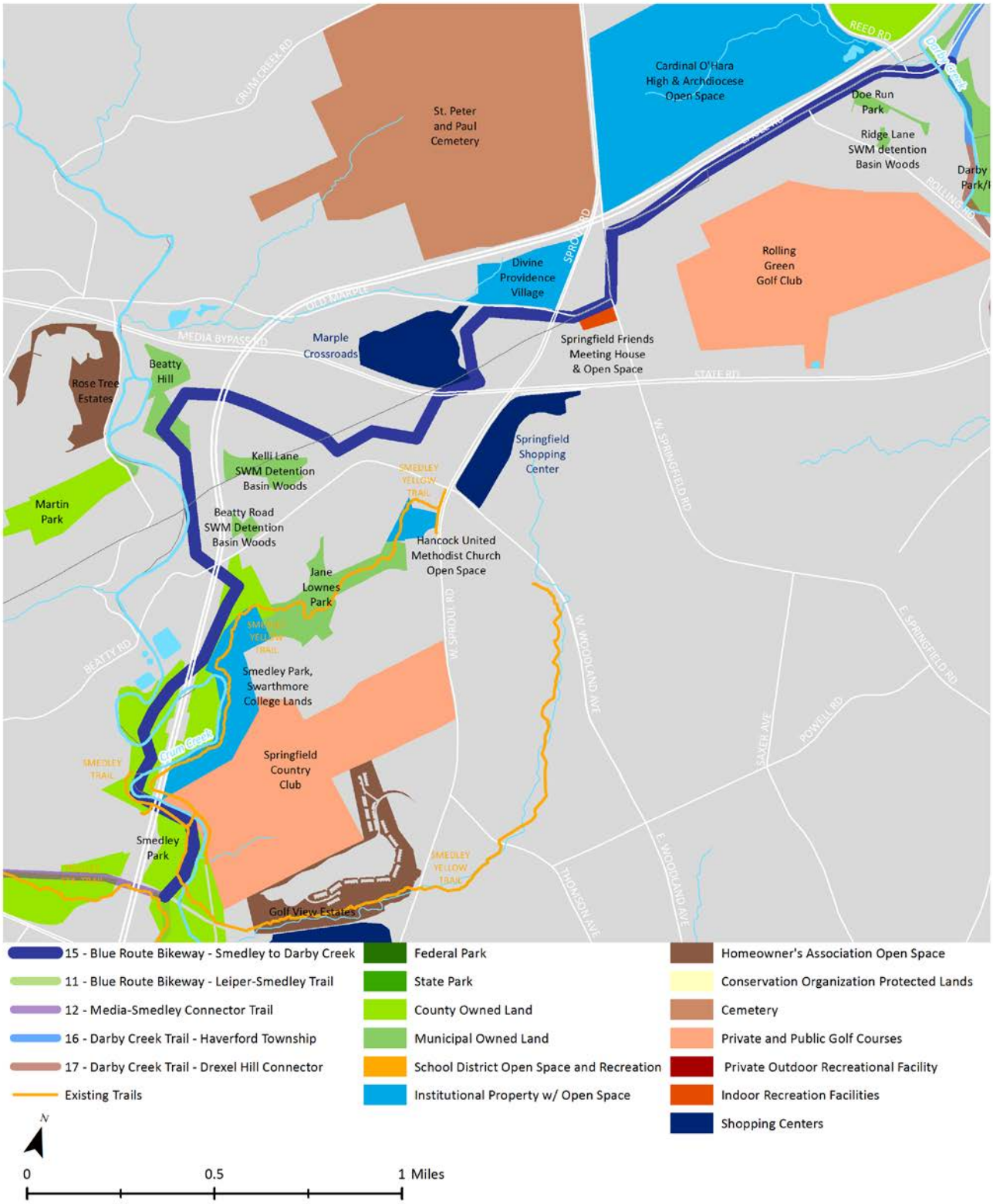
Municipalities:
Edgmont Township
Middletown Township

Potential Links:
Newtown Township
Upper Providence Township
Willistown Township (Chester County)

Primary Trail Connections:
5 - Rocky Run Trail
13 - Ridley Creek Greenway

Hub Connections:
Ridley Creek State Park picnic areas and parking lots
Tyler Arboretum

Map 3-16: Blue Route Bikeway – Smedley to Darby Creek



15: BLUE ROUTE BIKEWAY – SMEDLEY TO DARBY CREEK

DESCRIPTION

The Blue Route Bikeway – Smedley and North Trail parallels Interstate 476 from Smedley County Park to Darby Creek. It connects to the #11 – Blue Route Bikeway – Leiper-Smedley and #12 – Media-Smedley Connector Trails in the south and to #16 – Darby Creek Trail – Haverford Township and #17 – Darby Creek Trail – Drexel Hill Connector in the north.

This corridor is one of the limited east-west trail opportunities in the County's Primary Trail Network. A trail along this corridor can connect the Crum Creek and Darby Creek stream valleys and thus Primary Trails in the Darby Creek watershed with western Delaware County.

This trail was part of the Blue Route Bikeway route delineated by the Delaware County Planning Department in 1985 but was never implemented. The exact route should be re-examined with a more detailed study to determine an updated alignment.

Status:
Potential; Proposed; Existing

Surface Type(s):
Crushed Stone;
Undetermined

Ownership:
PennDOT; Ridley Township

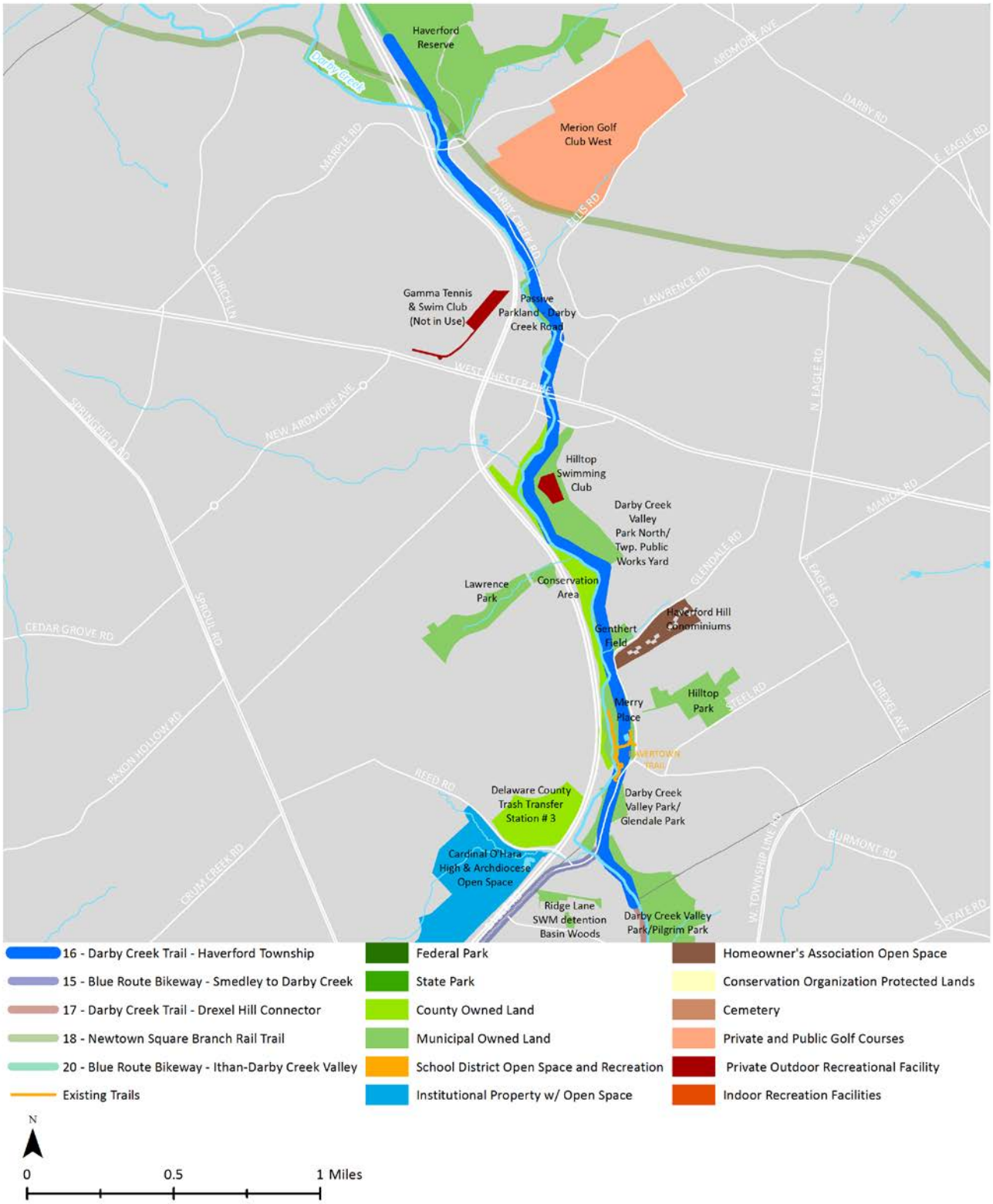
Municipalities:
Marple Township
Nether Providence Township
Springfield Township

Potential Links:
Haverford Township
Swarthmore Borough
Upper Darby Township

Primary Trail Connections:
11 - Blue Route Bikeway – Leiper-Smedley
12 - Media-Smedley Connector Trail
16 - Darby Creek Trail – Haverford Township

Hub Connections:
Cardinal O'Hara High School
Smedley County Park
Pilgrim Park

Map 3-17: Darby Creek Trail – Haverford Township



16: DARBY CREEK TRAIL – HAVERFORD TOWNSHIP

DESCRIPTION

Haverford Township opened the first segment of its portion of the Darby Creek Trail in 2013. Formerly a dirt and gravel hiking path on a cleared sewer easement, it is now a paved multi-use trail, connecting trailheads at Merry Place Park on Glendale Road and the Township public works yard off of Old West Chester Pike and Hilltop Road. The trail, which is over one mile long, includes benches, guard rails, and views of Darby Creek.

This segment is the middle section of the full trail proposed by Haverford Township, which includes extending the trail to the Haverford Reserve in the north and Glendale Park in the south. In order to complete this trail northward, the next step involves further study of potential crossings of West Chester Pike.

Haverford Township is studying options to extend the trail from Merry Place to Glendale Field. There is an opportunity from there to cross Burmont Road and work with Upper Darby Township to pave a trail through Pilgrim Park on the cleared sewer right-of-way and connect to #17 – Darby Creek Trail – Drexel Hill Connector.

Status:
Potential; Proposed; Existing

Surface Type(s):
Paved; Crushed Stone; Earthen

Ownership:
Haverford Township

Municipality:
Haverford Township

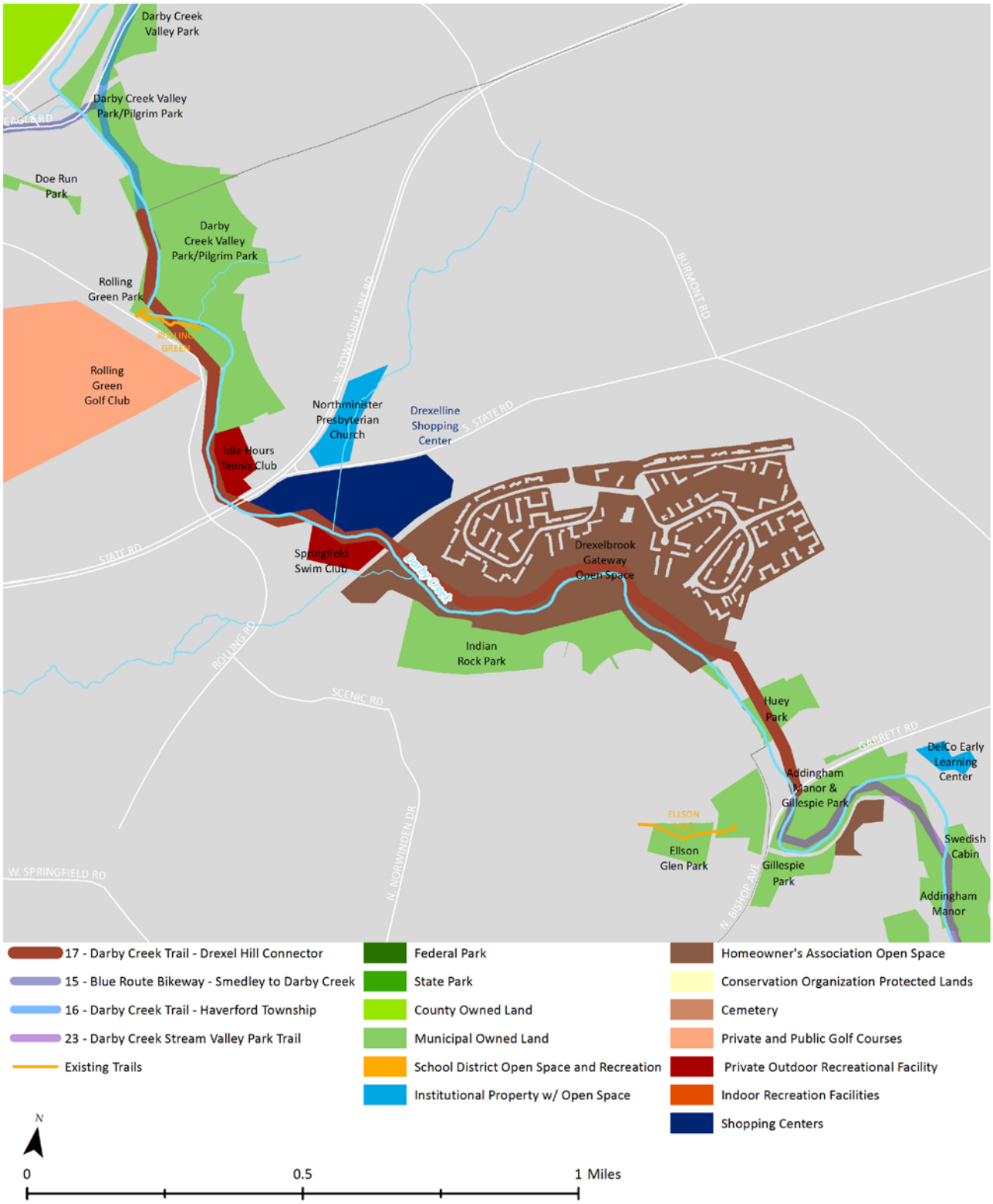
Potential Links:
Marple Township
Radnor Township
Upper Darby Township

Primary Trail Connections:
15 - Blue Route Bikeway – Smedley to Darby Creek
17 - Darby Creek Trail – Drexel Hill Connector
18 - Newtown Square Branch Rail Trail
20 - Blue Route Bikeway – Ithan-Darby Creek Valley

Hub Connections:
Glendale Field
Haverford Reserve
Haverford Township public works yard
Merry Place
Pilgrim Park

the Circuit
Greater Philadelphia's Regional Trail Network
Official Segment

Map 3-18: Darby Creek Trail – Drexel Hill Connector



17: DARBY CREEK TRAIL – DREXEL HILL CONNECTOR

DESCRIPTION

The Darby Creek Trail – Drexel Hill Connector is a continuation of #16 – Darby Creek Trail – Haverford Township. It follows the creek and connects the north end of the planned Darby Creek Stream Valley Park Trail at Upper Darby Township's Addingham open space.

The sewer right-of-way serves as a prime opportunity for multi-use trail development. The public is currently using the sewer authority's right-of-way as a trail. It would be safer and more accessible if it were to become an official trail. The right-of-way runs through public open spaces transected by the Upper Darby and Haverford Township boundary. A multi-municipal trail study is necessary to coordinate the connection of these trails.

A more detailed study is necessary to determine a safe crossing of Township Line Road at State Road (near Darby Creek). Land on both sides of Township Line Road near this crossing is held by the owner of the Drexeline Shopping Center. The trail will also need to cross the SEPTA Media trolley line. The Drexeline Station, located between Drexeline Shopping Center and Drexelbrook, offers a logical location for this crossing while also providing access to and from public transit.

Upper Darby Township can partner with Drexelbrook (apartment complex and catering and banquet facilities) to locate a trail from Drexeline to Drexelbrook parking lot, which would be striped to designate a trail along the edge of its property, near Darby Creek. Bloomfield Avenue, once designated as share-the-road, can bring trail users to the Rosemont Avenue bridge. On the south side of Rosemont Avenue, Bloomfield Avenue turns into a Township-owned driveway leading into the Township's Addingham open space. This driveway can be improved as part of the trail.

Status:
Potential; Proposed

Surface Type(s):
Paved; Undetermined

Ownership:
Upper Darby Township; Drexelbrook; Private Landowners

Municipality:
Upper Darby Township

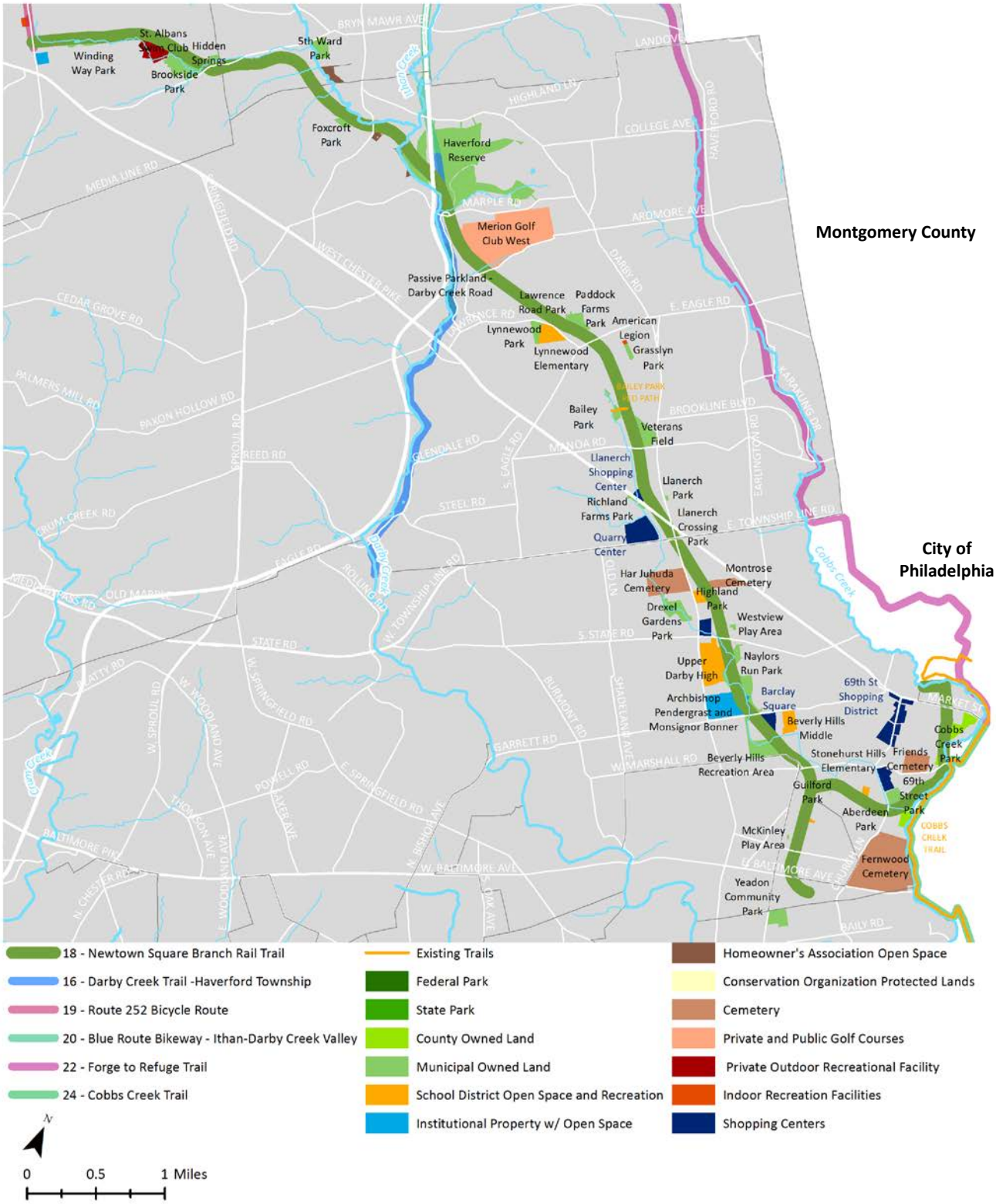
Potential Links:
Haverford Township
Springfield Township

Primary Trail Connections:
16 - Darby Creek Trail – Haverford Township
23 - Darby Creek Stream Valley Park Trail

Hub Connections:
Aronomink Swim Club
Drexeline Shopping Center
Drexelbrook
Idle Hour Tennis Club
Indian Rock Park
Pilgrim Park

the Circuit
Greater Philadelphia's Regional Trail Network
Official Segment

Map 3-19: Newtown Square Branch Rail Trail



18: NEWTOWN SQUARE BRANCH RAIL TRAIL

DESCRIPTION

The Newtown Square Branch is an unused rail right-of-way running generally northwest to southeast in Newtown, Radnor, Marple, Haverford, and Upper Darby Townships. The former rail line was operated by the Pennsylvania Railroad, but is now owned by a number of private entities. PECO maintains overhead electric lines on an aerial easement along this corridor.

The right-of-way can be converted into a multi-use trail beginning at Route 252 near Goshen Road at the SAP campus and ending near 69th Street in Upper Darby. The corridor connects a number of parks along the route and parallels Foxes Run for some of its length in Newtown Township. From Newtown Township, the railbed runs through the southwest corner of Radnor Township and into the northwest corner of Marple Township, where it runs beside Darby Creek. From there the corridor connects into Haverford Township and Upper Darby Township where it traverses multiple municipal open spaces, shopping centers, and schools. Key destinations include Haverford YMCA, Veterans Field in Haverford, Upper Darby High School, Delaware County Memorial Hospital, Archbishop Prendergast and Monsignor Bonner High School, and 69th Street Park.

The major physical obstacles to the completion of this this trail are the gaps where four very large railroad bridges were removed north of Eagle Road in 1963, when the line was abandoned. Smaller bridges at other locations may also be necessary.

Haverford purchased the portion of the right-of-way between Manoa Road and Eagle Road from private owners and, with volunteer help from the Friends of Haverford Trails, has moved forward in developing some of the trail with a wood chip surface. There already are plans and funding in place to upgrade it to a paved surface. This segment links the Skatium to the Haverford Area YMCA.

Upper Darby Township developed The Naylor's Run Trail Feasibility Study in 2011 to determine the best strategy for planning, building, and managing a segment between Manor Avenue to the north and Baltimore Pike to the south. The Cardington Branch (not included in the 2011 Study) is an abandoned rail bed spur in Upper Darby which connects the Newtown Square Branch to Millbourne along Naylor's Run and could join this trail to #22 – Cobbs Creek Trail and #24 – Forge to Refuge Trail.

the Circuit
Greater Philadelphia's Regional Trail Network
Official Segment

Status:
Potential; Existing

Surface Type(s):
Paved; Earthen; Undetermined

Ownership:
Haverford Township; PECO (aerial easement); Private Landowners

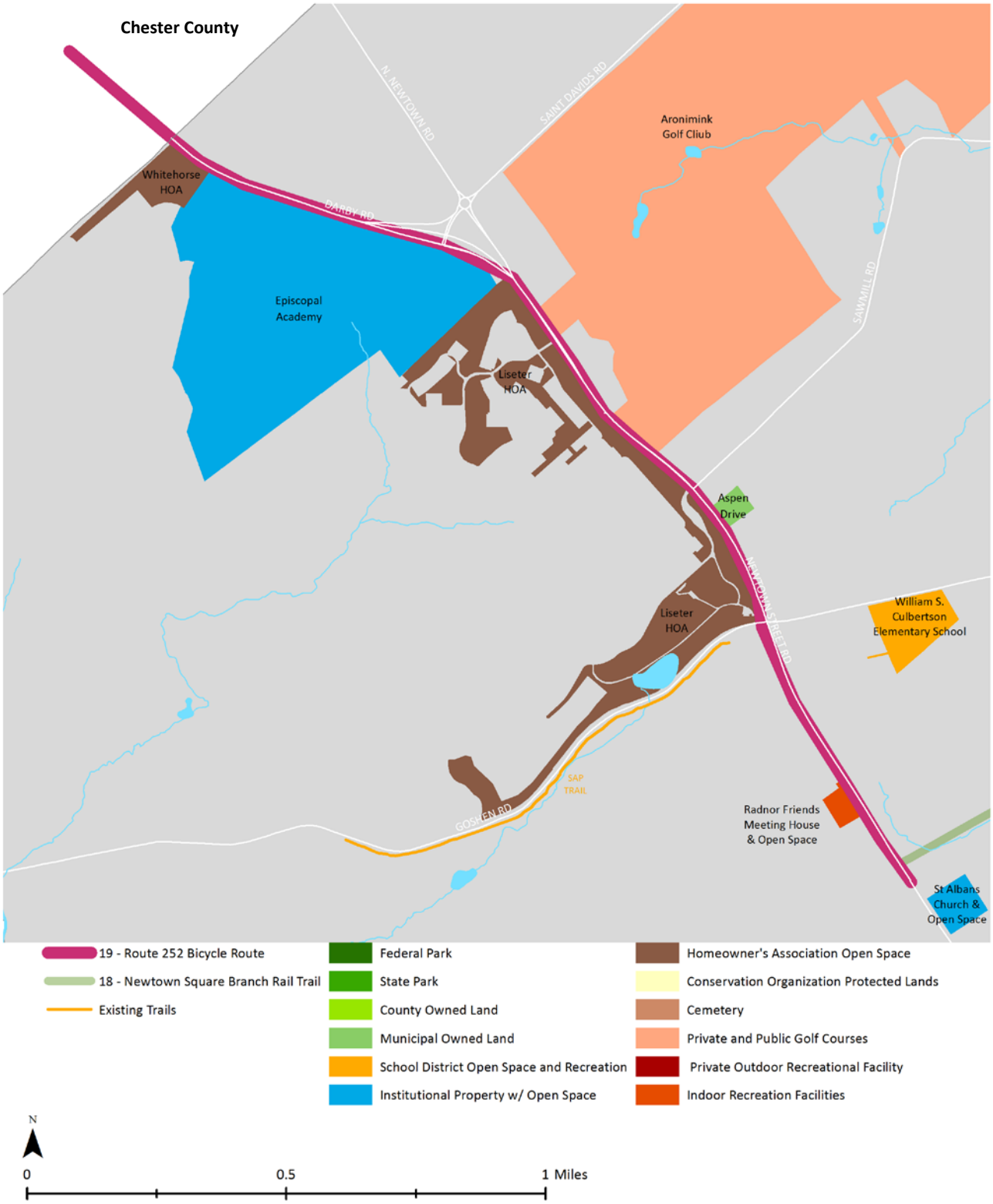
Municipalities:
Haverford Township
Marple Township
Newtown Township
Radnor Township
Upper Darby Township

Potential Links:
East Lansdowne Borough
Lansdowne Borough
Millbourne Borough
Yeadon Borough
City of Philadelphia

Primary Trail Connections:
16 - Darby Creek Trail – Haverford Township
19 - Route 252 Bicycle Route
24 - Cobbs Creek Trail

Hub Connections:
69th Street Park
Bailey Park
Beverly Hills Recreation Area
Foxcroft Park
Haverford Reserve
Naylors Run Park
Skatium
Upper Darby High School
Veteran's Field
Winding Way Park

Map 3-20: Route 252 Bicycle Route



19: ROUTE 252 BICYCLE ROUTE

DESCRIPTION

A Route 252 Bicycle Route trail can be either an on-road bikeway or a sidepath (separated path alongside a road) along PA Route 252. This corridor provides an opportunity to extend the County trail network along Route 252 (also known as Newtown Street Road (south of St. Davids Road) and Darby-Paoli Road (north of St. Davids Road)) to the County boundary between Newtown Township and Easttown Township, Chester County.

In the *Delaware County Bicycle Plan* (2009), Route 252 is identified as a primary corridor, and the 5th highest ranked road on the County's On-Road Bicycle Improvement Network.

The corridor can become a popular route for non-motorized access between Newtown Square and the town of Berwyn at Route 30, as well as a connection from Delaware County to the Chester Valley Trail – a major Chester County multi-use trail.

Status:
Potential; Proposed; Existing (on-road without enhancements)

Surface Type(s):
Paved; Undetermined

Ownership:
PennDOT; Homeowners Association; Private Landowners

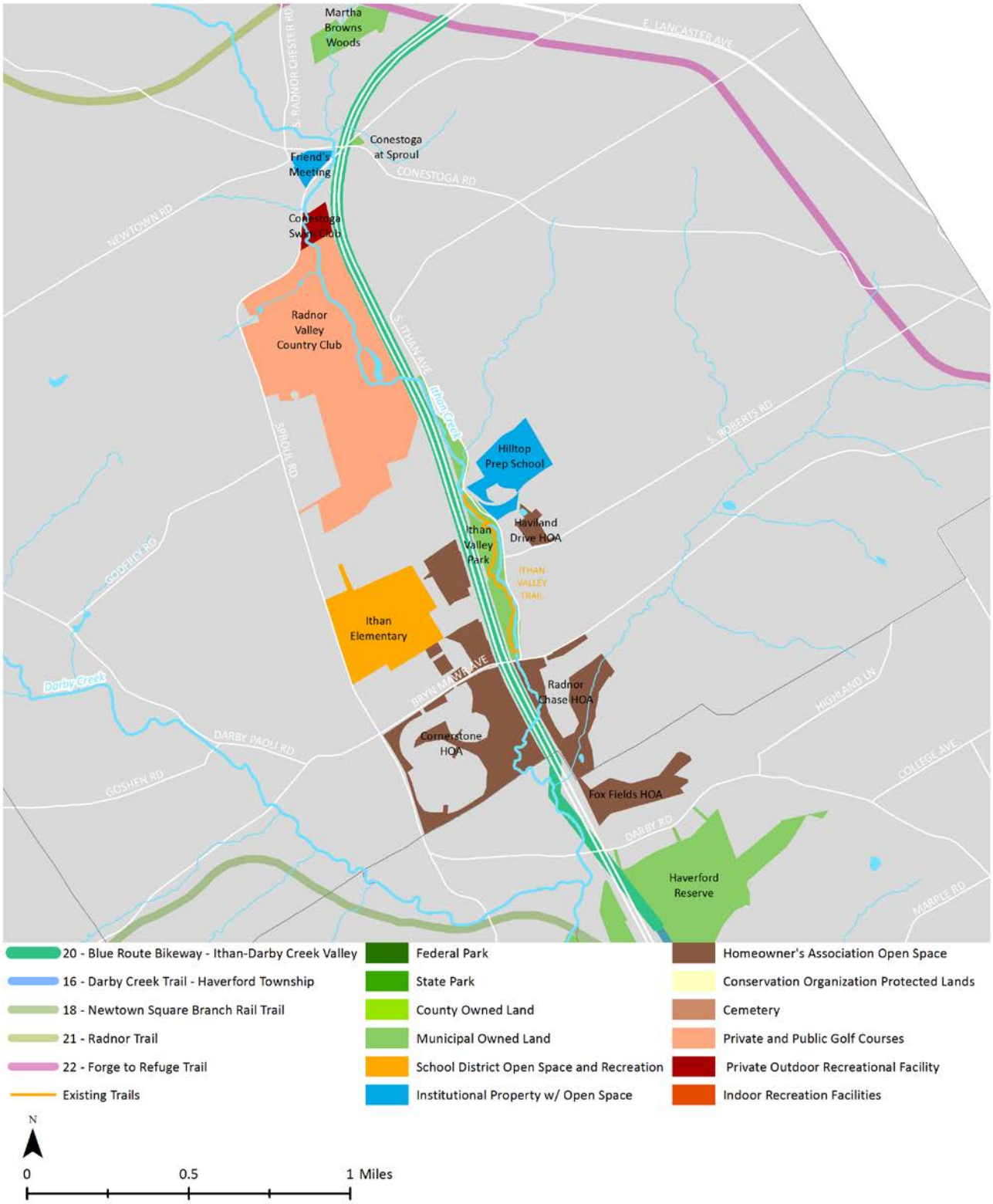
Municipality:
Newtown Township

Potential Links:
Radnor Township
Easttown Township (Chester County)

Primary Trail Connections:
18 - Newtown Square Branch Rail Trail

Hub Connections:
Ellis Preserve
Episcopal Academy
Liseter development
SAP corporate campus

Map 3-21: Blue Route Bikeway – Ithan-Darby Creek Valley



20: BLUE ROUTE BIKEWAY – ITHAN-DARBY CREEK VALLEY

DESCRIPTION

The Blue Route Bikeway – Ithan-Darby Creek Valley connects the Haverford Reserve, including several other trails that converge there to Radnor Township's trail network and the Forge to Refuge Trail. To this end, a potential recreational trail could be routed north-south around and between I-476 and Ithan Creek.

The corridor follows the proposed alignment of the Blue Route Bikeway, which was part of the proposed Blue Route Bikeway route delineated by the Delaware County Planning Department in 1992, but never implemented. The intent was for it to be mostly aligned within the right-of way of I-476. The route could still be developed as a trail and connect Conestoga Swim Club, Radnor Valley Country Club, Ithan Elementary School, and Ithan Valley Park.

If a trail within the Blue Route right-of-way is not feasible for the entire distance, an attempt should be made to connect the Haverford Reserve to Bryn Mawr Avenue/Ithan Valley Park with a multi-use trail. Connections east from there could be made with improvements to the road network for bicycling and walking.

Both the Radnor Chase and Cornerstone homeowners' associations own common open space land along Ithan Creek. It is necessary for Radnor Township to coordinate and partner with them for a trail along Ithan Creek leading to the Haverford Reserve recreation area to be feasible.

Note: The Draft Radnor Township Greenways and Open Space Network Plan (June 2014) did not include the Blue Route Bikeway - Ithan-Darby Creek Valley Trail as one of its priority trail routes. The County supports the further study of these trail possibilities as means to create inter-municipal connections between Radnor Township and its neighbors to the south.

Status:
Potential

Surface Type(s):
Undetermined

Ownership:
PennDOT; Municipalities; Homeowners Associations

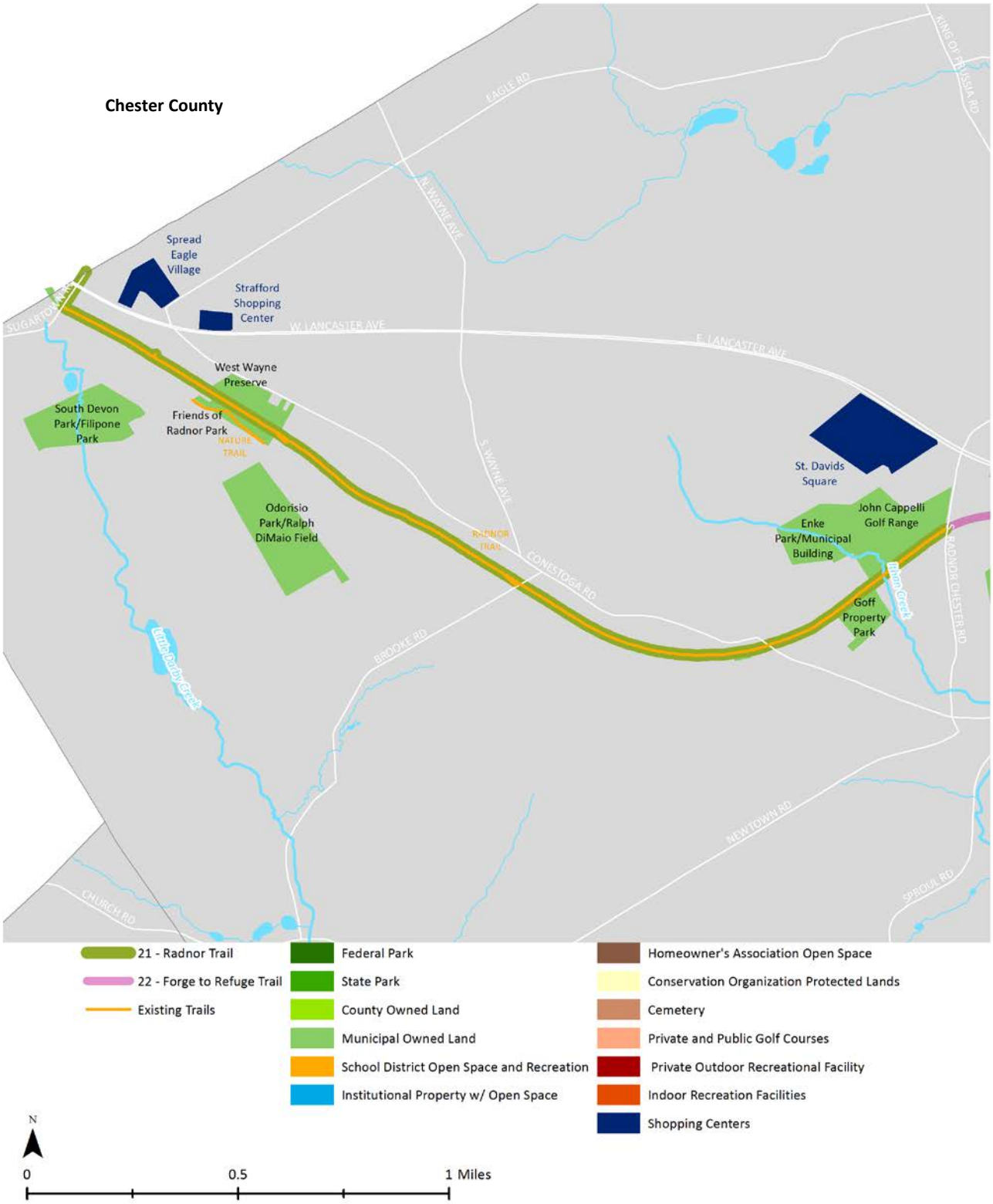
Municipalities:
Radnor Township
Haverford Township

Potential Links:
Lower Merion Township (Montgomery County)

Primary Trail Connections:
16 - Darby Creek Trail – Haverford Township
18 - Newtown Square Branch Rail Trail
22 - Forge to Refuge Trail

Hub Connections:
Conestoga Swim Club
Haverford Reserve
Ithan Elementary School
Ithan Valley Park
Radnor Valley County Club

Map 3-22: Radnor Trail



21: RADNOR TRAIL

DESCRIPTION

The 2.4-mile Radnor Trail has been a very popular recreational trail in northern Radnor Township since it opened in 2005. It is a fully paved multi-use trail that is practical for various forms of recreation such as walking, bicycling, running, in-line skating, dog-walking, and strollers.

The trail terminates at Sugartown Road in Devon (at Lancaster Avenue/Route 30 near the County boundary) in the north and Radnor-Chester Road in Wayne in the south. The trail currently connects a number of municipal parks, residential neighborhoods, small businesses, and the Wayne Arts Center.

The Trail, which was built on the unused Philadelphia & Western (P&W) rail right-of-way, can be accessed at seven locations. A narrower trail (about 5 ft. wide) extends north on Radnor-Chester Road, connecting the Radnor Trail to Lancaster Avenue.

The Forge to Heinz Trail (#22 – Forge to Refuge Trail) is an initiative to extend The Radnor Trail northward and southward. If the proposed Treddyffrin Township (Chester County) trail system is fully implemented, the Radnor Trail would be connected to Valley Forge National Park.

Status:
Existing

Surface Type(s):
Paved

Ownership:
Radnor Township

Municipality:
Radnor Township

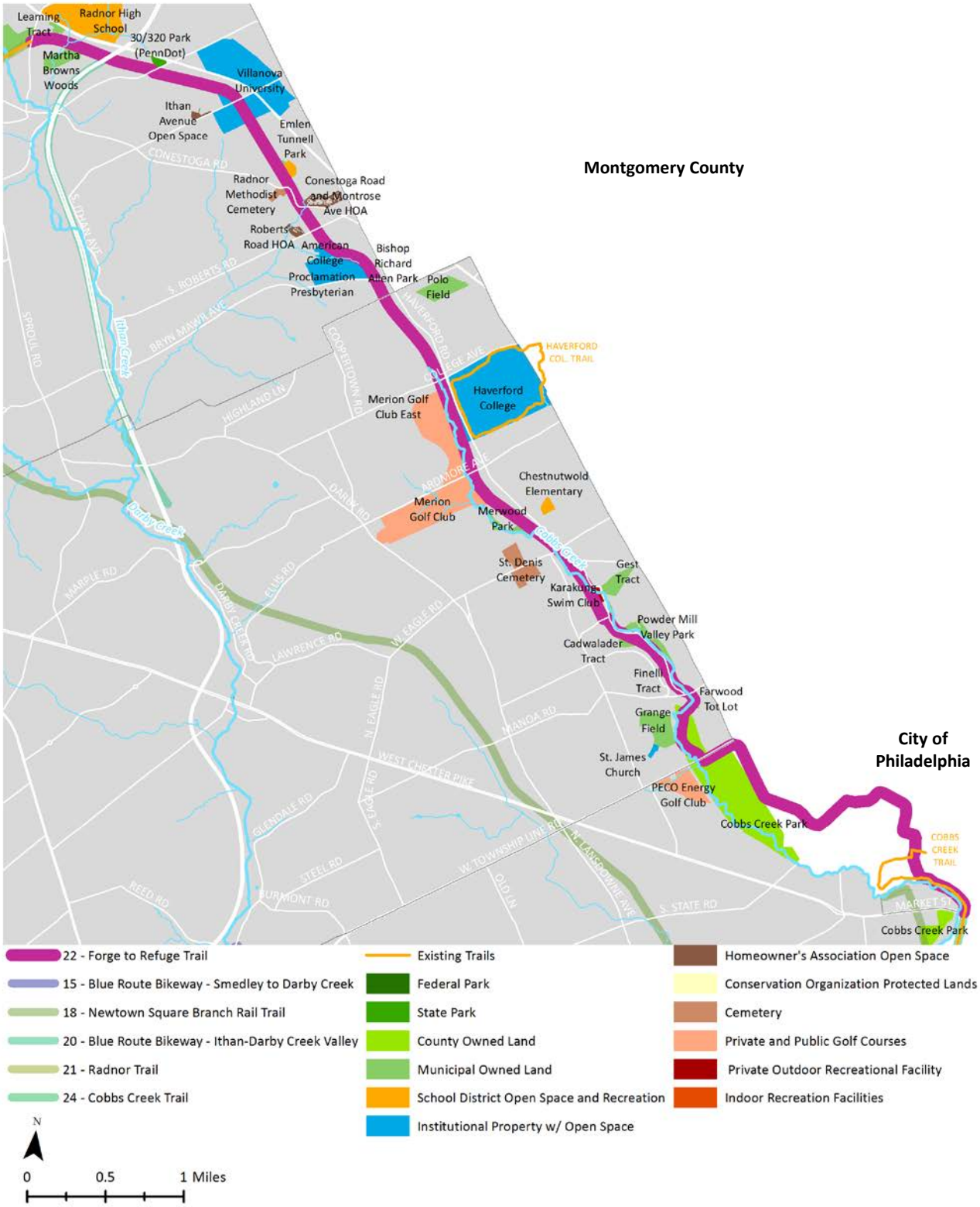
Potential Links:
Newtown Township
Lower Merion Township (Montgomery County)
Treddyfrin Township (Chester County)

Primary Trail Connections:
22 - Forge to Refuge Trail

Hub Connections:
Dittmar Park
Encke Park
Friends of Radnor Trails Park
Orodisio Park
Wayne Arts Center

the Circuit
Greater Philadelphia's Regional Trail Network
Official Segment

Map 3-23: Forge to Refuge Trail



22: FORGE TO REFUGE TRAIL

DESCRIPTION

The Forge to Refuge (or "Valley Forge to Heinz Refuge") multi-municipal trail route is proposed to extend the Radnor Trail northward to Valley Forge National Historic Park and southward to Cobbs Creek Connector Trail. The Valley Forge to Heinz Refuge Steering Committee is the driving force of this trail initiative. Radnor Township is currently leading a feasibility study looking at the southern connection between the southern terminus of the Radnor Trail and the Cobbs Creek Connector Trail.

The southern segment begins at the south terminus of the Radnor Trail and traverses through the eastern edges of Radnor and Haverford Townships before entering the City of Philadelphia and connecting to Cobbs Creek Trail. It passes by and connects several key destinations, including Villanova University, Haverford College, and Cobbs Creek Park.

Note: The Draft Radnor Township Greenways and Open Space Network Plan (June 2014) did not include the Forge to Refuge Trail as one of its priority trail routes. The County supports the further study of these trail possibilities as means to create inter-municipal connections between Radnor Township and its neighbors to the south.

Status:
Proposed

Surface Type(s):
Paved

Ownership:
PennDOT; SEPTA; City of Philadelphia; Undetermined

Municipalities:
Radnor Township
Haverford Township
City of Philadelphia

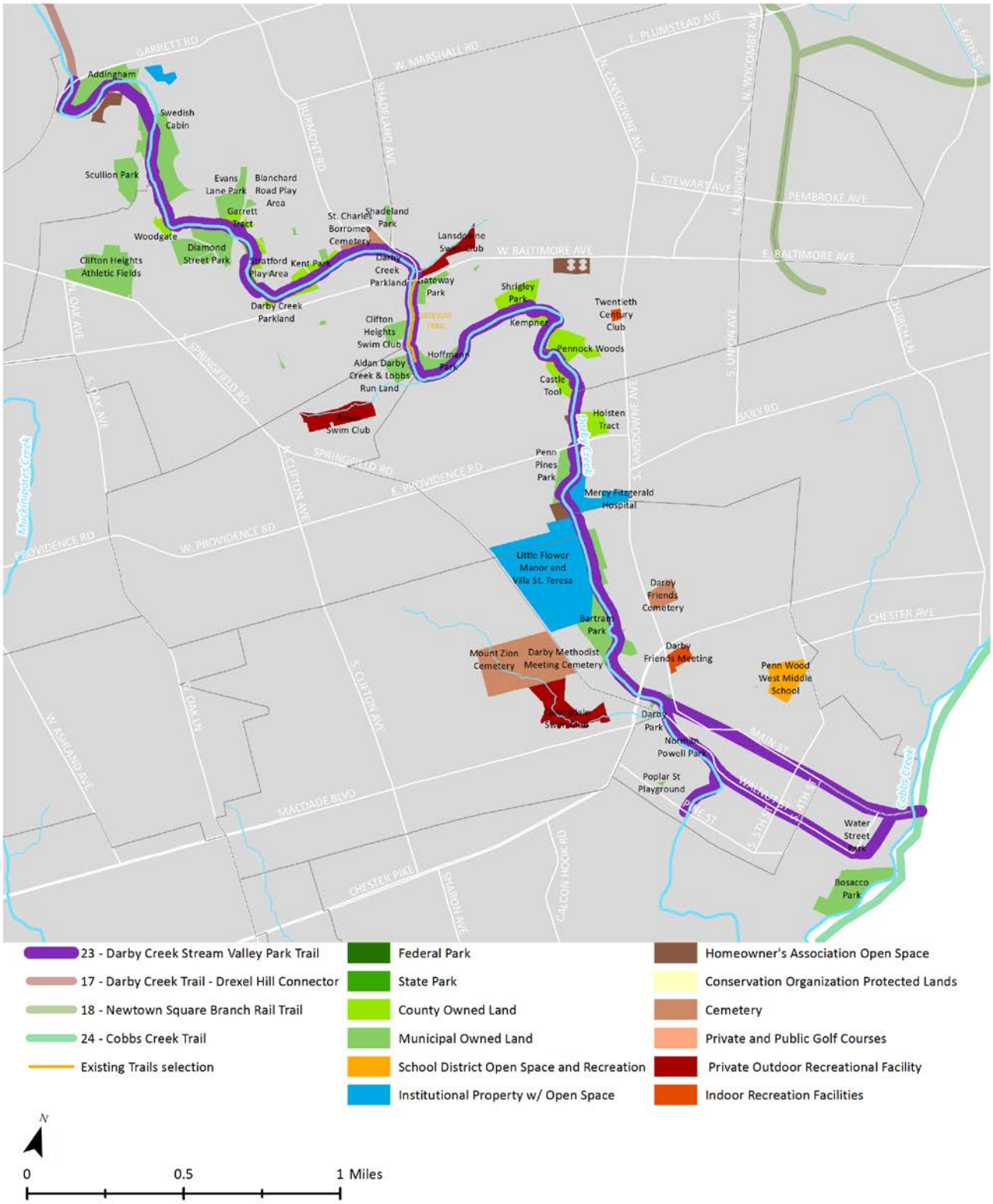
Potential Links:
Millbourne Borough
Lower Merion Township (Montgomery County)
Tredyffrin Township (Chester County)

Primary Trail Connections:
20 – Blue Route Bikeway – Ithan Darby Creek Valley
21 - Radnor Trail
24 - Cobbs Creek Trail

Hub Connections:
Cobbs Creek Park
Grange Field
Haverford College
Powder Mill Park
Radnor High School
Villanova University

the Circuit
Greater Philadelphia's Regional Trail Network
Official Segment

Map 3-24: Darby Creek Stream Valley Park Trail



23: DARBY CREEK STREAM VALLEY PARK TRAIL

DESCRIPTION

The proposed Darby Creek Stream Valley Park Trail was the focus of the Darby Creek Stream Valley Park Master Plan (2010). The multi-use trail route will be located along the Darby Creek corridor between Upper Darby Township's Addingham open space at Garrett Road and Pine Street in Darby Borough. It will pass through Upper Darby Township, and Lansdowne, Clifton Heights, Yeadon, and Darby Boroughs. Much of the route is on municipal and County owned parkland and easements. A small number of additional easements will be needed to close gaps in the trail. Several alternative and additional routes have been identified on either side of the stream, contingent on the need for additional easements and bridges.

The Master Plan looked at the design of a 5.1 mile long stream valley trail and such amenities as parking, signage, bridges, fencing, and maintenance. The stream valley trail is a segment of the larger Darby Creek Greenway. The trail is intended to be developed primarily by the municipalities and by the County on each of their own parks and open space lands.

The Master Plan indicates that both Chestnut and Walnut Streets have the potential to serve as a safe bicycle route connection between the limit of the study area in the Master Plan and the Main Street bridge at Cobbs Creek. Main Street itself can be the pedestrian connection. The Cobbs Creek Connector Trail is a proposed a multi-use trail on the other side of the creek in the City of Philadelphia (see Primary Trail #24).

Portions of the trail exist at Lansdowne's Gateway Trail near Hoffman Park and at the Darby Transportation Center. The County is preparing to construct the next segment, a 1-mile section in Upper Darby Township from the Swedish Cabin through Kent County Park in the near future.

the Circuit
Greater Philadelphia's Regional Trail Network
Official Segment

Status:
Proposed; Design; Existing

Surface Type(s):
Paved

Ownership:
Municipalities; Delaware County

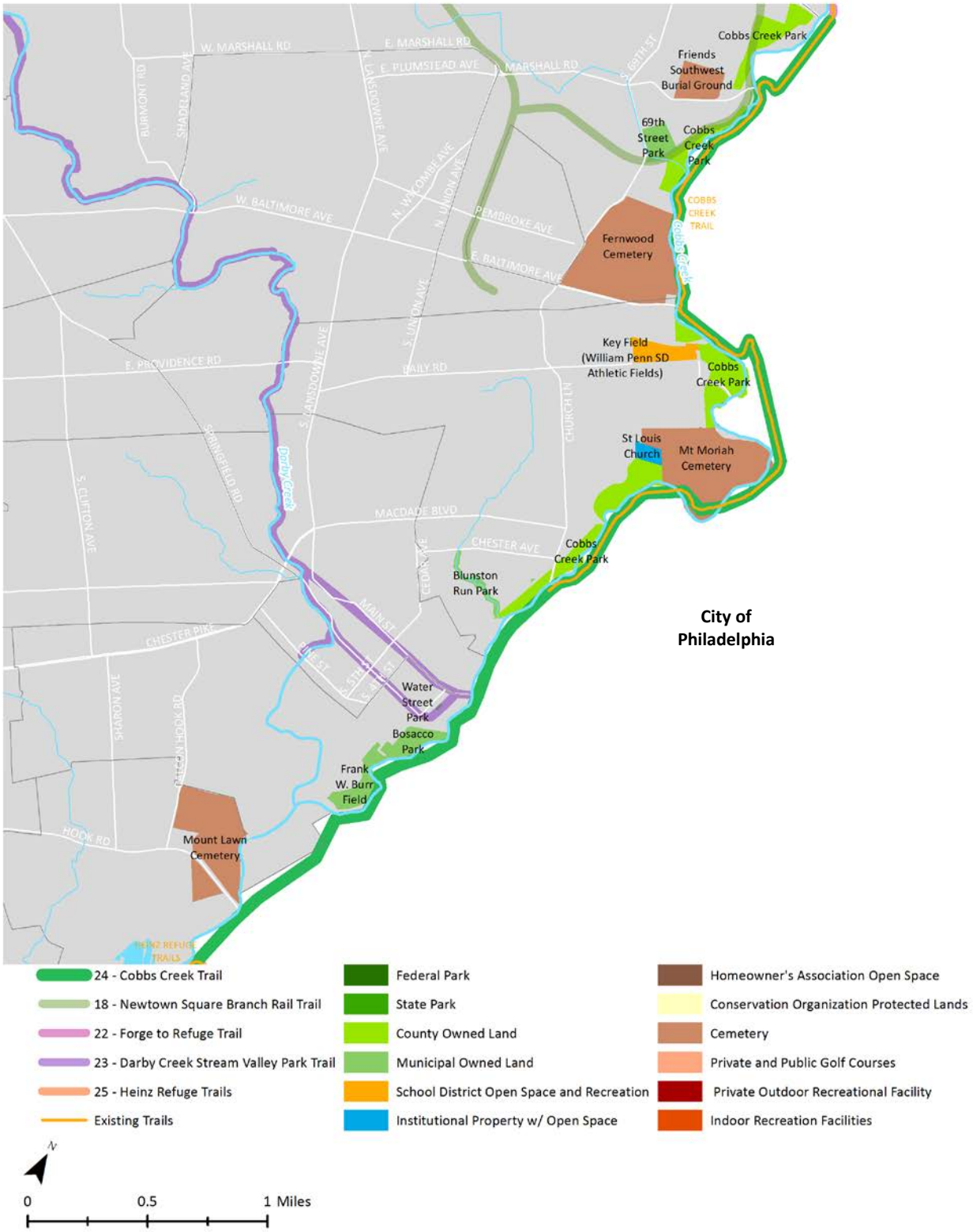
Municipalities:
Clifton Heights Borough
Darby Borough
Lansdowne Borough
Upper Darby Township
Yeadon Borough

Potential Links:
Aldan Borough
Collingdale Borough
Colwyn Borough
Sharon Hill Borough
Springfield Township
City of Philadelphia

Primary Trail Connections:
17 - Darby Creek Trail – Drexel Hill Connector
24 - Cobbs Creek Trail

Hub Connections:
Addingham
Bartram Park
Gillespie Park
Kent County Park
Shrigley Park
Hoffman Park
Norman Powell Park
Penn Pines Park
Pennock Woods

Map 3-25: Cobbs Creek Trail



24: COBBS CREEK TRAIL

DESCRIPTION

The Cobbs Creek Trail includes the existing Cobbs Creek Trail (CCT) and the planned Cobbs Creek Connector Trail (CCC). The existing Cobbs Creek Trail is owned and managed by the City of Philadelphia, on its side of Cobbs Creek, which constitutes a portion of Delaware County's eastern boundary. The north end of the CCT begins at 63rd and Market Streets/Route 3, just east of Millbourne Borough. This is the area where the proposed Forge to Heinz Trail connects to the CCT after coming through City parkland to the north.

A spur trail called the "Upper Darby Connector" trail enters Delaware County from a pedestrian bridge at the Cobbs Creek Community Environmental Education Center, linking to a residential neighborhood at Walnut Park Drive and Church Lane in Upper Darby. Other connections from the CCC to Delaware County include Marshall Road/Spruce Street in Upper Darby, Baltimore Pike/Route 13 in Upper Darby, N. Longacre Boulevard/Whitby Avenue in Yeadon, W. Cobbs Creek Parkway/65th Street in Yeadon near the Mount Moriah Cemetery. The south end of the existing CCT and the start of the planned CCC is at the Yeadon Borough boundary where Church Street becomes 70th Street.

The 58th Street Greenway, a connection to the Schuylkill River Trail and part of the East Coast Greenway, branches to the east between Longacre Boulevard and the W. Cobbs Creek Parkway bridges.

Clean Air Council has been the lead organization in planning the CCC. CCC connections into Delaware County include the Main Street/Woodland Avenue bridge to Darby (to link with the Darby Creek Stream Valley Park Trail), and the Hook Road connection to Heinz National Wildlife Refuge at 84th Street. The CCC is part of the East Coast Greenway and will bridge the gap between the Heinz Refuge trails and the 58th Street Greenway.

the Circuit
Greater Philadelphia's Regional Trail Network
Official Segment

Status:
Proposed; Existing

Surface Type(s):
Paved

Ownership:
City of Philadelphia

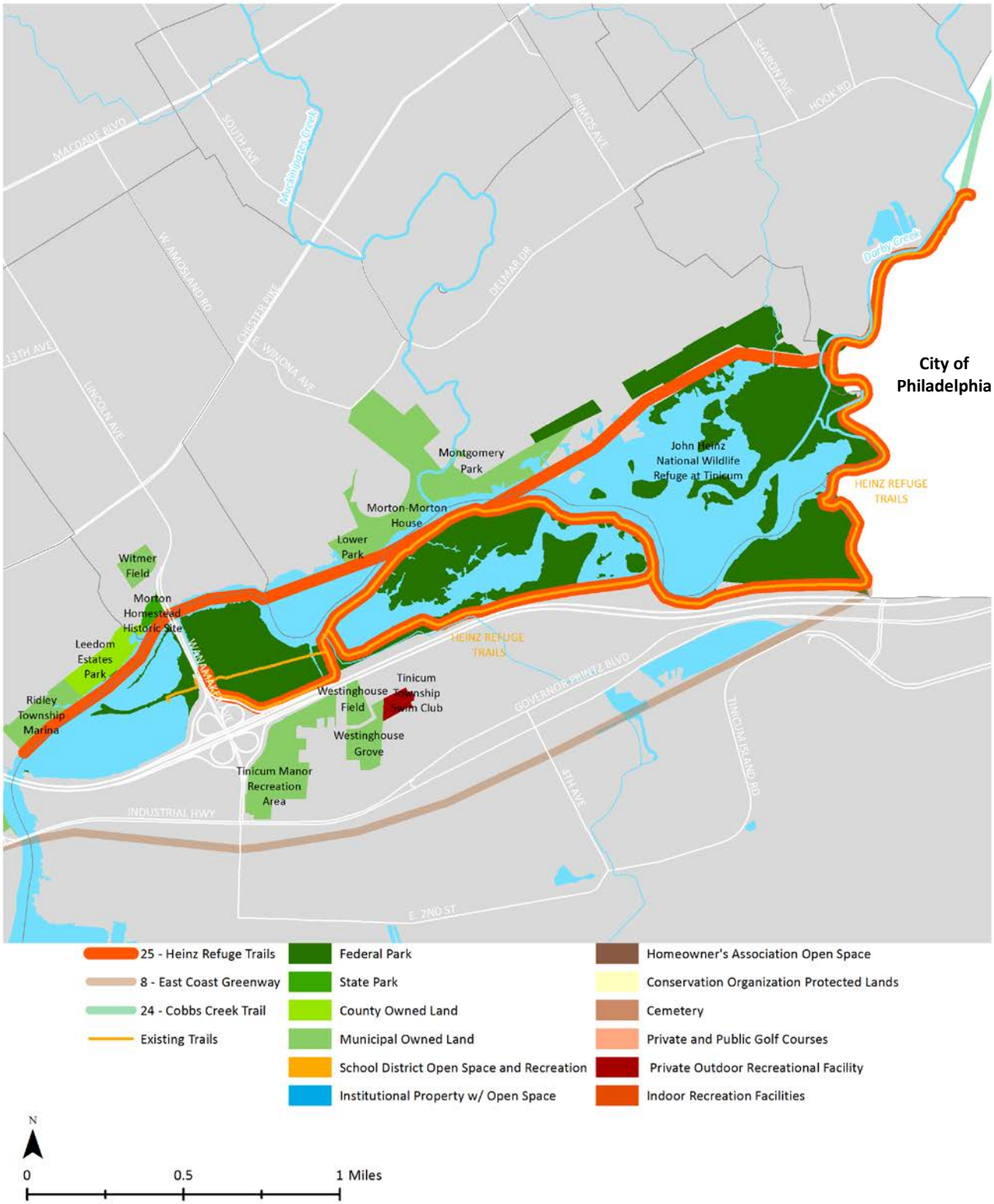
Municipality:
City of Philadelphia

Potential Links:
Colwyn Borough
Darby Borough
Darby Township
Millbourne Borough
Tinicum Township
Upper Darby Township
Yeadon Borough

Primary Trail Connections:
18 – Newtown Square Branch Rail Trail
22 - Forge to Refuge Trail
23 - Darby Creek Stream Valley Park
25 – Heinz Refuge Trails

Hub Connections:
Bosacco Park
Darby Borough CBD
John Heinz NWR
Mount Moriah Cemetery

Map 3-26: Heinz Refuge Trail



25: HEINZ REFUGE TRAIL

DESCRIPTION

The John Heinz National Wildlife Refuge at Tinicum is an important conservation greenway as it helps to support the largest remaining freshwater tidal wetland in Pennsylvania. The marsh provides habitat for rare and endangered plants and animals as well as a resting and feeding spot for migratory birds near the mouth of Darby Creek. It is also a great regional amenity as a recreation greenway.

The Refuge serves as both a Primary Trail and a key destination itself on the Network. It connects the Cobbs Creek Connector Trail to the East Coast Greenway while also providing significant loop trails within the Refuge. It contains over 10 miles of paved, crushed stone, and dirt trails stretching from its Cusano Environmental Education Center (CEEC) (physically located in Philadelphia) to Route 420 in Tinicum Township. There are also two boardwalk trails across the impoundment (marshland and mudflat reservoir) and one of its smaller coves. A canoe launch near the CEEC also makes the Refuge a recreational water trail stop.

The Heinz Refuge Access Study, a 2007 initiative of Clean Air Council, was developed to identify ways to provide better pedestrian access to the Refuge from Tinicum, the Eastwick neighborhood of Philadelphia, and the Philadelphia Airport. This study suggests ways the East Coast Greenway can connect to the Refuge's multi-use trail. One entrance point identified is the Prospect Park Borough (west) end of the Refuge at the Route 420 parking lot. Another proposed option is to run a trail under Interstate 95 on an unused trolley right-of-way near the Renaissance Inn in Tinicum. There is currently another study underway further examining connections to the Eastwick section of Philadelphia and the Route 420 parking lot north into Prospect Park.

Status:
Existing

Surface Type(s):
Paved; Boardwalk; Crushed Stone; Earthen

Ownership:
U.S. Fish and Wildlife Service, Department of the Interior

Municipalities:
Tinicum Township
City of Philadelphia

Potential Links:
Darby Township
Folcroft Borough
Norwood Borough
Prospect Park Township
Ridley Township

Primary Trail Connections:
8 - East Coast Greenway
24 - Cobbs Creek Trail

Hub Connections:
John Heinz National Wildlife Refuge

the Circuit
Greater Philadelphia's Regional Trail Network
Official Segment

Implementation 4

Chapter 4: Implementation

INTRODUCTION

Achieving the vision for a Delaware County Greenway Network will require the involvement of many agencies, organizations, and individuals. It will also require the utilization of various tools and techniques and sources of funding. This chapter provides a framework for implementation of the plan, including an overview of implementation methods and tools, roles and responsibilities, and actions.

It is important to remember that this is a long range plan. Greenways, especially trail networks, are not made or preserved in a few short years, but over decades. Connecting neighborhoods, open spaces, parks, trails, and other greenway components will require significant time and effort.

Trails and recreation greenways are the subject of Volume I, Chapter 4: Trails as a Recreation Facility. Parties interested in undertaking trail development projects in Delaware County should consult the information and trail development methods presented in that chapter. For specifics regarding trail development, stewardship, partner, and funding source, refer to Volume I, Chapter 6: Implementation Tools.

METHODS AND TOOLS FOR GREENWAY IMPLEMENTATION

This section identifies the various methods and tools widely used for building greenway networks. It covers the process and sequence for trail planning and development, protection tools for greenways, and recommended prioritization criteria for greenway projects in Delaware County.

TRAIL PLANNING AND DEVELOPMENT PROCESS

This plan identifies priority greenway corridors at the county-level. Municipalities will have their own local network priorities. Therefore, municipal-level greenway and recreation corridor plans should consider connection to the countywide and adjacent municipal networks.

When identifying a desired municipal network, priorities should be established to help plan and implement greenway corridors. The prioritization criteria, presented later in this section, provides guidance.

Once the general greenway trail network is identified, the basic sequence of development is as follows:

Corridor Proposal

The first step in the trail planning process is the identification of a general trail corridor. A corridor proposal shows the intent of the trail and desired connections without identifying specific alignments, thus providing flexibility in future planning efforts. This proposal may identify existing linear open spaces, rights-of-way, streambank corridors, and potential linear connections between various land uses.

A corridor proposal can be completed for either an individual trail or a wider planning area, such as a municipality. This Greenway Plan is an example of a countywide corridor proposal.

Stakeholder Identification

After a potential corridor is proposed, current and potential stakeholders must be identified. Stakeholders could include municipalities and non-profit organizations, as well as both residential and commercial landowners. Identifying stakeholders early in the process allows for adequate opportunity to address their concerns early in the planning process.

Feasibility Study

A feasibility study is the first phase of the trail planning process that closely examines the potential trail alignment and various alternatives. Advantages and disadvantages, as well as cost estimates, are developed for each alternative in order to inform the decision making process. Many feasibility studies also look at management and maintenance of the trail and identify issues for consideration going forward. These issues may include trail maintenance responsibilities and how joint efforts are coordinated.

Design

Design of the trail is a complicated process that involves producing construction documents, permitting and zoning approvals, and construction budgeting. As part of this phase, outstanding trail easements and right-of-way agreements are finalized with landowners. Involving the stakeholders in the design process allows for informed decisions regarding materials, access, and security, which affect the stakeholders, particularly those responsible for ongoing maintenance and management of the trail.

Construction

The construction phase of the trail planning process begins with “advertising” the contract documents for bid. After a contract and construction schedule is agreed upon, construction may begin on the trail. This involves the support and oversight by the design engineer to ensure proper implementation of the approved construction documents. After all contracted work is completed and approved, the trail may be opened to the public.

It should be noted that not all trail planning and implementation efforts follow this path. Some trails arise from specific opportunities, such as a new development or park, or realigned roadway that offers the chance to develop a trail.

PROTECTION TOOLS FOR GREENWAYS

Many of the Open Space protection tools found in Volume I: Open Space and Recreation Plan, Chapter 6: Implementation Tools, can be applied to conservation greenways and preservation of linear open space to be used for trails. The following are several of the implementation tools relevant to greenway implementation. Please refer back to Volume I for in-depth descriptions of these tools and methods.

Greenway Implementation Tools

Green Development and Redevelopment

- Smart growth
- Pennsylvania Municipalities Planning Code provisions
    - Municipal comprehensive plan
    - Zoning and subdivision and land development ordinances

        - Open space requirements
        - Mandatory dedication of open space
        - Fee-in-lieu thereof
        - Conservation design/conservation subdivision
        - Planned residential developments (PRDs)
    - Environmental protection ordinances such as:
        - Riparian buffers
        - Floodplain regulations
        - Wetlands
        - Hydric soils
        - Steep slopes
        - Woodlands
- Negotiated improvements
- Municipal open space plan

Open Space Acquisition

- Fee simple acquisition
- Donations
- Purchase and leaseback or resale
- Conservation easements
    - Can be combined with right of public access easement for trails
        - Joint-use easement (e.g., trail along utility or pipeline rights-of-way)
    - Agricultural conservation easements
- Deed restrictions
    - Lease of a property for use as open space or recreation (e.g., lease for trail along rail right-of-way)

Private Land Protection

- Agricultural Security Areas
- Act 515 and Act 319 covenant
- Land stewardship
    - Reforestation
    - Riparian buffer protection

In addition to the methods listed above, green streets can provide road-based connections where there is no off-road option to connect a trail.

PRIORITIZATION CRITERIA

Conservation of the Delaware County Greenway Network can be achieved through implementation of many types of projects, including but not limited to, planning, developing ordinances, engineering, land or easement acquisition, trail construction, and tree planting. This section identifies two sets of prioritization criteria (Conservation of Green Spaces, Landscapes, and Cultural Resources and Trails).

Municipalities and groups of municipalities can use the lists to develop local objectives for inclusion in their individual greenway network and segment plans and to prioritize planning for and construction of local trails. The criteria could also be considered when municipalities are weighing one project against another.

The lists are also presented in a general order of importance. When prioritizing a project, a municipality might consider simply how many criteria the project meets or use a weighted system. When appropriate, grant applications and letters of support should highlight how these criteria will be met by the project.

Conservation of Green Spaces, Landscapes, and Cultural Resources

The following is a list of potential criteria that might be appropriate for use in the conservation of green spaces, landscapes, and cultural resources in the greenway network. These criteria could be considered when looking to implement projects related to conservation greenways.

The project:

- Protects or positively impacts areas that are biologically and ecologically significant (i.e., identified in the Natural Heritage Inventory of Delaware County).
- Provides an opportunity for floodplain preservation.
- Involves stream protection and restoration (projects such as the establishment of riparian buffers and/or natural stream channel design).
- Protects or positively impacts a locally significant open space that is under threat of a land use change.
- Expands or enhances an existing protected open space usable for both passive and active recreation.
- Could potentially be used as a location for a potential segment of a Countywide Primary Trail.
- Is adjacent or potentially accessible to a Countywide Primary Trail or other trail connected to the Countywide Trail Network.
- Protects important wildlife corridors and bird migration paths.
- Encourages or helps to facilitate protection of important historic and cultural resources.
- Protects important natural landscapes (e.g., steep slopes, woodlands, tree canopy, wetlands, meadows, and vistas).
- Presents an opportunity for brownfield restoration or reclamation (contaminated site clean-up and redevelopment).
- Protects agricultural land.

Trails (Recreation Greenways)

The following is a list of potential criteria that could be used for development of trails in the Delaware County Greenway Network

The project:

- Is a Primary Trail in the Countywide Primary Trail Network.
- Is a priority trail in the Circuit, Greater Philadelphia's Regional Trail Network.
- Is listed in a local trail corridor plan or feasibility study.
- Links directly to a Primary Trail in the Countywide Primary Trail Network.
- Is listed in a local trail network plan within a comprehensive municipal parks, recreation, and greenway plan.
- Is listed in a municipal comprehensive plan.
- Requires the least amount of effort (planning/approvals/cost) compared to other possible projects.

- Links significant local destinations (e.g., schools, parks, shopping or employment centers, or residential areas), where there is direct evidence that trail will be well used.
- Links important historic, cultural, and commercial destinations (man-made resources).
- Provides a safe alternative to an unsafe condition (e.g., a project offering an alternative to pedestrians sharing a vehicular route or crossing a busy roadway at grade).
- Connects established or protected linear greenway corridors and major hubs or destinations.
- Provides a missing link to allow connection of segments as part of a longer trail system.

While the timing shown in the Action Plan (Table 4-1) should be used as a guide, the order in which the County, municipalities, and others approach implementation of these actions will often be a function of funding, local desire, and opportunity. Examples of opportunities include:

- A parcel may come up for sale, providing an opportunity to purchase some or all of the property.
- A new subdivision or land development is proposed, presenting an opportunity to negotiate with the developer to provide open space, an easement, or install a trail as part of a development.
- A landowner expresses interest in donating a land or an easement, either for conservation or public access trail.
- A new program opens up that would provide funding for an action designated for later implementation.

ROLES AND RESPONSIBILITIES IN BUILDING THE GREENWAY NETWORK

The development of the greenway system is a large undertaking requiring the involvement of the County and its municipalities as the two primary implementers. Partnerships can be formed with, and technical assistance, funding, and other resources are available from other sources including, but not limited to, individual landowners, government agencies, school districts, utility and infrastructure companies, nonprofit agencies, and citizen groups.

Specific roles in implementing conservation greenways and trail development were listed separately for both the County and municipalities in Volume I, Chapter 7: Action Plan. Roles for conservation greenway implementation are the same as for any type of open space. Roles are also further defined in the way Greenway Plan action items are worded.

ROLES IN BUILDING PRIMARY TRAILS

This section discusses some of the basic responsibilities and considerations necessary for developing the Countywide Primary Trail Network. Both the County and municipalities can take leadership roles in the delineation, engineering, and construction of trails. However, partnerships between two or more particular municipalities and the County will also be necessary to complete many sections and connections in the Network.

The following are points to consider when identifying the lead for implementation of particular sections of the Countywide Primary Trail Network.

Planning

Developing the trail involves several phases of planning, including feasibility and engineering studies. Various governmental agencies, such as a municipality, "friends" groups, or other organizations may lead the planning efforts. For multi-municipal trails, close coordination with the municipalities is crucial at this stage. As such, all municipalities should be involved in the planning process.

Funding

Funding is necessary for all stages of the trail planning process. Different funding sources and programs are available for planning, construction, and maintenance. Funding sources, including grants, municipal budgets, and bonds, have been used at the local level. They are discussed in more detail in Chapter 6: Implementation Tools of Volume I.

Most of the major grant programs award funding competitively on a regional basis. Projects with multiple partners (more than one municipality and/or other major stakeholder organization) earn extra ranking points with some funders, such as DCNR. However, funders generally require a lead organization to administer the grant. The County and municipalities can each take supporting roles for trail development such as participation on project steering committees, and providing cash or in-kind professional staff services.

Construction

Construction of the trail must be overseen by an agency with the staff capable to administer the funding and track contractor progress. This will most often involve coordination with several agencies and/or departments that are familiar with permitting, engineering, and construction.

Ownership

Ownership of the trail may be fee simple, easement, or land lease. It is important that the trail is owned by an agency with long-term viability and interest in the trail. Most often, this will be a governmental entity which already maintains the necessary insurance policies for recreational land.

Maintenance/Security

Responsible parties for maintenance and security should be identified prior to construction of the trail. Municipalities may be in a position to take on maintenance of a trail due to their local presence. "Friends of the trail" and other local non-profit and volunteer groups, such as watershed associations,

Trail Authority

In order to streamline development and management of multi-municipal trails, several communities in Pennsylvania have established trail authorities that construct, own, and/or manage trails. The Lackawanna Heritage Valley Authority (Scranton, PA) is a municipal authority of Lackawanna County which developed and manages roughly half of the Lackawanna River Heritage Trail. The York County Rail Trail Authority was established by York County to develop a system of trails, but not maintain them. The Sandy Creek Trail in northwestern Pennsylvania is owned by the Allegheny Valley Trails Association, a non-profit organization guided by a board of 12-21 volunteers who is responsible for short and long term planning, grant writing, fund raising, acquisition of railways, and enhancement and maintenance of existing trails.

may be able provide assistance or undertake long-term maintenance of the trail.

Local police departments and, in the case of trails in County parks, County Park Police may be in a position to police the trail due to their presence in the community. “Friends of the trail” groups may support police departments through volunteer “trail watches.” As usage increases, trails become self-policing; trailheads may still require a level of policing similar to neighborhood parks.

Delaware County

The County can assist in implementation of the Primary Trail Network in a variety of ways. It can serve as an advocate for trails, participate on project steering committees, and provide technical support for projects. The County may also take the lead in implementation of segments of the Primary Trail Network on a case-by-case basis.

PARTNERS AND SOURCES OF SUPPORT

Volume I: The Open Space and Recreation Plan, Chapter 7: Action Plan contains a section describing implementation partners and support. It describes many state agencies, institutions, organizations, businesses, and citizens advocacy groups. Although counties and municipalities typically take primary leads in greenway building, many other organizations, agencies, and groups have a role to play. Some of them, such as DCNR, can provide technical assistance for projects, while others, such as recreation clubs and organizations, can provide expertise for educational programs or volunteer manpower.

Volume I, Chapter 7 describes the following agencies and organizations that could potentially provide support to a greenway implementation project:

State Agencies: PA Department of Conservation and Natural Resources (DCNR), PA Department of Environmental Protection (DEP), PA Department of Transportation (PennDOT), PA Department of Community and Economic Development (DCED), PA Fish and Boat Commission (PFBC), and PA Historical and Museum Commission (PHMC).

Institutions, Organizations, and Businesses: school districts (and the Delaware County Intermediate Unit), land trusts and conservancies, recreation clubs and organizations, developers, utility and infrastructure companies, individual property owners, and businesses and foundations.

Citizens Advocacy Groups: friends groups, watershed organizations, the Delaware County Transportation Management Association (DCTMA), and the Greater Philadelphia Bicycle Coalition (GPBC). Additional organizations offering technical assistance include the Penn State Cooperative Extension and the Pennsylvania Recreation and Parks Society.

FUNDING SOURCES FOR GREENWAYS

Volume I: The Open Space and Recreation Plan, Chapter 6: Implementation Tools contains a funding section that is applicable to both conservation and recreation greenways. The three main sub-sections of this section are Budgeting, Bonds and Dedicated Taxes for Parks and Open Space, and Grants. They are all important for funding implementation of the Countywide Greenway Network.

The funding sources identified in Volume I also include a list of grants and other funding sources that are applicable in Delaware County and its municipalities. Some of these funding programs are specifically for trails. Others may fund the development of trail support facilities or the conservation of environmental

assets as part of riparian open space and recreation projects or historic preservation related projects. When pursuing funds for the implementation of a greenway project, consult the grant funding section for ideas and look for grants with an applicable project type in Volume I.

ACTION PLAN

As previously stated, implementation of this plan will require coordinated efforts from multiple agencies, jurisdictions, and the public. Due to the size of the proposed greenway network, key stakeholders should identify smaller, more manageable segments and prioritize accordingly. In order to coordinate this effort, a Greenway Network Committee should be formed to oversee the implementation of the actions in this plan. Table 4-1 lists the actions, and associated timing, for the implementation of the Countywide Greenway Plan.

GREENWAY NETWORK COMMITTEE

The most important element needed for greenway plan implementation is coordination and cooperation. Therefore, one of the best ways to help facilitate implementation of the greenway plan is to form a greenway network committee. Such an entity could provide a mechanism to assist municipalities with development of their individual segment plans and help coordinate projects of multi-municipal or countywide nature.

The Delaware County Planning Department (DCPD), possibly in cooperation with the County Parks Department, is the logical choice to convene a task force comprised of: County officials and staff, municipal officials or staff, watershed associations and other citizen groups, schools, business associations, specific corporations or large businesses wishing to participate or contribute, and the Bicycle Coalition of Greater Philadelphia. Professionals in land use law, landscape architecture and trail design, marketing, and from a land trusts or conservancy would also be beneficial.

The task force/committee would serve as a means to achieve face-to-face communication between parties interested in implementing a countywide trail network, including the County, municipalities, and stakeholders. It could meet regularly to discuss progress in implementation and to coordinate advocacy for policies and actions recommended in the Plan. The task force/committee would:

- Evaluate and help determine appropriate roles for the parties to take in greenway implementation.
- Provide technical assistance to implementation efforts in the County.
- Promote development of trails in the County.
- Develop a marketing plan, website, and graphics guide for the greenway network.

Table 4-1: Action Plan

OBJECTIVE GW 1	**Create a countywide greenway network that connects Delaware County's environmental, recreational, and cultural resources.**	
ACTION	***Delaware County will…***	
GW 1.1	Provide leadership and coordination for the planning and development of the Countywide Primary Trail Network.	●
GW 1.2	Organize a Greenway Network Committee to oversee the implementation of the Countywide Greenway Plan.	▲
GW 1.3	Identify priority segments of the Primary Trail Network and responsibilities for key stakeholders.	▲
GW 1.4	Provide technical assistance to municipalities for implementing the Greenway Network.	●
GW 1.5	Develop a marketing plan for the Greenway Network (website, graphics, and other materials).	▲
GW 1.6	Encourage development of trails in the County.	●
GW 1.7	Implement planned trails when, where, and to the degree appropriate.	●
GW 1.8	Coordinate Greenway Network implementation efforts with regional partners.	●
GW 1.9	Support and encourage greenway oriented projects which implement actions defined in state approved rivers conservation plans for the County's watersheds.	●
GW 1.10	Develop a public education program that focuses on the importance of greenways, their benefits, opportunities, and stewardship.	▲
GW 1.11	Promote the maintenance and/or restoration of vegetated riparian buffers along streams in the County.	●
GW 1.12	Maintain and/or restore vegetated riparian buffers along streams in County properties.	●
GW 1.13	Develop and install identification, direction and interpretive signage, as appropriate, to implement the Greenway Plan.	●
	Municipalities are encouraged to…	
GW 1.14	Prepare and implement municipal or multi-municipal greenway and trail network plans.	◆
GW 1.15	Plan for and develop a local trail network that prioritizes implementation of Countywide Primary Trails.	✚
GW 1.16	Use recommended Prioritization Criteria from the Countywide Open Space, Recreation, and Greenway Plan when developing municipal trails.	●
GW 1.17	Protect, maintain, and/or restore vegetated riparian buffers within conservation greenways.	●
GW 1.18	Develop and install identification, direction and interpretive signage, as appropriate, to implement the Greenway Plan.	●
GW 1.19	Review and adopt local ordinances and planning documents to encourage implementation of the Greenway Network.	◆
GW 1.20	Work with large property owners along greenway corridors (i.e., schools, cemeteries, golf courses, etc.) to foster and encourage proper stewardship of their land.	●

▲: Short Range (1-5 Years) ◆: Medium Range (5-10 Years) ✚: Long Range (10+ Years) ●: Ongoing

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GreenSpace Alliance; Delaware Valley Regional Planning Commission. (2011). *Return on Environment: The Economic Value of Protected Open Space in Southeastern Pennsylvania.*

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Appendices

APPENDIX II-A: GLOSSARY OF ACRONYMS

ADA – Americans with Disabilities Act (1990)
BCG – Brandywine Creek Greenway
BMP – Best Management Practice (as referenced in the Pennsylvania Handbook of Best Management Practices for Developing Areas, 2007). The new term for stormwater BMP is "stormwater control measure."
CCC – Cobbs Creek Connector Trail
CCT – Cobbs Creek Trail
CEEC – Cusano Environmental Education Center
DCPD – Delaware County Planning Department
DCNR – Pennsylvania Department of Conservation and Natural Resources
DEP – Pennsylvania Department of Environmental Protection
DCED – Pennsylvania Department of Community and Economic Development
DVRPC – Delaware Valley Regional Planning Commission
ECG – East Coast Greenway
GIS – Geographic Information System
MPC – Municipalities Planning Code
MPO – Metropolitan Planning Organization
SEPTA – Southeastern Pennsylvania Transit Authority
PEC – Pennsylvania Environmental Council
PECO – Philadelphia Electric Company, an energy delivery unit of Exelon
PEMA – Pennsylvania Emergency Management Agency
PennDOT – Pennsylvania Department of Transportation
PGPC – Pennsylvania Greenways Partnership Commission
YMCA – Young Men's Christian Association

APPENDIX II-B: GLOSSARY OF TERMS

AGRICULTURAL: Land developed with crops, pastures, orchards, tree farms, or other agricultural uses. The farmstead and associated buildings are also agricultural. Single or double lot split-offs with house are included in the agricultural classification.

BUFFER: Graduated mix of land uses, building heights or intensities designed to mitigate potential conflicts between different types or intensities of land uses; may also provide for a transition between uses. A landscaped buffer may be an area of open, undeveloped land and may include a combination of fences, walls, berms, open space and/or landscape plantings. A riparian buffer is located along a stream or other water body and contains plants appropriate to protecting water quality.

COMMUNITY CHARACTER: Those attributes of a community that make it unique, both in terms of the built environment and its population.

COMPLETE STREETS: A street designed and operated to enable safe, attractive, and comfortable access and travel for all users, including pedestrians, bicyclists, motorists, and public transport users of all ages and abilities.

CONSERVATION: The restoration, stabilization, management, and wise use of natural and heritage resources for compatible educational, recreational, aesthetic, agricultural, and scientific purposes or environmental protection.

CORRIDOR: An uninterrupted path or channel of developed or undeveloped land paralleling the route of a street, highway, or transit line.

DENSITY: Number of dwelling units (du) divided by the gross acreage (ac) of a site being developed in residential use; or, the number of dwelling units per acre (du/ac).

ENVIRONMENTAL IMPACT: Any change to the environment, whether adverse or beneficial, wholly or partially resulting from an organization's activities, products, or services.

FLOODPLAIN: Those land areas in and adjacent to streams and watercourses subject to periodic flooding. The 100 year floodplain has a one percent chance of flood occurrence in any given year.

GREENWAYS: A linear system of connected natural and man-made elements that function together for public benefit. These connections and the open spaces and other features that they connect, may be accessible to the public in the form of county or municipally owned parks and trails, or they may be owned privately with little or no public access.

HERITAGE OR HISTORIC RESOURCES: Structures, sites, and objects that reflect the prehistory and history of Delaware County.

INFILL: The use of land within a built-up area, typically for the reuse and repositioning of obsolete or underutilized buildings and sites. May involve a change of type or density of land use.

MODE OF TRANSPORTATION: A type of transportation or means of getting from one place to another, including train, trolley, bus, bicycle, walking, motorcycle, car, and van. Multi-modal transportation refers to a connected transportation system that supports cars, bicycles, pedestrians, and public transit.

NATURAL RESOURCES: Assets such as soils, woodlands, wetlands, and agricultural lands, along with hydrologic features such as rivers, lakes, and streams, that occur naturally within the County's landscape. This includes important habitat areas and the wildlife that they contain. Though sensitive to human disturbance, these resources have notable environmental, recreational, visual, and economic benefits, creating a needed balance between growth and their conservation.

OPEN SPACE: Land and water features of the landscape that have not been developed for intensive human uses such as residential neighborhoods, business districts, or industrial sites. A variety of terms are used to describe different types of open space, including *active open space* (athletic fields, play areas), *passive open space* (scenic and natural parks), *public open space* (government-owned or controlled), and *private open space* (undeveloped and unavailable for public use). The term *protected open space* includes publicly owned open space, land owned by a land trust or conservation organization, land under a permanent easement or deed restriction, and homeowners association open space. *Unprotected open space* describes all other privately owned undeveloped land. *Quasi-public open space*, a subcategory of unprotected open space, covers school fields, institutional lands, cemeteries, and club recreation areas like golf courses and swim clubs.

REVITALIZATION: The renewal and improvement of older commercial and residential areas through any of a series of actions or programs that support and facilitate private and public investment. This community investment can include (but is not limited to) activities and programs designed to improve neighborhoods; strengthen existing businesses; attract new businesses; encourage quality renovation and new construction; enhance public spaces and pedestrian amenities; ensure safe, efficient and convenient traffic flow; and contribute to the social and economic vitality of the area.

SUBDIVISION: The division by plat or deed of a piece of property into two or more lots, plots, tracts, parcels or other land divisions.

UNDEVELOPED/UNIMPROVED LAND: Vacant land areas are areas that are undeveloped and not clearly wooded, nor agricultural, nor developed.

UTILITY: A service providing access to electricity, natural gas, water, sewage, or telecommunications. An organization that maintains the infrastructure for a public service; regulated under Title 52 (Public Utilities) of the Pennsylvania Code.

WATERSHED: A land area, also known as a drainage basin, that drains, or "sheds" water to a particular stream or body of water.

WOODLAND: Forested areas of contiguous canopy or solid tree cover, woodlands, and natural lands.

WETLANDS: Land characterized by wetness for a portion of the growing season. Wetlands are generally delineated on the basis of physical characteristics such as soil properties indicative of wetness, the presence of vegetation with an affinity for water, and the presence or evidence of surface wetness or soil saturation. Wetland environments provide water quality improvement benefits and are ecologically valuable. Development activity in wetlands is subject to permitting processes administered by the PA Department of Environmental Protection and the U.S. Army Corps of Engineers.

ZONING ORDINANCE: A document adopted by municipal governments that classifies all land into residential, commercial, industrial, planned development and/or overlay districts. It describes in detail the permitted density and uses allowed in each zoning district; and that lists the specific regulations that govern each land use.

APPENDIX II-C: MAP DATA SOURCES

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Delaware County Planning Department

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Delaware Valley Regional Planning Commission

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Delaware County Planning Department

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Delaware County Planning Department

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Delaware County Planning Department

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Delaware County Planning Department

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Delaware County Planning Department

Map 3-24: Darby Creek Stream Valley Park Trail
Delaware County Planning Department

Map 3-25: Cobbs Creek Trail
Delaware County Planning Department

Map 3-26: Heinz Refuge Trail
Delaware County Planning Department

APPENDIX II-D: EXISTING TRAILS IN DELAWARE COUNTY

Table D-1: Existing Trails in Delaware County

Name	Municipality	Type of Trail	Surface Type
Adkinson Park Trail	Bethel	Multi-use	Paved
Bailey Park Pedestrian Path	Haverford	Multi-use	Concrete
Bartram Park Trail	Darby Borough	Hiking	Dirt/Mulch
Black Rock Park Trail (north)	Ridley	Hiking	Dirt
Black Rock Park Trail (south)	Ridley	Hiking	Dirt
Blue Trail (RCSP)	Edgmont	Hiking	Dirt
Blue Trail (Tyler-Rocky Run Trail)	Middletown	Hiking	Grass
Bonner Park Trail	Thornbury	Hiking	Dirt
Brandywine Trail	Chadds Ford	Hiking	Gravel/Boardwalk
Brooke Farm Trail	Radnor	Hiking	Dirt
Brookhaven Municipal Center Walking Trail	Brookhaven	Multi-use	Paved
Brookhaven Swim Club Trail	Brookhaven	Hiking	Dirt
Butterfly Trail	Edgmont	Hiking	Dirt
Chester City Riverfront Trail	Chester City	Multi-use	Paved
Clayton Park Trail	Concord	Hiking	Paved
Cobbs Creek Park Trail (Upper Darby South)	Upper Darby	Hiking	Paved/Dirt
Cobbs Creek Park Trail (Yeadon North)	Yeadon	Hiking	Paved/Dirt
Cobbs Creek Park Trail (Yeadon South)	Yeadon	Hiking	Paved/Dirt
Cobbs Creek Park Trails (Haverford)	Haverford	Hiking	Dirt
Concord Township Park Trail	Concord	Hiking	Paved
Cornucopia Trail	Middletown	Hiking	Dirt
Creekside Trail	Upper Chichester	HOA Hiking	Paved
Darby Creek Trail - Haverford	Haverford	Multi-use	Paved
Darlington Trail	Middletown	Hiking	Dirt
Dittmar Walking Trail	Radnor	Hiking	Paved
Ellson Trail	Springfield	Hiking	Dirt
Fisher Park Trail	Aston	Hiking/Biking	Stone
Fisherman's Trail	Edgmont	Hiking	Dirt
Fox Hill Farm Trails	Concord	HOA Hiking	Paved
Furness Park Trail	Nether Providence	Hiking	Dirt
Garnet Oaks trails	Bethel	HOA Hiking	Dirt
Glen Providence Park Trails	Upper Providence	Hiking	Grass/Dirt
Glendale Trail (south)	Haverford	Hiking	Dirt
Goshen Road Trail (SAP Trail)	Newtown	Multi-use	Paved
Grange Trail	Haverford	Hiking	Dirt
Green Trail (Tyler Arboretum)	Middletown	Hiking	Grass
Haverford College Trail	Haverford	Hiking	Dirt

Table D-1: Existing Trails in Delaware County (cont.)

Name	Municipality	Type of Trail	Surface Type
Haverford Reserve Trails	Haverford	Hiking	
Heinz Refuge Impoundment Trail	Tinicum	Hiking/Biking	Gravel
Hepford Field Trail	Nether Providence	Hiking/Biking	Paved
Hildacy Farm Trails	Marple	Hiking	Dirt
Hildacy Farms Trails	Marple	Hiking	Grass
Horse Trail (RCSP)	Edgmont	Equestrian	Dirt
Indian Orchard Trail	Middletown	Hiking	Dirt
Indian Rock Park Trail	Springfield	Hiking	Dirt
Ithan Valley Trail	Radnor	Hiking/Biking	Dirt
Karakung Trail (and extensions)	Haverford	Hiking	Mulch/Dirt
Kent Park Trail	Marple	Hiking	Dirt
Lansdale Glen Trail	Middletown	Hiking	Dirt
Lawrence Park-Loomis Elementary Trail	Marple	Hiking	Dirt
Leiper-Smedley Trail	Nether Providence	Multi-use	Paved
Linvill Trail	Middletown	Hiking	Grass
Luckenbach Trail	Thornbury	Hiking	Dirt
Martin Park Trail	Thornbury	Hiking	Grass
Millennium Trail	Middletown	Hiking	Grass/Dirt
Naamans Creek South OS Trail	Upper Chichester	Hiking	Dirt
Newlin Mill Trail	Concord	Hiking	Dirt
Orange Trail (RCSP)	Edgmont	Hiking	Dirt
Orange Trail (Tyler-Dismal Run Trail)	Middletown	Hiking	Grass
Palmer Arboretum Trail	Thornbury	Hiking	Dirt
Patterson Woods Trail	Thornbury	Hiking	Dirt
Pennock Woods	Lansdowne	Hiking	Dirt
Pennsy Trail	Haverford	Hiking	Wood Chips/Dirt
Pilgrim Park Trail (Haverford)	Haverford	Hiking	Dirt
Pilgrim Park Trail (Upper Darby)	Upper Darby	Hiking	Dirt
Pink Trail (Tyler-Pink Hill Trail)	Middletown	Hiking	Dirt
Powder Mill Valley Trail	Haverford	Hiking	Dirt
Purple Trail-East (Tyler Connector Trail)	Middletown	Hiking	Dirt
Purple Trail-West (Tyler Connector Trail)	Middletown	Hiking	Dirt
Radnor Trail	Radnor	Multi-use	Paved
Red Trail (RCSP)	Edgmont	Hiking	Dirt
Red Trail (Tyler-Painter Trail)	Middletown	Hiking	Grass
Ridley Creek State Park Multi-Use Trail	Edgmont	Multi-use	Paved
Ridley Township Municipal Park Exercise Trail	Ridley	Multi-use	Gravel

Table D-1: Existing Trails in Delaware County (cont.)

Name	Municipality	Type of Trail	Surface Type
Rocky Run Trail	Middletown	Hiking	Dirt
Rolling Green Trail	Springfield	Hiking	Dirt
Rose Tree Park Trail	Upper Providence	Hiking	Dirt
Runnymeade Trail	Edgmont	Hiking	Wood Chips
Saul Wildlife Trail	Rose Valley	Hiking	Dirt
Saw Mill Trail	Radnor	Hiking/Biking	Paved/Dirt
Skunk Hollow Trail	Radnor	Hiking/Biking	Dirt
Spring Valley Trail	Springfield	Hiking	Dirt
Springfield Trail/Smedley Yellow Trail	Springfield	Hiking	Dirt
Summit Trail	Thornbury	Hiking	Dirt
Swarthmore College Crum Woods Trails	Swarthmore	Hiking	Dirt
Swarthmore Trail	Swarthmore	Hiking	Dirt
Taylor Arboretum Trail	Nether Providence	Hiking	Dirt
Thornbury Park Back Field Loop	Thornbury	Hiking	Grass
Thornbury Park Paved Loop	Thornbury	Multi-use	Paved
Trolley Station Trail (Smedley Park)	Nether Providence	Hiking	Dirt
Veterans Memorial Trail	Marple	Hiking	Paved
Walsh Trail	Springfield	Hiking	Stone
White Trail (RCSP)	Edgmont	Hiking	Dirt
White Trail (Tyler-Minshall Trail)	Middletown	Hiking	Dirt
Willow Park Trails	Ridley	Hiking	Dirt
Willows Trail	Radnor	Hiking/Biking	Dirt
Woodlawn Trustees Trail	Concord	Multi-use	Wood Chips/Dirt
Woodlot Trail	Parkside	Hiking	Paved
Yellow Trail (RCSP)	Edgmont	Hiking	Dirt
Yellow Trail (Tyler-Middle Farm Trail)	Middletown	Hiking	Grass

Source: DCPD, 2014

APPENDIX II-E: PRIMARY TRAILS IN MUNICIPALITIES

Table E-1: Primary Trails in Municipalities

Municipalities	1 Brandywine Creek Greenway	2 Octoraro Rail Trail	3 PECO Right-of-Way Trail	4 Chester Creek Trail – North Extension	5 Rocky Run Trail	6 Chester Creek Trail	7 Chester Creek Trail – East Coast Greenway (ECG) Connector	8 East Coast Greenway	9 Blue Route Bikeway – ECG Connector	10 Blue Route Bikeway – Leiper to Kinder	11 Blue Route Bikeway - Leiper-Smedley Trail	12 Media-Smedley Connector Trail	13 Ridley Creek Greenway (North and South)	14 Ridley Creek State Park Trails	15 Blue Route Bikeway – Smedley to Darby Creek	16 Darby Creek Trail – Haverford Township	17 Darby Creek Trail – Drexel Hill Connector	18 Newtown Square Branch Rail Trail	19 Route 252 Bicycle Route	20 Blue Route Bikeway – Ithan-Darby Creek Valley	21 Radnor Trail	22 Forge to Refuge Trail	23 Darby Creek Stream Valley Park Trail	24 Cobbs Creek Trail	25 Heinz Refuge Trail
Aldan Borough																							X		
Aston Township						X																			
Bethel Township			X																						
Brookhaven Borough													X												
Chadds Ford Township	X	X																							
Chester City							X	X	X				X												
Chester Heights Borough		X		X	X	X																			
Chester Township						X																			
Clifton Heights Borough																							X		
Collingdale Borough																									
Colwyn Borough																							X		
Concord Township		X	X																						
Darby Borough																							X		
Darby Township								X																	
East Lansdowne Borough																		X							
Eddystone Borough								X	X																
Edgmont Township														X											

Table E-1: Primary Trails in Municipalities (cont.)

Municipalities	1 Brandywine Creek Greenway	2 Octoraro Rail Trail	3 PECO Right-of-Way Trail	4 Chester Creek Trail – North Extension	5 Rocky Run Trail	6 Chester Creek Trail	7 Chester Creek Trail – East Coast Greenway (ECG) Connector	8 East Coast Greenway	9 Blue Route Bikeway – ECG Connector	10 Blue Route Bikeway – Leiper to Kinder	11 Blue Route Bikeway - Leiper-Smedley Trail	12 Media-Smedley Connector Trail	13 Ridley Creek Greenway (North and South)	14 Ridley Creek State Park Trails	15 Blue Route Bikeway – Smedley to Darby Creek	16 Darby Creek Trail – Haverford Township	17 Darby Creek Trail – Drexel Hill Connector	18 Newtown Square Branch Rail Trail	19 Route 252 Bicycle Route	20 Blue Route Bikeway – Ithan-Darby Creek Valley	21 Radnor Trail	22 Forge to Refuge Trail	23 Darby Creek Stream Valley Park Trail	24 Cobbs Creek Trail	25 Heinz Refuge Trail
Folcroft Borough																									X
Glenolden Borough								X																	
Haverford Township															X	X		X		X		X			
Lansdowne Borough																		X					X		
Lower Chichester Twp.								X																	
Marcus Hook Borough								X																	
Marple Township															X			X							
Media Borough												X													
Middletown Township				X	X	X							X	X											
Millbourne Borough																		X				X			
Morton Borough																									
Nether Providence Twp										X	X	X	X		X										
Newtown Township																		X	X						
Norwood Borough								X																	X
Parkside Borough																									
Prospect Park Borough								X																	X
Radnor Township																		X		X	X	X			
Ridley Park Borough								X																	

Table E-1: Primary Trails in Municipalities (cont.)

Municipalities	1 Brandywine Creek Greenway	2 Octoraro Rail Trail	3 PECO Right-of-Way Trail	4 Chester Creek Trail – North Extension	5 Rocky Run Trail	6 Chester Creek Trail	7 Chester Creek Trail – East Coast Greenway (ECG) Connector	8 East Coast Greenway	9 Blue Route Bikeway – ECG Connector	10 Blue Route Bikeway – Leiper to Kinder	11 Blue Route Bikeway - Leiper-Smedley Trail	12 Media-Smedley Connector Trail	13 Ridley Creek Greenway (North and South)	14 Ridley Creek State Park Trails	15 Blue Route Bikeway – Smedley to Darby Creek	16 Darby Creek Trail – Haverford Township	17 Darby Creek Trail – Drexel Hill Connector	18 Newtown Square Branch Rail Trail	19 Route 252 Bicycle Route	20 Blue Route Bikeway – Ithan-Darby Creek Valley	21 Radnor Trail	22 Forge to Refuge Trail	23 Darby Creek Stream Valley Park Trail	24 Cobbs Creek Trail	25 Heinz Refuge Trail
Ridley Township								X	X	X			X												X
Rose Valley Borough																									
Rutledge Borough																									
Sharon Hill Borough																									
Springfield Township															X		X								
Swarthmore Borough										X															
Thornbury Township				X																					
Tinicum Township								X																	X
Trainer Borough			X					X																	
Upland Borough						X																			
Upper Chichester Twp.			X					X																	
Upper Darby Township																	X	X				X	X		
Upper Providence Twp.												X	X												
Yeadon Borough																							X		