Greenway Plan for the Darby Creek Watershed

Delaware County, PA
2010

GREENWAY PLAN
FOR THE
DARBY CREEK WATERSHED

Delaware County, Pennsylvania
May 2010

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EXECUTIVE SUMMARY

INTRODUCTION

GREENWAY PLANNING HISTORY

Planning for a greenway along Darby Creek and its tributaries has been a topic of discussion for 100 years. The County and the Darby Creek Valley Association (DCVA) have been working to promote this idea for many years. This Darby Creek Greenway Plan is an effort to provide a framework within which to realize the County and DCVA's vision to make Darby Creek and its tributaries *ribbons of green* for future generations. The plan, which is consistent with state greenway planning strategies, uses the concept of hubs and spokes as a basis for establishing a greenway network. The purpose is to provide linkages between resources and people, creating a greenway for all people, promoting wellness, providing/utilizing alternative modes of transportation, and most importantly, directing focus on preservation and enhancement on the natural, cultural, and historic resources in the watershed.

GREENWAY CONDITIONS ASSESSMENT

The planning process for the greenway involved a great deal of data collection and the production of study area maps for analysis by Delaware County Planning Department (DCPD) staff and the County's consultants from Urban Research and Development Corporation (URDC). Maps prepared for the plan contain information such as parcel lines, roads, trails, streams, parks and open spaces, municipal boundaries, transit routes, wetlands, floodplains, and steep slopes

Comprehensive open space, greenway, and bicycle planning documents were obtained for counties and municipalities just outside of the greenway plan study area. They were analyzed for existing and potential greenway connections across the County boundaries. In order to get a first-hand view of the potential greenway network, planning staff visited many of the locations that looked promising from the map analysis.

The *Darby Creek Watershed Conservation Plan* (2005) served as a valuable source of information concerning existing conditions, demographics, historic resources, demographics, biological and physiographic features, and a generalized analysis of the potential placement of greenways in the watershed.

Aerial photography made it possible to identify a number of important economic, social, and open space hubs. It also helped staff to identify spokes which connect the important hubs. In many cases, the linear undeveloped land along stream valleys served as these spokes. Some of these lands are backyards or back ends of commercial properties; others are linear parkland or privately owned properties left undeveloped, possibly due to environmental constraints.

The pattern that emerged when examining a composite map of watershed resources in eastern Delaware County is that parkland and open space is highly fragmented and that stream valleys are all that is left in terms of linear green connections. One of the reasons that land has continued to remain open along the stream valleys is due to environmental constraints, which include steep slopes or wide floodplains. With the exception of a few institutional, corporate, or privately owned properties, there is little land available for purchase, and there is little or no opportunity for addition or expansion of most public parks in the middle and lower portions of the Darby Creek Watershed.

PUBLIC PARTICIPATION

DCPD, with assistance from URDC planners, undertook an extensive public participation process that involved formation of a Greenway Steering Committee responsible for assisting the Planning Department with development of the plan and information-gathering from key persons, stakeholders, and the public. The process included personal interviews, topical focus groups, and a watershed-wide public meeting.

A Steering Committee, comprised of representatives from County agencies, municipalities, and citizens groups, was responsible for providing input, reviewing drafts, and assisting the DCPD with data collection. Refer to Appendix E for a list of the members and meeting minutes. Focus groups included interests such as bicyclists, schools, fishermen and naturalists, business and tourism professionals, utility and transportation right-of-way owners, and separate groups of municipal interests for the northern, central, and southern parts of the watershed. Interviewees included private, corporate, and organizational landowners from along the Darby Creek stream valley; additional municipal managers not present at focus groups; the manager of the John Heinz National Wildlife Refuge; the director of DCPD; staff from the Delaware County Conservation District; the director of the Delaware County Parks Department; specific members of the Darby Creek Valley Association (DCVA); and staff from the Philadelphia Water Department and the Fairmount Park Commission.

DCPD staff was also asked to make presentations to DCVA, the Delaware County Environmental Network, and the Haverford Civic Council, providing staff with an opportunity to answer questions and solicit additional input. DCPD gained a wealth of knowledge from these activities and continued to learn more about the study area as it discussed the plan with various people and groups in the watershed.

RELATIONSHIP TO COUNTY OPEN SPACE AND GREENWAY PLANNING

The *Greenway Plan for the Darby Creek Watershed* is the first of two greenway plans to be components of the County's Open Space, Parks, Recreation, and Greenway Plan. A second greenway plan will be prepared for the remainder of the County as part of that planning effort. The Delaware County Planning Commission made a formal recommendation to County Council to adopt this plan as a component of the County Open Space Plan, which is an official component of the County's Comprehensive Plan.

GREENWAYS

GREENWAY PURPOSES AND DEFINITION

Greenways Serve Many Purposes

Many people have their own assumptions about what a greenway is. The truth is that there are many types of greenways, but the common trait among them is that they are linear connections of some kind between important places (or hubs) on the landscape. Most of the time, they are green connections, involving existing or proposed green spaces or landscaping. There are a variety of types of connections (or spokes), as well as a number of types of hubs; these hubs and spokes may not always be in public ownership or be available for public access.

Some people think that the most important reason for establishing a greenway is to preserve natural features, including corridors for wildlife movement and plant diversity or to provide buffers around creeks for flood protection and water quality purposes. For those who see these functions as their top priority, connecting green spaces without regard to trails or public access is the goal.

Many other people view public trails as a necessary component of a greenway. They either desire a trail for its recreational benefits or as an alternative bike and pedestrian transportation route. As green space or as a trail, greenways can enhance real estate values and local economies. As such, local governments and businesses place a high value on them for their income-generating potential.

Greenway Definition

For the purpose of Countywide greenway planning, "greenway" is defined as ***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 limited or no public access.

GREENWAY BENEFITS

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 and promote conservation of the natural environment. Specific benefits include natural resource protection, conservation of cultural and historic resources, alternative transportation, educational opportunities, and enhanced quality of life.

GREENWAY TYPES

Based on its research, DCPD identified four (4) main types of potential greenways in the Darby Creek Watershed: (1) greenspace connections, (2) road-based greenways, (3) transit-oriented greenways, and (4) water trails. A fifth type, combination greenways, is made up of corridors with two or more of four main types. Some of the greenways were easy to identify and delineate; others were identified as opportunities to connect certain hubs, while taking advantage of existing infrastructure (roads, transit lines, vacant rights-of-way) that could potentially be signed and improved. Refer to Map 3-1, which displays the Darby Creek Greenway Network's greenway corridors using the main four types identified above.

DARBY CREEK GREENWAY CONCEPT PLAN

GREENWAY NETWORK

The proposed Darby Creek Greenway Network is presented on two conceptual maps: (1) Conservation Greenway Hubs and Spokes, and (2) Recreation Greenway Hubs and Spokes. Refer to Maps 3-2 and 3-3 which can be found in Chapter 3 of the Greenway Plan. Conservation greenways are shown as the major stream valleys and the five largest open space hubs, as well as golf courses and cemeteries (two types of unique, managed open space). The Recreation Greenway map shows public hubs and connections, including all parkland public and school open spaces, town centers, existing and potential trails, water trails, bike routes, scenic roads, and other "green roads," along with transit-oriented greenways.

The greenspace connections, which include both public and private (not for public access) open spaces without trails, were the easiest to delineate. Based on the information gathered, DCPD found more often than not, that County and municipal parkland in eastern Delaware County is located along a creek. These parks, as well as schools, served as the basis for identification of greenway hubs.

GREENWAY PLAN GOALS AND OBJECTIVES

As the County went through the process of identifying major goals and objectives, it became apparent that many goals are over-arching and may become the basis for greenway planning Countywide. The generalized vision for the Darby Creek Greenway is to have a *continuous ribbon of green* from one end to the other. The County's first greenway planning goal is conservation, for the purpose of preserving the many environmental benefits associated with natural corridors, including floodplain management and open space. The second goal is to make connections between the watershed's many natural and man-made resources through the development of trails for recreation and alternative transportation within the greenway network, where feasible.

Greenway Plan for the Darby Creek Watershed

Map 3-1
Greenway Network

Darby Cobbs Watershed Area
Cobbs Creek Sub Watershed
Darby Creek Watershed
Delaware County Boundary
Municipal Boundaries

Darby Creek Greenway Network
Greenspace Connection
Road-based Connection
Transit-oriented Connection
Water Trail

Streams
Major
Minor

Open Space and Recreation
Municipal Land
County Land
Federal and State Land
School District Land
Golf Courses
Private Recreation Facilities
Institutional Property w/ Open Space
Conservation Organization Protected Land
Homeowners Association Open Space
Cemetery

CHESTER COUNTY
MONTGOMERY COUNTY
CITY OF PHILADELPHIA
NEWTOWN TOWNSHIP
RADNOR TOWNSHIP
MARPLE TOWNSHIP
HAVERFORD TOWNSHIP
SPRINGFIELD TOWNSHIP
UPPER DARBY TOWNSHIP
RIDLEY TOWNSHIP
TINICUM TOWNSHIP
MILLBOURNE BOROUGH
LANSDOWNE BOROUGH
EAST LANSDOWNE
CLIFTON HEIGHTS
YEADON BOROUGH
ALDAN BOROUGH
MORTON
RUTLEDGE
COLLINGDALE BOROUGH
DARBY BOROUGH
GLENOLDEN
SHARON HILL
COLWYN
PROSPECT PARK
NORWOOD BOROUGH
FOLCROFT BOROUGH
DARBY TOWNSHIP
RIDLEY PARK

0 1 2 3 Miles

Source:
Delaware County Planning Department

Prepared By
Delaware County
Planning Department
2010

There is a great deal of undeveloped land (without trails) present along stream valleys, but not every stretch of the stream corridor is permanently protected. The stream valleys, whether publicly or privately owned, are not always managed for water quality or conservation of natural resources. Establishing and promoting greenways through education can help to preserve them for their scenic relief and functional assets.

Walking, running, and bicycling have become the most popular outdoor activities in recent years, both in southeastern Pennsylvania and nationwide. Athletic fields are still in high demand, and are important to a community; however, people of all ages are placing greater emphasis on maintaining a healthy lifestyle. A greenway network can provide greatly-needed opportunities to pursue related activities.

Many parks in the study area have a stream running through them, and some others can be linked through other kinds of connections. A practical and viable alternative to increase recreational opportunities for residents of the watershed is to make green connections - both between two or more parkland areas and between parks and other hubs like neighborhoods, downtowns, and schools.

Implementation was included as a distinct goal with its own objectives because commitment to implement the plan's recommendations is as important as the goals, objectives, actions, and policies that it contains.

Goal 1 Conservation

To encourage sustainable development and land management practices which preserve the County's critical natural resources and unique environmental and historic character

Objective 1	Maintain, enhance, and green the watershed through the introduction of native plants and the removal of invasive species
Objective 2	Protect and preserve water quality and flood carrying capacity in the watershed's streams through the use of best management practices and sound floodplain management strategies
Objective 3	Preserve, protect, and promote historic and cultural resources in the watershed
Objective 4	Preserve and protect soils, natural features, and viewscapes in the watershed
Objective 5	Preserve and protect natural heritage resources, including important flora, fauna, and landscapes

Goal 2 Connection

To provide a connected network of greenways made up of open space, parkland, trails, and transit corridors that link fragmented biological resources and connect the people to various destinations both in and out of the watershed

Objective 1 Preserve and enhance connections between and within natural resource areas in order to protect resource values, natural heritage areas, and wildlife corridors (see Conservation)

Objective 2 Preserve and develop connections between public open spaces to enhance their value for public use

Objective 3 Develop and enhance connections between watershed hubs such as towns, schools, and historic/cultural resources

Objective 4 Incorporate existing public transit routes, transit corridors, and utility rights-of-way in the greenway network

Goal 3 Quality of Life

To improve and maintain quality of life, well being, and economic health in the Darby Creek watershed through better planning and utilization of the greenway network as a basis for land use decision-making

Objective 1 Ensure that watershed residents of all ages and abilities have access to recreational amenities such as trails and parks

Objective 2 Maintain and enhance the visual quality of watershed communities through preservation of green spaces, inclusion of public landscaping, and control over dumping and litter

Objective 3 Support efforts to promote economic growth and redevelopment through sustainable development that is safe, attractive, and environmentally friendly

Objective 4 Encourage development/redevelopment that incorporates walkability and public transportation opportunities

Objective 5 Improve overall public health by increasing opportunities for physical activity – a key component of healthy lifestyles

Goal 4 Education

To educate the public, policy makers, and landowners about the benefits of greenways, and their roles in conservation, land management, and planning that takes into account greenway resources and recreational opportunities

Objective 1 Develop opportunities to raise awareness on the part of municipal officials regarding the value of natural resources, trails, and sustainable land use through sound planning

Objective 2 Raise awareness on the part of large property owners (e.g., residential, schools, industries, cemeteries, etc.) of the importance of incorporating sound land use management practices on their lands

Objective 3 Utilize schools as a mechanism to educate students on the importance of greenways and watershed stewardship, as well as their roles in protecting watershed resources

Objective 4 Engage the public in local planning and land stewardship activities through print and web media

Goal 5 Implementation

To provide a framework for implementation of the greenway plan through sound actions and policies that further the goals and objectives of the plan

Objective 1 Support implementation of sustainable land use, open space, trail, preservation, and other studies prepared for the watershed
Objective 2 Prepare new studies and land use planning documents that support the goals and policies of the greenway plan
Objective 3 Promote coordination and cooperation among municipalities, organizations, and stakeholders in the watershed

GREENWAY SEGMENTS

The Darby Creek watershed study area is relatively large compared with other watersheds in the County. It is 76 square miles and contains 26, mostly built out, first suburb municipalities. The watershed is very diverse, and land development patterns and demographics vary greatly from north to south. Therefore, for planning purposes, the Darby Creek Greenway Network has been broken down into 12 more manageable segments, most of which include more than one municipality. A profile was prepared for each segment, explaining significant characteristics, potential greenway opportunities, types, and challenges that may present themselves when planning for greenways in the segment.

Land area in Segment #8, Darby Creek Stream Valley Park, is mostly under County or municipal ownership. A trail master plan (feasibility study) was prepared for this area in 1986; however, it was in need of an update. Therefore, the County, as part of this project, prepared an update entitled *Darby Creek Stream Valley Master Plan* (2009). The study area included six urban municipalities located along the main stem of Darby Creek in the middle of the watershed. Municipalities include Upper Darby Township and Clifton Heights, Aldan, Lansdowne, Yeadon, and Darby Boroughs. The primary goal for this segment was to develop a recreational trail. While the plan was intended to serve as a pilot for future detailed segment area plans, each segment will have its own unique goals and possibilities, which may or may not include a trail.

GREENWAY PLAN IMPLEMENTATION

GREENWAY PLAN ACTIONS AND POLICIES

Partnerships Across Sectors and Boundaries

A main focus of this plan is to identify and develop green connections along tributary streams and other non-water-based corridors, thus connecting destination hubs. Many of the connections will serve as alternative transportation routes, such as walking and bicycle trails, while others unsuitable for this purpose could be kept in a natural state for environmental benefits. The greenway corridors delineated in the plan often straddle or cross municipal boundaries, necessitating communication and collaboration between municipalities in order to create a continuous greenway on both sides of the stream or municipal boundary.

Actions and Policies

In order to implement the goals and objectives of this plan, an Action Plan and a list of policies was developed. The actions are land and human capital oriented; some pertain to specific places and activities, while others depend on building partnerships, developing capacity, and implementation of education programs to build awareness for the greenway network. For example, there are actions recommending a greenway public education program, a marketing plan, and a website for the greenway. Others actions call for additional planning, including preparation of individual segment area plans and development of a trail graphics and signage guide. Additional actions include implementation of existing plans (i.e., Darby Creek Stream Valley Park Master Plan) and installation of improvements to make Baltimore Pike a "green" road. The most important implementation actions involve activities that focus on coordination and cooperation (i.e., formation of a Greenway Task Force).

Tools and Resources Identified

There are a number of tools and financial resources that can be utilized to help implement the greenway plan. Among them are land use planning tools (i.e., municipal codes designed to protect streams and their floodplains) and dedication of local staff to champion and coordinate activity and information exchange. The plan identifies a number of sources for technical and funding support for local greenway planning and implementation activities. Technical assistance can be provided from the Delaware County Planning Department (DCPD), which is available to help facilitate municipal coordination and cooperation, offer advice and support for greenway planning, and direct local officials to other helpful resources. DCPD staff can offer advice on roadway and transit systems, historic resources, subdivision and land development regulations, and open space, greenway, and environmental programs.

The Pennsylvania Greenways Partnership Program, which was set up as a collaboration of state agencies and experienced multi-disciplinary leaders from across the state, is

available to share information and to serve as a source of technical assistance to groups creating greenways and trails.

The Pennsylvania Department of Conservation and Natural Resources (DCNR) is the largest source of funding for municipalities in Delaware County. Other funding sources include the Delaware County Revitalization Program and the PECO Green Region Grant Program.

This is Only the Beginning

The Greenway Plan for the Darby Creek Watershed is intended to be a ten-year plan, to be evaluated and updated at the end of that period. The Implementation chapter clearly defines an ideal sequence for undertaking the activities contained in the Action Plan.

Development of a greenway network does not happen all at once, or even in all parts of a particular segment. Due to the coordination required, as well as the cost of preservation and facility development, greenway development can take years to come to fruition. Additionally, greenway care and maintenance are never-ending processes and long-term endeavors.

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GLOSSARY OF ACRONYMS

ADA – Americans with Disabilities Act (1990)

BMP – Best Management Practice (as referenced in the Pennsylvania Handbook of Best Management Practices for Developing Areas, 2007)

DCED – Pennsylvania Department of Community and Economic Development

DCNR – Pennsylvania Department of Conservation and Natural Resources

DCPD – Delaware County Planning Department

DCCD – Delaware County Conservation District

DCCP – *Darby Creek Watershed Conservation Plan* (2005), Cahill Associates for the Darby Creek Valley Association

DCVA – Darby Creek Valley Association

DCJA – Darby Creek Joint Authority

DEP – Pennsylvania Department of Environmental Protection

DVRPC – Delaware Valley Regional Planning Commission

EAC – Environmental Advisory Council

FEMA – Federal Emergency Management Agency

NAI – Natural Areas Inventory

NHI – Natural Heritage Inventory (new term for a county Natural Areas Inventory)

NWR – National Wildlife Refuge, as in "John Heinz NWR".

OHCD – Delaware County Office of Housing and Community Development

PANA – Pennsylvania Advocates for Nutrition and Activity, a member of the PGPAC.

PEC – Pennsylvania Environmental Council

PECO – Philadelphia Electric Company, a unit of Exelon Energy Delivery

PEMA – Pennsylvania Emergency Management Agency

PennDOT – Pennsylvania Department of Transportation

PGPC/PGPAC – Pennsylvania Greenway Partnership Commission/Pennsylvania Greenways Program Advisory Committee

PHFA – Pennsylvania Housing Finance Agency

PHMC – Pennsylvania Historical and Museum Commission

RHM – Radnor-Haverford-Marple Sewer Authority

SEPTA – Southeastern Pennsylvania Transportation Authority

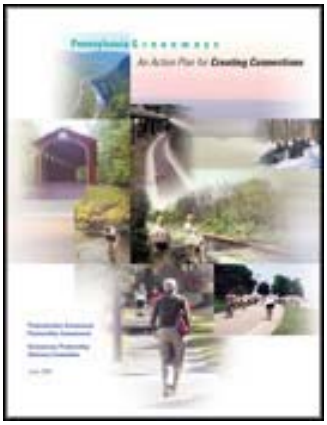
SALDO – Subdivision and land development ordinance

URDC – Urban Research and Development Corporation (County consultant)

CHAPTER 1
INTRODUCTION AND BACKGROUND

In 1998, Governor Ridge issued Executive Order 1988-3, charging state agencies to develop an action plan to advance a Pennsylvania greenways partnership into the 21st Century. The document, *Pennsylvania Greenways: An Action Plan for Creating Connections* was the result. 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. [www.pagreenways.org]

Before developing the goals and objectives for the Darby Creek Greenway Plan it was important for the County to understand 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 2001 Pennsylvania Greenways Action Plan (noted above). The purpose of the plan was to provide goals and strategies for greenway creation in the Commonwealth. Both of these resources served as guides for the creation of the concept plan for this document. Northampton County's *Two Rivers Greenway Plan*, written in 2005 by URDC, was also used as a guide for certain sections of this document.


Pennsylvania Greenways: An Action Plan for Creating Connections, 2001

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 explain 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. Bracketed text reflects new or region-specific information.

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. 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 should be developed with input from regional and local greenways task forces and local governments. In addition, local municipalities may develop local greenway plans that parallel and support county planning.
3. **Places for All People**
   Advocates representing every type of greenway should be represented on regional greenway task forces along with local government officials to support the development of county plans that address all constituencies.
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 with schools to support the statewide initiative. [In the years since the Greenways Action Plan was published, the state established Pennsylvania Advocates for Nutrition and Activity (PANA), which brings together many local contacts for its programs. PANA is a member of the Pennsylvania Greenways Program Advisory Committee (PGPAC), the new incarnation of the PGPC. PANA's website: http://www.panaonline.org.]
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**
   Municipalities should take advantage of programs, such as DEP's Stream Re-Leaf Program, that offer training or other assistance in protecting natural resources through greenways implementation.

Create a Greenways Organizational Network

7. **Greenways Organizational Structure**
   The 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 [http://www.pagreenways.org/funding.htm] 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 listed on the Pennsylvania Greenways website. A greenways trust or endowment could direct private funding to address special needs or opportunities when local

resources are inadequate. Funding incentives can be structured to encourage local governments' formal endorsement of greenways plans or their participation in owning or maintaining greenways. [For more greenway funding information and sources of technical assistance for local funding strategies such as bond initiatives, refer to Chapter 4 of this plan.]

Provide Technical Assistance and Outreach

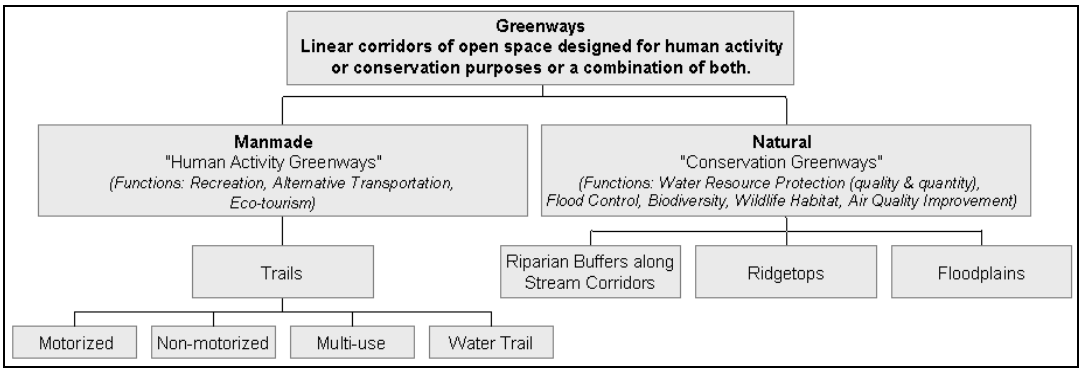
9. **Greenways Toolbox**
   The Greenways Toolbox initiative will directly benefit all local and regional partners. Materials have been developed to support all activities from planning through implementation. Regional task forces and the PGPAC should guide the development of additional toolbox materials.
   Greenways Toolbox website: http://www.pagreenways.org/greenwaystoolbox.htm
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.

This Darby Creek Greenway Plan is a component of a Delaware County Open Space, Recreation, and Greenway Plan (OSRGP) that is currently under development by the Delaware County Planning Department (DCPD). The OSPRG is considered an implementing component of the County's comprehensive plan that is also under development. A major portion of the OSRGP is devoted to County greenway plans. The first greenway plan is for the Darby Creek watershed. The second greenway plan will be prepared for the remainder of the County, with experience gained from the preparation of the Darby Creek Greenway Plan.

CONCEPT AND PURPOSE OF A GREENWAYS NETWORK

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 existing streams and waterways for canoeing, kayaking, inner tubing, rafting, or any other non-motorized water recreation use.

Figure 1-1
Greenway Types in the
Statewide Greenway Network



Source: PA Greenways Partnership Commission [http://www.pagreenways.org/greenwaysnetworks k -types.htm]

Some greenways are designed solely for environmental protection with limited or no human access. Conservation greenways can serve many functions including filtering runoff, reducing stream temperature, protecting wildlife habitat/biodiversity, providing flood/erosion control, improving air quality, and providing visual relief. 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. Single greenways and greenway systems can be composed of more than one type of greenway and provide a variety of natural functions.

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. Stream valleys are often the basis for greenway planning; however, greenways can include other features as well.

GREENWAY BENEFITS

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.

NATURAL RESOURCE PROTECTION

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.

Protection of Water Resources

Greenway trees, shrubs, and grasses 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. Cleaner water in a stream can help to support small aquatic organisms and the fish that eat. Tree cover around streams keeps the water temperature at a level crucial for a healthy stream.

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 rise naturally during a storm, limiting property damage due to flooding. Greenway open spaces 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 of historic and archaeological significance in a community. Lenape Indians used the County's stream corridors for water, food, recreation, and transportation in the 1500s and 1600s. Beginning in the mid-1600s, European settlers began to use the creeks for power and manufacturing. Many of these bygone settlements can be forever linked with a preserved greenway corridor.

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, and improved physical fitness of travelers will be a nice side effect.

QUALITY OF LIFE

Greenways are important to quality of life in a community. Greenways provide opportunities for much-needed recreation, create more attractive communities to live in, 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 good 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 mitigate urban noise and create 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 in cooperation 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 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 learning about history as well.

DELAWARE COUNTY GREENWAY 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 publicly accessible via county- or municipally-owned parks and trails, or they may also be privately owned, with limited or no public access. The primary goal of the greenway is to ensure protection of natural resources; a secondary goal is to make 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.

TYPES OF GREENWAYS

This greenway plan discusses the following five main types of greenways:

1) Greenspace connections (including conservation greenways and recreation greenways)
2) Road-based greenways
3) Transit-oriented greenways
4) Water trails (blueways)
5) Combinations

It is important to remember that all greenways function with conservation elements to some degree. Northampton County's *Two Rivers Greenway Plan*, written in 2005 by URDC, was used as a model for this section.

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. Greenspace connections can help protect sensitive environmental resources, such as hydric and steep slope soils, from negative encroachments. They can serve as important buffers that 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 species as well as economically valuable species. Improved water quality 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 limiting development in 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 of unforeseen natural events can lead to 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 these sensitive areas is to establish a wide buffer along the corridor.

Some less highly developed watersheds in Delaware County contain extensive acreage that is preserved for its sensitive natural features, often with no public access to minimize disturbance. Such preservation would be difficult to achieve in many portions of the Darby Creek watershed due its highly developed nature, where passive recreation and open space is in such high demand and short supply. The following are two types of greenspace connections:

Conservation Greenways

Conservation greenways, corridors where little or no public access is envisioned, are important 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 environmental and ecological sanctuaries. Public land in Darby Creek's stream valleys is found mostly in municipal and County parks. Private land is often found in the rear yards of residential lots. It is generally less developable due to its environmental constraints (i.e., floodplains, wetlands, steep slopes). Private conservation greenways include homeowners' association, golf and recreation club, and institutional land (i.e., private schools, colleges, cemeteries, and religious uses). Private land owners often do not understand the important role that their land plays in protection of greenway corridors.

An example of a conservation greenway with no trail development in Upper Darby Township– private land on the right, public parkland on the left (Gillespie Park)

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 regulation (zoning and subdivision codes) or with conservation easements. Functions of these corridors may include floodplain management, water quality protection, and conservation of important wildlife habitat. To maintain the rights of private landowners, it is often necessary to restrict access to private property. Signage can be installed informing the public of the importance of conservation greenways, noting that the land is private, and directing the way to the nearest public points of interest.

- **Conservation Greenways with Low-Impact Trail Development –** Though a rare occurrence, certain private, corporate, or institutional landowners may allow public access across their property. 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. Trails in this category are typically not ADA compliant, nor are they required to be, since they are privately owned.

Recreation Greenways

The major difference between conservation greenways and recreation greenways is ownership. While conservation greenways are generally under private ownership, recreation greenways tend to be either government-owned parkland or land that lies within a transportation or utility right-of-way corridor.

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 may include such amenities as a canoe launch or fishing pier. Parks in these corridors may also preserve significant historical or culturally significant elements. 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. Paved recreational trails can also serve as alternative transportation routes because their surface is generally more durable and they can be installed in areas where frequent flooding occurs. A paved surface is more accessible to users of various abilities since it can accommodate wheelchairs, strollers, cyclists, and inline skaters. 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.

Example of a recreation greenway with unpaved multiple-use trail development – sewer line right of way in Pilgrim Park, Upper Darby Township.

- **Recreational Greenway Connections using Utility or Abandoned Railroad Right-of-Way Corridors –** 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 easements, gas and petroleum pipelines, power lines, and abandoned railroad lines. These connections may involve the creation of a formalized trail within the right-of-way corridor. It is necessary to contact the owner before considering the implementation of a connection using a utility or former rail right-of-way corridor. 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.

An example of a recreation greenway with paved multiple-use trail development on an abandoned railroad right-of-way corridor – the Radnor Trail

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 greenways by installing trees, landscaped medians, and other measures that are both attractive and ecologically sustainable. Some urban stormwater BMPs could be applied to these greenway streets.

Bicycle Friendly Roadways or Bicycle Boulevards

The Bicycle Coalition of Greater Philadelphia has mapped bicycle routes on roadways as "bicycle friendly," "average," and "below average," on its Greater Philadelphia Regional Bicycle Map. 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. Any road-based greenway in the Delaware County Greenway Network shown on the Greenway Segment Maps in this plan should be examined and considered for installation of dedicated lanes for bicycles.

An example of a road-based greenway – Bloomfield Avenue in Upper Darby Township. A bicycle-friendly road with sidewalks, separated from Darby Creek by residential properties

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 made via a road that runs near a greenspace connection greenway; 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 sometimes have their own rights-of-way devoted for their use. Woodlands and other types of green spaces provide visual relief when seen by passengers through the railcar windows. While some of the land next to the right-of-way lies next to the rear yards of private properties, some also lie next to public parks. These rail lines may run perpendicular to and branch out from a stream valley. Residents of adjoining communities can see transit as an asset to them because it can allow them to easily access the main greenspace connection greenway even though they do not live within walking distance. A rail line may also follow within or parallel to the stream valley, providing access to the corridor or hubs at or near the stations. Greenway managers should consider partnering with SEPTA to market and promote the greenway or provide incentives for passengers traveling strictly within the greenway.

An example of a transit-oriented greenway and a combination greenway – Norristown High Speed Line at Merwood Park and Cobbs Creek

WATER TRAILS

Water trails, also called "blueways," are water-based recreation routes through scenic areas where the corridor is located within a river or another navigable waterway. Blueways often incorporate protected habitat areas along their shorelines. Public or private marinas and boat launches are the hubs, where small boats, canoes, or kayaks can be launched. They 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 can prohibit boating.

An example of a facility that can support a water trail – Ridley Township Municipal Marina on Darby Creek

COMBINATION GREENWAYS

Part of the concept for the Darby Creek greenway network is that it is to be composed of various types of greenways linked together. Single greenways can be also composed of more than one type of greenway. For example, a greenspace connection greenway and a road-based greenway exist as a combination when the conserved open space has no public access, but a bicycle friendly roadway or scenic road alongside it provides bicycle and vehicular passage with visual enjoyment of the open space. Transit with trail is another type that is possible. An example is a hiking trail alongside a transit line (this is both a transit-oriented and a recreation greenway). The most effective greenway system is composed of multiple systems of individual greenway types that can each stand alone, but work together when combined to provide a more comprehensive network.

DELAWARE COUNTY GREENWAY NETWORK

The primary purpose behind Delaware County's greenway planning effort is to preserve the environmental value of natural resources such as streams and woodlands, while providing visual/aesthetic open spaces for human enjoyment. The urbanized landscape has gradually encroached upon land needed for the natural flooding of streams, scenic relief, native plants, trees, and wildlife. Land preservation is important in order to prevent further fragmentation of remaining open space. A secondary purpose behind this planning effort is to identify potential trails for recreation and alternative transportation. This can be achieved through use of a system of hubs and spokes that connect natural features, points along a rail line, historic sites, downtowns, or a combination.

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 to be connected, while spokes, or corridors, are the linear strips used to connect them.

Hubs can be large open space tracts such as community and regional parks or nature preserves. In a County-level or watershed-level greenway plan such as this, hubs can also include smaller destinations like historic buildings and districts, schools and colleges, and downtowns. A spoke can include a trail, but it does not need to. Depending on the type of greenway (as explained earlier in this chapter) a spoke can be a road, transit line, utility or sewer right-of-way, body of water, conservation easement, a riparian buffer preserved by municipal ordinance, 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.

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 and connectivity," where

appropriate. Even though these concepts are often considered separately, one can see how they go hand-in-hand.

While it may take decades for the Darby Creek Greenway Network to be permanently protected, it is important to identify the areas of interest on a map today so that the many municipalities, organizations and residents in the watershed can begin to work toward the same goal. Preparation of Delaware County's greenway plans for the Darby Creek watershed and the remainder of the County are only the beginning of the process. Local governments, civic organizations, businesses, volunteers, and residents need to work together to develop a vision and implement it. Strong leadership at the local level is essential to make the overall vision a reality.

DELAWARE COUNTY TRAILS NETWORK

Just as all of the different watershed greenway networks in the County have the potential to someday be connected in to the Delaware County Greenway Network, it is conceivable that the trails within this system have the potential to be joined in a countywide network as well. For example, portions of the Darby Creek Greenway and potential greenways along the Chester, Ridley, and Crum Creeks could each connect to the segment of the East Coast Greenway that is proposed to run through the Delaware River waterfront. Other connections between watersheds such as Darby and Crum Creeks could occur by way of east-west public transportation routes like SEPTA's Route 101 Media Trolley or abandoned transportation or utility rights-of-way that could be redeveloped as trails. Such connections might be described as a system of hubs and spokes. This interconnected system of trails within the Delaware County Greenway Network is called the Delaware County Trails Network.

DARBY CREEK GREENWAY PLANNING HISTORY

Many plans and studies over the years have identified the potential for a greenway network within the Darby Creek watershed.

EARLY PLANNING FOR THE DARBY CREEK GREENWAY

Interest in preserving a greenway along Darby Creek and its tributaries has been expressed throughout the 20th century. Various articles, studies, and plans have highlighted the value of the stream valley and called for its conservation and use as public parkland.

One of the first articles expressing interest in a greenway is titled "New Wissahickon in Old Darby Creek," dated July 31, 1910, from an unknown publication. The article discusses how concerned citizens saw development beginning to fill out the Lansdowne area, and then assembled to raise funds to preserve the picturesque land along the stream for future generations. Two later articles were aimed at hikers, both describing the same

stretch of the valley in Haverford and Upper Darby Townships. One is a Philadelphia Evening Bulletin article from 1927, entitled "Darby Creek Valley A Hikers Paradise." The other undated article, called "Virgin Woodland along Darby Trail," describes a hike in Haverford and Upper Darby Townships and its many natural wonders and historical features.

In 1932, *Nature's Plan For Parkways - Recreational Lands*, prepared by the Regional Planning Federation of the Philadelphia Tri-State District, included a proposed regional plan that featured Darby and Cobbs Creeks 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 (p. 19).

In 1934, the document *Leisure In Our Time: A Survey of Recreational Opportunities in Delaware County Pennsylvania*, was prepared for the Delaware County Park Board and Delaware County Welfare Council. It reads: "There is a movement on foot, sponsored by the [County] 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 [in terms of building potential] 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" (p. 13). Although Darby Creek is not named, it was by far the most developed and threatened watershed at the time.

The Delaware Valley Regional Planning Commission's *1985 Regional Plan for Parks and Recreation Areas, Regional Open Space Plan Supplement*, released in August 1971, 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." Darby Creek is listed among specific recreation areas that offer 'catch-up opportunities' for investment." (p. 17)

MORE RECENT PLANNING FOR THE GREENWAY

Delaware County Open Space, Parks, and Recreation Study

In 1978, the *Delaware County Open Space, Parks, and Recreation Study* was developed by the Delaware County Planning Department (DCPD) and adopted by County Council. A large portion of the plan was devoted to the planning, administration, and coordination of recreational services. The plan 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.

Darby Creek Stream Valley Park Master Plan

In 1987, DCPD, with the help of Thomas Committa and Associates, prepared the *Darby Creek Stream Valley Park Master Plan*. The plan was essentially a trail greenway feasibility study prepared at a street-level for parts of Upper Darby, Lansdowne, Clifton Heights, Aldan, and Yeadon. The County purchased many pieces of land and easements along the stream in conjunction with its planning efforts for a greenway in this area. However, the overall trail effort lost momentum due to changing priorities and budget constraints at the County level. Fortunately, the early planning and acquisition in the 1980's resulted in a segment of stream corridor with a great deal of continuous public land that, today, provides the basis for a trail.

Darby Creek Watershed Conservation Plan

In 2002, the Darby Creek Valley Association commissioned a Rivers Conservation Plan for the Darby Creek watershed with funding from the PA Department of Conservation and Natural Resources Rivers Conservation Program. Titled the *Darby Creek Watershed Conservation Plan*, it was completed in 2004. One of the major recommendations of the plan was to prepare a greenway plan for Darby Creek in order to conserve its "ribbon of green."

The Conservation Plan looks at all of the natural, historical, recreational and cultural resources contained in the watershed. It makes recommendations regarding issues such as stream bank restoration, better stormwater management, creation of open space, and improving quality of life through responsible development patterns, municipal cooperation, and citizen involvement.

THE GREENWAY VISION

The generalized vision for this greenway planning effort is the creation of the continuous ribbon of green recommended in the Conservation Plan. The potential for such a ribbon emerges when examining a composite map of watershed resources. Where feasible, every attempt should be made to promote green connections along tributary streams and other non-water-based corridors to connect destination "hubs." These connections, or "spokes," could help provide alternative transportation routes such as walking and bicycle trails, while others found to be infeasible for public use would be kept as natural areas for their environmental benefits.

DARBY CREEK GREENWAY NETWORK

The proposed Darby Creek Greenway will include a number of greenway corridors in the watershed that have the potential to connect to each other. Altogether, the interconnected

web of greenways in the watershed is called the Darby Creek Greenway Network. Known hubs in the network are the public or private places of interest in the watershed (i.e., parks, downtown commercial districts, historic resources, and schools). The spokes in the network might include lands along the main stem of Darby Creek and its tributaries, abandoned rail lines, roadways, and/or other areas that are either under some form of long-term protection or recommended for it.

DARBY CREEK TRAILS NETWORK

Several areas within the Darby Creek watershed that already have or will have a system of trails are the John Heinz National Wildlife Refuge, portions of Radnor Township (including the rail trail), and the former Haverford State Hospital property. Other areas where an abundance of land is already in public ownership may have the potential for even more trails. As the potential for a greenway, and possibly trails, is investigated in this greenway plan, such areas will be referred to as the Darby Creek Trails Network. The trails system may have a variety of owners and parties responsible for maintenance, possibly including municipalities, the County, conservation organizations, and "friends of the trail" groups.

CITIZEN SUPPORT: THE DARBY CREEK VALLEY ASSOCIATION

The Darby Creek Valley Association (DCVA) is a well-established, all volunteer, nonprofit organization with over 100 members dedicated to the protection and enhancement of all the Darby Creek watershed's resources, including water, wildlife, historic sites, and the floodplain. Its primary mission is public education. DCVA is responsible for an annual conference, an annual stream clean up, educational programs, and partnerships with historical sites in the watershed. [Website - http://www.dcva.org].

DCVA has a volunteer monitoring network, "StreamWatch," which has a strong environmental education component, reaching out to local schools and streamside residents. Specifically, they are meeting with groups including local residents, schools, scout troops, etc. to encourage them to adopt sections of the stream for monitoring. DCVA is also working with interested groups to provide the required training, equipment, and technical support to monitor the sites.

CHAPTER 2
EXISTING CONDITIONS

The following is a description of the Darby Creek watershed study area, its resources and conditions, and influence on greenway potential. The *Darby Creek Watershed Conservation Plan* (DCCP) was consulted for information contained in this chapter.

STUDY AREA LOCATION

The Darby Creek watershed contains 76 square miles of land area. Of this, 22 square miles are located in the Cobbs Creek major sub-watershed. There are 31 municipalities in the watershed, 26 of which are in Delaware County, comprising 77.5% of the total land area. The remaining land area lies in Chester and Montgomery Counties and the City of Philadelphia. Map 2-1 shows the study area and its place in the region.

The watershed encompasses all or part of the following 26 municipalities in Delaware County: (See Map 2-2) Aldan, Clifton Heights, Collingdale, Colwyn, Darby, East Lansdowne, Folcroft, Glenolden, Lansdowne, Millbourne, Morton, Norwood, Prospect Park, Ridley Park, Rutledge, Sharon Hill, and Yeadon Boroughs; and Darby, Haverford, Marple, Newtown, Radnor, Ridley, Springfield, Tinicum, and Upper Darby Townships.

Although Darby Creek's headwaters are located in Chester and Montgomery Counties, most of the mainstem and tributaries flow through eastern Delaware County before flowing through the John Heinz National Wildlife Refuge at Tinicum before emptying into the Delaware River near Little Tinicum Island. The largest tributary to Darby Creek is Cobbs Creek, which forms the County's border with the City of Philadelphia. The largest major tributary to Cobbs Creek is Naylors Run, which begins in Haverford Township and travels through Upper Darby before it joins Cobbs Creek.

While this greenway plan focuses primarily on areas within Delaware County, planning efforts for water quality and trails in the contiguous counties have a great deal of influence on the Delaware County study area. Therefore, this plan gives a great deal of consideration to additional opportunities for the greenway connections across county boundaries.

HISTORY OF THE WATERSHED

The Darby Creek watershed is one of the first areas of the County to develop; settlements in the area were some of the earliest in the nation. As one of the City of Philadelphia's first inner-ring suburbs, development moved westward from the City and northward from the Delaware River. The development pattern relied heavily on the stream for water power, and factories, mills, and residences to serve workers became prominent fixtures

on the landscape. Later development in the watershed followed east/west rail and trolley lines, attracting new residents with the promise that the public transit systems would bring them to and from work in the City of Philadelphia. The watershed's dense development pattern centered around transit routes still exists today.

There have been many human activities associated with the development of Philadelphia's inner-ring suburbs that have helped to shape environmental conditions in today's watershed. Such practices included substantially altering the natural characteristics and flow patterns of streams (e.g., straightening and channelizing), filling wetlands, and developing in floodplains. At the time, the impact of most of these activities was not fully understood. Municipalities now have an opportunity to ensure that land development/redevelopment occurs in a much more sustainable manner, and to use redevelopment as a means to improve conditions in the watershed. However, it is still the responsibility of all watershed residents and stakeholders to ensure that their actions improve and enhance watershed resources as well.

ORIGINAL INHABITANTS

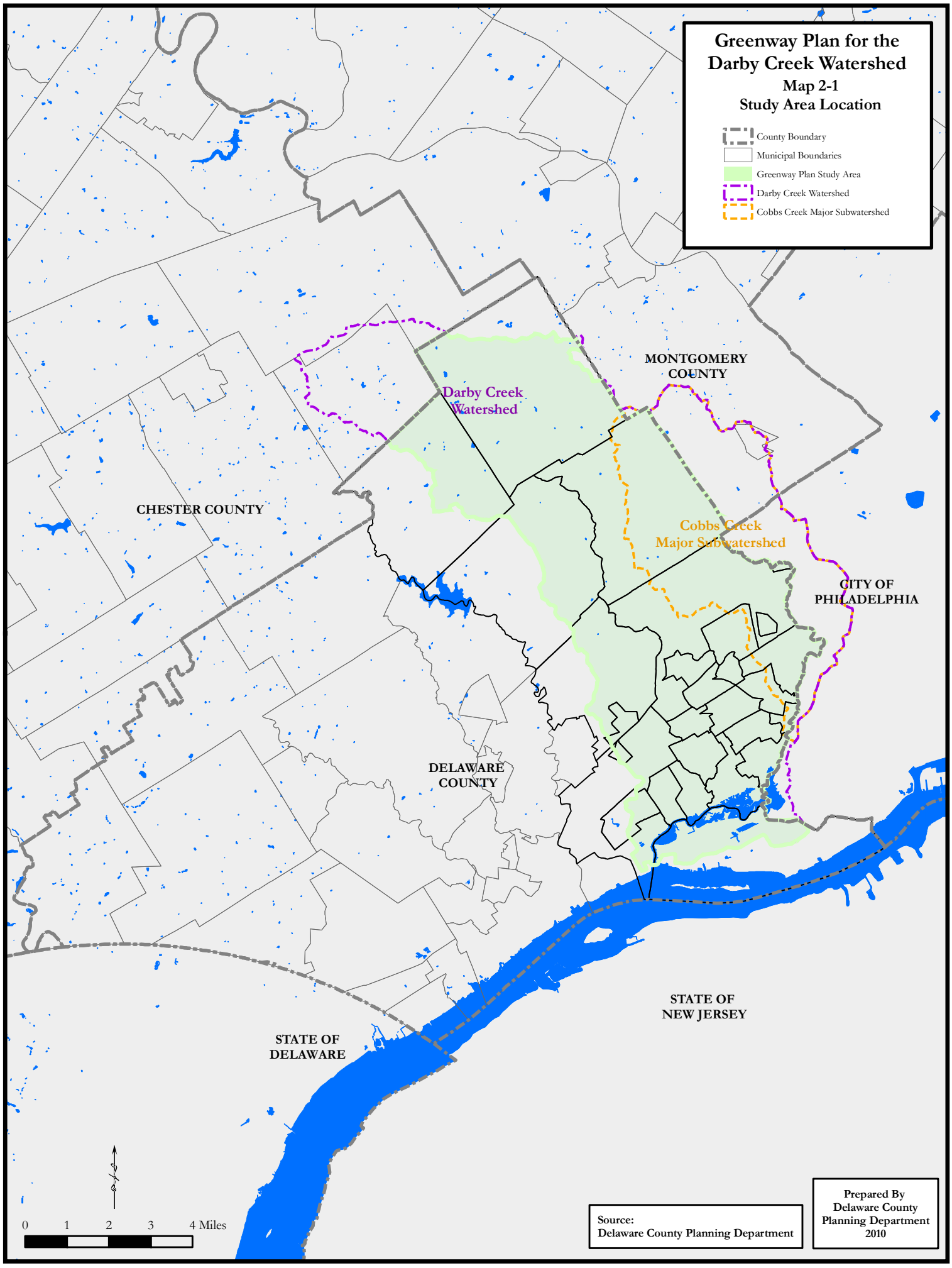
The Lenni Lenape (also called Delaware) tribe is believed to be the first group of Native Americans to cultivate the Darby Creek watershed area. Their activities included fishing, hunting, transportation by canoe, and farming in clearings created by burning forest areas. They also used burning for security and controlling forest understory for deer habitat.

EUROPEAN COLONIZATION

The Dutch were the first Europeans to appear in the watershed, but they did not establish a permanent settlement. The area's first permanent settlement was established by the Swedes, whose "New Sweden," was located on the flat land bordering Darby Creek, extending less than ten miles inland. Johan Printz was the first royal governor of New Sweden, in Tinicum Township. Other noted Swedish settlers were John Morton and Morton Mortonson. In 1655, the Dutch conquered all of the Swedish settlements. The Darby Creek area was later surrendered to the English in 1664 and later settled under William Penn's 1681 charter for Pennsylvania.

MILLS AND INDUSTRY

The early English settlers, primarily Quakers, used the creeks as a source of power. A variety of mills were established along the creeks, including grist, lumber, and textile. Although many of the old mills themselves have crumbled or been demolished, some of the tenement structures provided for worker housing still remain and are used today as housing. Mill practices that affected the streams include damming, use of a mill race, creation of an impoundment, all of which generated channel changes.


Greenway Plan for the
Darby Creek Watershed
Map 2-1
Study Area Location
County Boundary
Municipal Boundaries
Greenway Plan Study Area
Darby Creek Watershed
Cobbs Creek Major Subwatershed
MONTGOMERY COUNTY
Darby Creek Watershed
CHESTER COUNTY
Cobbs Creek Major Subwatershed
CITY OF PHILADELPHIA
DELAWARE COUNTY
STATE OF NEW JERSEY
STATE OF DELAWARE
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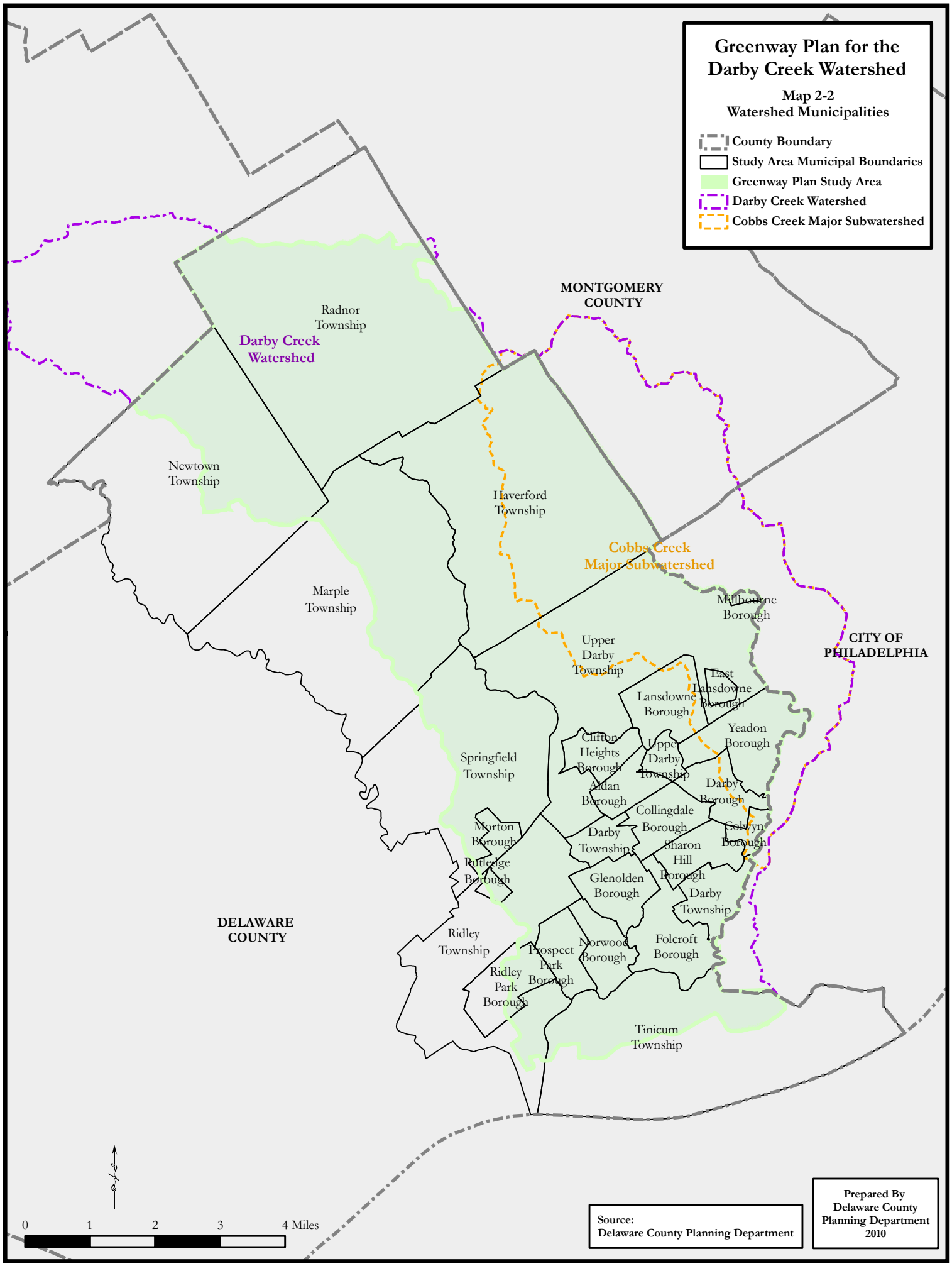
Source:
Delaware County Planning Department
Prepared By
Delaware County
Planning Department
2010


Greenway Plan for the Darby Creek Watershed
Map 2-2
Watershed Municipalities
County Boundary
Study Area Municipal Boundaries
Greenway Plan Study Area
Darby Creek Watershed
Cobbs Creek Major Subwatershed
MONTGOMERY COUNTY
Radnor Township
Darby Creek Watershed
Newtown Township
Haverford Township
Cobbs Creek Major Subwatershed
Marple Township
Millbourne Borough
CITY OF PHILADELPHIA
Upper Darby Township
East Lansdowne Borough
Lansdowne Borough
Yeadon Borough
Clifton Heights Borough
Upper Darby Township
Springfield Township
Aldan Borough
Darby Borough
Collingdale Borough
Morton Borough
Darby Township
Colwyn Borough
Sharon Hill Borough
Rutledge Borough
Glenolden Borough
Darby Township
DELAWARE COUNTY
Ridley Township
Folcroft Borough
Norwood Borough
Prospect Park Borough
Ridley Park Borough
Tinicum Township
N
0 1 2 3 4 Miles
Source:
Delaware County Planning Department
Prepared By
Delaware County
Planning Department
2010

Over the years, many dams, mills, bridges, and dwellings were swept away by floodwaters. By the late 19th century, the industrial revolution, with its engine-driven machinery, rendered creek-dependent industry obsolete.

TRANSIT-ORIENTED DEVELOPMENT

A second major development trend pushed westward from Philadelphia centering around each Pennsylvania Railroad stop (Wayne and the "main line") and trolley system station stops extending from West Philadelphia to Media and West Chester through the Darby Creek watershed. The Baltimore & Ohio and Reading Railroads were built through the southeastern part of the County creating early settlement patterns around railroad stations such as Darby, Sharon Hill, Glenolden, Propsect Park, and Ridley Park as well as Lansdowne, Aldan, Morton and Wallingford. These developments in the upper and middle of the watershed represented the new middle class in the late 1800s and early 1900s.

POST-WAR DEVELOPMENT

Residential development continued to expand in the watershed after World War II, especially in municipalities such as Springfield and Haverford Townships. The automobile gave the industrial workers the opportunity to live farther from their places of business, and the outer suburbs saw a tremendous population growth in areas such as Springfield Township, which more than doubled between 1950 and 1960. Automobile-oriented suburban development became popular in Newtown, Marple, and Radnor Townships, as well as the rest of the watershed. Commercial centers moved from transit stations to main vehicular corridors such as Baltimore Pike, West Chester Pike (Route 3), MacDade Boulevard, and Chester Pike (Route 13).

NATURAL FEATURES

PHYSIOGRAPHY, GEOLOGY, SOILS, AND SLOPES

Physiography

The northern portions of the Darby Creek watershed are situated in the Piedmont Uplands physiographic province, which is characterized by generally old, hard upland rocks. The Piedmont, meaning "foot of the mountains," is a region of gently rolling hills, fertile valleys, and well-drained soils. The southern portion of the watershed lies in the Coastal Plain province, which contains soft, unconsolidated sediments that were deposited by relatively recent water and glacial erosion. This land is generally low, gently rolling to flat, and poorly drained. With the exception of the Heinz Refuge, the areas of the watershed located in the Coastal Plain have been developed primarily for industrial and residential uses.

The boundary between the Piedmont Uplands and the Atlantic Coastal Plain physiographic provinces, known as the fall line, splits the watershed. The fall line is a conceptual geologic break marked by waterfalls and rapids that form where the hard rock of the upland Piedmont region meets the softer rock of the Coastal Plain. The falls and rapids historically provided sufficient energy for the development of the numerous mills that were located adjacent to the Creek.

The transition between the Piedmont Plateau and the Coastal Plain physiographic regions is a unique attribute of the Darby Creek watershed. Outstanding characteristics in the upper and middle portion of the watershed include attractive rock outcroppings at the stream valleys, giving way to a gentler less dramatic landscape in the Coastal Plain.

Geology

The Darby Creek watershed consists primarily of ancient crystalline bedrock, along with metamorphic and igneous rock from the Precambrian Period. Each rock formation has important properties that influence the local hydrology, topography, vegetative composition and structure, and landform of the Darby Creek watershed. Geology tends to be related to watershed soils as well.

Soils

The soil types in the watershed reflect the weathering process of the parent bedrock geology. Map 2-3, which is based on the Soil Survey of Chester and Delaware Counties (1963), shows the location of steep slope soils and soils suitable for woodlands and farmland in the study area. Many of these valuable soils now fall under the category of Made Land, which reflects land disturbance and development.

Steep Slopes

Elevations in the watershed generally range from 0 to 100 feet above sea level in the Coastal Plain to 100 to 200 feet above sea level in the Piedmont province. Steep slopes are rare in the Coastal Plain, but those that do exist are mostly at the stream valleys. These can be especially steep, having been cut over many years. Geological history and variability is often revealed in the attractive, even dramatic rock outcroppings that are exposed in the Darby Creek's stream valleys. Steep slope soils are shown in Map 2-3.

Greenway Implications (Physiography, Geology, Soils, and Slopes)

The extensive development that has occurred throughout the watershed is testament to the general developability of the soils and geologic physiology. Today, the scarcity of developable land in some parts of the watershed puts pressure on the remaining open land. However, steep slopes continue to frame the existing stream valleys and provide

Greenway Plan for the Darby Creek Watershed

Map 2-3
Woodlands, Steep Slopes, and Farmland Soils

Greenway Plan Study Area

Woodland Soils
- F-1 and F-2 Soils

Steep Slope Soils
- 15% to 24%
- 25% to 34%
- 25% to 45%

Farmland Soils
- Prime Farmland Class I Soils
- Statewide Significant Farmland Class II and III Soils

Chester County

Delaware County

Montgomery County

City of Philadelphia

State of New Jersey

Newtown Township

Radnor Township

Haverford Township

Marple Township

Upper Darby Township

Millbourne Borough

East Lansdowne Borough

Lansdowne Borough

Yeadon Borough

Springfield Township

Clifton Heights Borough

Upper Darby Township

Aldan Borough

Darby Borough

Collingdale Borough

Morton Borough

Darby Township

Sharon Hill Borough

Colwyn Borough

Ridley Township

Glenolden Borough

Darby Township

Rutledge Borough

Folcroft Borough

Prospect Park Borough

Norwood Borough

Ridley Park Borough

Tinicum Township

0 1 2 3 Miles

Source: NRCS- Soils

Prepared By Delaware County Planning Department 2010

corridors for the last remaining natural greenways in the study area. They are a framework upon which to build a region-wide greenway conservation strategy.

STREAMS AND WATERSHEDS

The Darby Creek watershed is located in southeastern Pennsylvania and empties into the Delaware River. It includes parts of Chester and Montgomery Counties at its headwaters, and part of the City of Philadelphia along its eastern edge. For the purpose of this plan, the Darby Creek watershed is broken down into three distinct subareas: the Darby Creek sub-basin, the Cobbs Creek sub-basin, and the direct drainage sub-basin, which includes Stony and Muckinipates Creeks and Hermesprota Run, all of which drain into the tidal portion of the Darby at the Heinz Refuge. Map 2-4 shows these sub-basins.

Streams and Major Tributaries

The streams of the study area are shown on Map 2-5. Tables A-1, A-2, and A-3 in Appendix A, show the hierarchy of streams which could serve as potential greenways in the watershed. Unnamed streams are included as a code with the prefix "UNS." The combined length of streams in the watershed is 123 miles. There are a few man-made ponds at the northern end of the watershed, many of which suffer from water quality problems sometimes associated with the geese they attract. There are no natural lakes in the watershed.

Darby Creek Sub-basin
The mainstem of Darby Creek originates in Chester County. Ithan Creek, a major headwaters tributary, originates in Radnor Township, Delaware County. Tributaries to Ithan Creek include Hardings Run, Kirks Run, and Meadowbrook Run. Another major tributary to Darby Creek is Little Darby Creek, which includes the reservoir at the Mill Dam Club; it joins with Darby Creek in Skunk Hollow Park in Radnor Township. The named tributaries that originate in Newtown Township include Thomas Run, Saw Mill Run, and Foxes Run. Darby Creek tributaries in Marple Township include Langford Run and Whetstone Run. All of the tributaries in Haverford Township, with the exception of Cobbs Creek and Naylors Run, are unnamed.

Cobbs Creek Sub-basin
Cobbs Creek is a major tributary of Darby Creek. The largest tributary to Cobbs Creek is Naylors Run, which flows through Haverford and Upper Darby Townships. Another tributary, Blunston Run, flows through Yeadon Borough to Cobbs Creek.

Direct Drainage Sub-basin
The three major tributaries within the Direct Drainage Sub-Basin (Stony and Muckinipates Creeks and Hermesprota Run) flow to the tidal portion of Darby Creek at the Heinz Refuge. Stony Creek, the westernmost stream, begins in Springfield Township. It flows through Morton and Ridley Park Boroughs and Ridley Township before it joins Darby Creek at the Ridley Township Marina next to Interstate 95. Historical maps

indicate that the mouth of Stony Creek was artificially relocated prior to the construction of the highway.

The Muckinipates Creek originates near Baltimore Pike in Springfield Township. It winds its way southward through Upper Darby, Darby, and Ridley Townships, and Glenolden Borough before it joins Darby Creek near the Morton Morton House in Norwood, and Montgomery Park in Folcroft. Hermasporota Run begins near Mount Lebanon Cemetery in Darby Township. It flows through Collingdale, Sharon Hill, and Folcroft Boroughs, as well as Darby Township before it joins Darby Creek. A tributary that extends from the Heinz Refuge to the south is Plum Hook Creek, which runs through Tinicum Township and connects to the Philadelphia International Airport.

Stream Order

First order streams, which are the small headwaters, are especially important to the watershed because they comprise the largest percentage of the total stream system on a lineal percentage basis. Many first order streams have been filled, piped, or channelized in the heavily developed urbanized areas of the study area. The neglect of first order streams when an area is intensely developed contributes to the overall decline in water quality and aquatic biota habitat in the watershed. The remaining first order streams should receive the highest priority for protection.

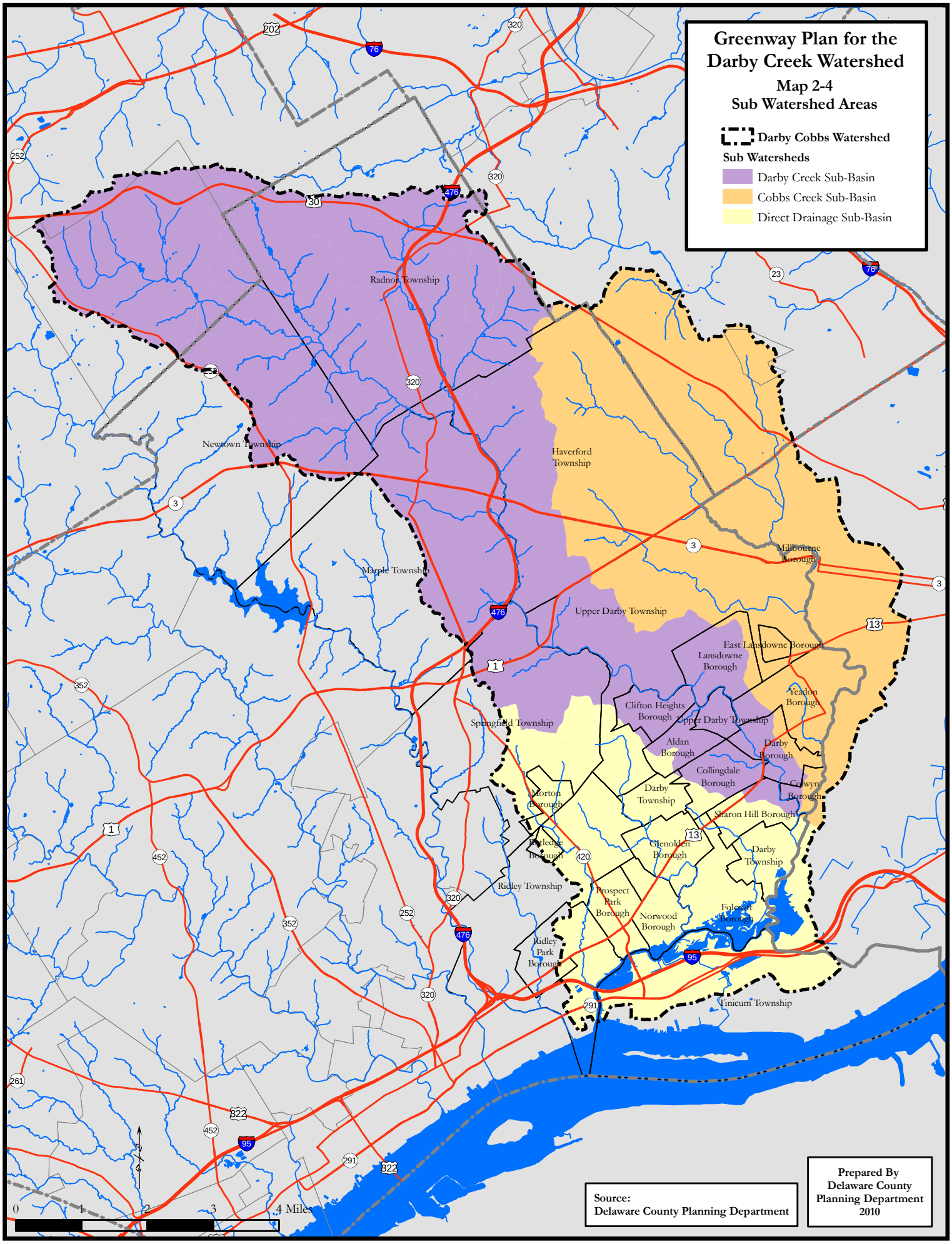
Unnamed Streams

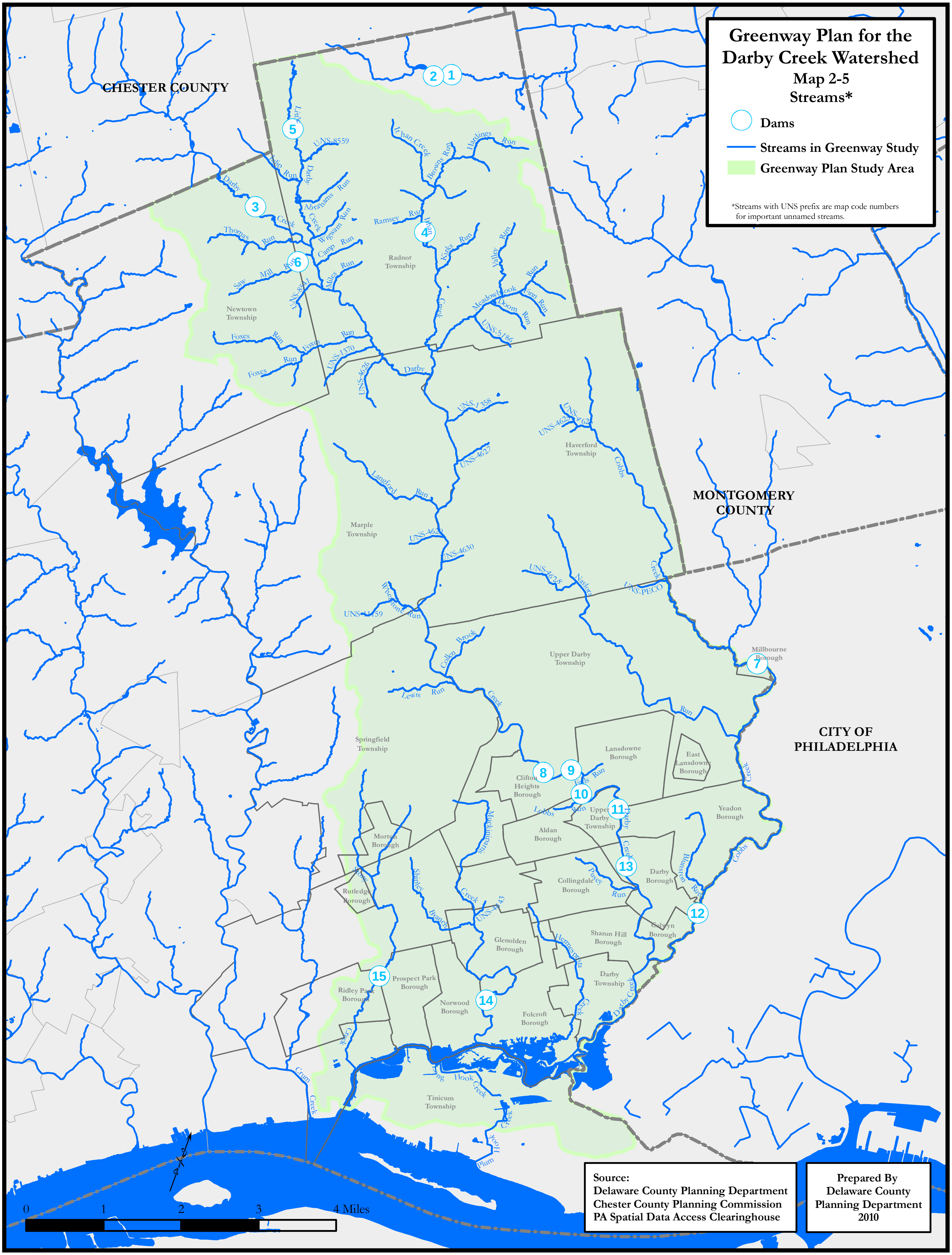
Small first-order streams are very important for the physical and biological health of the stream. People tend to care more about streams with names than those that cannot be identified with a short title. There is a greater sense of pride and ownership over a creek with a name. Some unnamed streams also become neglected because they are not shown on municipal maps. Many tributaries of Darby Creek are unnamed, including some that have been designated as part of the greenway network. A stream naming program would greatly contribute to stream and watershed stewardship activities. The official naming body for streams is the United States Board on Geographic Names at the U.S. Geological Survey. [Website: http://geonames.usgs.gov/domestic]

Unnamed streams that show some potential are listed with the named streams in Tables A-1, A-2, and A-3. USGS reach codes for these streams are listed in Table A-4 in Appendix A.

Historic and Buried Streams

The 1870 Historic Streams Map from the Delaware County Historical Society, when compared with a present day map, reveals that many first order tributaries have disappeared over the years. A likely explanation for the loss of these historic streams is that they were enclosed or buried as part of the development process, which at the time was considered a viable development practice. Today, it is known that this practice has contributed to some of the flooding and water quality problems in the watershed.


Greenway Plan for the
Darby Creek Watershed
Map 2-4
Sub Watershed Areas
Darby Cobbs Watershed
Sub Watersheds
Darby Creek Sub-Basin
Cobbs Creek Sub-Basin
Direct Drainage Sub-Basin
Radnor Township
Newtown Township
Haverford Township
Marple Township
Upper Darby Township
Springfield Township
Millbourne Borough
East Lansdowne Borough
Lansdowne Borough
Yeadon Borough
Clifton Heights Borough
Aldan Borough
Darby Borough
Collingdale Borough
Colwyn Borough
Morton Borough
Darby Township
Sharon Hill Borough
Glenolden Borough
Folcroft Borough
Prospect Park Borough
Norwood Borough
Ridley Park Borough
Ridley Township
Tinicum Township
0 1 2 3 4 Miles
Source:
Delaware County Planning Department
Prepared By
Delaware County
Planning Department
2010


Greenway Plan for the Darby Creek Watershed
Map 2-5
Streams*
Dams
Streams in Greenway Study
Greenway Plan Study Area
*Streams with UNS prefix are map code numbers for important unnamed streams.
CHESTER COUNTY
MONTGOMERY COUNTY
CITY OF PHILADELPHIA
Newtown Township
Radnor Township
Haverford Township
Marple Township
Upper Darby Township
Springfield Township
Millbourne Borough
Lansdowne Borough
East Lansdowne Borough
Clifton Heights Borough
Upper Darby Township
Aldan Borough
Yeadon Borough
Morton Borough
Rutledge Borough
Collingdale Borough
Darby Borough
Glenolden Borough
Sharon Hill Borough
Colwyn Borough
Prospect Park Borough
Ridley Park Borough
Norwood Borough
Folcroft Borough
Darby Township
Tinicum Township
0 1 2 3 4 Miles
Source:
Delaware County Planning Department
Chester County Planning Commission
PA Spatial Data Access Clearinghouse
Prepared By
Delaware County
Planning Department
2010

Dams

There are 12 known dams in the Darby Creek Watershed, listed in Table 2-1. Two more in the Gulph Creek watershed are also listed in the table to make it a complete list for eastern Delaware County. Dams have been constructed for various reasons. Some were built to create an artificial pond or lake, others to produce power for a mill or for a mill race. There have been a number of efforts in Delaware County to remove non-functioning dams for fish passage as well as safety. Such efforts should be continued. Existing dam locations are shown on Map 2-5.

The Kent Dam on Darby Creek between Clifton Heights Borough and Upper Darby Township

Water Quality

Urbanization has impaired the water quality of the streams in the watershed. Contaminants deposited on streets and paved areas such as oil, gasoline, metals, and other substances are washed away and then deposited in the stream system. Trash also often makes its way into the streams, and during stream cleanups, larger items like car parts and shopping carts are sometimes pulled from the creek. Landfills, tank farms, and industrial facilities, which once operated along the Darby and Cobbs Creeks, have leached chemicals into the streams over the years. Aging sanitary sewer interceptors, many of which parallel the streams, have developed cracks and often leak into the streams. Efforts should be made to address stormwater management, watershed clean-up, and other activities to improve existing water quality in the watershed.

WETLANDS AND FLOODPLAINS

Wetlands

Map 2-6 presents wetlands found on the National Wetlands Inventory (NWI) maps prepared by the U.S. Department of the Interior (1991). Three major classes of wetlands are represented in the watershed: Lacustrine (lakes and ponds), Palustrine (marshes and swamps), and Riverine (rivers and streams). Radnor Township contains the majority of the concentrated areas of Palustrine wetlands outside of the Heinz Refuge. The Heinz Refuge contains large portions of all three types. It is important to note that many small wetlands are typically omitted from NWI mapping.

Most of the County's wetlands have been lost to development and filled over the years. A majority of those that remain are located at or near the Heinz Wildlife Refuge at Tinicum, the largest remaining freshwater tidal wetland in Pennsylvania. Since wetlands act as natural filters, cleaning stormwater runoff and protecting streams, it is important to preserve wetlands for their valuable natural functions.

TABLE 2-1
DAMS IN EASTERN DELAWARE COUNTY

	Municipality	Creek	Location
1	Radnor Township	Gulph Creek	West side of the Eastern University campus, near Sparrow Residence Hall
2	Radnor Township	Gulph Creek	East side of the Eastern University campus, near the gymnasium
3	Newtown Township	Darby Creek	Just southeast of St. David's Road, and just north of Paper Mill Road, within the Paper Mill Historical Museum property (municipal land)
4	Radnor Township	Ithan Creek	Within the Radnor Valley Country Club grounds, just west of Interstate 476
5	Radnor Township	Little Darby Creek	Just north of where Maplewood Avenue crosses Little Darby Creek, known as the Mill Dam
6	Radnor Township	Saw Mill Run	Within the Greene Countrie Village homeowners association open space off of Earles Lane, known as Earles Lake Dam
7	Millbourne/Philadelphia	Cobbs Creek	North of Sellers Avenue terminus, known as the Millbourne Dam
8	Upper Darby Township	Darby Creek	Just west of Dennison Avenue, and known as the Kent Dam
9	Upper Darby Township	Darby Creek	Downstream from Kent Dam, within Delaware County's Kent Park
10	Lansdowne/Clifton Heights Boroughs	Darby Creek	North of Hoffman Park, near R3 trestle, owned by SEPTA
11	Upper Darby Township/ Yeadon Borough	Darby Creek	Just south of Providence Road at Penn Pines Park
12	Darby Borough/Philadelphia	Cobbs Creek	Just north of Main Street/Woodland Avenue
13	Darby Borough	Darby Creek	Between 12th and 13th Streets, known as the 12th Street Dam
14	Glenolden/Folcroft Boroughs	Muckinipates Creek	North of curve in Delmar Drive
15	Prospect Park Borough	Stony Creek	Moore's Lake Park at 13th Street

Source: DCPD, FEMA, PA DEP, 2010

Floodplains

Floodplains (shown on Map 2-6) and the riparian areas buffering streams, rivers, lakes, and other water bodies are especially sensitive watershed zones. Floodplains intercept and slow runoff, helping to absorb/contain out-of-bank flows as storms increase in intensity. The more natural vegetation in the floodplain, the more functional it will be for critical stormwater management, flood control, and water quality. Riparian buffers in floodplains substantially filter nonpoint pollutants and anchor the stream banks,

Greenway Plan for the Darby Creek Watershed

Map 2-6
Wetlands & Floodplains

- Greenway Plan Study Area
- Hydric Soils

Wetlands

- Lake
- Freshwater Pond
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Riverine
- Other

Floodplain

- 100 Year Floodplain
- 500 Year Floodplain

CHESTER COUNTY

MONTGOMERY COUNTY

CITY OF PHILADELPHIA

STATE OF NEW JERSEY

Radnor Township

Newtown Township

Haverford Township

Marple Township

Upper Darby Township

Millbourne Borough

Springfield Township

Lansdowne Borough

East Lansdowne Borough

Clifton Heights Borough

Yeadon Borough

Upper Darby Township

Aldan Borough

Darby Borough

Morton Borough

Collingdale Borough

Darby Township

Rutledge Borough

Ridley Township

Sharon Hill Borough

Colwyn Borough

Glenolden Borough

Darby Township

Prospect Park Borough

Folcroft Borough

Ridley Park Borough

Norwood Borough

Tinicum Township

0 1 2 3 Miles

Source:
FEMA - Floodplains, 2010
NWI - Wetlands
NRCS - Soils

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Delaware County
Planning Department
2010

preventing damaging erosion. Trees provide stream shading which reduces overheating of waters in the summer. The matter from decaying vegetation helps aquatic species to thrive. Every effort should be made to preserve riparian buffers to support the health of the stream and prevent flooding.

Floodplain at Darby Creek in Springfield Township's Rolling Green Park, which was expanded in 2000 after the Township purchased and demolished six homes ravaged by Hurricane Floyd.

The history of the watershed is steeped in mills, waterpower, and development in or near the floodplain. As such, many of the natural floodplains in the Darby Creek watershed were paved and built upon. Most of this development occurred before any regulations were enacted to control development in floodplains. Today, all of the municipalities in the Darby Creek watershed participate in the Federal Emergency Management Agency (FEMA) Floodplain Management Program (excluding East Lansdowne, which does not have any streams). All of the municipal floodplain ordinances meet FEMA's minimum requirements; however, they are enabled to more stringently regulate floodplains if they choose to do so. It should be noted that FEMA requirements only regulate new development and substantial improvements in the floodplain and that a floodplain ordinance is only as effective as its enforcement.

Municipalities in the watershed should consider adopting rigorous floodplain and riparian zone protection provisions. Ideally, the floodplain should be kept as densely vegetated as possible (with native vegetation) to protect the stream from runoff and ensure water quality. Green development practices such as pervious paving and green roofs should be utilized as much as possible when developing in the greenway. This is beneficial for reducing stormwater runoff, and it also sets a good example for private developers.

WOODLANDS AND VEGETATION

Woodland soils in the Darby Creek watershed are shown on Map 2-3. The following text was contained in the DCCP:

The Darby Creek watershed is situated in the Eastern Broadleaf Coastal Forest Ecological Province. Historically, the province was characterized as an oak-chestnut forest, until Chestnut Blight exterminated American chestnuts in the region. Atlantic white cedar, a wetland species, is also listed as extirpated in Pennsylvania due to harvesting without replanting. Dutch elm disease has put the American elm in danger as well.

Most of the watershed also lies in an eco-region called the Appalachian mixed-oak forest, characterized by the white, black, and red oak species. Red maple, sugar maple, silver maple, American beech, sweetgum, and Eastern Hemlock among many other species typically native to Pennsylvania can also be found here. Another part of the watershed

lies in the Atlantic Coastal Plain eco-region, where trees are adapted to living in a water saturated soil environment. If it were undisturbed, this region would be dominated by red maple, black gum, sweet gum, pitch pine, Atlantic white cedar, pin oak, green ash, black willow, willow oak, and southern red oak.

Typical native shrubs include witch hazel, rhododendron, mountain laurel, Viburnum, dogwood, elderberry, and spicebush. Native vines present are bittersweet, poison ivy, grape, and Virginia creeper. Common native wildflowers that occur in the watershed are jack-in-the-pulpit, May apple, dogtooth violet, spring beauty, phlox, purple coneflower, eastern columbine, brown-eyed Susan, speedwell, and milkweeds.

Non-native/Invasive Trees and Plants


Stony Creek stream bank overgrown with invasive plants (Japanese knotweed) at Moore's Lake Park in Prospect Park Borough

Native plant species are important for food and habitat for native species of wildlife. Over the years, many non-native trees that were planted as residential landscape ornamentals have replaced or choked out native species. Introduced tree species that can be found throughout the watershed include Norway maple, blue spruce, white spruce, Austrian pine, Scotch pine, tree-of-heaven, horse chestnut, arborvitae, weeping willow, etc. Non-native invasive shrubs include bush honeysuckle, wild rose, privet, burning bush, and Russian olive. Invasive vines present are Japanese honeysuckle, Asiatic bittersweet, and wisteria.

Many cultivated flower species have also proliferated and cause substantial harm as they replace native species. For example, common reed (*Phragmites australis*) has taken over most of the freshwater marshes in the watershed, and Kudzu, a vine from Asia, has encroached into the area engulfing and killing native vegetation in its path. Deer feed only on the native species, leaving the exotic invasives untouched. With no natural deer predators, this means that the deer density problem is directly linked to the spread of invasive plant species.

Whenever possible non-native plants should be removed and replaced with native tree, shrub, and other plant species in greenway riparian zones, forests, parks and when greening urban streetscapes.

WILDLIFE

There is little formal documentation detailing the type and assemblage of wildlife species in the watershed. Most wildlife species in the urbanized portions of the Darby Creek watershed are nocturnal, and therefore, not easy to observe. Mammals in the watershed include white-tailed deer, chipmunk, groundhog, opossum, skunk, red fox, eastern

cottontail, raccoon, flying squirrel, gray squirrel, bat, muskrat, eastern mole, rat, and field mouse. Few mammals other than these are able to co-exist with the level of human activity within most of the watershed.


Common Snapping Turtle photographed in Cobbs Creek Park in Haverford Township

Fragmentation of bird habitat is also a serious problem in this developed watershed. The Heinz Refuge is a nationally designated Important Bird Area, accommodating over 280 songbirds, wading birds, and other species. There are 73 Important Bird Areas in the state, and this is the only one in the watershed. The Heinz Refuge is also home to eight turtle, three snake, two toad, and six frog species. Some of these can be found in other parts of the watershed as well (along with some different species such as the snapping turtle). The most frequently observed reptile at the Refuge is the painted turtle.

NATURAL HERITAGE AREAS

In 1992, the Pennsylvania Science Office of the Nature Conservancy prepared the Natural Areas Inventory of Delaware County (NAI). Today, the format of the 1992 NAI is considered outdated. As such, Delaware County has recently commissioned the Western Pennsylvania Conservancy to prepare an update, now referred to as a Natural Heritage Inventory (NHI). The new format utilizes GIS mapping to present resources, thus allowing this information to be "layered" with local land use data for better planning function. For more information on NHIs, visit http://www.naturalheritage.state.pa.us.

The following is a brief description of the natural areas in the Darby Creek watershed, as identified in order of importance on pages 15-22 in the 1992 NAI. Sites of global or statewide significance are numbered. Sites ranked high and low are of County significance; all such sites listed are important. The largest and most notable natural area identified in the 1992 study is the Heinz Refuge. Once called the Tinicum National Environmental Center, the Refuge encompasses 1,200 acres of land that is dedicated to wildlife and environmental protection. It is administered by the Department of Interior's U.S. Fish and Wildlife Service, and was established by an Act of Congress in 1972 for protection of the last 200 acres of freshwater tidal marsh in Pennsylvania. Deer, fox, turtles, frogs, muskrats, fish, and over 280 species of birds make their home at the Refuge. A listing and a map of NAI sites in the study area can be found in Appendix B (Table B-1 and Map B-1).

NATURAL FEATURES SUMMARY

Greenways and the conservation of the watershed's natural resources can be mutually compatible and beneficial. Given the limited land area in the watershed for open space and recreation, additional focus will be placed on stream corridors, public and private

open spaces, and areas with wetlands and woodlands for a source of recreation area. In places where trails and public recreation are inappropriate, due to either private property issues or sensitive natural resources, greenway planning can help to identify areas in need of protection and the most effective mechanism to provide it.

TRANSPORTATION FACILITIES

HIGHWAYS

The Darby Creek watershed has a well-developed transportation system that includes roads, rails, busses, and even the Philadelphia Airport. The two major interstate highways, I-476 (the Blue Route) and I-95 are relatively recent. The Blue Route, completed in the early 1990s, runs through the center of the County. At the northern end, it is situated in the Ithan and Darby Creek stream valleys. It crosses into the Crum Creek watershed near the border of Marple and Springfield Townships. When the Blue Route was first constructed, PennDOT offered to help compensate for the highway's impacts by paying 90 percent of construction costs for bicycle trails paralleling I-476. None of the municipalities in the Darby Creek watershed accepted the offer at the time; however, the potential trail routes developed by DCPD are featured in some municipal planning documents, could still be feasible.

Other major highways in the watershed include US 30 (Lancaster Avenue), US 1 (State Road, Township Line Road), US 13 (Chester Pike), Baltimore Pike, and MacDade Boulevard. State routes include PA 3 (West Chester Pike), PA 320 (Sproul Road), PA 420 (Kedron/Wanamaker Avenue), PA 252 (Newtown Street Road), and PA 291 (Essington Avenue). Both the US and the state routes suffer from significant traffic congestion.

Half of the Philadelphia International Airport, including several runways, is situated in Tinicum Township. Airport-related development (hotels, airport parking, restaurants) extends along PA 291 within Tinicum and Ridley Townships.

PUBLIC TRANSIT ROUTES AND STATIONS

The Southeast Pennsylvania Transportation Authority (SEPTA) serves the County with public transportation. The rail and bus hub in the watershed is the 69th Street Terminal in Upper Darby Township. The Market-Frankford elevated rail system extends out from the City to 69th Street Terminal where connections can be made to other parts of the County via the Media and Sharon Hill trolley lines, Norristown High Speed Line (formerly Route 100 line), and numerous bus routes. "Green line" trolley routes enter the watershed from Philadelphia into Yeadon and Darby Boroughs. The Darby Transportation Center, served by this trolley and by bus routes, will be undergoing a major reconstruction project that includes a streamside walking path along Darby Creek. SEPTA Regional Rail lines, Paoli/Thorndale (formerly R5), Media/Elwyn (formerly R3), and the Wilmington/Newark (formerly R2), extend across the watershed from their hub in Center City Philadelphia.

Transit lines and their stations are among the features on the Greenway Segment map panels in Chapter 3.

PROPOSED TRAILS

There are a number of trails and "connections" proposed in Delaware County and the adjoining counties that could connect to a trail network in the Darby Creek watershed. The Cobbs Creek Connector Trail is proposed on the Philadelphia side of the creek (with connections to Yeadon and Darby Boroughs). The County is actively working with the Delaware River communities and the East Coast Greenway Alliance to route a segment of the East Coast Greenway through the riverfront corridor from the airport to the state line at Marcus Hook. Should a Darby Creek trail be completed to the Delaware River, it would be able to connect to a much larger regional and national trail system. In addition, use of the public transportation (e.g., trolley or rail lines) can link any Darby Creek trail network to networks proposed in other watersheds in the region.

BLUEWAYS

Blueways, also referred to as water trails, could be located within the lower portions of the Darby Creek watershed, particularly below the confluence of Darby and Cobbs Creeks. A water trail could be developed that would link the parks and marinas along Darby Creek in Folcroft, Norwood, and Prospect Park Boroughs with Ridley Township park and marina facilities. Such a trail could also connect to the Heinz Refuge.

GREENWAY TRANSPORTATION IMPACT SUMMARY

Both public transit routes and trails can become important components of the greenway network. Public transit systems can link watershed areas both within and outside of the watershed. When combined with or linked to trails, the network is further expanded. Although trails are usually considered recreational amenities, they can actually serve as an alternative mode of transportation, linking communities to schools, businesses, and recreation facilities without need for an automobile.

DEMOGRAPHICS

The Darby Creek watershed is very diverse. It contains some communities of considerable wealth, as well as many areas that are economically challenged. There are places where almost anyone might feel safe and secure, and some areas that have problems with crime. Goals and priorities of the stakeholders in one portion of the watershed might be substantially different from those in another part – in fact they might be very different in towns that are directly across the stream from one another.

TOTAL POPULATION

It is difficult to obtain an accurate watershed population count since census districts do not follow watershed boundaries. While some municipalities lie entirely in the watershed, others have only a small amount of land area in the watershed. According to the 2000 Census, Upper Darby Township has the highest population of any study area municipality, with approximately 80,000 persons. Haverford Township is next, with nearly 50,000 persons (See Table C-1 in Appendix C). Radnor and Ridley Townships (only partially in the study area) have 30,000 or more. Marple and Springfield Townships (both partial) both have a population around 25,000. The other geographically large municipalities are Newtown and Tinicum, with populations of 11,700 and 4,353 respectively. Each of the remaining municipalities is small in both population and physical size. Of these, six have populations below 5,000 people (Aldan, Colwyn, East Lansdowne, Morton, and Millbourne Boroughs). The remaining twelve municipalities have populations between 5,000 and 12,000. The most populated of these are Lansdowne, Darby, and Yeadon Boroughs, which, at over 11,000 people, each had populations close to that of Newtown Township in 2000.

Recent trends indicate a decline in overall population in the lower and middle watershed during the 1990s, balanced out by increases in population in the northern and western municipalities. An exception to this was a population increase in Upper Darby Township. Refer to Table C-1 in Appendix C. Reasons for population decline are varied, but include an increase of deaths in an aging population, general out-migration (especially young people), a decline in employment opportunities, and a reduction in the average household size.

POPULATION PROJECTIONS

Population projections have been developed by the Delaware Valley Regional Planning Commission (DVRPC) and adopted by its constituent counties, including Delaware County. Almost without exception, these projections demonstrate a continued decline in population in the watershed, including minor decline in the northern-most municipalities such as Radnor and Marple Townships. Much larger declines are predicted for large municipalities in the middle and lower watershed, the greatest being Upper Darby – projected to go from 81,821 in 2000 to 69,300 in 2025. Refer to Table C-2 in Appendix C for population trends and forecasts.

POPULATION DENSITY

The average population density of the watershed is roughly ten people per acre (or 6,400 per square mile). Municipality densities range from the five-digit levels of Upper Darby (10,398), Darby Borough (12,560), to the low densities of Newtown Township (1,158), Radnor Township (2,243), and Marple Township (2,258), where the densities are literally only one-tenth as high as the middle and lower watershed municipalities. Radnor and Newtown Townships, though the least dense in the study area, actually have reasonably dense populations when compared to some places in western Delaware County and other

suburban counties. Tinicum Township's statistic of 500 persons per square mile is not reflective of the density of its developed portion, since the Heinz Refuge and the Philadelphia International Airport take most of the Township's land area. Table C-3 in Appendix C shows population density by municipality side-by-side with median household income.

AGE DISTRIBUTION

Generally speaking, young populations increase the demand for active recreational areas, while older populations increase the demand for more passive recreational activities. Most watershed municipalities fall into the 12-20% range for the age bracket of age 65 and over; this is significantly higher than the County average of 9.5%. In the age 17 and under category, the Delaware County average is 24.7%. Most of the Darby Creek watershed municipalities are at or near this County average. There is no detectable pattern within the watershed for this age group. In sum, there are both many children and many elderly people living in the watershed.

HOUSING PROFILE

Housing unit counts largely reflect population statistics, at least in terms of gross counts and densities. Changes in housing unit counts demonstrate both a loss in existing housing units due to fire, demolitions, and other sources of loss, as well as development and re-development activity. Municipalities with the largest housing unit increases from 1990 to 2000 include Marple, Ridley, Newtown, and Upper Darby Townships, followed by Springfield, Haverford, and Radnor Townships. Surprisingly, Ridley and Upper Darby Townships showed that development and redevelopment is indeed occurring in the middle and lower watershed. Ten municipalities had losses in total dwelling units in the watershed with Collingdale Borough, Darby Township, Darby Borough, Yeadon Borough, and Prospect Park Borough experiencing the greatest losses. The losses demonstrate a lack of strength in the real estate market in the watershed and are a reflection of the overall socioeconomic weakness in portions of the Darby Creek watershed. Owner occupancy, historically viewed as a positive factor in community development, tends to decline as one moves down the watershed from north to south. Most of the municipalities south of Haverford and Springfield have owner-occupancy rates in the 50 and 60 percentile ranges in 2000, which are mostly below the Countywide percentile of 68.4.

New residential development activity occurs predominately in the upper portions of the watershed, in Newtown, Marple, Springfield, and Radnor Townships, where there is more open land to develop. All other municipalities have few, if any, new residential development proposals, and when they do occur, they are usually for less than ten units. As open land becomes scarce, its value for development goes up. Land available for development in the watershed is becoming scarce and more expensive.

A ranking of municipalities by median home value generally mirrors a ranking by median income (see next section below), with the higher income municipalities in the north

having the higher housing values. The tax millage (property tax rate) is set much lower in the upper watershed compared to the middle and lower watershed municipalities. In these lower and middle watershed areas, both municipal and school district budgets are hard pressed to provide adequate levels of service needs are greatest, given the tremendous disparity in real estate assessed values and the heavy reliance on the real estate tax to support budgets.

MEDIAN INCOME

The highest median household income levels are present in four large townships clustered at the north end of the watershed (Radnor, Newtown, Haverford, and Springfield Townships ($74,272, $65,924, $65,714, and $65,703 respectively). They are followd by Rutledge Borough and Marple Township (which is also in the north). At the other end of the spectrum are Millbourne, Darby, and Colwyn Boroughs, Darby Township, and Clifton Heights Borough ($30,185, $30,938, $33,150, $37,396, and $39,291, respectively). These municipalities along with many others, like Upper Darby and Ridley Townships, have median household incomes which are significantly below the Delaware County median, which itself is low in contrast to the region at large. Refer to Table C-3 in Appendix C for a chart showing median income in study area municipalities in relation to population density.

MAJOR SOURCES OF EMPLOYMENT

While historic sources of employment for the residents of the Darby Creek watershed have been in the City of Philadelphia and the industrialized waterfront communities along the Delaware River, in the latter half of the 20th century, jobs began to move up or out of the watershed. Many industries that employed people at the waterfront closed their doors in the 1970s. As a result, the employment base in the watershed declined considerably, creating today's reality of smaller offices, plants, and warehouses scattered throughout the watershed. A few remaining industrial areas exist in Darby Township and Folcroft and Sharon Hill Boroughs along Darby Creek, including an oil tank farm and the Folcroft Industrial Park. After the decline of industry, suburban office parks grew in places like Radnor and Newtown Townships.

The construction of I-476 stimulated economic growth, especially around the interchanges at US 30/Lancaster Avenue (Wayne), PA 3/West Chester Pike (Lawrence Park), US 1/State Road (Marple Crossroads Shopping Center), Baltimore Pike (Springfield), and MacDade Boulevard (Ridley Township). Strip and big box style commercial development exists along Baltimore Pike, Chester Pike, and MacDade Avenue.

PROJECTED EFFECT OF GREENWAYS ON DEMOGRAPHICS

It is important to review the existing demographics and consider the effect that a greenway will have on people living in the watershed. It is difficult to determine the

effect a greenway will have on the watershed's population; however, it is expected that the greenways will positively benefit overall quality of life.

Conservation green space in a community can enhance the quality of life for people living near the greenway in a number of ways. The increasing number of seniors will have better access to the type of recreation that they often desire most, walking trails in scenic parks. That type of recreation also attracts homebuyers and renters of all ages, and could attract more young adults back into the watershed. Accessible recreation, benefiting the body and mind, makes a greenway a pleasant place to live. Young couples attracted by the mix of urban life and green space may not want to leave when they start a family. A side effect could be an increase in income levels. Increasing demand by promoting these amenities would push home values up. This could be a welcome change in the middle and southern areas of the watershed.

It is likely that housing values will increase in neighborhoods closest to the greenways, depending on the type of greenway proposed. Recreation greenways with public access are generally more attractive for local homebuyers than those without public access. Also, depending on type, greenways can help to maintain, and even attract, businesses to serve residents as well as recreational users of a trail. Parks can enhance town centers, commercial centers, and office parks. If a park is located in a linear greenway network, it will be even more attractive to businesses looking to relocate. Employees love to work somewhere where they can walk in a park on their lunch hour or view trees outside their window. Preserving and promoting greenways through the business associations and chambers of commerce will help employment in the watershed.

A component of the planning for the Darby Creek Greenway includes identification of potential for and establishment of off-road trails. Trails, where appropriate, will indirectly increase quality of life and land value by giving neighbors easy access to recreation and alternate modes of getting from place to place. Other connections could be made by "completing the streets," which involves enhancing an existing street that is currently unsafe for pedestrians and bicyclists so that two greenway hubs can be connected.

The speed and effectiveness of each municipalities in implementation and promotion of the greenway will also contribute to a community's ability for the greenway amenity to attract new residents and businesses in the watershed.

EXISTING LAND USE AND ZONING

EXISTING LAND USE PATTERNS

The Darby Creek watershed is highly urbanized and almost completely developed. The largest land use by far is residential, which constitutes 52% of the watershed. Recreation acreages are greatest in the upper and lower portions of the watershed, with fewer acres of recreational land in the middle. Half of the institutional uses in the watershed can be

found in the upper third, attributable to the large universities located there (Villanova University, Haverford College, Cabrini College, etc.).

The land use categories vacant, wooded, and agriculture are of special interest since they would be suitable for both protected greenway open space and developable land. Virtually all of the land in the agricultural category is located in the upper watershed. Much of this is located in and around the Ardrossan Farm property in Radnor Township, the only known farm remaining in the watershed. Both development and preservation efforts are proposed for the property at this time. Most of the wooded land in the watershed is located at the northern end. Refer to Maps 2-7 and 2-8 and Table 2-2 for land use and land ownership in the watershed.

LAND USE PLANNING

Each municipality in the watershed has its own officials, commissions, ordinances, and plans. Some municipalities have substantial budgets and staff dedicated to covering all important land issues and more, while others have comparatively small budgets, dealing primarily with day-to-day municipal operations only. Many municipal officials are unaware of the natural, historic, and cultural resources in their communities, or the importance of protecting or capitalizing on them to improve and maintain a high quality of life.

TABLE 2-2
LAND USE IN THE DARBY CREEK WATERSHED
IN DELAWARE COUNTY

Type	Acres	Square Feet	% Land Area
Residential (non-apartment)	20,439	890,345,326	52.24%
Apartment	878	38,243,619	2.24%
Office	575	25,047,583	1.47%
Mixed Use	92	3,991,348	0.23%
Commercial	2,283	99,443,186	5.83%
Industrial	1,129	49,181,219	2.89%
Mining	35	1,530,350	0.09%
Institutional	2,940	128,082,047	7.52%
Cemetery	1,171	51,007,331	2.99%
Open Space and Recreation	6,388	278,260,877	16.33%
Agriculture and Farmland	303	13,206,040	0.77%
Transit/Utility/Parking	2,070	90,172,167	5.29%
Vacant	821	35,748,006	2.10%
Total	**39,124**	**1,704,259,099**	100.00%

Source: DCPD, 2007

All municipalities in the watershed have zoning ordinances, comprehensive plans, and subdivision and land development regulations (SALDOs). Zoning ordinances generally regulate the type of land use that may be placed on the land and how intensely or densely

Greenway Plan for the Darby Creek Watershed

Map 2-7
Land Use

Greenway Plan Study Area

2005 Delaware County Land Use

- Residential
- Apartment
- Office
- Mixed Use
- Commercial
- Industrial
- Mining
- Institutional
- Cemetery
- Open Space and Recreation
- Agriculture/Farmland
- Transportation/Utility/Parking
- Vacant

CHESTER COUNTY

MONTGOMERY COUNTY

CITY OF PHILADELPHIA

Delaware County

STATE OF NEW JERSEY

Radnor Township

Newtown Township

Haverford Township

Marple Township

Upper Darby Township

Millbourne Borough

East Lansdowne Borough

Lansdowne Borough

Yeadon Borough

Springfield Township

Clifton Heights Borough

Upper Darby Township

Aldan Borough

Darby Borough

Collingdale Borough

Morton Borough

Darby Township

Sharon Hill Borough

Colwyn Borough

Ridley Township

Rutledge Borough

Glenolden Borough

Darby Township

Folcroft Borough

Prospect Park Borough

Norwood Borough

Ridley Park Borough

Tinicum Township

0 1 2 3 Miles

Source:
Delaware County Planning Department

Prepared By
Delaware County
Planning Department
2010

Greenway Plan for the Darby Creek Watershed

Map 2-8
2005 Land Ownership

Ownership by Land

- Private Residential
- Private Residential/Commercial
- Private Commercial/Industrial
- Private Institutional
- Private Recreation and Open Space
- Private Right of Way
- Public Institutional
- Public Recreation and Open Space
- Government

CHESTER COUNTY

MONTGOMERY COUNTY

CITY OF PHILADELPHIA

STATE OF NEW JERSEY

Radnor Township
Newtown Township
Haverford Township
Delaware County
Marple Township
Upper Darby Township
Millbourne Borough
Springfield Township
Lansdowne Borough
East Lansdowne Borough
Clifton Heights Borough
Upper Darby Township
Yeadon Borough
Aldan Borough
Darby Borough
Morton Borough
Collingdale Borough
Darby Township
Ridley Township
Rutledge Borough
Sharon Hill Borough
Colwyn Borough
Glenolden Borough
Darby Township
Prospect Park Borough
Folcroft Borough
Ridley Park Borough
Norwood Borough
Tinicum Township

0 1 2 3 Miles

Source:
Delaware County Planning Department

Prepared By
Delaware County
Planning Department
2010

it may be developed. SALDOs provide specific details regarding the development process as well as detailed requirements for developing a site. Fourteen of the 26 municipalities in the watershed use the SALDO ordinance prepared by the County in 1981.

All municipalities in the watershed have comprehensive plans; however, they range in age. Some were adopted recently, while others are in need of an update. A recent, positive trend has been the collaboration of two or more municipalities to develop multi-municipal comprehensive plans. A two-borough plan was written for Lansdowne and East Lansdowne Boroughs; a four-borough plan for Aldan, Collingdale, Sharon Hill, and Colwyn Boroughs; and a two-municipality plan for Springfield Township and Clifton Heights Borough.

Two municipal open space, parks, and recreation plans currently exist in the watershed, one for Radnor Township, and one for a multi-municipal area that includes the six boroughs in the William Penn School District (Aldan, Clifton Heights, Colwyn, Darby, East Lansdowne, Lansdowne, and Yeadon).

Table D-1 in Appendix D presents an inventory of ordinances and plans, with their years of adoption and amendment.

Very few, if any of the watershed's municipal zoning and subdivision ordinances address many of the interrelated issues that are important to the watershed. While all municipal ordinances meet minimum FEMA floodplain requirements, most do not specifically provide for protection of the stream system, riparian zones, or wetlands which link the greenway neighborhoods. Municipalities, however, have the power to incorporate these features into their local zoning codes and SALDOs. Consistent regulations, when implemented watershed-wide can provide effective means to further the goal of watershed protection. Therefore, municipalities should consider working together to develop and implement common land use provisions that benefit the greenway network as a whole. Another tool that can be useful in preserving open space and greenway areas is the municipal official map, which is explained further in the Implementation Plan chapter. To date, no municipality in Delaware County has formally adopted an official map.

In addition to zoning and SALDO ordinances, municipalities often have other free-standing ordinances governing a variety of issues. In compliance with state law, each of the municipalities in the watershed has adopted a stormwater management ordinance consistent with the County's *Act 167 Stormwater Management Plan for the Darby and Cobbs Creeks Watershed* (2005). This ordinance contains provisions for the control of runoff from new development and redevelopment. A requirement of the ordinance is installation of a riparian buffer as part of the development/redevelopment process; the recommended width is 50 feet. Several municipalities have selected a smaller width, which is allowed, provided that it is not less than ten feet. Municipal riparian buffer widths can be found in Table D-2 in Appendix D.

The current status of municipal comprehensive plans, zoning ordinances, and SALDOs can be viewed at the DCED e-library website located at http://www.elibrary.state.pa.us. Some of these plans are available for download there as well.

SIGNIFICANT QUALITY OF LIFE ISSUES AND CONCERNS

There are a number of quality of life issues affecting the study area. They vary greatly, given the diverse nature of the municipalities. Areas at the top of the watershed (Radnor, Newtown, Marple, and Haverford Townships) still have open land and are experiencing development pressure. They are generally wealthier and have less crime and fewer social issues. However, with the exception of a few town centers, these communities have fewer traditional downtowns, walkable communities, neighborhood open spaces, and readily available public transportation, which characterize healthy communities.

Municipalities in the middle of the watershed, with the exception of Springfield Township, parts of Ridley Township, and Upper Darby Township (from a size standpoint), are generally small, dense, and experience problems associated with being some of the first inner-ring suburbs of Philadelphia. Most of the development in these areas is infill or redevelopment, and efforts are being made to re-green the landscape as well as retrofit development for stormwater management as part of the redevelopment process. Generally, housing prices are lower and there are fewer large expanses of open space. The communities do, however, contain very good housing stock, walkable neighborhoods with sidewalks, and abundant public transportation options.

Land Use Planning and Zoning Relative to Quality of Life

Land use planning is important in both developing and developed communities. Planning involves identification of existing resources (both natural and manmade), making decisions with regard to how a community would like to develop or preserve its resources, preparation of plans (open space, downtown revitalization), and adoption and enforcement of ordinances (zoning, SALDO, and other codes) to ensure that growth and development occurs in accordance with local desires. All of these steps help to improve or ensure quality of life in the area.

Municipalities should consider planning for greenway connections (green infrastructure), either for conservation or for recreation (trails), in the same manner as they would other infrastructure in their communities. Since municipal jurisdictions do not always follow the natural boundaries of a watershed, or a stream serves as a common boundary between municipalities, local officials need to be educated on the value of undertaking planning jointly. This will help to facilitate development and implementation of consistent objectives, policies and plans on both sides of a stream.

SIGNIFICANT RECREATIONAL, HISTORICAL, AND CULTURAL RESOURCES

OPEN SPACE AND RECREATION SITES AND ACTIVITIES

A variety of organizations and individuals control the watershed's open space and parks resources. Aside from the public parkland and open space owned by the municipality, county, and federal government, there are also private clubs, schools, cemeteries, homeowners associations, and conservation organizations that own parks or open space of some kind. Map 2-9 shows the location of open spaces and recreation sites in the study area by ownership categories. Segment Area Maps found in Chapter 3 include each of the sites in a greenway segment, labeled and color-coded by land use or park type.

Public Parks

The Darby Creek watershed contains an abundance of recreation sites and facilities ranging from the many tiny tot lots and pocket parks to large recreation areas with athletic fields for baseball, soccer, and football. Some of these areas include basketball and roller hockey surfaces, and others are natural areas with woodlands and nature trails. In most cases, the owner of the land (county, municipality, etc.) maintains its own properties using public works or separate parks staff. The County has mapped the watershed's many park resources; municipalities have mapped them as well. Most of the information concerning municipal open space can be found in local comprehensive plans and parks and open space plans.

Merry Place at Glendale Park in Haverford Township

Golf Clubs

The eight golf clubs located in the watershed represent some of the largest areas of undeveloped land. Golf clubs, by nature, are made up of managed turf grass with scattered trees and sand traps, a limited number of support buildings, and other athletic facilities such as tennis courts. Neighbors, even those who are not members, enjoy their presence for the view and feeling of openness they provide. Although many of the golf courses do not foresee development in the future, financial trouble or change in ownership could suddenly force their sale for this purpose. Most golf clubs are part of a greenway since many lie within a stream valley. Owners and members are not likely to want public trails passing through them, as non-members are not permitted on the grounds. Municipalities should, however, view golf clubs as part of conservation greenways, and should maintain an ongoing dialogue with owners about their land

management and long-term preservation as open space. See Table 2-3 for a list of golf clubs in the study area.

TABLE 2-3
GOLF CLUBS IN THE STUDY AREA

	Cemetery	Acres	Municipality	Stream/Greenway Corridor
1	Aronimink Golf Club	286.89	Newtown	Thomas Run
2	Llanerch Country Club	130.6204	Haverford	Naylors Run tributary (UNS-4628)
3	Merion Golf Club East	153.68	Haverford	Cobbs Creek
4	Merion Golf Club West	80.67	Haverford	Darby Creek tributary (UNS-4627)
5	Overbrook Golf Club	128.24	Radnor	Miles Run
6	PECO Energy Golf Club	74.19	Upper Darby	Cobbs Creek
7	Radnor Valley Country Club	156.85	Radnor	Ithan Creek
8	Rolling Green Golf Club	155.77	Springfield	Darby Creek (main)
	Total Acres	**1166.91**		

Source: DCPD, 2010

Fishing

Fishing is a popular activity in the stream valley greenways of the watershed. There are many unofficial walking trails in the area that began as “desire paths” worn by anglers. Some of the cleared sewer rights-of-way that parallel streams are also the primary means of access for fishing. The Pennsylvania Fish and Boat Commission (PFBC) designated seven segments of the Darby, Little Darby, and Ithan Creeks for an annual fish-stocking program. The trend has been to stock fewer and fewer stream segments with trout in the Darby Creek watershed. Existing dams limit fish passage in the watershed, which is important to anglers. A process is underway to remove several of them. Refer to the section on dams for more information on dam removal efforts.

TRAILS

Pedestrian access is limited throughout the watershed’s wide range of landscapes, including agricultural, suburban, commercial, industrial, urban, parkland, and tidewater areas. However, trails do exist in some places, usually built specifically for recreation in parks, and others for connection between adjoining parks and other destinations. Limited planning and ongoing maintenance challenges have resulted in a pattern of fragmented open space, which often impairs opportunities for a fully developed trail system along Darby Creek. However, there

Dirt hiking path in Pennock Woods, Lansdowne Borough – not currently connected to any other trail system

Greenway Plan for the Darby Creek Watershed

Map 2-9
Open Space & Recreation by Ownership

Greenway Plan Study Area

Open Space by Ownership

- Private Residential
- Private Residential/Commercial
- Private Commercial/Industrial
- Private Institutional
- Private Recreation and Open Space
- Private Right-of-Way
- Public Institutional
- Public Recreation and Open Space
- Federal, State and Local Government

CHESTER COUNTY

MONTGOMERY COUNTY

DELAWARE COUNTY

CITY OF PHILADELPHIA

Radnor Township

Newtown Township

Haverford Township

Marple Township

Upper Darby Township

Springfield Township

Millbourne Borough

Lansdowne Borough

East Lansdowne Borough

Clifton Heights Borough

Upper Darby Township

Yeadon Borough

Aldan Borough

Morton Borough

Darby Borough

Collingdale Borough

Darby Township

Rutledge Borough

Ridley Township

Sharon Hill Borough

Colwyn Borough

Glenolden Borough

Darby Township

Prospect Park Borough

Folcroft Borough

Ridley Park Borough

Norwood Borough

Tinicum Township

0 1 2 3 Miles

Source:
Delaware County Planning Department

Prepared By
Delaware County
Planning Department
2010

is still a great deal of open space, much of which could potentially be connected to other open spaces and to the communities along portions of the creek valley. Existing and proposed trails are shown on the Greenway Segment maps in Chapter 3. 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.

Trails Within Parks

Following is a list of some of the existing self-contained recreational trails in specific parks. Unfortunately, they do not connect to anything else. All of these can be found in potential greenway segments identified later in this plan.

- Glendale Park, Haverford Township – A path along Darby Creek, used frequently by anglers
- Haverford College Trail, Haverford Township – Trail circling the college campus between Cobbs Creek and Ardmore
- Haverford Reserve, Haverford Township – New trails under development along Darby Creek and two tributaries
- Pennock Woods, Lansdowne Borough – Hilly paths through a bird sanctuary along Darby Creek in a quiet residential section of the Borough
- Veterans Memorial Park, Marple Township – A short loop trail in a Township park
- Ithan Valley Park, Radnor Township – Trail along Ithan Creek
- Indian Rock Park, Springfield Township – A hiking path along Darby Creek, marked with blue blazes and connected to a playground in a residential section of the Township
- Heinz Refuge/Tinicum Trail, Tinicum Township – Nature trails maintained by the John Heinz NWR, the longest continuous trails currently in the watershed

Existing Connecting Trails

The following are some of the recreational trails that connect one or more parks or other types of greenway hubs:

- Radnor Trail, Radnor Township – A former rail right-of way converted into a multi-use trail, connecting Encke Park, the Wayne Arts Center, and the Wayne/St. Davids downtown
- Brooke Farm/The Willows/Skunk Hollow/Saw Mill Trails, Radnor Township – A series of linked trails in adjacent parks and homeowners association lands, maintained by the Township
- Cobbs Creek Trails, Haverford Township/City of Philadelphia – Trails within Cobbs Creek Park, maintained by the City's Fairmount Park Commission

Proposed Connecting Trails

The following trails or trail systems have been proposed previously in other reports:

- **Blue Route Bikeway**, proposed by the Delaware County Planning Department, 1985 and 1986. When I-476 was undergoing planning and construction, municipalities in Delaware County were given the option to use federal highway money to fund 90% of trail construction costs within the highway right-of-way. Delaware County offered 5% of trail construction costs, leaving the other 5% to the municipality, which would also need to make arrangements for maintenance costs. DCPD prepared reports for four trail segments, identifying and mapping the most feasible routes, and encouraged municipalities to pursue the opportunity. Only Nether Providence Township (in the Crum Creek watershed) accepted the offer and constructed a trail. The rights-of-way are still available today, though the original federal funding offer is off the table.

- ***Darby Creek Stream Valley Park Master Plan***, Thomas Committa and Associates for Delaware County, 1987. The original plan was developed as implementation of a recommendation of the County's 1978 *Open Space, Parks and Recreation Study* for preservation and development of trails in the Darby Creek stream valley. It identified a trail that would link Upper Darby Township and Clifton Heights, Lansdowne, and Yeadon Boroughs with a recreational trail, mostly through County and municipally owned land. The approximately 4-mile trail route in the master plan has been revised and expanded as a pilot greenway segment.

- ***Lansdowne Gateway Park/Pedestrian Bicycle Trail Master Plan Report***, 2007. A feasibility study and engineering plan was prepared for an area within the Darby Creek Stream Valley Park. It called for construction of a trail on County and SEPTA-owned streamside land that would connect the Borough's gateway park at Baltimore Pike and Scottdale Road to Hoffman Park. Construction is set to occur once engineering work is finished.

- ***Cobbs Creek Connector Trail*** (feasibility study), Campbell Thomas & Co. for Clean Air Council (2007). This trail was delineated from Cobbs Creek Park at 70th Street in Philadelphia (across Cobbs Creek from Delaware County), south to the Heinz Refuge. Two bridges are proposed to cross to and return from Bosacco Park in Colwyn Borough. When constructed, this trail would provide a key connection from Colwyn and adjacent areas in Delaware County to the Heinz Refuge, the Tinicum/Ft. Mifflin Trail, and the East Coast Greenway, bypassing the privately owned streamside land on the Delaware County side of Darby Creek.

- ***Heinz Refuge Access Study*** (feasibility study), by Campbell Thomas & Co. for Clean Air Council (2007). This study explored potential new trails that could connect the Heinz Refuge trails to surrounding communities, including Essington (Tinicum Township) and Prospect Park Borough in Delaware County. Four new pedestrian access options were studied, with three of them deemed feasible. If implemented, users could access the Refuge using new trails from the Philadelphia International Airport and International Plaza, under Interstate 95, and from Essington via the Renaissance Hotel and an abandoned trolley right-of-way.

- **Radnor Township Proposed Pedestrian/Cyclist Network,** *Radnor Township Open Space Plan*, October 1991. The Township is currently updating this plan. One of the Township's principal goals was the creation of a Township-wide pedestrian and cyclist network, for which a hierarchy of trail types and proposed routes map was developed. The development of what became known as the Radnor Trail was a key element. Remaining elements shown on the map include the Ithan Valley Trail (paralleling I-476), extending the Darby Creek Valley trails, some east-west connections, and improving crossings of I-476. The plan also suggested connecting cul-de-sac streets with trails as part of the subdivision and land development process, and including trails in whatever plans are developed for the Ardrossan Farm agricultural open space.

Unofficial Paths

Sewer authority rights-of-way are often used as unofficial trails since they are cleared and attractive for recreation. Many of them follow stream valleys in undeveloped public parklands such as Pilgrim Park in Upper Darby Township and Darby Creek Valley Park in Haverford Township. The only problem with their use as trails is that they are not marked, policed, or maintained for recreation purposes, so safety, vandalism, and littering are issues. Other sewer rights-of-way on private property are unlawful to use at any time, though this may not stop everyone, especially if the property lines are unmarked. As explained in the fishing section, many paths along streams have been worn by anglers for access to prime fishing spots.

SCHOOLS

Since residential land uses are the largest land use type in the watershed, so then are the public and private schools that serve them. Public schools provide a form of recreational land that is semi-public. When not in use for school activities, these lands are generally available to the community for recreational use. They can be thought of as permanently protected, though a school district does have the right to vote to sell the property or change its use from open space to something else.

Ten school districts are represented, entirely or in part, in the watershed. All of these contain some kind of potential greenway corridor, except perhaps the Wallingford Swarthmore School District, which only includes Rutledge Borough in the watershed. The other school districts, listed from north to south are the Radnor Township, Marple-Newtown, Haverford Township, Upper Darby, Springfield, William Penn, Southeast Delco, Ridley, and Interboro. Each school district has one high school, one or two middle schools, and three to five elementary schools. A few school districts have combined their elementary and middle schools. The Archdiocese of Philadelphia operates several parochial schools of various grade levels as well. Cardinal O'Hara High School in Marple Township is situated on a large Archdiocese-owned tract of woodland and meadow. Monsignor Bonner and Archbishop Prendergast High Schools are in Upper Darby Township, adjacent to Naylors Run and the Media Route 101 trolley tracks. Archbishop Carroll High School is on the watershed boundary next to Villanova University in Radnor

Township. Due to the existing development patterns and sidewalk layout, many students can walk or bike to school in the middle and lower sections of the watershed. Not all roads, however, have safe pedestrian access to schools, even in these densely developed areas.

All of the college campuses in the watershed, including Villanova University, American College, and Haverford College, are located in the northern end of the watershed. The southeast quadrant of Radnor Township contains eight different preparatory schools and academies. Two Delaware County Technical and Vocational Schools are located in this watershed, one in Marple Township, and one in Folcroft Borough.

Map 2-10 shows school districts and individual schools in the study area. The schools represented by the map numbers are listed in Table 2-4. The map and table list all types of schools: public, private, church-affiliated, preschool, and colleges.

CEMETERIES

Cemeteries are by nature green gardens of peace. While cemeteries are not intended for frequent public visitation, they serve as patches of greenspace are less likely to be the subject of intensive development. However, in some cases, cemeteries contain unused land that is not suitable for burial grounds. Such land is either used for cemetery-related building construction or for open space. Several cemeteries in the watershed contain streams. In most cases headstones are set back from the stream and a natural riparian buffer is allowed to remain.

The largest cemeteries are located in the southern half of the watershed. Three cemeteries have frontage on Cobbs Creek. Fernwood Cemetery's wooded buffer is narrower than Mount Lawn's, which also has woodland stemming away from the creek. Mount Moriah Cemetery also contains natural wooded areas that fade into the adjacent Cobbs Creek Park. Mount Zion and Eden Cemeteries in Collingdale Borough are adjacent to each other. The result is that the entire Pusey Run stream corridor is in public, swim club, or cemetery ownership.

Places such as the Pusey Run corridor provide a possible trail connection between destinations. In other areas where cemetery access is not permitted, these sanctuaries serve as green backdrops that preserve local viewsheds. The cemetery inventory in Table 2-5 includes major cemeteries in the watershed. These cemeteries are shown on the Greenway Segment maps in Chapter 3. Many of the small cemeteries that are associated with churches were not included in the table or on the maps.

HISTORIC RESOURCES

The Darby Creek watershed has been inhabited for a very long time; therefore, it is immensely rich in historic and cultural resources. Some of these sites are documented; many are not. Some are protected; most are not.

TABLE 2-4
SCHOOLS IN THE STUDY AREA

Map #	School Name	Map #	School Name
1	Wayne Elementary School	66	St. Alice School
2	Ithan Elementary School	67	St. Andrews School
3	Radnor Middle School	68	St. Bernadette
4	Radnor High School	69	St. Dorothy School
5	Charles H. Russell Elementary School	70	St. Eugene School
6	William S. Culbertson Elementary School	71	St. Laurence School
7	Wilmer F. Loomis Elementary School	72	St. Lucy Day School
8	Chatham Park Elementary School	73	Sacred Heart School
9	Chestnutwold Elementary School	74	Holy Cross School
10	Coopertown Elementary School	75	St. Francis of Assisi School
11	Haverford High School	76	St. Cyril of Alexandria
12	Haverford Middle School	77	St. Philomena School
13	Lynnewood Elementary School	78	Blessed Virgin Mary School
14	Manoa Elementary School	79	St. Joseph's School
15	Aronimink Elementary School	80	Holy Spirit School
16	Beverly Hills Middle School	81	St. George's School
17	Bywood Elementary School	82	Archbishop Ryan School for Children
18	Drexel Hill Middle School	83	St. Gabriel School
19	Garrettford Elementary School	84	Our Lady of Fatima School
20	Highland Park Elementary School	85	Our Lady of Perpetual Help
21	Hillcrest Elementary School	86	American College
22	Charles Kelly Elementary School	87	Villanova University
23	Stonehurst Elementary School	88	Haverford College
24	Upper Darby High School	89	Academy of Notre Dame De Namur
25	Westbrook Park Elementary School	90	St. Aloysius Academy
26	Upper Darby Kindergarten Center	91	Agnes Irwin School
27	Primos Elementary School	92	Clarke Pennsylvania Auditory
28	Springfield High School	93	Country Day School of the Sacred Heart
29	Scenic Hills Elementary School	94	Hilltop Preparatory School
30	Harvey Sabold Elementary School	95	Lake Montessori School
31	Walnut Street Elementary School	96	Presbyterian Childrens Village
32	Penn Wood West Middle School	97	St. David's Nursery School
33	Penn Wood High School	98	Delaware County Christian School
34	Penn Wood 9th Grade Academy	99	Devereaux Gateway School
35	Park Lane Elementary School	100	Brookline School
36	William B. Evans Elementary School	101	Child Steps
37	Bell Avenue Elementary School	102	Haverford Friends School
38	Ardmore Avenue Elementary School	103	KEEP Kindergarten
39	Aldan Elementary School	104	Friendly Faces Day Care
40	East Lansdowne Basic School	105	Play and Learn
41	Sharon Hill Elementary School	106	Faith Preschool and Kindergarten
42	Harris School 1-8	107	Strattford Friends School
43	Delcroft Elementary School	108	Holy Child Academy
44	Kindergarten Center K-1	109	Ancona Montessori School
45	Darby Township School 2-8	110	Kid's Choice Learning Center
46	Academy Park High School	111	Little Friends Nursery Day 1

TABLE 2-4
SCHOOLS IN THE STUDY AREA
(CONTINUED)

Map #	School Name	Map #	School Name
47	Prospect Park Elementary School	112	Nicholas School
48	Norwood Elementary School	113	St. Louis School
49	Interboro High School	114	Lansdowne Friends Meeting
50	Tinicum School	115	Lansdowne Montessori School
51	Interboro Elementary School	116	Christ Haven Christian Academy
52	Glenolden School	117	Life Discovery School Kindergarten
53	Amosland Elementary School	118	Little Friends Nursery Day 2
54	Leedom Elementary School	119	Today's Child Learning Center
55	Archbishop Carroll High School	120	Ted DiRenzo Montessori School
56	St. Katharine of Siena	121	Bumblebee Preeschool and Kindergarten
57	St. Anastasia School	122	Kindercare Learning Center
58	Cardinal O'Hara High School	123	Southside Baptist Academy
59	St. Pius X School	124	Interboro Kinderschool
60	Annunication B.V.M. School	125	Alternatives Elementary School
61	Sacred Heart Preschool	126	Calvary International Christian School
62	St. Denis School	127	Church of Atonement Day School
63	St. John Neumann/St. Coleman	128	YMCA Ridley Area Childrens Corner Kindergarten
64	Archbishop Prendergast High School	129	CHI Institute
65	Monsignor Bonner High School		

Source: DCPD, 2007

Greenway Plan for the Darby Creek Watershed

Map 2-10
Schools

CHESTER COUNTY

MONTGOMERY COUNTY

CITY OF PHILADELPHIA

Greenway Plan Study Area

School Type

- Public
- Archdiocesan
- College/University
- Private
- Trade School

School Districts

- Radnor Township School District
- Marple Newtown School District
- School District of Haverford Township
- Upper Darby School District
- Springfield School District
- Wallingford_Swarthmore School District
- William Penn School District
- Southeast Delco School District
- Interboro School District
- Ridley School District

0 1 2 3 Miles

Source:
Delaware County Planning Department

Prepared By
Delaware County
Planning Department
2010

TABLE 2-5
CEMETERIES IN THE DARBY CREEK WATERSHED

	Cemetery	Acres	Municipality	Stream/Greenway Corridor
1	Darby Methodist Meeting Cemetery	1.40	Collingdale	Pusey Run
2	Eden Cemetery	48.46	Collingdale	Pusey Run
3	Har Zion Cemetery	13.84	Collingdale	Hermesprota Creek
4	Mount Lebanon Cemetery	26.36	Collingdale/ Darby Township	Hermesprota Creek
5	Mount Zion Cemetery	24.40	Collingdale	Pusey Run
6	Darby Friends Burial Ground	3.70	Darby Borough	
7	Mount Jacob Cemetery	24.40	Darby Township	Hermesprota Creek
8	Mount Lawn Cemetery	52.24	Darby Township	Darby Creek (main)
9	Glenwood Cemetery	64.09	Marple	
10	Haverford Friends Cemetery	3.69	Haverford	
11	Odd Fellows Cemetery	0.81	Haverford	
12	First Presbyterian Church Cem.	1.43	Marple	
13	St. Denis Cemetery	19.30	Haverford	Cobbs Creek
14	Saints Peter and Paul Cemetery	307.13	Marple	Whetstone Run
15	Mount Sharon Cemetery	39.38	Springfield	
16	Prospect Park Cemetery	3.95	Prospect Park	
17	Arlington Cemetery	109.45	Upper Darby	Naylors Run/Newtown Sq. Railroad Right-of-way
18	Fernwood Cemetery	96.75	Upper Darby	Cobbs Creek
19	Friends Southwest Burial Ground	15.84	Upper Darby	Cobbs Creek
20	Har Juhuda Cemetery	31.83	Upper Darby	Naylors Run
21	Montrose Cemetery	9.16	Upper Darby	Newtown Sq. Railroad Right-of-way
22	St. Charles Borromeo Cemetery	6.09	Upper Darby	Darby Creek
23	Holy Cross Cemetery	171.81	Yeadon/ Darby Borough	Blunston Run
24	Mt. Moriah Cemetery	81.51	Yeadon	Cobbs Creek
	Total Acreage	**1,157.02**		

Source: DCPD, 2010

The Bureau for Historic Preservation of the Pennsylvania Historic and Museum Commission manages the National Register of Historic Places in the state. Properties listed on the National Register include sites, buildings, structures, objects, and districts that are significant to American history, architecture, archaeology, engineering, and culture. Sites must meet certain general criteria and undergo a long and complex application process before they can be placed on the National Register. National Register listing helps to preserve the properties in a number of ways by means of special planning consideration, federal tax benefits, and eligibility for federal funding assistance. It does not, however, interfere with a private property owner's right to alter, manage, or dispose of the property. As of 2007, there were 51 sites in Delaware County's Darby Creek watershed municipalities listed on the Nation Register, and 39 more that are classified as eligible.

The Darby Creek Valley Association has paid special attention to the historic structures in the watershed through the work of its Historic Sites Committee. Many municipalities in the watershed have historical societies, commissions, and conservancies. Some are local government appointed boards; others are independent organizations. These groups are often small and under-funded. The Radnor Conservancy includes both open space and historic preservation as its missions. Many historic sites are located in parks and natural areas, a number of which are within an existing or potential greenway corridor. The greenspace at historic sites is important, and should be included in a greenway plan. Historic groups should be enlisted as supporters. The Darby Creek Watershed Conservation Plan (DCCP) includes a table listing historical societies active in the watershed.

DCPD can provide advice on how a municipality can begin historic preservation. The first step a municipality can take is to establish an historical commission to advise the local government. This appointed volunteer commission would develop local expertise on historic resources and their preservation, and possibly begin or update a survey. Surveys often require the services of a consultant; however, community volunteers can also undertake them. There are eight municipalities in the watershed with surveys, although some of the surveys are in need of an update. See Table 2-6.

Protection of historic resources is accomplished in various ways. One of the best known is the protection of clusters of buildings through the creation of a local historic district, or Act 167 Historic District. The community decides what it would like to protect, and then develops guidelines for their protection. A Historical and Architectural Review Board (HARB) reviews changes within the district when they are proposed. Another type of protection is provided through a zoning overlay that can protect resources scattered throughout the municipality. There are three municipalities in the watershed with Act 167 Historic Districts and HARBs. See Table 2-6.

TABLE 2-6
STATUS OF HISTORIC PRESERVATION

Municipality	Historic Preservation Ordinance	Historic Commission/ Committee/ HARB	Historic Resources Survey or Inventory	National Historic Landmarks	National Register Listings	Sites Determined Eligible for the National Register
Aldan Borough		Commission	Inventory			
Clifton Heights Borough						1
Collingdale Borough			Inventory			
Colwyn Borough			Inventory			1
Darby Borough	Yes	Commission	Survey		1	5
Darby Township		Commission			1	3
East Lansdowne Borough			Inventory			
Folcroft Borough						1
Glenolden Borough		Commission	Inventory			1
Haverford Township			Survey		5	4
Lansdowne Borough	Yes	HARB	Survey		4	2
Marple Township	Yes	Commission	Survey		1	2
Millbourne Borough						
Morton Borough			Inventory			1
Newtown Township		Committee	Survey	1	5	6
Norwood Borough			Inventory		1	
Prospect Park Borough			Inventory		1	
Radnor Township	Yes	HARB	Survey		12	16
Ridley Township			Survey			2
Ridley Park Borough	Yes	HARB & Com.	Inventory			3
Rutledge Borough						1
Sharon Hill Borough		Commission	Inventory			1
Springfield Township			Inventory			2
Tinicum Township			Survey	1	1	1
Upper Darby Township		Commission	Survey		2	6
Yeadon Borough		Task Force	Inventory			3

Information correct as of July, 2009
Source: DCPD, 2010

Specific Historic Sites

Historic sties are plotted (though not individually labeled) on the greenway segment maps in Chapter 3. Only public and semi-public sites and historic districts and neighborhoods were mapped, as such places are important for greenway purposes. Table 2-7 is a listing of selected prominent historic sites. This list includes items detailed in the Darby Creek Watershed Conservation Plan, which was researched using information provided by the Delaware County Planning Department. It does not include every historic resource that is mapped or that exists on the National Register.

Two examples of public historic sites in the study area: the Morton Morton House in Norwood Borough (left), and the Lower Swedish Cabin in Upper Darby Township (right)

SUMMARY OF PARKS, RECREATION, AND HISTORIC SITES

Parks, recreation facilities, and historic sites constitute some of the most important locations in the watershed. They can contribute to quality of life in a community by providing visual relief, recreational opportunities, and links to the watershed's identity and past. Access to these sites can be provided through greenway connections; therefore, it is important that any network of trails include them as significant features. In addition, whenever possible, open space acquisition and historic preservation efforts should be focused on sites within close proximity to existing or proposed trails.

TABLE 2-7
SELECTED HISTORIC SITES IN THE STUDY AREA

Houses and Estates	Municipality	Brief description
The Finley House	Radnor	1840, Victorian house
Ardrossan	Radnor	19th Century mills, farm, schoolhouse
Thomas Massey House	Marple	1696, prominent landowner, National Register
The Grange Estate	Haverford	1700s mansion, formal gardens, National Register
Maris or Levis House	Springfield	1757 home, associated with Underground Railroad
Levis House	Springfield	1693 Samuel Levis built, brick
Collen Brook Farm	Upper Darby	1794 farmhouse, historic tree, National Register
Sellers Library	Upper Darby	1825, former Sellers home, Underground Railroad
Lansdowne Court	Lansdowne	1907, historic Victorian housing district
Bunting Friendship Freedom House	Darby Borough	1730, Penn Plan design, Underground Railroad
Site of John Blunston Homestead	Darby Borough	House of early Darby settler, arrived in 1682
1006 Main St.	Darby Borough	1734, believed built for J. Blunston's granddaughter
Woodburne	Darby Borough	1908, part of Little Flower Manor
Fuller Row	Darby Borough	Mid-1800s, mill worker housing
Places of Worship and Cemeteries	Municipality	Brief description
Radnor Friends Meeting House	Radnor	1718, Rev. War hospital, Ithan village built around it
Radnor United Methodist Church	Radnor	Founded 1780, oldest Methodist church in County
Newtown Square Friends Meeting House	Newtown	Built 1711, burial ground older, still active
St. David's Episcopal Church	Newtown	1715, Cemetery contains Gen. Anthony Wayne
Baptist Cemetery	Newtown	Contains many original Newtown Square settlers
Old Haverford Friends Meeting	Haverford	Built 1700s, oldest home of worship in County
Darby Friends Meeting House	Darby Borough	1805, on National Register, Darby Friends' 3rd building
Darby Friends Burial Ground	Darby Borough	1687, oldest burial ground in PA in continuous use
Mt. Zion Methodist Church	Collingdale	1808, also became Home Protection Society of Darby
Schoolhouses	Municipality	Brief description
Hood Octagonal School	Newtown	1841, fieldstone, in original condition, National Register
1797 Federal School	Haverford	One-room schoolhouse on National Register
Old Central School	Springfield	1852 (Re-built building) Home of Twp. Historic Society
Mill-Related Sites	Municipality	Brief description
Paper Mill House Museum	Newtown	1780, originally mill-worker housing, now a museum
Nitre Hall and Lawrence Cabin	Haverford	1810, mill's powder master home, on National Register
Kent Mill	Clifton Heights	Mill complex from mid-1800s to 1960s
Kellyville Mill Complex	Lansdowne	Cotton mill complex the basis for neighborhood

TABLE 2-7
SELECTED HISTORIC SITES IN THE STUDY AREA
(CONTINUED)

Houses and Estates	Municipality	Brief description
Darby Creek Mills Site	Darby Borough	1685–1800s, various functions with different owners
Sites Associated with Swedish Settlement	Municipality	Brief description
Swedish Cabin	Upper Darby	Example of early log construction by Swedish settlers
Morton Morton House	Norwood	Mid-1700s, reconstructed 1969, on National Register
Morton Homestead	Prospect Park	Began in 1654, with parkland, on National Register
Lazaretto	Tinicum	1800, quarantine station, Swedish governor's home site
Governor Printz Park	Tinicum	Possible site of the 1st European government in PA
Miscellaneous	Municipality	Brief description
The Square Tavern	Newtown	1742, historic restored tavern, on National Register
Lansdowne Sycamore Park	Lansdowne	Sycamore tree (300+ years old) symbol of the Borough
Darby Free Library	Darby Borough	1873, 2nd oldest library in continuous operation in U.S.
Darby Trolley Bridge	Darby Borough	1904, Warren Pony-truss bridge, not in use
Sharon Hill Railroad Station	Sharon Hill	1872, serpentine stone train station structure

Source: Darby Creek Watershed Conservation Plan, 2004

CHAPTER 3
GREENWAY PLAN

GREENWAY CONCEPT PLAN

This chapter sets forth the overall goals and objectives of the greenway plan. They were developed through an extensive public participation process which included focus group meetings, interviews, and oversight by a project steering committee (refer to Appendix E). They reflect the watershed stakeholders' desire to preserve, enhance, and promote the diverse resources in the Darby Creek watershed. The implementation plan contained in Chapter 4 elaborates on the goals and objectives and sets forth a series of actions, policies, and tools to reflect the goals and objectives and realize the vision to make Darby Creek a *ribbon of green.*

The concept of hubs and spokes was used as a framework for development of the greenway network (refer to Map 3-1). The individual segment area profiles contain an evaluation of each respective area's resources, opportunities, and challenges. These segment profiles can serve as a basis for the development of individual segment plans that would contain actions and policies specific to each area. Finally, this section contains information concerning unique corridors not otherwise discussed as well as opportunities for connections to other areas of the County and the region.

DARBY CREEK GREENWAY PLAN GOALS AND OBJECTIVES

Goal 1 Conservation

To encourage sustainable development and land management practices which preserve the County's critical natural resources and unique environmental and historic character

Objective 1 Maintain, enhance, and green the watershed through the introduction of native plants and the removal of invasive species

Objective 2 Protect and preserve water quality and flood carrying capacity in the watershed's streams through the use of best management practices and sound floodplain management strategies

Objective 3 Preserve, protect, and promote historic and cultural resources in the watershed

Objective 4 Preserve and protect soils, natural features, and viewscapes in the watershed

Objective 5 Preserve and protect natural heritage resources, including important flora, fauna, and landscapes

Goal 2 Connection

To provide a connected network of greenways made up of open space, parkland, trails, and transit corridors that link fragmented biological resources and connect the people to various destinations both in and out of the watershed

Objective 1 Preserve and enhance connections between and within natural resource areas in order to protect resource values, natural heritage areas, and wildlife corridors (see Conservation)

Objective 2 Preserve and develop connections between public open spaces to enhance their value for public use

Objective 3 Develop and enhance connections between watershed hubs such as towns, schools, and historic/cultural resources

Objective 4 Incorporate existing public transit routes, transit corridors, and utility rights-of-way in the greenway network

Goal 3 Quality of Life

To improve and maintain quality of life, well being, and economic health in the Darby Creek watershed through better planning and utilization of the greenway network as a basis for land use decision-making

Objective 1 Ensure that watershed residents of all ages and abilities have access to recreational amenities such as trails and parks

Objective 2 Maintain and enhance the visual quality of watershed communities through preservation of green spaces, inclusion of public landscaping, and control over dumping and litter

Objective 3 Support efforts to promote economic growth and redevelopment through sustainable development that is safe, attractive, and environmentally friendly

Objective 4 Encourage development/redevelopment that incorporates walkability and public transportation opportunities

Objective 5 Improve overall public health by increasing opportunities for physical activity – a key component of healthy lifestyles

Goal 4 Education

To educate the public, policy makers, and landowners about the benefits of greenways, and their roles in conservation, land management, and planning that takes into account greenway resources and recreational opportunities

Objective 1 Develop opportunities to raise awareness on the part of municipal officials regarding the value of natural resources, trails, and sustainable land use through sound planning

Greenway Plan for the Darby Creek Watershed

Map 3-1
Greenway Network

Darby Cobbs Watershed Area
Cobbs Creek Sub Watershed
Darby Creek Watershed
Delaware County Boundary
Municipal Boundaries

Darby Creek Greenway Network
Greenspace Connection
Road-based Connection
Transit-oriented Connection
Water Trail

Streams
Major
Minor

Open Space and Recreation
Municipal Land
County Land
Federal and State Land
School District Land
Golf Courses
Private Recreation Facilities
Institutional Property w/ Open Space
Conservation Organization Protected Land
Homeowners Association Open Space
Cemetery

CHESTER COUNTY
MONTGOMERY COUNTY
CITY OF PHILADELPHIA
NEWTOWN TOWNSHIP
RADNOR TOWNSHIP
MARPLE TOWNSHIP
HAVERFORD TOWNSHIP
SPRINGFIELD TOWNSHIP
UPPER DARBY TOWNSHIP
RIDLEY TOWNSHIP
TINICUM TOWNSHIP
MILLBOURNE BOROUGH
LANSDOWNE BOROUGH
EAST LANSDOWNE
CLIFTON HEIGHTS
YEADON BOROUGH
ALDAN BOROUGH
MORTON
RUTLEDGE
COLLINGDALE BOROUGH
DARBY BOROUGH
GLENOLDEN
SHARON HILL
COLWYN
PROSPECT PARK
NORWOOD BOROUGH
FOLCROFT BOROUGH
DARBY TOWNSHIP
RIDLEY PARK

0 1 2 3 Miles

Source:
Delaware County Planning Department

Prepared By
Delaware County
Planning Department
2010

Objective 2 Raise awareness on the part of large property owners (e.g., residential, schools, industries, cemeteries, etc.) of the importance of incorporating sound land use management practices on their lands

Objective 3 Utilize schools as a mechanism to educate students on the importance of greenways and watershed stewardship as well as their roles in protecting watershed resources

Objective 4 Engage the public in local planning and land stewardship activities through print and web media

Goal 5 Implementation

To provide a framework for implementation of the greenway plan through sound actions and policies that further the goals and objectives of the plan

Objective 1 Support implementation of sustainable land use, open space, trail, preservation, and other studies prepared for the watershed

Objective 2 Prepare new studies and land use planning documents that support the goals and policies of the greenway plan

Objective 3 Promote coordination and cooperation among municipalities, organizations, and stakeholders in the watershed

HUBS AND SPOKES CONCEPT

As discussed in Chapter 1, Delaware County's greenway planning focuses on the hubs and spokes concept as a mechanism to connect both natural and man-made resources within a planning area such as a watershed. Therefore, Darby Creek Greenway Network is designed around important hubs and spokes within the Darby Creek watershed.

Examples of hubs within the Darby Creek watershed include existing large parks and open spaces as well as other types of destinations like downtowns (i.e., Wayne, Lansdowne, Drexel Hill), college campuses (i.e., Haverford College, Villanova University), public and private schools (i.e., Loomis Elementary School, Cardinal O'Hara High School), historic sites and districts (i.e., Paper Mill House, Swedish Cabin), or transit stations (i.e., Route 101 Media trolley, Norristown High Speed Line).

Some hubs in the Darby Creek watershed could also be considered spokes, as they are linear parks that are connected to other hubs. A good example is Haverford Township's series of parks along Darby Creek between West Chester Pike and Township Line Road. These parks are both long and narrow as well, and contain destinations with several permanent recreational facilities. They also adjoin each other for the most part, creating a long ribbon in public ownership, so it could be considered one long hub.

Spokes are linear corridors that link the hubs with green space, transit, pedestrian transportation routes, or utility and transportation rights-of-way. The spokes in the

network would currently be under, or recommended for, some form of long-term protection. Some examples of existing or potential greenway spokes in the Darby Creek watershed are Cobbs Creek with the SEPTA Norristown High Speed Line (formerly Route 100), cleared sewer rights-of-way, the Radnor Trail, and the I-476 right-of-way. Some hubs in the Darby Creek watershed could also be considered spokes as they are linear parks that are connected to other hubs (e.g., many of Haverford Township's parks along Darby and Cobbs Creeks). Some spokes are pedestrian paths, but others are not, as is the case of vegetated riparian buffers required by municipal ordinances along both public and private lands. This system of hubs and spokes, which are delineated Maps 3-2 and 3-3, and on the individual Greenway Segment Maps (Maps 3-5A through 3-16B), comprise the Darby Creek Greenway Network in Delaware County.

Isolated mini-greenways may also exist in the watershed, beginning and ending without a connection to the main greenway along the Darby Creek stream valley. Without this connection, however, they cannot be considered part of the County greenway network.

CONSERVATION HUBS AND SPOKES

To some stakeholders, the primary focus for the greenway is on the preservation of natural resources and the environmentally sensitive features of the landscape. Map 3-2 shows a conceptual diagram of Conservation Greenway Hubs and Spokes in the study area. The five main areas identified as conservation hubs are the largest expanses of open space in the watershed – the John Heinz National Wildlife Refuge at Tinicum, Cobbs Creek Park, the Archdiocese lands at and around the Cardinal O'Hara High School, the Haverford Reserve (former Haverford State Hospital Site), and the "Radnor Agricultural Landscapes."

The conservation spokes are the linear connectors between these hubs, most of which are crucial for stream valley conservation. Also noted on the map are large cemeteries and golf clubs. They were mapped because they are large managed landscapes, making them stand out as important components of the County Greenway Network. Municipalities and greenway managers should closely monitor their status. Although it would seem that golf courses would be around forever, their owners occasionally have financial difficulties and consider selling. Cemeteries can be conservation-oriented if they incorporate design and management that is both ornamental and naturalistic.

RECREATION AND CONNECTIVITY HUBS AND SPOKES

There are an amazing number of recreational amenities that exist in the watershed. There are also many opportunities to connect them with recreational and multi-use trails. In addition, transportation infrastructure (roads and rail), sidewalks, and employment and economic centers (downtowns) can logically factor into the greenway network. Refer to Map 3-3 for a conceptual diagram of Recreation Greenway Connectivity Hubs and Spokes in the study area. This figure is a basic dot and line representation displaying open space hubs of three different sizes, town center hubs, and five types of spokes. This

Greenway Plan for the Darby Creek Watershed

Map 3-2
Conservation Greenway
"Hubs and Spokes"

Conservation Spokes

Conservation Hubs

Large Cemeteries

Golf Clubs

Little Darby Creek

RADNOR AGRICULTURAL LANDSCAPES

Ithan Creek

Meadowbrook Run

HAVERFORD RESERVE

Foxes Run

Cobbs Creek

Langford Run

Naylors Run

ARCHDIOCESE LANDS

COBBS CREEK PARK

Stony Creek

Darby Creek

Pusey Run

Cobbs Creek

Muckinipattis Creek

Hermesprota Creek

JOHN HEINZ NATIONAL WILDLIFE REFUGE AT TINICUM

Delaware River

Source:
Delaware County Planning Department

Prepared By
Delaware County
Planning Department
2010

Map not to scale.

Greenway Plan for the Darby Creek Watershed

Map 3-3
Recreation Greenway
"Hubs and Spokes"

Spokes
- Road-based Connection
- Transit-Oriented
- Proposed Water Trail
- Potential Green Space Connection
- Exisiting/Proposed Trail

Town Center Hub

Recreation and Open Space Hubs
- Regional Recreation or Open Space Area
- Substantial Recreation or Open Space Area
- Neighborhood Recreation or Open Space Area

TO CHESTER COUNTY
Wayne
Lancaster Avenue
SEPTA R5
Odorisio Park/ Flipone Park
Existing Radnor Trail
Encke Park
Radnor High School
Villanova University
Chanticleer
Brooke Farm Trails/Parks
Proposed Radnor Trail Extension
Brooke Farm Trail
Waterloo Mills Preserve
The Willows / Skunk Hollow
Radnor Open Space Parks
Proposed Ithan Creek Trail
Ithan Valley Park
SEPTA R5
Lancaster Avenue
Ardmore
TO ARDMORE
Existing Saw Mill Trail & Proposed Trail
Former Rail Line
Newtown Veteran's Memorial Park
Newtown Square
Marple Township Parks
Haverford Reserve
Haverford College
SEPTA 100
SEPTA Busway
Karakung Drive
Oakmont
Darby Road
Powder Mill Parks
The Grange
North Darby Creek Valley Park
Marple Township Parks
Potential Haverford Darby Creek Valley Trail
Llanerch
Cobbs Creek Park
Country Transfer Station
Glendale Park
Archdiocese Lands (Cardinal O'Hara High School)
Darby Creek Valley Parkland
Pilgrim Park
Drexel Gardens Park
Naylors Run Park
Upper Darby/ Millbourne/ 69th Street
TO CITY OF PHILADELPHIA
Beverly Hills Recreation Area
Drexelbrook
Drexel Hill
Indian Rock Park
Darby Creek Stream Valley Parkland
101 Trolley
Springfield
Existing Cobbs Creek Trail
Potential Rail Trail
Baltimore Avenue
Darby Creek Stream Valley Park
Proposed Darby Creek Stream Valley Park Trail
Lansdowne
Springfield Township Parks
Smedley County Park
Clifton Heights/ Aldan
Cobbs Creek Park
SEPTA R3
TO MEDIA/SWARTHMORE
Morton
Collingdale Borough Parks/Cemeteries
Darby
Proposed Cobbs Creek Connector Trail
Darby Township Parks
Colwyn Borough Parks
Glenolden Park
Clearview Landfill
Potential Trail
Moore's Lake Field
Norwood
Darby Township Parks
Existing Tinicum Trail
Ridley Park
Norwood/ Folcroft Parks
John Heinz National Wildlife Refuge
Darby Creek
Willow Park
Ridley Township Marina
Existing Tinicum Trail
Proposed East Coast Greenway Trail
Essington
Philadelphia International Airport
TO CHESTER CITY
Darby Creek
Governor Printz Park
Lazaretto
Tinicum Waterfront Open Space
Proposed Tinicum to Fort Mifflin Trail
Delaware River
TO FORT MIFFLIN & CITY OF PHILADELPHIA

Map not to scale.

Source:
Delaware County Planning Department

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Delaware County
Planning Department
2010

figure shows connectivity only, and is not the greenway plan map. The types of spokes indicate existing or potential connectivity and portray potential.

GREENWAY SEGMENT PROFILES

As described in previous sections, the Greenway Plan for the Darby Creek Watershed outlines opportunities for establishment of various types of connections that are part of a common network. This section of the plan breaks the Darby Creek Watershed Greenway Network into 12 greenway corridor segments for analysis and future planning; each has its own map and aerial photograph. Map 3-4 shows the relative location of the greenway segment areas.

How to Read the Greenway Segments Map Panels

Four different types of greenways are indicated on the segment maps contained in this section of the plan (Maps 3-5A through 3-16B). Though represented by lines, greenway widths vary greatly depending on the specific location within a corridor. Greenspace connection greenways identified on the maps could be preserved/developed as a conservation greenway, recreation greenway, or both. The maps do not reflect a recommended level of public access. Such access would be a recommendation in a future segment area-specific plan developed by participating municipalities.

Greenway hubs are not specified on the maps. However, hubs to be identified in future segment area plans should be those public spaces and conservation lands that the corridor lines touch or to which they come in close proximity.

This plan suggests that municipalities form project teams to develop master plans for each of the greenway segments (also referred to as "greenway segment plans"). Municipalities and project teams should begin their detailed planning process by reviewing their respective segment profiles. Subsequently, the needs and desires of the communities' citizens and stakeholders should be identified and examined. Greenway segment project teams should ask themselves if Delaware County's recommendations are still feasible when viewed at the community level. It is recommended that the segment area project teams hire a professional consultant experienced in land conservation and preservation techniques, recreation planning, landscape architecture, and/or other skills needed to assist them with development of their greenway segment plan. The consultant can assist them in dealing with identified obstacles, engaging the public, and developing a "street-level" greenway plan. In some cases the greenway segment plan could be incorporated into a major section of a municipal or multi-municipal open space plan. Besides serving as starting points for a greenway segment plan, the profiles contained in this chapter can also be used by communities as foundations for development of pilot implementation projects.

Table 3-1 below identifies the greenway segment/s that each municipality lies within.

TABLE 3-1
MUNICIPAL SEGMENT KEY

Municipalities	Greenway Segments											
	1	2	3	4	5	6	7	8	9	10	11	12
Aldan Borough								■				
Clifton Heights Borough								■				
Collingdale Borough									■		■	
Colwyn Borough						■						
Darby Borough						■		■				
Darby Township										■	■	
Folcroft Borough										■	■	
Glenolden Borough											■	
Haverford Township			■	■	■							
Lansdowne Borough								■				
Marple Township			■									
Millbourne Borough				■								
Newtown Township	■											
Norwood Borough										■	■	
Prospect Park Borough										■		■
Radnor Township	■	■										
Ridley Township										■	■	■
Ridley Park Borough												■
Sharon Hill Borough						■						
Springfield Township							■					
Tinicum Township										■		
Upper Darby Township				■	■		■	■				
Yeadon Borough						■		■				

MULTI-MUNICIPAL PLANNING

Municipalities should work with other municipalities in the same segment as much as possible to implement the plan. The identified segments are suggested areas that may be split into smaller segments if it helps to facilitate inter-municipal planning. However, segments should not be split down the middle of the creek, but rather, across the creek. This is so that policies and planning on both banks are consistent. An additional reason for multi-municipal planning for the various greenway segments is that funding agencies, such as DCNR, tend to rank multi-municipal projects higher than individual municipal projects.

Greenway Plan for the Darby Creek Watershed

Map 3-4
Greenway Segment Location Key

Segment Boundary
Municipal Boundaries
Greenway Plan Study Area

Greenway Corridors
- Greenspace Connection
- Road-based Connection
- Water Trail
- Transit-oriented Connection
- Greenway Adjacent to Study Area

Open Space and Recreation
- Municipal Land
- County Land
- Federal and State Land
- School District Land
- Golf Courses
- Indoor/Outdoor Recreation Facilities
- Institutional Property w/ Open Space
- Conservation Organization Protected Land
- Homeowners Association Open Space
- Cemetery
- Utility ROW

CHESTER COUNTY

MONTGOMERY COUNTY

CITY OF PHILADELPHIA

Segment #1 Newtown

Segment #2 Radnor

Segment #3 Haverford-Marple

Segment #4 Cobbs Creek North

Segment #5 Naylors Run

Segment #6 Cobbs Creek South & Colwyn Area

Segment #7 Springfield & Drexel Hill

Segment #8 Darby Creek Stream Valley Park

Segment #9 Pusey Run

Segment #10 Darby Creek-South End

Segment #11 Muckinipates Creek Greenway

Segment #12 Stony Creek Greenway

0 1 2 3 Miles

Source: Delaware County Planning Department

Prepared By Delaware County Planning Department 2010

CONSERVATION GREENWAYS AS THE PRIMARY GOAL

A conservation greenway with no trail development is appropriate and encouraged in all parts of the greenway network, even if a trail network is not desired by the community. For instance, in the following segment profiles and associated maps, wherever a trail is recommended, but found by the community not to be feasible, it would still be appropriate to take measures to preserve a linear stretch of natural woodland or meadow. Even if this greenway has little or no public access, it would be preferable to leaving the corridor unprotected. Decision-makers should refer to the prioritization criteria included in the Implementation Chapter of this plan. This list should be used for making decisions on projects to fund and pursue, and to aid in the development of greenway segment plans.

TRIBUTARY GREENWAYS

Darby Creek tributaries south of the confluence of Ithan Creek and Darby Creek, as well as other non-stream corridors containing connected open land are designated as greenways in this plan. Just because a stretch of tributary is not designated as a greenway, it does not mean that it is not important for conservation and protection from encroachment. Tributaries designated as greenways by the County are those that connect the main greenway to some type of hub (either conservation, recreation, or both). The largest tributary greenway is the Cobbs Creek Greenway.

In the future, there may be greenway projects that municipalities wish to pursue along tributaries that were not designated as greenways. Though these areas are not highlighted featured in this plan, it does not necessarily mean that they cannot be become viable greenways or that they are not significant to the local community.

NEWTOWN SEGMENT PROFILE (Segment #1)

Municipalities

Newtown Township
Radnor Township


Pedestrian bridge across Darby Creek at Paper Mill House, Newtown Township

Greenway Course and Key Features

This segment's study area contains Darby Creek and Saw Mill Run in Newtown Township (with the Newtown Township border as the segment boundary). It also contains the Foxes Run Greenway, which extends into Radnor Township along the former Newtown Square Branch Rail Line, now owned by PECO/Exelon. The Marple Township boundary serves as the southern end of the segment.

Major hubs are the Aronimink Golf Club, Waterloo Mills Preserve, Interior French Road, Veterans Memorial Park, and St. Albans Swim Club.

Segment Area Overview

The Waterloo Mills Preserve at the top of the watershed, located in both Easttown Township, Chester County and Radnor Township, Delaware County. The preserve, managed by the Brandywine Conservancy, contains passive recreational trails which are open to Conservancy members or by permission. The historic Paper Mill House and grounds, owned by Newtown Township, are south of the preserve across St. David's Road. Southeast of the Paper Mill House, Darby Creek is a conservation greenway on private residential land, leading to the Willows and Skunk Hollow Parks in the Radnor Segment. Paper Mill Road is a low-traffic street that could be a road-based greenway for hikers and bicyclists to follow Darby Creek.

A conservation greenway along Julip Run connects the St. David's Episcopal Church to The Willows. Thomas Run, another conservation greenway, flows through Aronimink Golf Club, connecting to the Willows.

Foxes Run Greenway
While participating in the Delaware County Open Space Mapping Program in 2004, Newtown Township proposed recreational trail connections along Goshen Road, Bishop Hollow Road, and Newtown Street Road (Route 252). Located at the study area boundary with the Crum Creek watershed, the historic Square Tavern and its surrounding open space (owned by the SAP Corporation), serves as an important conservation hub. The greenspace connection greenway that links this hub to Darby Creek begins on the east side of Newtown Street Road (Route 252) where Foxes Run and the former Newtown Square Branch Line railroad right-of-way parallel each other. The Foxes Run greenway, which utilizes the former railroad right-of-way, connects two Newtown Township parks

with the St. Albans Swim Club. It crosses into Radnor Township at Newtown's Hidden Springs open space. The right-of-way runs through residential areas in the southwest corner of Radnor Township, turning away from the stream and heading southeast into Marple Township. There are several roads near the creek and right-of-way which could also serve as access spokes.

Saw Mill Run Greenway

Saw Mill Run, another tributary of Darby Creek, begins in Radnor Township, although most of its length is in Newtown Township. It connects the Interior French Road tract to Earle's Lake via open space located in the Greene Countrie Village condominium community. The Township owns an open space tract at Greene Countrie Drive.

Opportunities

1. The former Newtown Square Branch rail right-of-way, which parallels Foxes Run for some of its length, is part of the County's greenway network and could conceivably be converted into a trail that would connect Greer Park, St. Albans Swim Club, Newtown Township Veterans Memorial Park, and Hidden Springs. The Newtown Square Branch right-of-way connects to Darby Creek at the Haverford Reserve.

2. The Foxes Run greenway provides an opportunity to make a greenway trail connection between the Darby Creek and Crum Creek watersheds at the SAP corporate campus and the proposed Ashford development site. In 2007, a mixed-use development called the "Newtown Town Center – Ellis Preserve" was proposed at the northwest corner of Route 252 (Newtown Street Road) and Route 3 (West Chester Pike). If a trail were to be developed at the Ellis Preserve, it could connect to a Foxes Run trail via a Newtown Street Road crossing at Winding Way.

3. The latest site plans proposal for the Ashford and Ellis Preserve developments include public trails at Route 252. If Newtown Township approves these plans, there could potentially be public off-road public trails following Route 252 from the Newtown/Edgmont Little League Fields all the way to the Episcopal Academy (approximately 3.5 miles).

4. Whether or not a trail is developed for the Foxes Run greenway, the parks and rail right-of-way could serve as a partial recreation greenway with adjacent conservation greenways.

5. Newtown Township could partner with Greene Countrie Village to preserve a Saw Mill Run greenway connection from the Interior French Road tract to the Greene Countrie Road Tract. Newtown and Radnor Townships could prepare a Saw Mill Run Greenway master plan that explores the feasibility of linking the greenway to Radnor's parkland and trails at Darby Creek.

6. Newtown Township could designate and facilitate road-based greenways along Newtown Street Road (Route 252) and St. David's Road, in order to make on-road connections to Easttown Township's planned bicycle route.

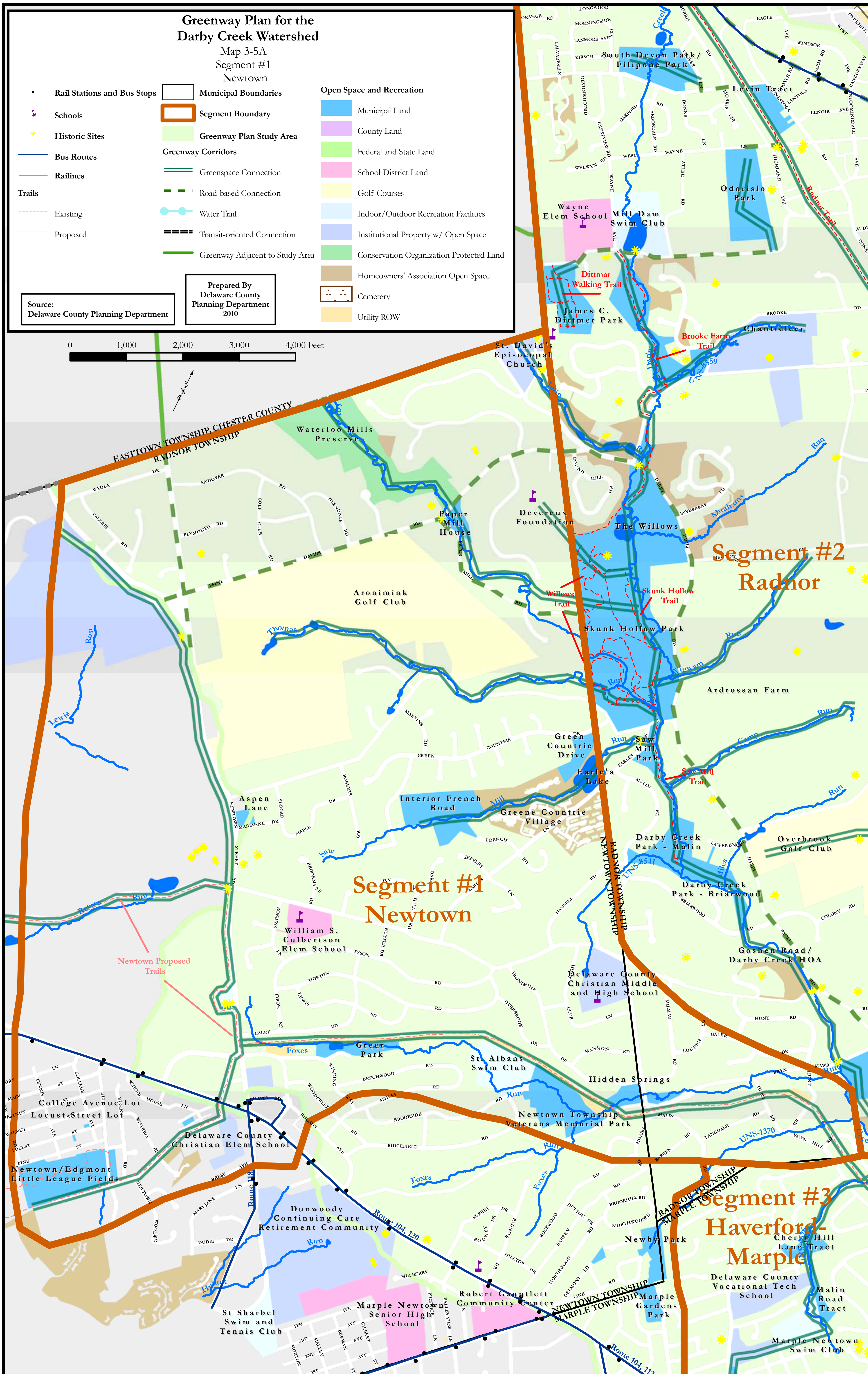
7. The Darby Creek Act 167 Stormwater Management Plan model ordinance, adopted by all of the Darby Creek municipalities, calls for installation of a riparian buffer. However, the buffer requirement only applies to new development and redevelopment. Because it is difficult for municipalities to regulate buffers on private land, municipalities should focus their attention on education of streamside landowners about the importance of maintaining riparian buffers.

Challenges

1. The portions of the Newtown Square Branch right-of-way is surrounded by private residential land, possibly making it difficult to secure for a trail. Parts of the right-of-way in the Radnor Township portion may currently be used by adjacent property owners. If so, the right-of-way may need to be re-established or the trail may need to continue on-road or end at Hidden Springs. A trail may or may not be of interest to area residents. Newtown and Radnor Townships should work with area residents as part of the greenway segment plan development process to determine the type of greenway desired.

2. Costs associated with use of the rail right-of-way for a greenway trail would need to be determined.

3. The residents of the Greene Countrie Village community should be heavily involved in the planning and development of a Saw Mill Run Greenway. The owners should be approached before the process begins, since their level of involvement will determine what type of access the greenway will have for the residents and the public.



Greenway Plan for the
Darby Creek Watershed
Map 3-5A
Segment #1
Newtown
Rail Stations and Bus Stops
Schools
Historic Sites
Bus Routes
Railines
Trails
Existing
Proposed
Municipal Boundaries
Segment Boundary
Greenway Plan Study Area
Greenway Corridors
Greenspace Connection
Road-based Connection
Water Trail
Transit-oriented Connection
Greenway Adjacent to Study Area
Open Space and Recreation
Municipal Land
County Land
Federal and State Land
School District Land
Golf Courses
Indoor/Outdoor Recreation Facilities
Institutional Property w/ Open Space
Conservation Organization Protected Land
Homeowners' Association Open Space
Cemetery
Utility ROW
Source:
Delaware County Planning Department
Prepared By
Delaware County
Planning Department
2010
0
1,000
2,000
3,000
4,000 Feet
EASTTOWN TOWNSHIP, CHESTER COUNTY
RADNOR TOWNSHIP
Waterloo Mills Preserve
Paper Mill House
Devereux Foundation
Aronimink Golf Club
South Devon Park/ Filipone Park
Levin Tract
Odorisio Park
Wayne Elem School
Mill Dam Swim Club
Dittmar Walking Trail
James C. Dittmer Park
St. David's Episcopal Church
Brooke Farm Trail
Chanticleer
Radnor Trail
The Willows
Segment #2
Radnor
Willows Trail
Skunk Hollow Trail
Skunk Hollow Park
Ardrossan Farm
Green Countrie Drive
Saw Mill Park
Earle's Lake
Saw Mill Trail
Interior French Road
Greene Countrie Village
Aspen Lane
Darby Creek Park - Malin
Overbrook Golf Club
Darby Creek Park - Briarwood
Segment #1
Newtown
William S. Culbertson Elem School
Newtown Proposed Trails
RADNOR TOWNSHIP
NEWTOWN TOWNSHIP
Goshen Road/ Darby Creek HOA
Delaware County Christian Middle and High School
Greer Park
St. Albans Swim Club
Hidden Springs
Newtown Township Veterans Memorial Park
College Avenue Lot
Locust Street Lot
Delaware County Christian Elem School
Newtown/Edgmont Little League Fields
Dunwoody Continuing Care Retirement Community
Route 118
Route 104, 120
St Sharbel Swim and Tennis Club
Marple Newtown Senior High School
Robert Gauntlett Community Center
NEWTOWN TOWNSHIP
MARPLE TOWNSHIP
RADNOR TOWNSHIP
MARPLE TOWNSHIP
Segment #3
Haverford-Marple
Newby Park
Cherry Hill Lane Tract
Marple Gardens Park
Delaware County Vocational Tech School
Malin Road Tract
Marple Newtown Swim Club
Route 104, 112, 120
Thomas Run
Lewis Run
Reeses Run
Saw Mill Run
Foxes Run
Hunter Run
Darby Creek
Julip Run
Abrahams Run
Wigwam Run
Camp Run
Miles Run
UNS-8559
UNS-8541
UNS-1370

Greenway Plan for the Darby Creek Watershed

Map 3-5B
Segment #1
Newtown

Segment Boundary

Municipal Boundaries

Greenway Corridors

- Greenspace Connection
- Road-based Connection
- Water Trail
- Transit-oriented Connection
- Greenway Adjacent to Study Area

Open Space and Recreation

- Municipal Land
- County Land
- Federal and State Land
- School District Land
- Golf Courses
- Indoor/Outdoor Recreation Facilities
- Institutional Property w/ Open Space
- Conservation Organization Protected Land
- Homeowners' Association Open Space
- Cemetery
- Utility ROW

South Devon Park/ Filipone Park
Levin Tract
Odorisio Park
Wayne Elem School
Mill Dam Swim Club
James C. Dittmer Park
Chanticleer
St. David's Episcopal Church
Segment #2 Radnor
Waterloo Mills Preserve
Paper Mill House
Devereux Foundation
The Willows
Aronimink Golf Club
Skunk Hollow Park
Ardrossan Farm
Green Countrie Drive
Saw Mill Park
Earle's Lake
Aspen Lane
Interior French Road
Greene Countrie Village
Darby Creek Park - Main
Overbrook Golf Club
Segment #1 Newtown
Darby Creek Park - Briarwood
William S. Culbertson Elem School
Goshen Road / Darby Creek HOA
Delaware County Christian Middle and High School
Greer Park
St. Albans Swim Club
Hidden Springs
College Avenue Lot
Locust Street Lot
Newtown Township Veterans Memorial Park
Delaware County Christian Elem School
Newtown/Edgmont Little League Fields
Dunwoody Continuing Care Retirement Community
Segment #3 Haverford-Marple
Newby Park
Cherry Hill Lane Tract
Delaware County Vocational Tech School
Malin Road Tract
Robert Gauntlett Community Center
Marple Gardens Park
Marple Newtown Senior High School
St. Sharbel Swim and Tennis Club

0 1,000 2,000 3,000 4,000 Feet

Source:
Delaware County Planning Department
Delaware Valley Regional Planning Commission

Prepared By
Delaware County
Planning Department
2010

RADNOR SEGMENT PROFILE (Segment #2)

Municipalities

Radnor Township


The Willows, a park in Radnor Township

Greenway Course and Key Features

This segment contains all of the Darby Creek greenway branches within Radnor Township's boundaries, except for Foxes Run, which is part of the Newtown Segment. Greenway corridors within this segment include Little Darby Creek, Darby Creek, the Radnor Trail, Ithan Creek, Meadowbrook Run, and Browns Run.

Major hubs include the Overbrook Golf Club, Radnor Valley Country Club, Villanova University, Radnor High School, Ithan Elementary School, and Radnor Township parks such as The Willows and Skunk Hollow, Dittmar Park, Orodisio Park, Encke Park, Ithan Valley Park, and Fifth Ward Park. The I-476 right-of-way is a significant feature within the Ithan Creek Greenway.

Segment Area Overview

Creek-Based Greenways in Eastern Radnor Township
An existing trail system and conservation greenway begins at the Mill Dam Club, next to Wayne Elementary School. It follows Little Darby Creek and the Brooke Farm Trail south to The Willows, a Township park. Chanticleer Garden is also connected via Township open space. To the west of Radnor's Saw Mill Park, south of Skunk Hollow Park, is a short greenspace connection greenway along Saw Mill Run. This greenway begins in Radnor Township at Darby Creek, but is mostly in the Newtown Township segment.

A conservation greenway along Julip Run connects Newtown Township's St. David's Episcopal Church to The Willows. Little Darby Creek and Darby Creek around the Willows and Skunk Hollow parks represent conservation greenways. This segment includes the important woodland stream valleys of Wigwam Run and Camp Run on the Ardrossan Farm property. South of Skunk Hollow, a greenspace connection greenway follows Darby Creek to its confluence with Ithan Creek in Haverford Township. An existing trail runs as far south as Radnor Township's Malin Road tract, but could be extended to Briarwood Road on Township property.

Radnor's Road-Based Greenways
Radnor Township has proposed road-based greenways running the length of St. David's Road, and south on Darby-Paoli Road through the Darby Creek valley. Bryn Mawr Avenue connects this greenway to the Ithan Creek valley. Another road-based greenway

proposed by the Township is Maplewood Avenue, which bridges the gap between the Radnor Trail and the other Township parks and trails to the west. Orodisio Park and South Devon Park both connect to the Radnor Trail from short sections of street. Lancaster Avenue, which serves downtown Wayne and many historic sites, is also designated as a road-based greenway.

Ithan Creek Greenway
A greenspace connection greenway, with great potential for a recreational trail, runs north-south around and between I-476 and Ithan Creek. This greenway connects Conestoga Swim Club, Radnor Valley Country Club, Ithan Elementary School, and Ithan Valley Park. The greenspace connection includes homeowners' association open space at the Cornerstone and Radnor Chase residential developments. Radnor High School is an important hub at the north end of the Ithan Creek greenspace connection greenway. It contains the tributary of Hardings Run and is also in close proximity to the Radnor Trail. Martha Brown's Woods, owned by the Radnor Township School District, is located where the creeks and the I-476/Lancaster Avenue interchange run together.

A conservation greenway traverses the Radnor Valley Country Club and the Overbrook Golf Club; it heads west to meet Darby-Paoli Road. Meadowbrook Run, a tributary of Ithan Creek, is another important conservation greenway. It passes through homeowners' association and institutional land in the southeast portion of the Township.

The Ithan Creek corridor is a recreation greenway that follows the I-476 right-of-way from the center of Radnor Township, southward to the Haverford Reserve in Haverford Township. A conservation greenway follows the Ithan Creek Valley from the Cornerstone homeowners' association land north to Encke Park.

The Radnor Trail and Remaining P & W Right-of-Way
The Radnor Trail is an important recreation greenway connecting Sugartown Road (at Lancaster Avenue near the County boundary) to Radnor Chester Road on the unused Philadelphia & Western (P&W) rail right-of-way. The trail currently connects Dittmar Park, Orodisio Park, and Lancaster Avenue, running from the County boundary at Devon, through Wayne to an area near Radnor High School. The Radnor Trail could be extended to Spring Mill Road at the edge of Villanova University. Hubs along the trail include Encke Park, the Levin tract, and the Wayne Arts Center.

Villanova University is a key greenway hub. It is not only a possible future new endpoint for the Radnor trail, but is also the major northern hub for a transit-oriented greenway that follows the Norristown High Speed Line light rail corridor.

Opportunities

1. Radnor Township adopted the Wayne Business Overlay District in 2007, which affects development along Lancaster Avenue. This is consistent with the Greenway Plan's recommendation for making Lancaster Avenue a road-based greenway.

Improving the street to be more pedestrian and bicycle friendly would help to facilitate non-motorized access to and from the downtown via other greenway routes.

2. Wayfinding signage can be installed to direct people to and from the Radnor Trail and other greenway hubs that are nearby, but not adjoining. These include South Devon Park, Orodisio Park, the Brooke Farm Trail, Radnor Middle School, and Radnor High School. A trail could be constructed through Orodisio Park to link West Wayne Avenue to Maplewood Avenue, making it even easier to get from the greenway hubs in the northwest part of the Township to the Radnor Trail.

3. It would be very beneficial for residents if a safe pedestrian route crossing Lancaster Avenue were created to connect the Radnor Trail to Radnor High School

4. With the impending development of the Ardrossan Farm property, Radnor Township should continue its efforts to preserve conservation greenways along Wigwam Run. Great care should be taken while planning for future development to buffer the stream valleys and preserve the historic resources at the property, as this area's agricultural land is a major conservation hub in the watershed.

5. The Township, with the help of other conservation organizations, is encouraged to educate streamside landowners about the importance of maintaining a riparian buffer.

6. The Township should decide what kind of road-based greenways are appropriate. The road-based greenways could be appropriately designated and marked at the Township level.

7. Radnor Township could partner with Easttown Township to make South Valley Forge Road a designated bikeway, linking both Townships' bicycle networks.

8. Development of a recreational trail could be pursued along Ithan Creek. This trail could be built in the I-476 right-of-way, implementing the Blue Route Bikeway Plan.

9. The Radnor Trail could be extended to Villanova University along the rail right-of-way.

10. Radnor Township could partner with Lower Merion Township to develop bicycle routes around and across their shared boundaries.

11. There is a potential for partnering with Haverford and Marple Townships to develop trail access to the new recreational amenities at the Haverford Reserve.

12. The Darby Creek Act 167 Stormwater Management Plan model ordinance, adopted by all of the Darby Creek municipalities, calls for installation of a riparian buffer. However, the buffer requirement only applies to new development and redevelopment. Because it is difficult for municipalities to regulate buffers on private

land, municipalities should focus their attention on education of streamside landowners about the importance of maintaining riparian buffers.

Challenges

1. Both the Radnor Chase and Cornerstone homeowners' associations own common open space land along Ithan Creek. The Township would need to partner with the homeowners' associations for any kind of a through-trail along Ithan Creek leading to the Haverford Reserve recreation area. In the past the Radnor Chase Homeowners' Association expressed interest in an internal trail system, but was opposed to one that connected to a larger greenway.

2. Obtaining the rights to more of the P&W right-of-way for the purposes of extending the Radnor Trail could be expensive, difficult, and time consuming.

Greenway Plan for the Darby Creek Watershed

Map 3-6A
Segment #2
Radnor

0 1,000 2,000 3,000 4,000 Feet

Rail Stations and Bus Stops
Schools
Historic Sites
Bus Routes
Railines

Trails
Existing
Proposed

Municipal Boundaries
Segment Boundary
Greenway Plan Study Area

Greenway Corridors
Greenspace Connection
Road-based Connection
Water Trail
Transit-oriented Connection
Greenway Adjacent to Study Area

Open Space and Recreation
Municipal Land
County Land
Federal and State Land
School District Land
Golf Courses
Indoor/Outdoor Recreation Facilities
Institutional Property w/ Open Space
Conservation Organization Protected Land
Homeowners' Association Open Space
Cemetery
Utility ROW

Source:
Delaware County Planning Department

Prepared By
Delaware County
Planning Department
2010

TREDYFFRIN TOWNSHIP, CHESTER COUNTY
RADNOR TOWNSHIP

Segment #2
Radnor

Segment #3
Haverford-Marple

Segment #4
Cobbs Creek North

Cabrini College
Valley Forge Military Academy
North Wayne Field/ Mariale Park
Cowan Field
Fenimore Woods
Eastern College
South Devon Park/ Filipone Park
Levin Tract
Route 105
Radnor Trail
Wayne Elem School
Mill Dam Swim Club
Odorisio Park
Radnor Middle School
R5 Regional Rail
Harford Park
Radnor Nature Park
Radnor Elem School
Radnor Memorial Park
Villanova University
Dittmar Walking Trail
James C. Dittmar Park
Brooke Farm Trail
Chanticleer
Archbishop Carroll High School
Encke Park
John Cappelli Golf Range
Radnor High School
Radnor Racquet Club
Route 123
Hardings Run
Martha Brown Woods
Devereux Foundation
The Willows
Willows Trail
Skunk Hollow Trail
Skunk Hollow Park
Conestoga Swim Club
100 Trolley
Route 105
Ardrossan Farm
Radnor Valley Country Club
Proposed Blue Route Bikeway
Agnes Irwin School
Notre Dame DeNamur
Saw Mill Trail
Saw Mill Park
Overbrook Golf Club
Darby Creek Park - Malin
Darby Creek Park - Briarwood
Ithan Valley Park
Hilltop Prep School
Presbyterian Children's Village
Clem Macrone Park
Emlen Tunnell Park
Unkefer Park
Radnor Methodist Cemetery
Railroad Right of Way
St Edmonds Home
Ithan Valley Trail
The Woodlands II HOA
Sacred Heart Academy
Proclamation Presbyterian
St. Aloysius Academy
Delaware County Christian Middle and High School
Goshen Road/ Darby Creek HOA
Ithan Elem School
Former Newtown Square Railline
Hidden Springs
5th Ward Park
Cornerstone HOA
Radnor Chase HOA
Meadowbrook
Proposed Blue Route Bikeway
Newtown Township Memorial Park
Newby Park
Cherry Hill Lane Tract
Foxcroft Park
Highland Farms
Hooperstown Elem School
Delaware County
RADNOR TOWNSHIP
NEWTOWN TOWNSHIP
MARPLE TOWNSHIP
HAVERFORD TOWNSHIP

Greenway Plan for the Darby Creek Watershed

Map 3-6B
Segment #2
Radnor

0 1,000 2,000 3,000 4,000 Feet

Prepared By
Delaware County Planning Department
2010

Source:
Delaware County Planning Department
Delaware Valley Regional Planning Commission

Segment Boundary

Municipal Boundaries

Greenway Corridors

- Greenspace Connection
- Road-based Connection
- Water Trail
- Transit-oriented Connection
- Greenway Adjacent to Study Area

Open Space and Recreation

- Municipal Land
- County Land
- Federal and State Land
- School District Land
- Golf Courses
- Indoor/Outdoor Recreation Facilities
- Institutional Property w/ Open Space
- Conservation Organization Protected Land
- Homeowners' Association Open Space
- Cemetery
- Utility ROW

Segment #2
Radnor

Segment #3
Haverford-Marple

Segment #4
Cobbs Creek North

South Devon Park/ Filipone Park
Levin Tract
North Wayne Field/ Mariale Park
Valley Forge Military Academy
Cabrini College
Cowan Field
Fenimore Woods
Eastern College
Wayne Elem School
Mill Dam Swim Club
Qdorisio Park
Radnor Middle School
Harford Park
Radnor Nature Park
Radnor Elem School
James C. Dittmer Park
Chanticleer
Villanova University
Radnor Memorial Park
Archbishop Carroll High School
Encke Park
John Cappelli Golf Range
Radnor High School
Radnor Racquet Club
Martha Brown Woods
Devereux Foundation
The Willows
Skunk Hollow Park
Gonestoga Swim Club
Ardrossan Farm
Radnor Valley Country Club
Notre Dame DeNamur
Agnes Irwin School
Green Countrie Drive
Saw Mill Park
Overbrook Golf Club
Darby Creek Park - Malin
Darby Creek Park - Briarwood
Ithan Valley Park
Hilltop Prep School
Presbyterian Children's Village
Clem Macrone Park
Emlen Tunnell Park
Unkefer Park
Radnor Methodist Cemetery
Railroad Right of Way
St Edmonds Home
Delaware County Christian Middle and High School
Goshen Road/ Darby Creek HOA
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The Woodlands II HOA
American College
Sacred Heart Academy
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St. Aloysius Academy
Radnor Chase HOA
Cornerstone HOA
5th Ward Park
Hidden Springs
Newby Park
Cherry Hill Lane Tract
Foxcroft Park
Highland Farms
Hooperstown Elem School

HAVERFORD-MARPLE SEGMENT PROFILE (Segment #3)

Municipalities

Haverford Township
Marple Township


Darby Creek trail north of Glendale Park in Haverford Township (also a sewer right-of-way)

Greenway Course and Key Features

The main stem of this greenway corridor runs north-south along Darby Creek, serving as the boundary between Haverford and Marple Townships. The northern border of Radnor Township and the southern border of Haverford Township are the north and south boundaries of this segment. Tributary greenways include Ithan Creek, from the Cornerstones development at the Radnor Township border to its confluence with Darby Creek; the unnamed tributary which runs through the Cherry Hill Lane Tract (UNS-4626); Langford Run; the unnamed tributary at Lawrence Park (UNS-4629); and Whetstone Run.

Major hubs include the Haverford Reserve, Merion Golf Club West, Darby Creek Valley Park, Archdiocese land that contains Cardinal O'Hara High School, Glendale Park, Hilltop Park, First Ward Park, Foxcroft Park, Marple-Newtown Swim Club, Lawrence Park, Marple Veterans Memorial Park, and the Langford Road Tract. The I-476 right-of-way is a significant feature along the Darby Creek and Ithan Creek Greenways.

Segment Area Overview

Confluence of Ithan and Darby Creeks
Greenspace connection greenways follow Ithan and Darby Creeks to their confluence near the Radnor-Haverford Township boundary; the Ithan Creek Greenway extends from the Cornerstone development to Darby Creek. The Haverford Reserve property is located on Darby Creek, south of the Township boundary. The Newtown Square Branch Rail Line right-of-way intersects this area, making it a critical conservation and greenspace connection hub. Possibilities for recreation greenways and open space preservation at this location would involve both Haverford and Marple Townships, as well as private, public, and corporate landowners.

Darby Creek: Haverford and Marple Townships
This portion of the greenway begins at the confluence of Darby and Ithan Creeks, and continues southward along Darby Creek. It follows the Haverford and Marple Township boundary before the Haverford Reserve and I-476 right-of-way interesect. Plans for the Haverford Reserve call for maintaining the large expanse of natural land for passive recreation. Hiking trails will traverse the woodlands and slopes and follow two tributaries of Darby Creek.

From the south end of the Reserve to Burmont Road in Haverford, the main stem of the greenway generally follows the course of the proposed Blue Route Bikeway. The bikeway was proposed to lie within the right-of way of I-476. North of the Route 3 interchange it was planned for the Haverford side; south of the interchange, it was proposed to be on the Marple side. Haverford Township owns and maintains parkland along most of I-476/Darby Creek from the Haverford Reserve all the way to Upper Darby Township. The only gaps in public ownership are around the Route 3 interchange and at Burmont Road. South of the Route 3 interchange, Delaware County also owns a linear conservation area on the Marple side of Darby Creek. A cleared sewer easement currently serves as a dirt and gravel hiking path, with trailheads at Merry Place in Glendale Park and at a Haverford Township property off of Old West Chester Pike.

Haverford Township has mapped a proposed road-based greenway trail along the length of Glendale Road, connecting West Chester Pike and Burmont Road. This trail would be an excellent way to promote awareness of the Darby Creek valley and the sewer easement trail, drawing in passers-by who frequent the roadways at either end of Glendale Road. The Township also made a conscious effort to connect Hilltop Park to Glendale Park by acquiring open space along Hillside Avenue.

The former Newtown Square Branch right-of-way is part of the greenway network to the west of the Haverford Reserve where it parallels Darby Creek and Foxes Run. The right-of-way turns away from Foxes Run in Radnor Township, but to the south, it parallels Darby Creek (Marple/Haverford municipal boundary) in its Marple Township section.

South of the Haverford Reserve, an unnamed tributary stream connects the main stem of the greenway to Merion Golf Club West. This is a conservation greenway only, as the both the golf club and the land around the stream are privately owned.

Marple Township

The Archdiocese of Philadelphia land containing Cardinal O'Hara high School and the Saints Peter and Paul Cemetery is one of the largest expanses of open space in the watershed. The Township has proposed trails (currently existing as desire paths) to partly follow Whetstone Run and a tributary stream through the dense woods. Use of the property for trails has not yet been negotiated with the Archdiocese. The Delaware County Transfer Station property in Marple is a potential important greenway hub which contains open space acting as a woodland stream buffer.

North Broomall Greenway

An unnamed tributary of Darby Creek (UNS-4626) that begins south of the Marple-Newtown Swim Club, and flowing to the former Newtown Square Branch right-of-way constitutes an important greenspace connection greenway in Marple Township. The lower portion of this greenway is comprised of a contiguous string of Township open spaces, the First Ward Park, Malin Road Tract, Marple-Newtown Swim Club, grounds of the Delaware County Vocational Technical School, and the Cherry Hill Lane Tract.

Langford Run Greenway

This greenway lies within a large wooded open space around Langford Run, and contains a few tributary mini-corridors extending in different directions. Marple Associates owns approximately 74 acres of woodlands and cleared open spaces surrounding a section of Langford Run near the West Chester Pike/I-476 interchange. Township land branches off from the stream valley area. These corridors include Marple Township's Langford Road Tract, New Ardmore Park (the most upstream portion of connected open space on Langford Run), Veterans Memorial Park, and the Lawrence Park Swim Club.

Lawrence Park Greenway

The Lawrence Park greenway follows an unnamed tributary (UNS-4629) from the Loomis Elementary School property, through Township parkland called Lawrence Park, to Darby Creek. This greenspace connection greenway ends on the County-owned Marple Conservation Area after crossing under I-476.

Connections to Springfield and Drexel Hill

Pilgrim Park, located along Darby Creek contains a cleared sewer right-of-way. This flat, wide, and sometimes muddy, area is currently being utilized as a dirt hiking path. Pilgrim Park, parts of which are owned by Haverford and Upper Darby Townships, is undeveloped woodland. The land on the west side of the stream, closest to Burmont Road, is privately owned industrial property. For more information on the greenway connections between Springfield and Marple Townships, refer to the Greenway Connections at the Study Area Boundary section of this plan.

Opportunities

1. Continued care should be taken during the design, development, and maintenance of the Haverford Reserve recreational area in order to ensure that its stream valley greenways and open gateways (future connections to the site) are preserved.

2. Many people already use the cleared sewer authority right-of-way along much of Haverford Township's length of Darby Creek as a recreational trail. Between the Haverford Reserve (former Haverford State Hospital site) and the Upper Darby Township line, much of the right-of-way is on Township parkland. The municipalities have an opportunity to market the trail using wayfinding signage on the nearby roads as well as at the trailheads. For example, there could be a sign at West Chester Pike and Glendale Road pointing the way to Merry Place at Glendale Park that would also contain the words "Darby Creek Stream Valley Trail."

3. Haverford Township mapped Glendale Road as a possible road-based trail. The Township should continue to examine this idea to determine just how much of the road is feasible for a trail and what kind of trail it could be. A main objective for a Glendale Road trail or bikeway would be to connect other neighborhoods to the Darby Creek Valley from West Chester Pike.

4. A trail could follow the planned route of the Blue Route Bikeway north of the Delaware County Transfer Station in Marple Township. A new feasibility study for this route could become part of a greenway segment plan. The Transfer Station land is an alternative route for a section of the Blue Route Bikeway if there is not enough room in the highway right-of-way.

5. Since trail possibilities exist on both sides of Darby Creek, it would be ideal for Haverford and Marple Townships to coordinate planning. If new or existing trail stream crossings are found to be feasible, there would be an opportunity for a loop trail on both sides of the stream.

6. The former Newtown Square Branch right-of-way to the west of the Haverford Reserve to the Newtown Township boundary is part of the greenway network suggested for this segment. It could provide a connection to Marple Township's Foxcroft Park. It also could connect to the right-of-way in the Newtown Segment, linking it to Newtown Street Road (Route 252) to Hidden Springs, Newtown Township Veterans Memorial Park, St. Albans Swim Club, and Greer Park. Marple and Radnor Townships should coordinate their efforts when planning the greenway at their boundary.

7. The Darby Creek Act 167 Stormwater Management Plan model ordinance, adopted by all of the Darby Creek municipalities, calls for installation of a riparian buffer. However, the buffer requirement only applies to new development and redevelopment. Because it is difficult for municipalities to regulate buffers on private land, municipalities should focus their attention on education of streamside landowners about the importance of maintaining riparian buffers.

8. With the existence of continuous connected open space along Langford Run, there is an opportunity to create a natural stream buffer and a long recreational trail. If public access across the Marple Associates open space property can be obtained, the many parcels of Marple Township parkland in this tributary greenway could be connected and managed as one park with one master plan.

9. There are linked open spaces along the unnamed tributary of Darby Creek (UNS-4626) in the northeast section of Marple Township. They should be examined for passive recreational trail possibilities as well as stream valley stewardship activities.

10. Lawrence Park in Marple Township should be managed as a greenway with a riparian buffer. There is an opportunity to create a recreational trail connecting Loomis Elementary School to any linear trail along Darby Creek and I-476. The tributary should be officially named (perhaps as "Lawrence Run").

11. The sewer right-of-way in Pilgrim Park presents an opportunity for trail development. There is currently a path maintained only by the sewer authority. It is already informally used for recreation, but could be safer (better policed, more accessible) if it were to become an official trail. Upper Darby and Haverford Townships should

work together on a master plan or feasibility study for the park. The study could be an implementation action of the greenway segment plans.

12. Marple Township should partner with the Archdiocese of Philadelphia to conserve and permanently protect the open space around Cardinal O'Hara High School. This wooded open space has great potential as an ecological education area and for passive recreation.

Challenges

1. Haverford Township officials have expressed possible interest in developing a trail that connects Merry Place to the Haverford Reserve. To make this more feasible, the Township should consider acquiring two tax-delinquent parcels south of Marple Road at the I-476 right-of-way. There are also other gaps to overcome at Marple Road and the West Chester Pike interchange.

2. There is another small gap in Haverford's Township-owned land along the Darby Creek corridor near the south end of Glendale Road. A few private residential properties lie at Burmont Road between the parkland tracts. Any continuous trail would need to go on-road around these properties.

3. The area near the confluence of Ithan Creek and Darby Creek in Haverford and Marple Townships is a key area for securing a greenspace connection greenway. However, private ownership of some of the adjacent to the open space land poses a challenge for a trail in this area.

4. Portions of the former Newtown Square Branch right-of-way in Marple Township are surrounded by private residential land and may be difficult to secure for a trail. The right-of-way needs to be surveyed to see if it is still clear or if neighboring property owners has overtaken parts of it.

5. A land survey will be needed to determine if the I-476 right-of-way is wide enough to accommodate a trail in the Lawrence Park section of Marple Township. Nearby homeowners should be brought into the planning process early so that any needs or issues that they may have regarding a trail can be addressed.

Segment #3
Haverford-Marple

Segment #5
Naylors Run

Segment #7
Springfield & Drexel Hill

Greenway Plan for the Darby Creek Watershed

Map 3-7A
Segment #3
Haverford-Marple

- Rail Stations and Bus Stops
- Schools
- Historic Sites
- Bus Routes
- Rail Lines

Trails
- Existing
- Proposed

- Municipal Boundaries
- Segment Boundary
- Greenway Plan Study Area

Porposed Greenway Corridors
- Greenspace Connection
- Road-based Greenway
- Water Trail
- Transit-oriented Greenway
- Greenway Adjacent to Study Area

Open Space and Recreation
- Municipal Land
- County Land
- Federal and State Land
- School District Land
- Golf Courses
- Indoor/Outdoor Recreation Facilities
- Institutional Property w/ Open Space
- Conservation Organization Protected Land
- Homeowners' Association Open Space
- Cemetery
- Utility ROW

Source:
Delaware County Planning Department

Prepared By
Delaware County
Planning Department
2010

0 1,000 2,000 3,000 4,000 Feet

Segment #3
Haverford-Marple
Segment #5
Naylors Run
Segment #7
Springfield & Drexel Hill
Newby Park
Robert Gauntlett Community Center
Marple Gardens Park
Delaware County Vocational Tech School
Cherry Hill Lane Tract
Foxcroft Park
Malin Road Tract
Marple Newtown Swim Club
First Ward Park
Malin Road Tot Lot
Marple Township Little League
Glenwood Cemetery
Haverford State Hospital
The Quadrangle
Anthony Avenue Tract
Merion Golf Club West
Peace Tract
Marple Township Building
Charles H. Russell Elem School
New Ardmore Park
Gamma Swim Club
Lawrence Park Swim Club
Langford Road Tract
Darby Creek Valley Park
Veterans Memorial Park
Hilltop Swimming Club
Foster Tract
Lynnewood Park
Lawrence Road Park
Paddock Farms Park
Lynnewood Elem School
Donna Circle Tract
Governor Sprout Apartments
Lawrence Park
Wilmer F. Loomis Elem School
Darby Creek Valley Park
Westgate Hills Park
Conservation Area
Drexel Swim Club
Genthert Field
Odd Fellows Cemetery
Cardinal O'Hara High School
Sussex Fitness Center
Glendale Park
Manoa Elem School
Llanerch Country Club
Hilltop Park
Thompson Nature Park
Delaware County Trash Transfer Station # 3
Darby Creek Valley Park/ Pilgrim Park
Doe Run Park
Rolling Green Golf Club
Darby Creek Valley Park/ Pilgrim Park
Aronimink Swim Club
Dermond Circle
St. Dorothy's Church
Rolling Green Park
Collenbrook Farm
Northminister Presbyterian Church
Idle Hours Tennis Club
Halderman Field
Coventry Woods HOA
Springfield Swim Club
Veterans Memorial Park
Drexelbrook Open Space
Indian Rock Park
Walsh Park
Scenic Hills Elem School
Addingham
Garrettford Elem School
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Prepared By
Delaware County
Planning Department
2010
Source:
Delaware County Planning Department
Delaware Valley Regional Planning Commission
Greenway Plan for the
Darby Creek Watershed
Map 3-7B
Segment #3
Haverford-Marple
Segment Boundary
Municipal Boundaries
Greenway Corridors
Greenspace Connection
Road-based Connection
Water Trail
Transit-oriented Connection
Greenway Adjacent to Study Area
Open Space and Recreation
Municipal Land
County Land
Federal and State Land
School District Land
Golf Courses
Indoor/Outdoor Recreation Facilities
Institutional Property w/ Open Space
Conservation Organization Protected Land
Homeowners' Association Open Space
Cemetery
Utility ROW

COBBS CREEK NORTH SEGMENT PROFILE (Segment #4)

Municipalities

Haverford Township
Millbourne Borough
Upper Darby Township


SEPTA Route 103 busway running between East and West Hathaway Lane in Haverford Township

Greenway Course and Key Features

This segment contains the Cobbs Creek greenway in Haverford and Upper Darby Townships, with the southern boundary of the segment at Upper Darby's boundary with Yeadon at the Fernwood Cemetery. Darby Road is a potential road-based spoke in Haverford Township. This segment also includes the Cobbs Creek valley in Millbourne Borough. The northern end follows SEPTA's Norristown High Speed Line (formerly Route 100 line) in Haverford. Major hubs include Haverford College, the Grange Estate, Merwood Park, Powder Mill Valley Park, and Cobbs Creek Park.

Segment Area Overview

The Norristown High Speed Line runs through Haverford and Upper Darby sections of the Cobbs Creek stream valley as a transit-oriented greenway. Many of the greenway hubs have an adjacent rail station. Haverford Road, a main north-south arterial, also parallels the stream and the High Speed Line. Karakung Drive splits off of Haverford Road and closely follows Cobbs Creek.

Cobbs Creek Headwaters
The Merion Golf Club adjoins Haverford College, and it contains Cobbs Creek and one of its tributaries. The college's arboretum contains a walking trail around its perimeter, called the Haverford College Trail. Eldwell Field Park connects to the south side of the college. The Township's Merion Golf Manor and Merwood Park are the next public lands on the creek south of the Golf Club. The some sections of the stream are channelized. Merwood Park is next to the Ardmore Junction High Speed Line station and on the Route 103 bus line where a potential recreation greenway crosses the Cobbs Creek greenway.

SEPTA Rights-of-Way and Millbourne Borough
The SEPTA owns a bus right-of-way, or "busway," in Haverford Township. The busway is part of the SEPTA 103 Bus Route and appears as an asphalt road with lawn on either side, paralleling Hathaway Lane. The 103 Route originates at 69th Street Terminal, makes its way to the busway from Darby Road, and then exits the County at County Line Road into the Ardmore section of Lower Merion Township. This Ardmore section includes shopping destinations on Lancaster Avenue. Locals already use the busway for foot and bicycle travel and for recreation, since bus traffic is very low.

SEPTA owns and maintains a number of rights-of-way that the County recommends be designated as greenways. Most of these are active rail lines. Cobbs Creek surrounds the northern and western sides of Millbourne Borough, including the former Sears site, which is now owned by a private development company. The right-of-way for SEPTA's Market-Frankford elevated rail line runs alongside the Sears site before entering west Philadelphia. The northern side of the Sears site is bounded by a curve in Cobbs Creek. SEPTA owns a vacant right-of-way located next to the Market-Frankford line, which connects 69th Street Terminal to Cobbs Creek Park.

In addition to being a possible future new terminus for the Radnor Trail, Villanova University is also the major northern hub for a transit-oriented greenway that follows the Norristown High Speed Line. In Haverford Township, the High Speed Line generally follows the Cobbs Creek stream valley. There is a combination of the greenspace connection and transit-oriented greenway types at this location.

Powder Mill Valley
Except when it runs through or alongside parkland, the spoke of this conservation greenway is comprised of residential land and the Norristown High Speed Line right-of-way. The next hubs south of Merwood Park are Karakung Swim Club, the Gest Tract, and the Suburban Jewish Community Center. Along Karakung Drive, the creek, and the High Speed Line all run through Haverford's parkland in the Powder Mill Valley (Powder Mill Park, the Cadwalader Tract, the Finelli Tract, and Beechwood Park). The Lawrence Cabin and Nitre Hall historic sites are located in this parkland. Beginning in 2007, Haverford Township closed Karakung Drive to vehicular traffic on 24 Sundays from May to November (11 a.m. to 5 p.m.), thus facilitating its use as a pedestrian and bicycle-only recreation greenway.

Cobbs Creek Park in Haverford Township
South of the Powder Mill Valley, Cobbs Creek runs through the portion of the City of Philadelphia's Cobbs Creek Park contained in Haverford Township. This parkland consists of woodland in its natural state and dirt paths. To the east, Farwood Tot Lot is located in the park near the creek. Haverford Township's Grange Field and the Grange Estate historic site are located on the other side of the creek and rail right-of-way. The properties contain woodlands, hiking paths, athletic fields, and historic buildings.

Cobbs Creek Stream Valley in Upper Darby Township
Located south of Township Line Road in Upper Darby is Cobbs Creek Park. The creek is the County boundary at this location. The City of Philadelphia owns parkland on both sides of the creek. Parkland on the Upper Darby side is narrow, with its western edge bounded by the SEPTA Route 100 rail line. On the west side of that rail line is a golf club owned and operated by PECO/Exelon. The area downstream from Cobbs Creek Park to the Millbourne Borough boundary is privately owned industrial land that is actually part of the SEPTA 69th Street Terminal. It is paved up to the edge of the stream. Land on the Philadelphia side of the creek is undeveloped open space in Cobbs Creek Park.)

South of West Chester Pike/Market Street, Cobbs Creek Park is on both sides of the creek, constituting a conservation greenway. At present, the only park trails are located on the Philadelphia side of the creek. A small gap in the parkland along the creek exists around Marshall Road and the Friends Southwest Burial Ground. A former rail right-of-way runs through Cobbs Creek Park from Market Street to the Naylors Run greenway. There are eight narrow, but deep, residential properties that abut the creek off of Briarcliff Road. They appear to have a greenspace buffer at present time. The Fernwood Cemetery extends south to Baltimore Avenue where a small commercial property abuts Cobbs Creek.

Opportunities

1. Municipalities and DCVA could partner with SEPTA to promote usage of the Norristown High Speed Line for access to the Cobbs Creek greenway. An option could be reduced fares or a special pass for traveling from point to point within the greenway during specified time periods.

2. Haverford Township could partner with Lower Merion Township to develop bicycle routes around and across their common boundaries, bringing people to and from the Cobbs Creek valley. The SEPTA Route 103 busway and Manoa Road are two such boundary crossings.

3. The SEPTA busway in Haverford Township, which is part of the SEPTA 103 bus route, could double as a recreation greenway trail linking the Oakmont neighborhood to the County line. (Lower Merion Township could continue the bike route to Ardmore.) Signage, striping, and other improvements may need to be made to make the route safer.

4. It may be possible to develop a bicycle trail through Millbourne Borough on SEPTA's vacant right-of-way located next to the Market-Frankford Line. The trail would enter the 69th Street Terminal property. A bicycle rack could be provided for use by commuters using the terminal.

5. There is an important greenway gateway area located where Millbourne, Upper Darby, and the City of Philadelphia meet at Market Street. It has the potential to link the 69th Street downtown area of Upper Darby, the Naylors Run greenway, and the Cobbs Creek bikeway. Landscaping, signage, and other improvements could provide better visibility and access to these greenways.

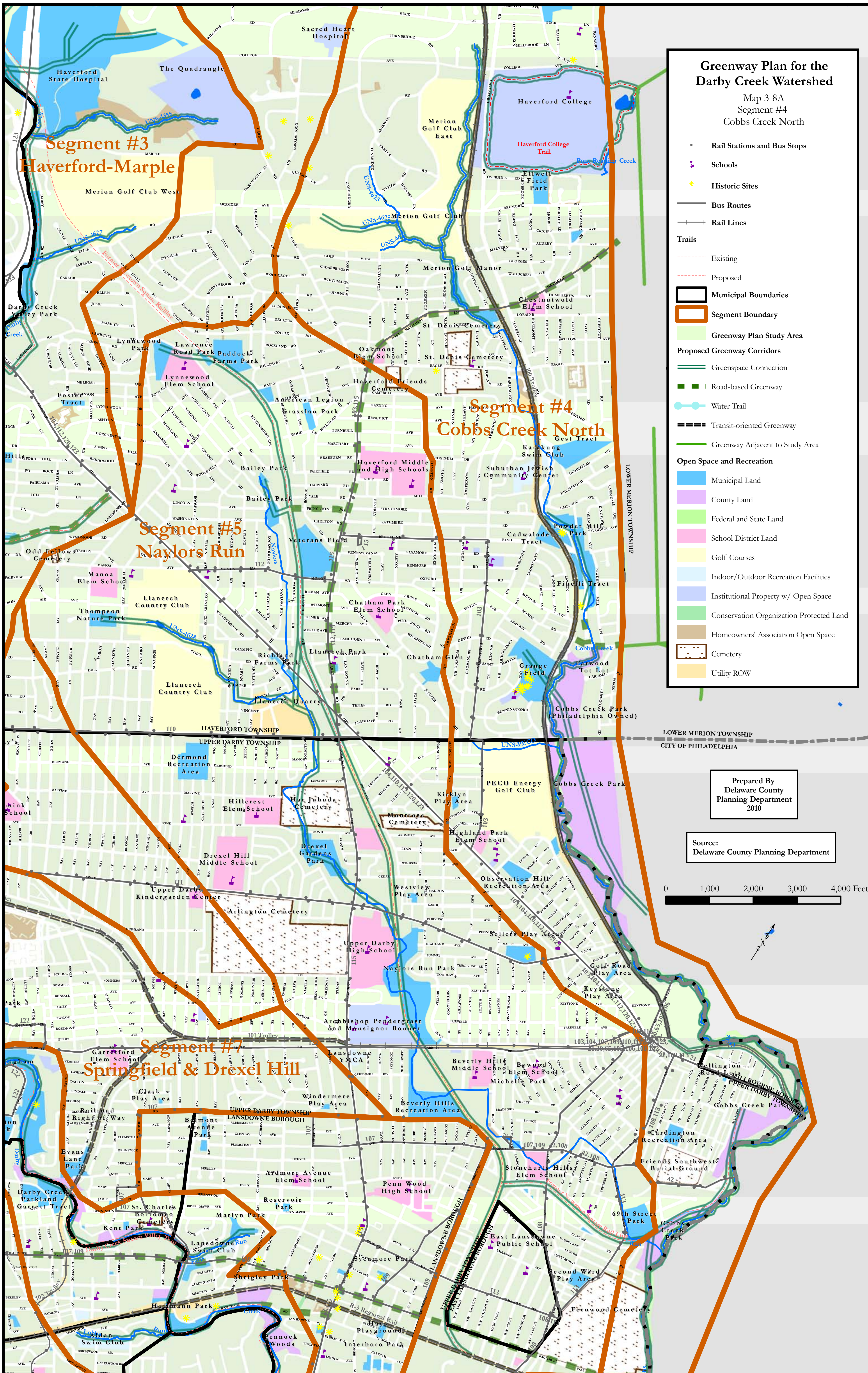
6. The municipalities should educate streamside landowners about the importance of maintaining riparian buffers installed with native vegetation.

7. Upper Darby Township could partner with the Fairmount Park Commission to develop gateways to Cobbs Creek Park trails at Township Line Road, North State Road, Market Street, and Marshall Road.

Challenges

1. Residents may have taken over some of the former rail right-of-way between Stonehurst Hills Elementary School and Cobbs Creek Park, possibly precuding its use as a trail.

2. The former Sears site in Millbourne Borough, a significant gap in the conservation greenway, is good candidate for brownfields remediation, incorporating environmental mitigation at Cobbs Creek.


Greenway Plan for the
Darby Creek Watershed
Map 3-8A
Segment #4
Cobbs Creek North
Rail Stations and Bus Stops
Schools
Historic Sites
Bus Routes
Rail Lines
Trails
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Proposed
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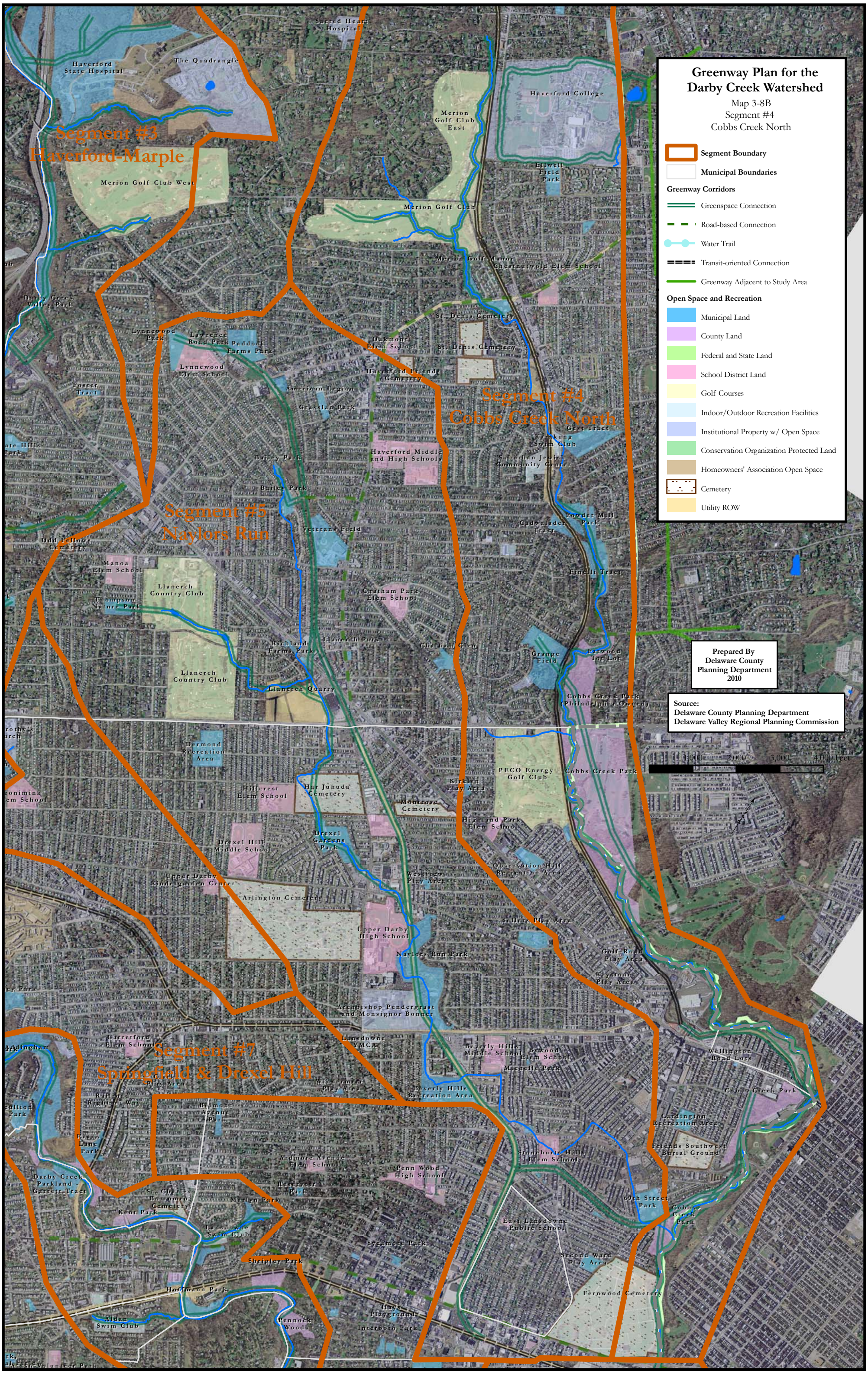
Sacred Heart Hospital
Merion Golf Club East
Merion Golf Club West
Merion Golf Club
Haverford College
Haverford College Trail
Pont Reading Creek
Ellwell Field Park
Merion Golf Manor
Chestnutwold Elem School
St. Denis Cemetery
Oakmont Elem School
Haverford Friends Cemetery
American Legion
Grasslan Park
Haverford Middle and High Schools
Karakung Swim Club
Gest Tract
Suburban Jewish Community Center
Darby Creek Valley Park
Lynnewood Park
Lawrence Road Park
Paddock Farms Park
Lynnewood Elem School
Foster Tract
Bailey Park
Veterans Field
Powder Mill Park
Cadwalader Tract
Finelli Tract
Odd Fellows Cemetery
Manoa Elem School
Llanerch Country Club
Thompson Nature Park
Chatham Park Elem School
Llanerch Park
Richland Farms Park
Chatham Glen
Llanerch Quarry
Cobbs Creek
Grange Field
Earwood Tot Lot
Cobbs Creek Park (Philadelphia Owned)
HAVERFORD TOWNSHIP
UPPER DARBY TOWNSHIP
LOWER MERION TOWNSHIP
CITY OF PHILADELPHIA
Dermond Recreation Area
PECO Energy Golf Club
Cobbs Creek Park
Hillcrest Elem School
Har Juhuda Cemetery
Kirklyn Play Area
Montrose Cemetery
Highland Park Elem School
Drexel Hill Middle School
Drexel Gardens Park
Observation Hill Recreation Area
Westview Play Area
Upper Darby Kindergarden Center
Arlington Cemetery
Sellers Play Area
Upper Darby High School
Naylors Run Park
Golf Road Play Area
Keystone Play Area
Archbishop Pendergrast and Monsignor Bonner
Garrettford Elem School
Lansdowne YMCA
Beverly Hills Middle School
Bywood Elem School
Michelle Park
Wellington Road Lots
MILLBOURNE BOROUGH
Clark Play Area
Windermere Play Area
Beverly Hills Recreation Area
Railroad Right of Way
UPPER DARBY TOWNSHIP
LANSDOWNE BOROUGH
Belmont Avenue Park
Cardington Recreation Area
Evans Lane Park
Ardmore Avenue Elem School
Stonehurst Hills Elem School
Friends Southwest Burial Ground
Penn Wood High School
Darby Creek Parkland - Garrett Tract
St. Charles Borromeo Cemetery
Reservoir Park
Marlyn Park
69th Street Park
Kent Park
Lansdowne Swim Club
East Lansdowne Public School
Darby Creek Stream Valley Trail
Sycamore Park
Second Ward Play Area
Shrigley Park
Hoffmann Park
R-3 Regional Rail
Hays Playground
Fernwood Cemetery
Aldan Swim Club
Pennock Woods
Interboro Park
LANSDOWNE BOROUGH
EAST LANSDOWNE BOROUGH
Former Newtown Square Railline
101 Trolley
102 Trolley
100 Trolley


Greenway Plan for the Darby Creek Watershed
Map 3-8B
Segment #4
Cobbs Creek North
Segment Boundary
Municipal Boundaries
Greenway Corridors
Greenspace Connection
Road-based Connection
Water Trail
Transit-oriented Connection
Greenway Adjacent to Study Area
Open Space and Recreation
Municipal Land
County Land
Federal and State Land
School District Land
Golf Courses
Indoor/Outdoor Recreation Facilities
Institutional Property w/ Open Space
Conservation Organization Protected Land
Homeowners' Association Open Space
Cemetery
Utility ROW
Prepared By
Delaware County
Planning Department
2010
Source:
Delaware County Planning Department
Delaware Valley Regional Planning Commission
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Segment #3
Haverford-Marple
Segment #4
Cobbs Creek North
Segment #5
Naylors Run
Segment #7
Springfield & Drexel Hill
Sacred Heart Hospital
Haverford State Hospital
The Quadrangle
Haverford College
Merion Golf Club East
Merion Golf Club West
Merion Golf Club
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Darby Creek Valley Park
St. Denis Cemetery
Lynnewood Park
Lawrence Road Park
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Foster Tract
American Legion
Grasslam Park
Gest Tract
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Bailey Park
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Powder Mill Park
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St. Charles Borromeo Cemetery
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Sycamore Park
Second Ward Play Area
Shrigley Park
Hoffmann Park
Fernwood Cemetery
Hays Playground
Aldan Swim Club
Pennock Woods
Interboro Park
Aldan Volunteer Park

NAYLORS RUN SEGMENT PROFILE (Segment #5)

Municipalities

Haverford Township
Upper Darby Township

The Newtown Square Branch Rail Line former right-of-way in Upper Darby Township, looking north from an area near Emerson Avenue.

Greenway Course and Key Features

This segment contains the Naylors Run stream valley in Haverford and Upper Darby Townships. The northern end of the greenway is the abandoned rail right-of-way at Lynnewood Park in Haverford Township. Major hubs in the greenway include Upper Darby High School, Drexel Gardens Park, Bailey Park, Naylors Run Park, and Beverly Hills Recreation Area. The greenway splits in two directions at Stonehurst Hills Elementary School. One branch leads south along the abandoned rail right-of-way between Lansdowne and East Lansdowne Boroughs, ending at Baltimore Avenue. The other branch extends to Cobbs Creek Park where it connects to the Cobbs Creek North greenway segment.

Segment Area Overview

Naylors Run is a major tributary of Cobbs Creek, with its confluence with Cobbs Creek located in Cobbs Creek Park in Upper Darby Township (between the Friends Southwest Burial Ground and Fernwood Cemetery). The natural stream channel has been greatly compromised in many areas due to channelization and piping. Much of its headwaters are now piped. Naylors Run begins in area north of Bailey Park in the center of Haverford Township. Much of the stream's length runs through areas with very small private residential lots. The nearby Newtown Square Branch Rail Line right-of-way is a nearby corridor that represents a recreation greenway opportunity.

Naylors Run in Haverford Township

The upper reaches of the stream are piped, but emerge intermittently in the areas immediately north of Bailey Park. A remnant of Naylors Run is channelized along the edge of the former chewing gum factory on Eagle Road. The stream remains nearly parallel to the vacant Newtown Square Branch right-of-way, which, though not designated as a trail, shows evidence of usage as a footpath. An unnamed tributary (UNS-4628) runs from the Township's Thompson Nature Park, through the Llanerch Country Club, after which it joins Naylors Run in the Llanerch Quarry. The only existing open space areas which contain Naylors Run are Haverford Township's Richland Farms Park and Bailey Park, and the PECO/Exelon Company's Llanerch Quarry site. The remaining portions of Naylors Run in Haverford Township are located in the rear yards of many small residential properties and around or underneath commercial properties at West Chester Pike.

Naylors Run in Upper Darby Township
A short stretch of greenspace connection greenway in Upper Darby is preserved in Har Jehuda Cemetery and in Drexel Gardens Park. To the west, the cemetery also adjoins open space at Hillcrest Elementary School. The stream is then piped under the intersection of State and Lansdowne Avenues, including the Bond Shopping Center.

South of the Bond Shopping Center, the creek is flanked by Upper Darby High School. Delaware County Memorial Hospital's parking lot overlooks the stream and Naylors Run Park. The park is linear in nature, with an ample wooded riparian buffer. On the north side of Garrett Road, the Archdiocese of Philadelphia's Archbishop Prendergast and Monsignor Bonner High Schools back up to Naylors Run.

On the south side of Garrett Road, the stream runs past the Barclay Square Apartments and through the Beverly Hills Recreation Area and the Park Lane East Apartments. The stream is channelized and straight on the northern and eastern edges of Park Lane East and on the west side of the Beverly Hills Recreation Area.

The Stonehurst Hills Elementary School property contains the stream and a wide floodplain. Naylors Run goes underground immediately downstream from the school land. This built-up area does not contain any stream valley greenspace. A recreation greenway could possibly still occur on-road or in the nearby rail right-of-way. It is a gap in the conservation greenway. The piped creek runs along the edge of 69th Street Park, and emerges near its mouth in a section of Philadelphia's Cobbs Creek Park, located in Upper Darby Township.

Darby Road – West Chester Pike to Oakmont, Haverford Township
Darby Road is the main north-south route that runs through Haverford Township. It is ideal for a road-based greenway connection because of its ability to connect neighborhoods and stream valleys in the area. Nodes along this route include the Haverford High School and Middle School complex, Chatham Park Elementary School, the Skatium public ice skating facility, Veterans Field, Haverford's skateboard park, and the downtown commercial area of Oakmont. The SEPTA 103 bus runs on Darby Road for a distance, and then turns off of Darby Road in a northeasterly direction via SEPTA's own busway at Oakmont (this is described in the Cobbs Creek North Segment profile). It is also in the (highest) priority group for road improvements in the *Delaware County Bicycle Plan*. Veteran's Field connects Darby Road to the potential trail route on the former Newtown Square Branch right-of-way. Princeton Road also connects pedestrians and cyclists from Darby Road to Bailey Park and its surrounding neighborhoods.

Former Newtown Square Branch Rail Line Right-of-Way
This right-of-way is owned by PECO/Exelon. It is part of the greenway corridor that runs from Lynnewood Park in Haverford Township southward into Upper Darby Township at 69th Street Terminal. This section parallels the Naylors Run stream valley, a greenspace connection greenway. The right-of-way also has an offshoot, known as the Stonehurst Hills Railroad Spur, which runs through the narrow section of Upper Darby Township

between Lansdowne and East Lansdowne Boroughs. A recreation greenway along the spur would allow connectivity between the various hubs and neighborhoods in the Naylors Run greenway to the Baltimore Pike and SEPTA Media/Elwyn rail corridor. Both the main right-of-way and the spur are mapped as potential bicycle routes in the *Delaware County Bicycle Plan.*

There are a various reasons why the right-of-way in northwest section of Haverford Township is not included in the County's greenway network at this time. Many adjacent landowners there have very shallow rear lots, with their homes built up to the right-of-way. A greenway at this location would only be of the recreational variety (i.e., a trail) since the right-of-way is so narrow and does not contain significant greenspace to preserve. Some of the landowners have encroached onto the PECO right-of-way, placing improvements within it. As such, adjacent residents may have some concern over installing a trail at this location even though other Township residents would be in favor if it. For this reason, the right-of way is still coded as a proposed trail on Map 3-9A. Note: potential for a trail on this right-of-way was identified on the bicycle circulation map contained in the *Haverford Township Comprehensive Plan* (1988).

Opportunities

1. Darby Road in Haverford Township could be improved as a "green street" or "bicycle boulevard." Traffic calming measures and landscaping elements could make the route safer and more attractive for both cyclists and pedestrians. Bike lanes or share the road signage are also recommended. A streetscape planning initiative would be the helpful to identify where and how cyclists and pedestrians can share the road.

2. It is possible to create a continuous recreational greenway between Haverford and Upper Darby Townships by using the Newtown Square Branch right-of-way. The northernmost possible hub of a continuous stream-based recreation greenway on Naylors Run is at the Har Jehuda Cemetery in Upper Darby Township. A combination of the stream, the rail right-of-way, and road-based connections like Darby Road would allow the longest possible recreation greenway to serve the largest population and link the most hubs together.

3. In Haverford Township, there is a vacant 4.5-acre property containing Naylors Run and a vacant rail right-of-way at the end of Harvard Road near Veterans Field and Bailey Park. Preserving and opening this property for public use could connect more neighborhoods, while conserving a section of the stream.

4. Stream bank restoration, stream daylighting, and floodplain improvement are conservation activities that could help improve conditions along Naylors Run. Public education would help to conserve the greenway at private streamside properties.

5. The *Lansdowne and East Lansdowne Multi-Municipal Comprehensive Plan* recommended the use of the former rail right-of way (known as the Stonehurst Hills Railroad Spur) in Upper Darby Township as a multi-use trail connection. Upper

Darby is currently in the process of preparing a feasibility study to determine if such a connection is a possibility.

6. Upper Darby Township could partner with the owners and management of the Barclay Square Apartments and Shopping Center to implement stream and greenway conservation activities.

7. Stonehurst Hills Elementary School, Upper Darby High School, and Archbishop Prendergast and Monsignor Bonner High Schools are in close proximity to Naylors Run; therefore they have opportunities to use it as an outdoor classroom.

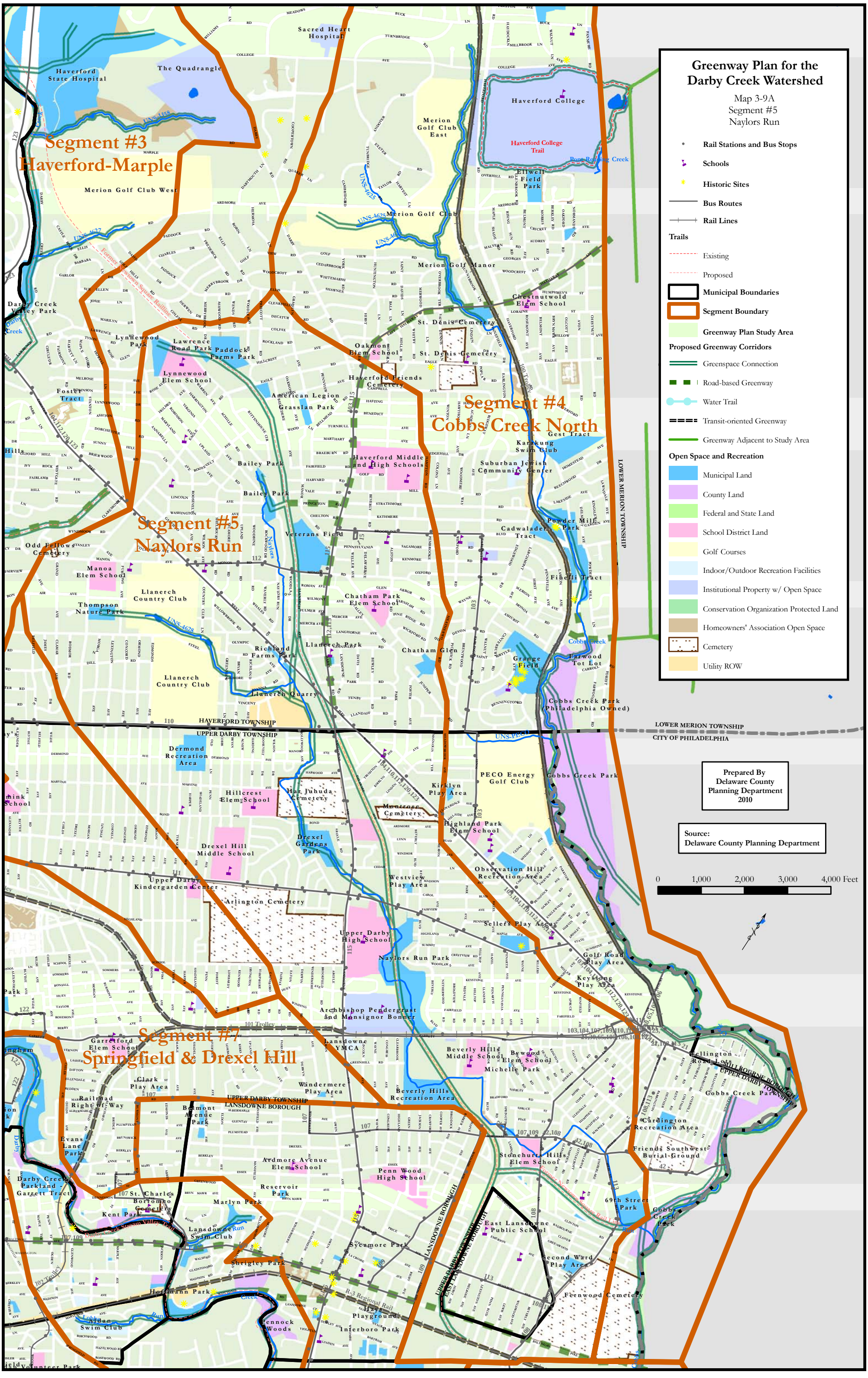
8. The municipalities should educate landowners with streamside property about the importance of maintaining riparian buffers made up of native vegetation. Even if recreational trails are not feasible, Naylors Run should be protected as a conservation greenway.

Challenges

1. There is little greenspace and road crossings are difficult in the West Chester Pike area, near the intersections with Township Line Road and Darby Road.

2. A section of Naylors Run is piped upstream of 69th Street Park in Upper Darby.

3. Most of the corridor within Haverford Township is closed to access due to private land at the stream. The former Newtown Square Branch right-of-way is probably the only way to make an off-road connection between the Upper Darby portion of the greenway and places like Lynnewood Park, Bailey Park, and Veterans Field.


Greenway Plan for the Darby Creek Watershed
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Naylors Run
Segment #3
Haverford-Marple
Segment #4
Cobbs Creek North
Segment #5
Naylors Run
Segment #7
Springfield & Drexel Hill
Rail Stations and Bus Stops
Schools
Historic Sites
Bus Routes
Rail Lines
Trails
Existing
Proposed
Municipal Boundaries
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Institutional Property w/ Open Space
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Seller's Play Area
Golf Road Play Area
Keystone Play Area
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Cobbs Creek Parkland
Cardington Recreation Area
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Reservoir Park
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Pennock Woods
Interboro Park
Hays Playground
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Cobbs Creek Stream Valley Park
Former Newtown Square Railline
R-3 Regional Rail
Cobbs Creek
Darby Creek
Naylors Run
Pond Reading Creek
UNS-1358
UNS-4627
UNS-4625
UNS-4626
UNS-4628
UNS-PECO
HAVERFORD TOWNSHIP
UPPER DARBY TOWNSHIP
LOWER MERION TOWNSHIP
CITY OF PHILADELPHIA
UPPER DARBY TOWNSHIP
LANSDOWNE BOROUGH
LANSDOWNE BOROUGH
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EAST LANSDOWNE BOROUGH
MILLBOURNE BOROUGH
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101 Trolley
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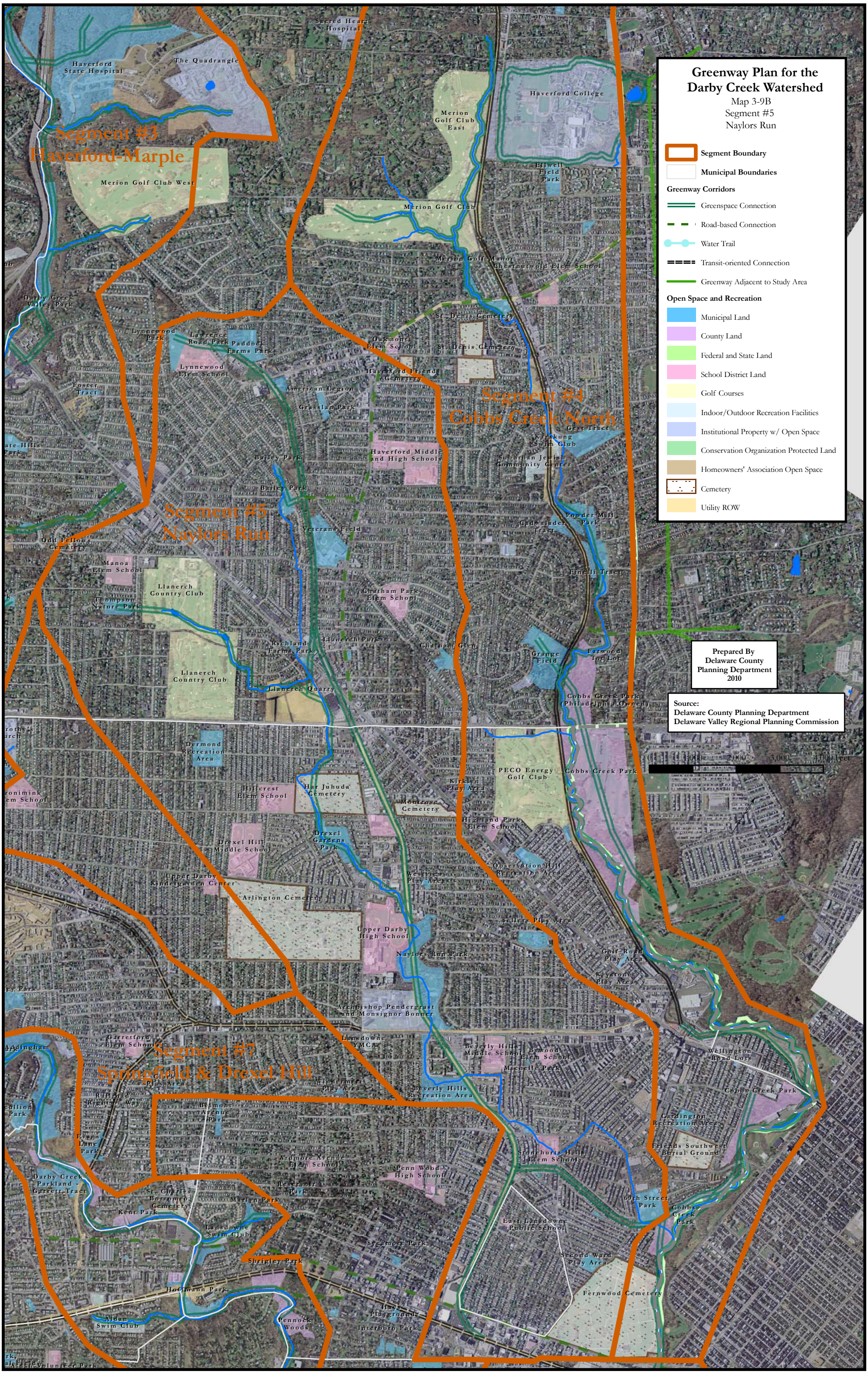
Greenway Plan for the Darby Creek Watershed
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COBBS CREEK SOUTH & COLWYN AREA SEGMENT PROFILE (Segment #6)

Municipalities

Colwyn Borough
Darby Borough
Sharon Hill Borough
Yeadon Borough


Bosacco Park along Cobbs Creek in Colwyn Borough

Greenway Course and Key Features

This segment includes parts of both the Darby Creek mainstem and the Cobbs Creek tributary, including Blunston Run from Cobbs Creek Park at the northern boundary of Yeadon Borough, southward through Darby and Colwyn Boroughs. The southern boundary of the segment is the confluence of Darby and Cobbs Creeks, located at the southern tip of Colwyn at Tribet Place Park. The Darby Creek portion of this segment begins at the southern end of Segment #8 – Darby Creek Stream Valley Park, and includes the greenway along Darby Creek from Darby Borough through Sharon Hill and Colwyn to Tribet Place Park. Major hubs include Cobbs Creek Park, Yeadon Swim Club, Bosacco Park, Bell Avenue Elementary School, and Mount Moriah and Holy Cross Cemeteries.

Segment Area Overview

Cobbs Creek Greenway in Yeadon, Darby, and Colwyn Boroughs
A major feature in this portion of the segment is Cobbs Creek Park, portions of which are in Delaware County even though they are owned by the City of Philadelphia. The park generally follows Cobbs Creek from the Upper Darby/Yeadon border to Blunston Run, serving as a greenspace connection greenway along the County-City boundary. It contains both woodland and meadow; there are no trails on the Delaware County side. Mount Moriah Cemetery separates two sections of the park in Yeadon. Both the SEPTA Media/Elwyn Rail Line and Longacre Boulevard/Whitby Avenue cross through Cobbs Creek Park and over the creek.

A large athletic complex, owned by the William Penn School District, is connected to Cobbs Creek Park's passive parkland. Below the cemetery, the park continues south to Blunston Run and the CSX freight rail line. Note: Blunston Run is an important conservation greenway, flowing through parkland, a swim club, and school land.

Between the CSX rail line and the SEPTA Wilmington/Newark Line, the Cobbs Creek stream valley in Colwyn, Darby, and Yeadon Boroughs is a conservation greenway made up of the rear lots of residential and commercial land. The trucking company at Main and Water Streets in Colwyn, which backs onto Cobbs Creek, is almost completely paved. The elevated Wilmington/Newark Line divides the commercial/industrial land use from

the park/swim club land in Colwyn's Cobbs Creek valley. This rail line could serve as an obstacle to a pedestrian connection along Cobbs Creek.

Bosacco Park, with its variety of athletic fields, has streamside access via a paved driveway. Colwyn Swim Club and the dense wild vegetation throughout Frank Burr Field serve as barriers between Bosacco Park and Tribet Place Playground at the southern tip of the Borough. Dense invasive vegetation prevents visual access to the confluence of Darby and Cobbs Creeks at Tribet Place. All of the parks along Cobbs Creek in Colwyn are completely encompassed by floodplains.

Darby Creek in Colwyn and Sharon Hill Boroughs and Darby Township
The main stem Darby Creek portion of this segment includes the stream valley located in the Boroughs of Colwyn and Sharon Hill, which is mostly private residential and industrial land. South of the Wilmington/Newark Line in Colwyn is a former industrial site that was recently sold to a commercial developer. The Henderson Group owns much of the industrial and office park land next to the creek in Sharon Hill; its buildings are situated very close to the creek. The Henderson-owned land in Sharon Hill that is directly across the creek from the Clearview Landfill site in Darby Township serves as a wide buffer of open space

Main Street, Darby Borough
Main Street in Darby is an important connector between SEPTA's Darby transportation center, the Darby Creek Stream Valley Park Trail and Philadelphia's Cobbs Creek Park Trail. This street is an important element in Darby Borough's plans for revitalization.

Darby and Colwyn Borough Border
Either Chestnut or Walnut Streets have the potential to serve as a connector between Darby and Cobbs Creeks. One of these streets could connect from the industrial area at Mill Street. The document, A *Feasibility Study for the Cobbs Creek Connector Trail*, proposed a multi-use trail that would use bridges to connect the Philadelphia side of Cobbs Creek to Bosacco Park in Colwyn. (Refer to the Proposed Connecting Trails section of the Existing Conditions Chapter.)

Opportunities

1. Main Street could be promoted and improved as a "green road" with trees, greenway wayfinding signage, and installation of stormwater management best management practices. Enhancements to Main Street would help it to become a well-used bicycle and pedestrian route connecting the proposed Darby Creek Stream Valley Park Trail in Delaware County to the Cobbs Creek Trail in Philadelphia. Since it has been suggested that Main Street might be too narrow and crowded to accommodate bicycle traffic, Walnut or Chestnut Streets could instead become the bicycle route for thru-traffic.

2. Colwyn Borough owns the entire stream bank along Cobbs Creek (parkland and swim club) from the rail line south. A trail could be developed from Bosacco Park to the

confluence of Darby and Cobbs Creeks. A public visioning process and/or a master plan could help to identify the best location for a trail.

3. The *Feasibility Study for the Cobbs Creek Connector Tail*, called for trail development with two bridges connecting Bosacco Park to a proposed trail along Cobbs Creek in Philadelphia. Colwyn Borough could enhance the park as a trail hub and partner with the City when the time comes to construct the bridges and plan the trail they would connect.

4. Management and grounds staff for the industrial parks along Darby Creek in Sharon Hill Borough should be included in a riparian buffer education outreach program. The larger section of stream buffer directly across from the Clearview Landfill is an area of particular importance due of its location within a larger buffer area on both sides of the stream.

5. The Boroughs could partner with the City's Fairmount Park Commission to develop gateways to existing and future Cobbs Creek Park trails at Longacre Boulevard and Church Lane in Yeadon Borough, and Main Street in Darby and Colwyn Boroughs.

6. The municipalities should educate landowners with streamside property about the importance of riparian buffers, preferably maintained with native vegetation. Whether or not recreational trails are feasible, Darby Creek, Cobbs Creek, and Blunston Run should be protected as conservation greenways.

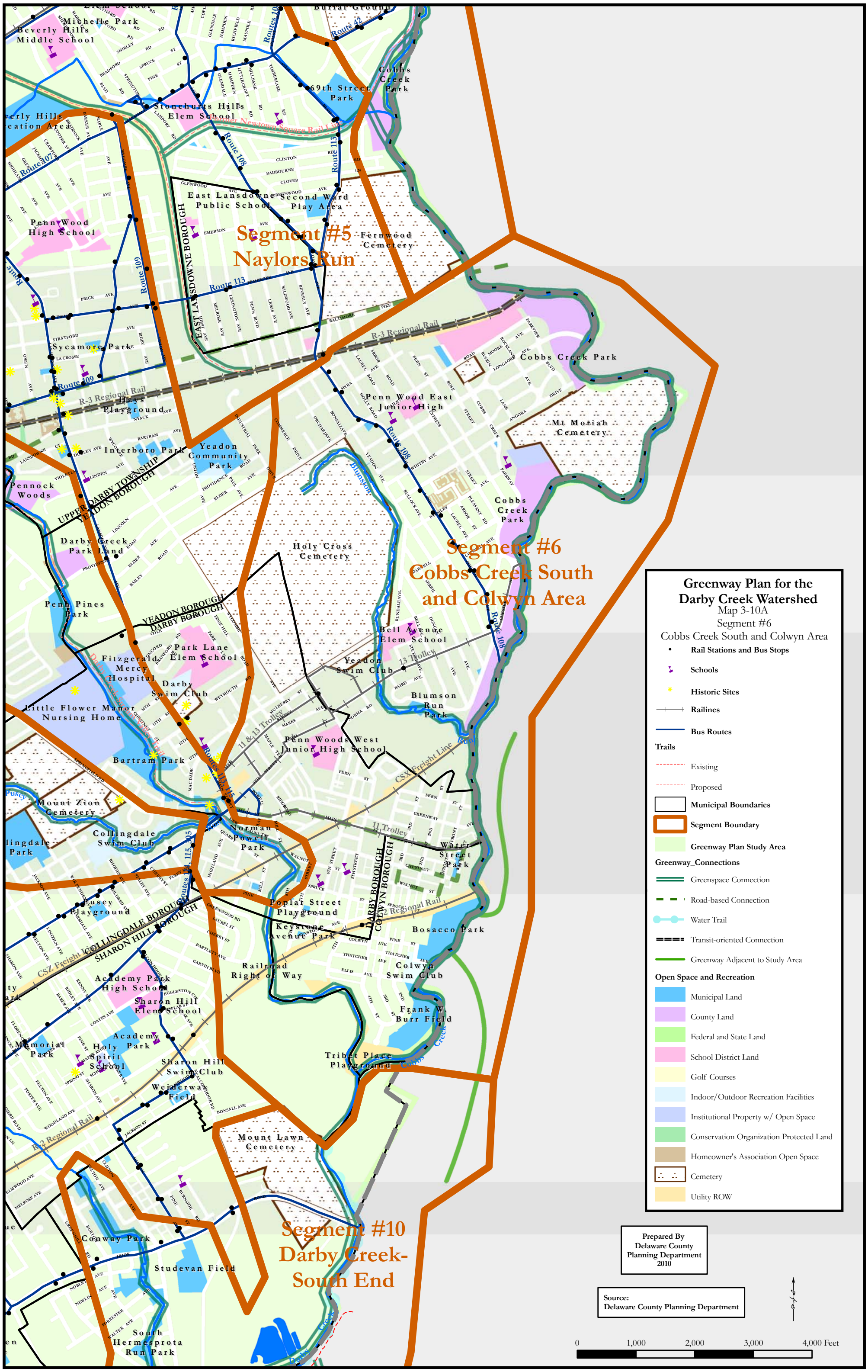
Challenges

1. The area between the two railroad tracks along Cobbs Creek in Yeadon, Darby, and Colwyn is composed of many small privately owned lots. This stretch of stream does not appear to be suitable for any trails on the Delaware County side; however, landowners could still be approached and educated about the importance of maintaining a vegetated riparian buffer.

2. The dense invasive vegetation at Frank Burr Field in Colwyn prevents access along the greenway at Cobbs Creek. A remediation and management strategy for this park would need to be developed for any proposed path or trail along the creek.

3. The Colwyn Swim Club lies between Bosacco Park and Frank W. Burr Field. An easement on the swim club would be needed to connect the two Borough properties via a trail.

4. Sharon Hill Borough's industrial parks contain open space along Darby Creek. Since the land is privately owned it would not be able to be included in the greenway without cooperation from the property owners. A partnership between the owners and the community could help to preserve the integrity of the stream valley.


Segment #5
Naylors Run
Segment #6
Cobbs Creek South
and Colwyn Area
Segment #10
Darby Creek-
South End
Greenway Plan for the
Darby Creek Watershed
Map 3-10A
Segment #6
Cobbs Creek South and Colwyn Area
Rail Stations and Bus Stops
Schools
Historic Sites
Railines
Bus Routes
Trails
Existing
Proposed
Municipal Boundaries
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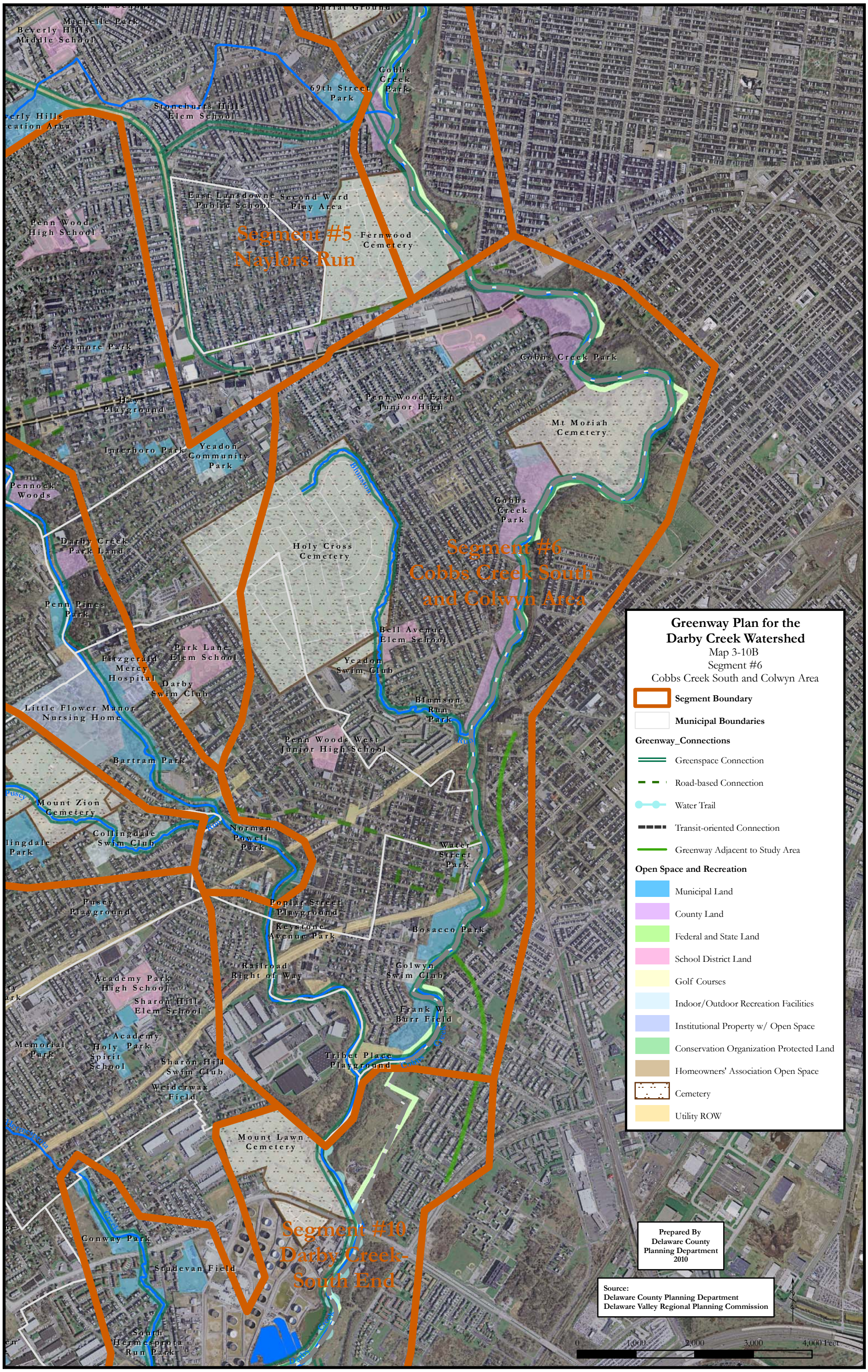
East Lansdowne Public School
Second Ward Play Area
Fernwood Cemetery
Penn Wood High School
Sycamore Park
Hays Playground
Interboro Park
Yeadon Community Park
Penn Wood East Junior High
Mt Moriah Cemetery
Pennock Woods
Darby Creek Park Land
Holy Cross Cemetery
Penn Pines Park
Park Lane Elem School
Fitzgerald Mercy Hospital
Darby Swim Club
Little Flower Manor Nursing Home
Bell Avenue Elem School
Yeadon Swim Club
Blumson Run Park
Penn Woods West Junior High School
Bartram Park
Mount Zion Cemetery
Collingdale Swim Club
Norman Powell Park
Water Street Park
Poplar Street Playground
Keystone Avenue Park
Bosacco Park
Colwyn Swim Club
Frank W. Burr Field
Academy Park High School
Sharon Hill Elem School
Academy Holy Spirit School
Memorial Park
Sharon Hill Swim Club
Weiderwax Field
Tribet Place Playground
Mount Lawn Cemetery
Conway Park
Studevan Field
South Hermesprota Run Park
Railroad Right of Way
Route 107
Route 108
Route 109
Route 113
Route 12
Routes 115
Routes 113, 115, 205
R-3 Regional Rail
R-2 Regional Rail
CSX Freight Line
CSZ Freight Line
Darby Creek Valley Trail
Blunston Run
Cobbs Creek
13 Trolley
11 & 13 Trolley
11 Trolley
EAST LANSDOWNE BOROUGH
YEADON BOROUGH
DARBY BOROUGH
UPPER DARBY TOWNSHIP
COLLINGDALE BOROUGH
SHARON HILL BOROUGH
DARBY BOROUGH
COLWYN BOROUGH


Segment #5
Naylors Run
Segment #6
Cobbs Creek South
and Colwyn Area
Segment #10
Darby Creek-
South End
Greenway Plan for the
Darby Creek Watershed
Map 3-10B
Segment #6
Cobbs Creek South and Colwyn Area
Segment Boundary
Municipal Boundaries
Greenway_Connections
Greenspace Connection
Road-based Connection
Water Trail
Transit-oriented Connection
Greenway Adjacent to Study Area
Open Space and Recreation
Municipal Land
County Land
Federal and State Land
School District Land
Golf Courses
Indoor/Outdoor Recreation Facilities
Institutional Property w/ Open Space
Conservation Organization Protected Land
Homeowners' Association Open Space
Cemetery
Utility ROW
Prepared By
Delaware County
Planning Department
2010
Source:
Delaware County Planning Department
Delaware Valley Regional Planning Commission
0
1,000
2,000
3,000
4,000 Feet
Beverly Hills
Middle School
Michelle Park
Burial Ground
Cobbs
Creek
Park
69th Street
Park
Stonehurst Hills
Elem School
East Lansdowne
Public School
Second Ward
Play Area
Penn Wood
High School
Fernwood
Cemetery
Sycamore Park
Hays
Playground
Penn Wood East
Junior High
Mt Moriah
Cemetery
Interboro Park
Yeadon
Community
Park
Pennock
Woods
Darby Creek
Park Land
Holy Cross
Cemetery
Penn Pines
Park
Bell Avenue
Elem School
Park Lane
Elem School
Fitzgerald
Mercy
Hospital
Darby
Swim Club
Yeadon
Swim Club
Blumson
Run
Park
Little Flower Manor
Nursing Home
Penn Woods West
Junior High School
Bartram Park
Mount Zion
Cemetery
Collingdale
Swim Club
Norman
Powell
Park
Water
Street
Park
Pusey
Playground
Poplar Street
Playground
Keystone
Avenue Park
Bosacco Park
Railroad
Right of Way
Golwyn
Swim Club
Academy Park
High School
Sharon Hill
Elem School
Frank W.
Burr Field
Academy
Holy
Spirit
School
Memorial
Park
Sharon Hill
Swim Club
Tribet Place
Playground
Weiderwax
Field
Mount Lawn
Cemetery
Conway Park
Studevan Field
South
Hermesprota
Run Park

SPRINGFIELD-DREXEL HILL SEGMENT PROFILE (Segment #7)


Sewer right-of-way along Darby Creek in Upper Darby Township's Pilgrim Park

Municipalities

Springfield Township
Upper Darby Township

Greenway Course and Key Features

This segment includes the section of the Darby Creek stream valley from the Upper Darby/Haverford Township boundary within Pilgrim Park, south to Garrett/Bishop Road. The segment includes land area as far west as Springfield High School and as far east as Garrettford Elementary School. Tributary greenway corridors are along Collenbrook Run and Lewis Run. The Routes 101 and 102 SEPTA trolley lines are included as transit-oriented greenways.

Major hubs include Pilgrim Park, Idle Hours Tennis Club, Springfield Swim Club, Indian Rock Park, Huey Park, Ellson Glen Park, and Springfield Veterans Memorial Park, and Collenbrook Farm, and the Drexelbrook development.

Segment Area Overview

Darby Creek North of Route 1
Pilgrim Park is an undeveloped Township-owned woodland located in both Haverford and Upper Darby Townships. The park, located along Darby Creek, contains a cleared sewer right-of-way. This flat, wide, and sometimes muddy, area is currently being utilized as a dirt hiking path. In Springfield Township, the privately owned land on the west side of the stream, close to Burmont Road contains an industrial use. The remainder of the land use along the creek is residential to Rolling Green Park. The creek side land use is mainly residential down to the Springfield Swim Club, interrupted only by the commercial uses around State Road (Route 1). On the Upper Darby Township side, south of Pilgrim Park, the stream flows past the Idle Hours Tennis Club, where paths along the sewer right-of-way pass around the club's fences to State Road.

Darby Creek South of Route 1
The rear of the Drexeline Shopping Center property abuts Darby Creek. The shopping center parking lot is paved very close to the stream bank, creating a gap in the greenspace connection in this area. At the southern end of the Drexeline property/Springfield Swim Club is a greenspace connection greenway that follows the stream for 4,000 feet. The land on both sides of the creek, which is buffered to some degree, is held by Drexelbrook Associates, the owner of the adjoining apartment community and banquet facility located on the Upper Darby side of the creek. Some of the slopes leading up to the apartment buildings are very steep; land on the Springfield side is very narrow in some places.

Public access to this stretch of Darby Creek can best be attained from Springfield's Indian Rock Park.

A dirt hiking path leads from a playground and parking area at the end of Butler Road, down a steep slope to a blazed hiking trail that follows the stream. The north end of the path is located at the Route 101 trolley bridge; the south end is on private residential property across the creek from other residences on Bloomfield Avenue.

South of private lots on Bloomfield Avenue (Upper Darby) and N. Bishop Avenue (Springfield), Upper Darby Township's Huey Park preserves undeveloped greenspace on both sides of Bloomfield Avenue (with sidewalk). Springfield's Ellson Glen Park extends to the west from the stream bank, across Bishop Avenue. Two privately owned residential properties adjoin the creek south of the Rosemont Bridge. An extension of Bloomfield Road, used to access the historic buildings at Upper Darby Township's Addingham property, has a sign stating that only fishermen are allowed access through this private land. Steep, wooded slopes separate the residences from the road and the creek. The Garrett Road overpass divides the private land from Upper Darby's Addingham parkland.

SEPTA Trolley Lines
The Routes 101 Media and 102 Sharon Hill trolley lines have many stops within the various greenway segments. The trolley can transport people to various hubs and bring people to the greenway from other areas of the County. Refer to the Springfield section in the Greenway Connections at the Study Area Boundary section at the end of this chapter for more detail on the trolley line right-of-way connections into the Crum Creek watershed.

Opportunities

1. Springfield Township's Indian Rock Park has a blazed hiking path along Darby Creek; it is not otherwise signed or publicized. As part of a segment plan, this trail could be examined for its connection possibilities, safety issues, and usefulness as a publicized recreation amenity.

2. There is an opportunity for trail development in the sewer right-of-way in Pilgrim Park. Although a path is currently maintained by the sewer authority, it is already used by some for recreation. It could be safer (better policed, more accessible) if it were to become an official trail. Upper Darby and Haverford Townships should work together on a study or master plan for the park. The study could be an implementation activity recommended in plans for two other overlapping greenway segments.

3. The Townships should educate streamside landowners about the importance of riparian buffers, maintained preferably with native vegetation.

4. SEPTA's Route 101 trolley "transit-oriented greenway" presents an opportunity for a "rail with trail." There is a potential trail route from the Springfield Township

municipal center to the County's Smedley Park, located in the Crum Creek watershed.

Challenges

1. Pursuit of a greenway "rail with trail" along the Route 101 trolley route might be difficult to implement while still maintaining safety.

2. Drexelbrook does not appear to be interested in developing a public recreational trail through its property at this time. Upper Darby Township should continue to work with Drexelbrook to identify opportunities to extend the trail through the area.

3. The Darby Creek area, as well as the land surrounding Collenbrook Run at the Drexeline Shopping Center, contain a great deal of impervious surface and little greenspace, which creates a gap in the greenway network. On the opposite side, at the Springfield Swim Club, a parking lot in the floodplain is frequently flooded.

4. Although the construction of the Coventry Woods development on Lewis Run may have precluded a publicly accessible greenway between Springfield Veterans Memorial Park and Rolling Road, much of the stream valley remains open space. The corridor could still remain a conservation greenway with a riparian buffer if it is managed properly. Any public trail through the area would need to be negotiated with the homeowners' association.

5. A bridge between Addingham and Gillespie Park or a safe road crossing at Garrett Road/Bishop Avenue would be needed to link Bloomfield or Bishop Avenue neighborhoods to the proposed trail at Gillespie Park. (Refer to Segment 8, Darby Creek Stream Valley Park.)

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2010

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Greenway Plan for the Darby Creek Watershed

Map 3-11A
Segment #7
Springfield & Drexel Hill

- Rail Stations and Bus Stops
- Schools
- Historic Sites
- Railines
- Bus Routes

Trails

- Existing
- Proposed
- Municipal Boundaries
- Segment Boundary
- Greenway Plan Study Area

Greenway Corridors

- Greenspace Connection
- Road-based Connection
- Water Trail
- Transit-oriented Connection
- Greenway Adjacent to Study Area

Open Space and Recreation

- Municipal Land
- County Land
- Federal and State Land
- School District Land
- Golf Courses
- Indoor/Outdoor Recreation Facilities
- Institutional Property w/ Open Space
- Conservation Organization Protected Land
- Homeowners' Association Open Space
- Cemetery
- Utility ROW

Segment #3 Haverford-Marple

Segment #5 Naylors Run

Segment #7 Springfield & Drexel Hill

Segment #8 Darby Creek Stream Valley Park

Paul Cemetery
San Francisco East Condos Open Space
Delaware County Trash Transfer Station # 3
Hilltop Park
Havertown Trail
Elem School
Thompson Nature Park
Llanerch Country Club
Route 112
Divine Providence Village
Doe Run Park
Darby Creek Valley Park/ Pilgrim Park
MARPLE TOWNSHIP
SPRINGFIELD TOWNSHIP
HAVERFORD TOWNSHIP
UPPER DARBY TOWNSHIP
Rolling Green Golf Club
Rolling Green Park
Rolling Green Trail
Aronimink Swim Club
Dermond Circle
St. Dorothy's Church
Mansion Park
Collenbrook Farm
Aronimink Elem School
Dermond Recreation Area
Richland Farms Park
Llanerch Quarry
Llanerch Country Club
Route 110
Routes 13, 111
Meadow Green Park
Halderman Field
Spring Valley Park
Veterans Memorial Park
Idle Hours Tennis Club
Northminister Presbyterian Church
Springfield Swim Club
Hillcrest Elem School
Har Jehuda Cemetery
Drexel Hill Middle School
Drexel Gardens Park
Upper Darby Kindergarden Center
Arlington Cemetery
Route 111
101 Trolley
Drexelbrook Open Space
Walsh Park
Walsh Trail
Indian Rock Park
Scenic Hills Elem School
Wagner Wayside Park
Springfield High School
Williams Park
Central Field
Kerr Park
Spring Valley Trail
Huey Park
Ellson Park
Ellson Trail
Addingham
Gillespie Park
Garrettford Elem School
Route 122
Lansdowne YMCA
Archbishop Prendergast and Monsignor Bonner
Mount Sharon Cemetery
Netherwood Park
Scullion Park
Clark Play Area
Windermere Play Area
Belmont Avenue Park
Evans Lane Park
Route 107
Westbrook Park Elem School
Bishop Park
Upper Darby School District Athletic Fields
Darby Creek Parkland - Garrett Tract
Ardmore Avenue Elem School
Reservoir Park
Marlyn Park
Penn Wood High School
Jacob's Park and Upper Field Complex
Crowell Park
St. Eugene's School
Lansdowne Swim Club
Routes 107, 109
Route 109
Route 115
UPPER DARBY TOWNSHIP
SPRINGFIELD TOWNSHIP
CLIFTON HEIGHTS BOROUGH
MORTON BOROUGH
LANSDOWNE BOROUGH
Creek
Run
Brook

Greenway Plan for the Darby Creek Watershed

Map 3-11B
Segment #7
Springfield & Drexel Hill

Segment Boundary

Municipal Boundaries

Greenway Corridors

- Greenspace Connection
- Road-based Connection
- Water Trail
- Transit-oriented Connection
- Greenway Adjacent to Study Area

Open Space and Recreation

- Municipal Land
- County Land
- Federal and State Land
- School District Land
- Golf Courses
- Indoor/Outdoor Recreation Facilities
- Institutional Property w/ Open Space
- Conservation Organization Protected Land
- Homeowners' Association Open Space
- Cemetery
- Utility ROW

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Delaware County
Planning Department
2010

Source:
Delaware County Planning Department
Delaware Valley Regional Planning Commission

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Segment #3
Haverford-Marple

Segment #5
Naylors Run

Segment #7
Springfield & Drexel Hill

Segment #8
Darby Creek Stream Valley Park

Paul Cemetery
Delaware County Trash Transfer Station # 3
Hilltop Park
Elem School
Thompson Nature Park
Llanerch Country Club
Darby Creek Valley Park/ Pilgrim Park
Doe Run Park
Divine Providence Village
Rolling Green Golf Club
Richland Farms Park
Llanerch Park
Llanerch Quarry
Dermond Circle
St. Dorothy's Church
Aronimink Swim Club
Rolling Green Park
Meadow Green Park
Mansion Park
Dermond Recreation Area
Collenbrook Farm
Aronimink Elem School
Idle Hours Tennis Club
Northminister Presbyterian Church
Halderman Field
Hillcrest Elem School
Har Juhuda Cemetery
Spring Valley Park
Veterans Memorial Park
Springfield Swim Club
Drexel Hill Middle School
Drexel Gardens Park
Drexelbrook Open Space
Upper Darby Kindergarden Center
Walsh Park
Kerr Park
Indian Rock Park
Arlington Cemetery
Scenic Hills Elem School
Wagner Wayside Park
Springfield High School
Williams Park
Healthplex Hospital
E.T. Richardson Middle School
Central Field
Huey Park
Upper Darby High School
Thomson Park
Ellson Glen Park
Addingham
Garrettford Elem School
Archbishop Prendergast and Monsignor Bonner
Keystone Park
H.C. Sabold Elem School
Gillespie Park
Lansdowne YMCA
Levis Park
Mount Sharon Cemetery
Scullion Park
Clark Play Area
Windermere Play Area
Belmont Avenue Park
Evans Lane Park
Westbrook Park Elem School
Netherwood Park
Bishop Park
Upper Darby School District Athletic Fields
Darby Creek Parkland - Garrett Tract
Ardmore Avenue Elem School
Penn Wood High School
Greenbriar
Crowell Park
St. Charles Borromeo Cemetery
Reservoir Park
Kent Park
Marilyn Park
Lansdowne Swim Club
St. Eugene's School

DARBY CREEK STREAM VALLEY PARK SEGMENT PROFILE (Segment #8)

Municipalities

Aldan Borough
Clifton Heights Borough
Darby Borough
Lansdowne Borough
Upper Darby Township
Yeadon Borough

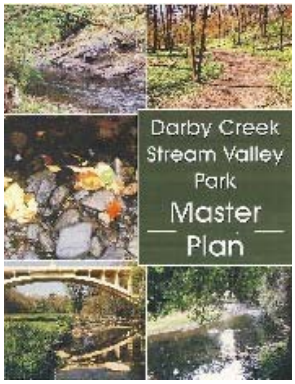
Kent Park (County) in Upper Darby Township, to contain a future trail segment

Greenway Course and Key Features

Beginning at Upper Darby Township's Addingham open space property and Gillespie Park, this segment extends downstream along Darby Creek, all the way to Pine Street in Darby Borough. Major Hubs include municipal parks such as Hoffman Park, Penn Pines Park, Bartram Park; and County easements and parkland including Kent Park and Shrigley Park.

Segment Area Overview

The County, with the participation of the six area municipalities, revised the *Darby Creek Stream Valley Park Master Plan* (1985), to serve as a pilot greenway segment plan. Refer to the *Darby Creek Stream Valley Park Master Plan* (2009) for more detail on the recommended trail route including possible alternative routes, cost estimates, and recommendations for oversight and maintenance.



This section of the Darby Creek greenway is unique in that it contains a great deal of connected publicly land, including several County-owned open spaces, in the heart of one of the most densely populated areas of the watershed. The type of greenway planned in this segment is a greenspace connection greenway with a multi-use trail on at least one side of the stream.

Addingham to the Kent Park Area

The Addingham property, located near Garrett Road in Upper Darby marks the northern boundary of this greenway segment. Across the creek from Addingham is Gillespie Park, which is located on both sides of Sycamore Avenue. The Lower Swedish Cabin lies within the downstream portion of Addingham at the northern end of Creek Road. Downstream from Creek Road is the County-owned Garrett Tract, opposite Clifton Heights Borough's Diamond Street Park. The Woodgate Tract, a 1.5-acre open space parcel acquired by the County as a gift in 2006, is also on the Clifton Heights side of the creek, but is not connected to any other publicly owned land.

The historic industrial area of Kent Mills in Clifton Heights retains its character at the bend in the creek. The 102 SEPTA trolley line runs through this area for a short distance. Delaware County owns a narrow easement on both sides of the creek in Clifton Heights and Upper Darby between the Garrett Track and Kent Park. Kent Park is a relatively wide passive park downstream on Upper Darby side. On the Clifton Heights side, private businesses on Baltimore Pike back up to the stream. The County has a narrow easement across the K-Mart property.

Lansdowne Borough with Adjoining Parts of Aldan and Upper Darby

A major greenway alignment follows County-owned land along Darby Creek from Kent Park to Hoffman Park in Lansdowne Borough. It crosses Baltimore Pike before it enters Lansdowne Borough, and passes through Lansdowne's Gateway Park and Hoffman Park. The Falls Run tributary is a greenspace connection extending from Marlyn Park, along the Lansdowne Swim Club to Darby Creek. Across the stream from Hoffman Park is a large wooded open space parcel, which, though situated in Aldan Borough, is actually jointly-owned by Clifton Heights Borough and Upper Darby Township. A short conservation greenway follows the Lobbs Run tributary through this and residential land to Aldan Swim Club.

Between Hoffman Park and the County's Shrigley Park, the stream makes a sharp bend to the northeast, paralleling Scottdale Road past residential land. Shrigley Park is a passive nature park that extends from the creek, across the road, back to the SEPTA Media/Elwyn Line tracks. Just downstream from Shrigley Park, the stream bends sharply to the south. The County owns a piece of wooded parkland on the south side of this bend across the Highland Avenue Bridge in Upper Darby Township; it is known as the Kempner Tract. On the Lansdowne side of the creek bend, the long slope up from Scottdale Road serves as a conservation greenway between the road and the historic houses of The Knoll.

Downstream from the Kempner tract, on the Lansdowne side, is Pennock Woods, a County-owned passive park. Pennock Woods contains desire paths created by local neighbors who frequent the park. A County property known as Castle Tool is on the Upper Darby side of the stream, opposite the southern part of Pennock Woods.

Yeadon and Penn Pines Area

South of the Castle Tool area, Darby Creek serves as the boundary between Upper Darby Township and Yeadon Borough. The Supplee Envelope Company and Hillcrest Apartments are located on the Upper Darby side of the creek. The County owns an easement across another business and an apartment complex on the Yeadon side of the creek. A County property called the Holsten tract extends from the easement to E. Providence Road.

South of E. Providence Road there is a relatively wide greenspace connection greenway extending approximately 3,600 feet downstream. The Upper Darby Township side of the creek contains Penn Pines Park and open space at the Lansdowne Towers Apartments. On the Yeadon side, there is a great deal of wooded streamside open space that extends

along the creek from E. Providence Road to the Mercy Fitzgerald Hospital property. The open space continues behind the hospital, which straddles the Yeadon/Darby Borough boundary. There is a large residential lot on Hereford Place.

Darby Borough
The northern end of the Little Flower Manor/Sisters of St. Teresa property is on the north side of the municipal boundary between Upper Darby Township and Darby Borough, with most of the land in Darby Borough. The site contains an approximately 500-foot deep wooded area along the stream. The owners of this property are currently considering development proposals for the Sisters of St. Teresa portion of the site; the Little Flower Manor nursing home will remain. On the east side of the stream, opposite Little Flower Manor, is Darby Borough's Bartram Park, a mostly passive greenway park. The northern end of the park adjoins the Mercy Fitzgerald Hospital property; the southern portion of the park is actually on both sides of the creek.

Land on both sides of the greenway near the Springfield Road-MacDade Avenue intersection is privately owned. The north side of the road contains a new shopping center (currently under construction) and an active beverage company. Areas on the south side of the creek contain residential and commercial properties. The greenway crosses MacDade Avenue at a bridge that was completely rebuilt in 2007. A new SEPTA transportation center was recently constructed on the south side of MacDade Avenue; plans include a streamside trail. There is an unused historic trolley bridge between the SEPTA site and Quarry Street that is planned for incorporation into a greenway trail. The greenway is proposed to run through a revitalization area containing industrial sites located between Quarry Street and the Darby Creek south to Pine Street. The Borough's linear Norman Powell Park, located on the north side of the creek along New Walnut Street, extends south to a freight rail overpass.

Other Tributary Greenways
The following are tributary greenways within this segment that were not specifically addressed in the *Darby Creek Stream Valley Park Master Plan*:

1. Lobbs Run from Aldan Swim Club to its confluence with Darby Creek would make a good conservation greenway. Aldan should work with Clifton Heights, Upper Darby, and Lansdowne to formulate a vision for the property and its role in the greenway.

2. Lansdowne Swim Club, perhaps in partnership with Lansdowne, could create greenway connections at Falls Run, with access connections to the proposed trail at Darby Creek and the Lansdowne Gateway at Baltimore Avenue. Marlyn Park could also be connected if the Swim Club allows public access.

3. Scottdale Road, from the Highland Avenue Bridge to Lansdowne Avenue, is very important for linking the greenway trail to downtown Lansdowne. It could be enhanced for safe pedestrian and bicycle access.

Opportunities

With the completion of the segment master plan, implementation projects are ready to begin and or continue their progress. In addition to trail engineering and construction, the following are some initial implementation projects:

1. The Villa St. Teresa/Little Flower Manor property is currently the subject of a redevelopment proposal. A dialogue should continue between Darby, the developer/s, and the County to see if an open space and a trail could be set aside as part of the development process. Bridges could be utilized to create a loop trail from Bartram Park and back.

2. Darby Borough Community Development Corporation and SEPTA are planning to incorporate the proposed trail into their new Darby Transportation Center. The old trolley bridge at the SEPTA site will be reused to provide trail access to Quarry Street.

3. The Mercy Fitzgerald Hospital has indicated that it might be willing to allow use of a portion of its land for the trail. The County should pursue this opportunity as soon as possible.

4. The Municipalities could produce and post small signs along the trail route on public land. This would indicate that this is the location of a proposed paved trail, help to promote its use, and raise awareness and build support for the trail's construction.

5. The Municipalities should educate streamside landowners about the importance of riparian buffers.

Challenges

The following are three challenges identified in the *Darby Creek Stream Valley Park Master Plan*:

1. The portion of Scottdale Road between Hoffman and Shrigley Parks is the most significant gap in public greenspace along the proposed route of Darby Creek Stream Valley Park Trail. The road parallels Darby Creek and, if made safer and more accommodating for bicycles and pedestrians, would increase connectivity with the Lansdowne Borough. The road could be improved to allow safer and easier access from Hoffman Park to Lansdowne Avenue.

2. The greenway trail would need to cross East Providence Road mid-block. Trail developers should begin discussions with PennDOT early on to get permission for a road crossing.

Greenway Plan for the Darby Creek Watershed

Map 3-12A
Segment #8
Darby Creek Stream Valley Park

- Rail Stations and Bus Stops
- Railstations
- Segment Boundary
- Municipal Boundaries
- Schools
- Historic Sites
- Railines
- Bus Routes

Trails

- Existing
- Proposed
- Greenway Plan Study Area

Greenway Corridors

- Greenspace Connection
- Road-based Connection
- Water Trail
- Transit-oriented Connection
- Greenway Adjacent to Study Area

Open Space and Recreation

- Municipal Land
- County Land
- Federal and State Land
- School District Land
- Golf Courses
- Indoor/Outdoor Recreation Facilities
- Institutional Property w/ Open Space
- Conservation Organization Protected Land
- Homeowners' Association Open Space
- Cemetery
- Utility ROW

Segment #7
Springfield & Drexel Hill

Segment #8
Darby Creek Stream Valley Park

Segment #9
Pusey Run

Segment #11
Muckinipattes Creek Greenway

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Delaware County
Planning Department
2010

Source:
Delaware County Planning Department

Greenway Plan for the Darby Creek Watershed

Map 3-12B
Segment #8
Darby Creek Stream Valley Park

Segment Boundary

Municipal Boundaries

Greenway Corridors

- Greenspace Connection
- Road-based Connection
- Water Trail
- Transit-oriented Connection
- Greenway Adjacent to Study Area

Open Space and Recreation

- Municipal Land
- County Land
- Federal and State Land
- School District Land
- Golf Courses
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- Institutional Property w/ Open Space
- Conservation Organization Protected Land
- Homeowners' Association Open Space
- Cemetery
- Utility ROW

Segment #7
Springfield & Drexel Hill

Segment #8
Darby Creek Stream Valley Park

Segment #9
Pusey Run

Segment #11
Muckinipates Creek Greenway

Segment #6
Cobbs Creek South & Colwyn Area

Huey Park
Addingham
Ellson Glen Park
Gillespie Park
Scullion Park
Clark Play Area
Park
Reservoir Park
Sycamore Park
Evans Lane Park
St. Charles Borromeo Cemetery
Marlyn Park
Lansdowne Swim Club
Hays Playground
Interboro Park
Yeadon Community Park
Shrigley Park
Kent Park
Diamond Street Park
Pennock Woods
Upper Darby School District Athletic Fields
Hoffmann Park
Holsten
Holy Cr Cemete
Westbrook Park Elem School
Aldan Swim Club
Penn Pines Park
Bishop Park
Park Lane Elem School
Mercy Fitzgerald Hospital
Darby Swim Club
St. Eugene's School/Convent Open Space
Aldan Volunteer Park and Duffy Field
Villa St. Teresa/ Little Flower Manor
Primos Elem School
Aldan Park, Carr Memorial Field
Primos Secane Swim Club
Westmont Drive and Northern Pusey Run Open Space
Bartram Park
Penn Wo Junior H
Aldan Borough Park
Veterans Field
Eden Cemetery
Mount Zion Cemetery
Collingdale Swim Club
Collingdale Park
Norman Powell Park
Railroad Right of Way
Harris Elem School
Water Street Park
Madison & Beech Playground
Spruce Street Park
Pusey Playground
Poplar Street Playground
Keystone Avenue Park
Bosaco Park
Briarcliffe Swim Club
Mt Lebanon Cemetery
Mt Jacob Cemetery
Grobes Park
Community Center Park
Academy Park High School
Sharon Hill Elem School
Colwyn Swim Club
YMCA
Schools

0 1,000 2,000 3,000 4,000 Feet

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Planning Department
2010

Source:
Delaware County Planning Department
Delaware Valley Regional Planning Commission

PUSEY RUN GREENWAY SEGMENT PROFILE (Segment #9)

Municipalities

Collingdale Borough


Wooded area with a trail along a tributary of Pusey Run in Collingdale Park

Greenway Course and Key Features

This greenway segment is comprised of the green space around Pusey Run in Collingdale Borough. Major hubs include Westmont Playground, Collingdale Park, Collingdale Swim Club, and Harris Elementary School. The Mount Zion and Eden Cemeteries also surround Pusey Run. The Darby Methodist Meeting Cemetery is connected to Mount Zion Cemetery

Segment Area Overview

Pusey Run lies entirely within the Borough of Collingdale. With the exception of road crossings, the only area where the creek is not surrounded by parkland or cemetery land is the commercially developed area near its confluence with Darby Creek.

Westmont Playground, which lies on the north side of Westmont Drive, is the northern end of the greenway. On the opposite side of Westmont Drive, Pusey Run travels through a 2-acre undeveloped Borough open space property. Though it does not touch any of the other open spaces, the Borough's Veterans Field is just a block to the west on Westmont Drive. The stream flows southward into the adjacent Eden Cemetery.

About half of Pusey Run lies within the Mount Zion and Eden Cemeteries. A section of woodland extends away from the stream into the 17-acre Collingdale Park, which borders both cemeteries. Harris Elementary School's open space abuts both Collingdale Park and the Eden Cemetery. Vegetated areas surround the creek at the Collingdale Swim Club property to the southwest of Mount Zion Cemetery. There is some vegetated stream buffer in the cemeteries, but it is narrower than in the Swim Club land, and is broken at the southern end of the Eden Cemetery.

A section of Pusey Run south of the swim club is piped on either side of MacDade Boulevard until reaches Darby Creek at Springfield Road.

Opportunities

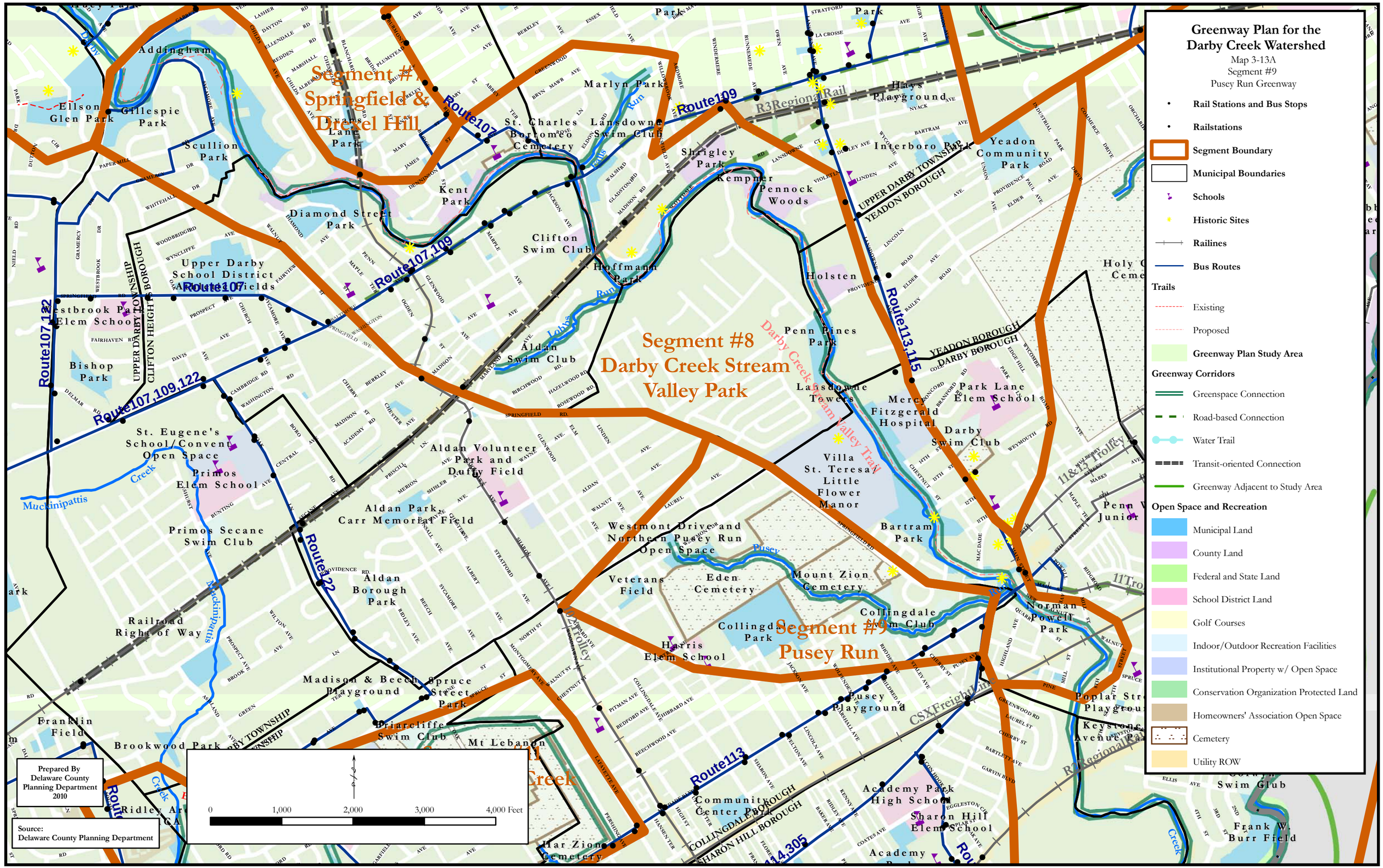
1. Because there is continuous open space from the Collingdale Swim Club to Westmont Playground, an opportunity exists to develop a creekside trail as a recreational amenity and alternative transportation route. Existing pathways at Collingdale Park could be connected to any future trail developed at Pusey Run.

2. Commercial and residential landowners near the Collingdale Swim Club and along Pusey Run could be educated about the importance of protecting the stream and the consequences of illegal dumping.

Challenges

1. If the greenway is to be recreational, the cemeteries and the Collingdale Swim Club would need to provide permission for a trail along the stream on their property and be partners in any trail development.

2. There is an indication that Collingdale citizens may have feelings about the stream being a nuisance rather than an asset. A greenway study for Pusey Run should include an extensive public education component.



Greenway Plan for the Darby Creek Watershed

Map 3-13A
Segment #9
Pusey Run Greenway

- Rail Stations and Bus Stops
- Railstations
- Segment Boundary
- Municipal Boundaries
- Schools
- Historic Sites
- Railines
- Bus Routes

Trails

- Existing
- Proposed
- Greenway Plan Study Area

Greenway Corridors

- Greenspace Connection
- Road-based Connection
- Water Trail
- Transit-oriented Connection
- Greenway Adjacent to Study Area

Open Space and Recreation

- Municipal Land
- County Land
- Federal and State Land
- School District Land
- Golf Courses
- Indoor/Outdoor Recreation Facilities
- Institutional Property w/ Open Space
- Conservation Organization Protected Land
- Homeowners' Association Open Space
- Cemetery
- Utility ROW

Greenway Plan for the Darby Creek Watershed

Map 3-13B
Segment #9
Pusey Run

Segment Boundary

Municipal Boundaries

Greenway Corridors

- Greenspace Connection
- Road-based Connection
- Water Trail
- Transit-oriented Connection
- Greenway Adjacent to Study Area

Open Space and Recreation

- Municipal Land
- County Land
- Federal and State Land
- School District Land
- Golf Courses
- Indoor/Outdoor Recreation Facilities
- Institutional Property w/ Open Space
- Conservation Organization Protected Land
- Homeowners' Association Open Space
- Cemetery
- Utility ROW

Segment #7
Springfield & Drexel Hill

Segment #8
Darby Creek Stream Valley Park

Segment #9
Pusey Run

Segment #6
Cobbs Creek South & Colwyn Area

Segment #11
Muckinipates Creek Greenway

Huey Park
Addingham
Ellson Glen Park
Gillespie Park
Scullion Park
Evans Lane Park
Clark Play Area
Park
Reservoir Park
Sycamore Park
Marlyn Park
St. Charles Borromeo Cemetery
Lansdowne Swim Club
Hays Playground
Interboro Park
Yeadon Community Park
Shrigley Park
Kent Park
Diamond Street Park
Pennock Woods
Upper Darby School District Athletic Fields
Hoffmann Park
Holsten
Holy Cr
Cemete
Westbrook Park Elem School
Bishop Park
Aldan Swim Club
Penn Pines Park
Park Lane Elem School
Mercy Fitzgerald Hospital
Darby Swim Club
St. Eugene's School/Convent Open Space
Primos Elem School
Aldan Volunteer Park and Duffy Field
Villa St. Teresa/ Little Flower Manor
Aldan Park, Carr Memorial Field
Primos Secane Swim Club
Westmont Drive and Northern Pusey Run Open Space
Bartram Park
Penn Wo
Junior H
Aldan Borough Park
Veterans Field
Eden Cemetery
Mount Zion Cemetery
Collingdale Swim Club
Collingdale Park
Norman Powell Park
Railroad Right of Way
Harris Elem School
Water Street Park
Madison & Beech Playground
Spruce Street Park
Pusey Playground
Poplar Street Playground
Keystone Avenue Park
Bosaco Park
Briarcliffe Swim Club
Mt Lebanon Cemetery
Mt Jacob Cemetery
Grobes Park
Community Center Park
Academy Park High School
Sharon Hill Elem School
Colwyn Swim Club
YMCA
Schools

0 1,000 2,000 3,000 4,000 Feet

Prepared By
Delaware County
Planning Department
2010

Source:
Delaware County Planning Department
Delaware Valley Regional Planning Commission

DARBY CREEK GREENWAY SOUTH END PROFILE (Segment #10)

Municipalities

Darby Township
Folcroft Borough
Norwood Borough
Prospect Park Borough
Ridley Township
Tinicum Township

Fishing area at Darby Creek in Folcroft Borough's Montgomery Park

Greenway Course and Key Features

The northern end of this segment is Darby Creek in Darby Township; the southern end is located at the mouth of the creek at the Delaware River in Tinicum. The segment also includes the Hermesprota Run tributary stream valley, the John Heinz National Wildlife Refuge, and greenway and trail connections to the Delaware River waterfront. Municipal parkland along Darby Creek north of the Heinz Refuge includes the Morton-Morton House in Norwood, Montgomery Park in Folcroft, and Leedom Estates Park and Ridley Marina in Ridley Township.

Segment Area Overview

Darby Creek in Darby Township
The former Clearview Landfill sits at the northern end of the greenway segment. At the southern end of the landfill, both sides of the creek are in Darby Township. On the west side is the Mount Lawn Cemetery on Hook Road. South of Hook Road, Darby Creek defines the border between Delaware County and the City of Philadelphia within the Heinz Refuge. A Sunoco tank farm separates Mount Lawn Cemetery from the Refuge on the Delaware County side. There is little greenspace, if any at the Sunoco facility.

Hermesprota Run*
The Hermesprota Run stream valley is a greenspace connection greenway in Folcroft Borough and Darby Township. The stream flows through small private residential parcels for much of its length Darby Township's Conway Park. Public parkland around the stream could serve as a recreational greenway from Conway Park through South Hermesprota Run Park to the Heinz Refuge. The greenway along Hermesprota Run continues along the western side of Delaware County's Emergency Services Training Center.

*Note: Although Hermasprota Run originates near the Har Zion Cemetery (Segment 11), the area surrounding the stream is highly urbanized, contains few buffered streamsides, and very few "hub" resources to link; therefore, this segment of the Hermesprota is not included in this segment greenway.

Tinicum Township and Water Trails

The federally protected marshlands of the Heinz Refuge serve as the southern anchor of the Darby Creek greenway network. The Refuge is both a conservation greenway and recreation greenway, with its miles of gravel and dirt trails stretching from the Cusano Environmental Education Center to Route 420 in Essington. With the exception of a portion near the Renaissance Inn, most of the Refuge is located north of Interstate 95. *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 Essington, the Eastwick neighborhood of Philadelphia, and the Philadelphia Airport.

On the northern the edge of the Refuge along Darby Creek, is a stretch of municipal parkland that includes Montgomery Park in Folcroft and Morton Morton House historic site in Norwood. There is a pipeline easement running along the northern shore of the Refuge in Folcroft Borough. There are 29 small residential properties, a private marina, and a boat showroom lining the creek along Darby Crescent Road in Prospect Park Borough. The Morton Homestead, which is owned by the state Historical and Museum Commission, is located between the Ridley Township boundary and Route 420 in Prospect Park. Leedom Estates Park and the Ridley Township Marina constitute a long stretch of municipal and County parkland along the north side of Darby Creek at the Refuge in Ridley Township.

Darby Creek from the Clearview Landfill, through the Refuge, to the Delaware River is deep enough for navigation by canoe or kayak during high tides. There is currently a canoe launch near the Heinz Refuge's Cusano Environmental Education Center. Another public boat launch is located at the Ridley Township Marina. Private boat clubs nearby on the Delaware River include the West End Boat Club, Corinthian Yacht Club, and Riverside Yacht Club. Tinicum waterfront sites are also included as hubs in the greenway, both for the Tidal Delaware Trail, and for the East Coast Greenway.

Mouth of Darby Creek

Interstate 95 crosses over Darby Creek just west of the Ridley Township Marina. The Township has a long-term plan to improve access to the Marina by designing a bridge and road connecting to Sellers Avenue under the overpass. On the southwest side of the elevated highway are small private developed parcels in Ridley, and a Township-owned open space tract in Tinicum. Most all of the land at the mouth of Darby Creek, including the Boeing site in Ridley and the Piasecki site in Tinicum, is zoned for industrial use. It would be difficult to develop a greenspace connection in the area due to the private industrial nature of the land uses.

East Coast Greenway

The East Coast Greenway (ECG) is a planned off-road bikeway proposed to run through urbanized areas along the entire east coast of the United States. In Delaware County, current alignments indicate that the ECG will follow the Delaware River corridor, roughly along Routes 291and 13. It will pass through this greenway segment in Ridley and Tinicum Townships. According to the *Delaware County Bicycle Plan*, the ECG will enter the County in Tinicum Township and parallel Route 291 on the Powhattan Avenue

right-of-way (dedicated by the Township). It will then cross Darby Creek on the Route 291 roadway bridge before entering Ridley Township. *The Heinz Refuge Access Study*, a 2007 initiative of Clean Air Council, addresses the connection of the ECG at Essington and the Philadelphia International Airport to the Darby Creek Greenway (specifically the Heinz Refuge) through bicycle and pedestrian trails.

Tidal Delaware Trail

Pennsylvania Environmental Council and the Pennsylvania Department of Conservation and Natural Resources (DCNR) are developing the Tidal Delaware River Trail, which will connect waterfront locations up and down the Delaware River in Pennsylvania and New Jersey. Trail maps feature public access points at several locations in Delaware County, including the Tinicum waterfront and the Ridley Marina.

Opportunities

1. Some of the publicly owned open space along the north side of the Heinz Refuge could be linked with recreational multi-use trails. Although it may be difficult to develop a trail system along the entire length of Darby Creek shoreline from Ridley Township to the Cusano Environmental Education Center due to natural obstacles or ownership gaps, several trails between segment area hubs are still potentially possible.

2. Norwood and Folcroft Boroughs could explore the feasibility of constructing a pedestrian bridge between Lower Park (a.k.a. Amosland Park or Norwood Park) and Montgomery Park. Such a bridge over the Muckinipates Creek could help to facilitate the development of a multi-municipal park complex with both active and passive portions. If trails are linked in this manner, the park could also include the Muckinipates Sewer Authority property, and the Morton Morton House.

3. A water trail for small recreational watercraft could be developed for the navigable sections of Darby Creek in conjunction with plans for the Tidal Delaware River Trail.

4. The East Coast Greenway alignment studies and *Heinz Refuge Access Study* suggest several potential options for connecting areas of Delaware County to greenways and passive recreation opportunities. The municipalities should seriously consider the implementation of these studies.

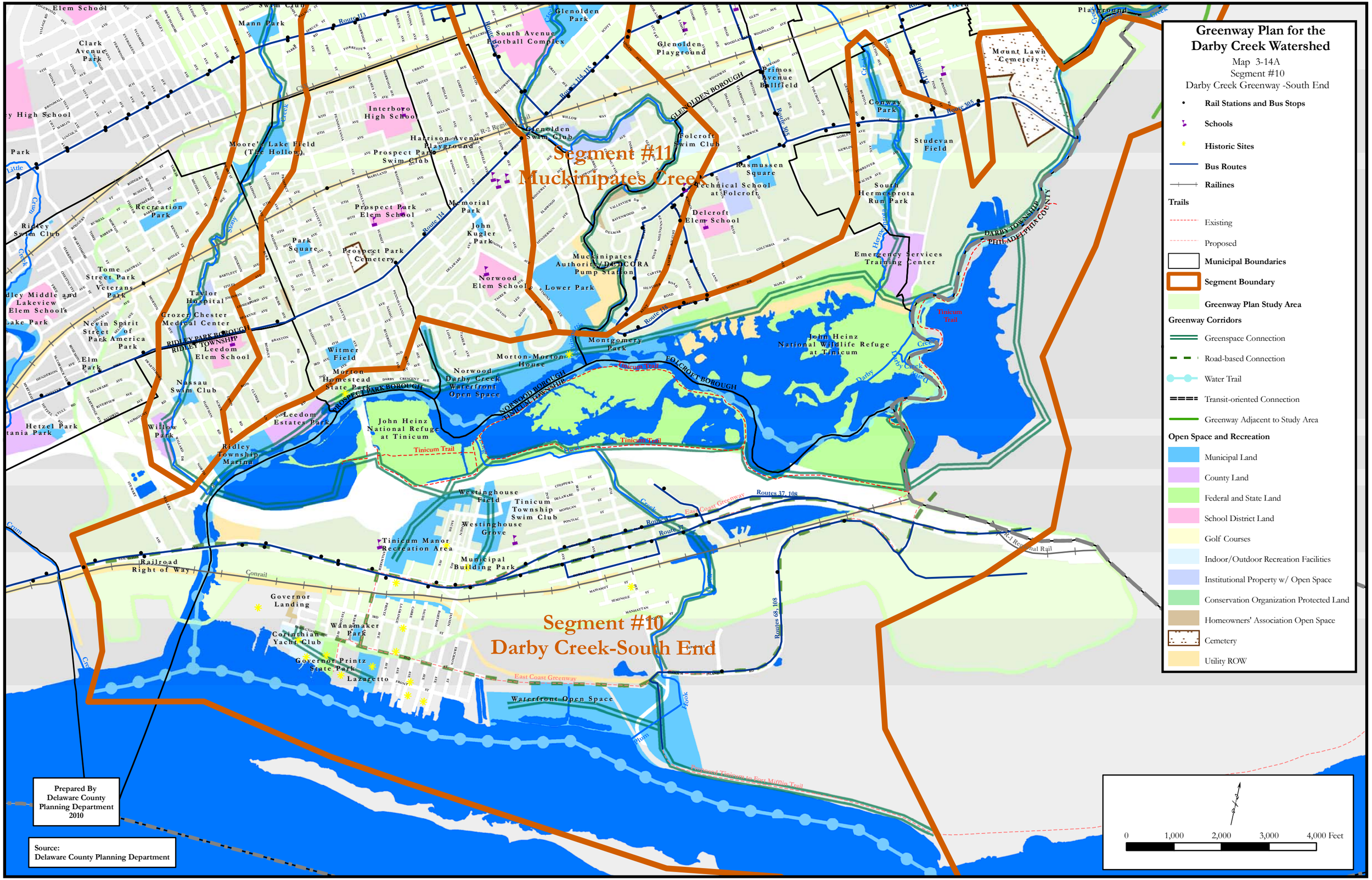
5. Delaware County could consider developing a greenway stewardship program on Hermesprota Run at its Emergency Services Training Center, located on the boundary of Folcroft Borough and Darby Township. The County and Darby Township could look into the feasibility of a multi-use stream trail leading from the Heinz Refuge the north end of Conway Park.

Challenges

1. The Clearview Landfill is an obstacle due to its contamination and uncertain future regarding its cleanup. This site is included in a multi-area Superfund site. The affected municipalities should work with the U.S. Environmental Protection Agency (EPA) that is in the process of developing a study to determine its potential for reuse, possibly for recreation and incorporation into a Darby-Cobbs Creek trail system.

2. The Sunoco Tank Farm in Darby Township poses a physical obstacle to almost any type of greenway along this portion of Darby Creek. The Heinz Refuge trails on the opposite side of the creek stop shortly before reaching 84th Street (Hook Road), but the Cobbs Creek Connector Trail Feasibility Study proposed that they be extended so that the trail can continue across the street to the north.

3. Natural barriers, including dense vegetation divide publicly owned land on the north side of the Heinz Refuge (e.g., Ridley Marina at Leedom Estates Park, Muckinipates Creek between Norwood and Folcroft). The municipalities should work together to develop a management plan to control this vegetation.


Segment #11
Muckinipates Creek
Segment #10
Darby Creek-South End
Greenway Plan for the Darby Creek Watershed
Map 3-14A
Segment #10
Darby Creek Greenway -South End
Rail Stations and Bus Stops
Schools
Historic Sites
Bus Routes
Railines
Trails
Existing
Proposed
Municipal Boundaries
Segment Boundary
Greenway Plan Study Area
Greenway Corridors
Greenspace Connection
Road-based Connection
Water Trail
Transit-oriented Connection
Greenway Adjacent to Study Area
Open Space and Recreation
Municipal Land
County Land
Federal and State Land
School District Land
Golf Courses
Indoor/Outdoor Recreation Facilities
Institutional Property w/ Open Space
Conservation Organization Protected Land
Homeowners' Association Open Space
Cemetery
Utility ROW
Prepared By
Delaware County
Planning Department
2010
Source:
Delaware County Planning Department
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Elem School
Swim Club
Mann Park
Clark Avenue Park
Route 113
Glenolden Park
South Avenue Football Complex
Glenolden Playground
Primos Avenue Ballfield
Mount Lawn Cemetery
Playground
Interboro High School
Harrison Avenue Playground
Glenolden Swim Club
Folcroft Swim Club
Conway Park
Route 291
Route 305
Studevan Field
Moore's Lake Field (The Hollow)
Prospect Park Swim Club
Rasmussen Square
Technical School at Folcroft
South Hermesprota Run Park
Recreation Park
Ridley Swim Club
Prospect Park Elem School
Memorial Park
John Kugler Park
Delcroft Elem School
Park Square
Prospect Park Cemetery
Muckinipates Authority/DELCORA Pump Station
Norwood Elem School
Lower Park
Emergency Services Training Center
Tome Street Park & Veterans Park
Taylor Hospital
Grozer Chester Medical Center
Nevin Spirit Street of Park America Park
RIDLEY PARK BOROUGH
RIDLEY TOWNSHIP
Leedom Elem School
Witmer Field
Montgomery Park
Morton-Morton House
John Heinz National Wildlife Refuge at Tinicum
Elm Park
Morton Homestead State Park
Norwood Darby Creek Waterfront Open Space
NORWOOD BOROUGH
FOLCROFT BOROUGH
PROSPECT PARK BOROUGH
TINICUM TOWNSHIP
Nassau Swim Club
Leedom Estates Park
John Heinz National Refuge at Tinicum
Tinicum Trail
Willow Park
Ridley Township Marina
Westinghouse Field
Tinicum Township Swim Club
Westinghouse Grove
Tinicum Manor Recreation Area
Municipal Building Park
Railroad Right of Way
Conrail
Governor Landing
Wanamaker Park
Corinthian Yacht Club
Governor Printz State Park
Lazaretto
East Coast Greenway
Waterfront Open Space
Routes 37, 108
Route 291
Route 95
Routes 68, 108
R-1 Regional Rail
DARBY TOWNSHIP
PHILADELPHIA COUNTY
Proposed Tinicum to East Middle Trail

Greenway Plan for the Darby Creek Watershed

Map 3-14B
Segment #10
Darby Creek-South End

Segment Boundary

Municipal Boundaries

Greenway Corridors

- Greenspace Connection
- Road-based Connection
- Water Trail
- Transit-oriented Connection
- Greenway Adjacent to Study Area

Open Space and Recreation

- Municipal Land
- County Land
- Federal and State Land
- School District Land
- Golf Courses
- Indoor/Outdoor Recreation Facilities
- Institutional Property w/ Open Space
- Conservation Organization Protected Land
- Homeowners' Association Open Space
- Cemetery
- Utility ROW

Segment #11
Muckinipates Creek

Segment #10
Darby Creek-South End

Elem School
Mann Park
Clark Avenue Park
South Avenue Football Complex
Glenolden Park
Glenolden Playground
Primos Avenue Ballfield
Mount Lawn Cemetery
Playground
Conway Park
Studevan Field
Interboro High School
Moore's Lake Field (The Hollow)
Harrison Avenue Playground
Prospect Park Swim Club
Glenolden Swim Club
Folcroft Swim Club
Rasmussen Square
Technical School at Folcroft
South Hermesprota Run Park
Delcroft Elem School
Recreation Park
Ridley Swim Club
Prospect Park Elem School
Memorial Park
John Kugler Park
Park Square
Prospect Park Cemetery
Muckinipates Authority/DELCORA Pump Station
Emergency Services Training Center
Norwood Elem School
Lower Park
Tome Street Park
Veterans Park
Taylor Hospital
Crozer Chester Medical Center
Nevin Spirit of America Park
Leedom Elem School
Witmer Field
Montgomery Park
John Heinz National Wildlife Refuge at Tinicum
Morton-Morton House
Morton Homestead State Park
Norwood Darby Creek Waterfront Open Space
Elm Park
Heizel Park
Willow Park
Leedom Estates Park
John Heinz National Refuge at Tinicum
Ridley Township Marina
Westinghouse Field
Tinicum Township Swim Club
Westinghouse Grove
Tinicum Manor Recreation Area
Municipal Building Park
Railroad Right of Way
Governor Landing
Wanamaker Park
Corinthian Yacht Club
Governor Printz State Park
Lazaretto
Waterfront Open Space

Prepared By
Delaware County
Planning Department
2010

Source:
Delaware County Planning Department
Delaware Valley Regional Planning Commission

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MUCKINIPATES CREEK SEGMENT PROFILE (Segment #11)

Municipalities

Collingdale Borough (minimal)
Darby Township
Folcroft Borough
Glenolden Borough
Norwood Borough
Ridley Township (minimal)

Trail and bridge over the Muckinipates Creek at Darby Township's Brookwood Playground, connects to Our Lady of Fatima Church and School in Ridley Township

Greenway Course and Key Features

This greenway segment follows the Muckinipates Creek from the Ridley Area YMCA to the confluence with Darby Creek at the Morton Morton House in Norwood. The eastern fork of the greenway includes a number features, including the Briarcliffe Swim Club, Darby Township Elementary and Ashland Middle Schools, and Crescent Park. Signficant sites along the Muckinipates Creek include the Ridley Area YMCA, Brookwood Playground, Glenolden Park and the South Avenue Football Complex, Lower Park (a.k.a. Amosland or Norwood Park), and Morton Morton House.

Segment Area Overview

The Muckinipates Creek contains significant parkland as well as a number of privately owned land parcels. The greenway types recommended for this segment area include a mix of conservation where residential and commercial development occurs up to the creek, and recreation where there is public greenspace.

Northern branches of Muckinapates Greenway*
The northern end of the Muckinipates Creek Greenway contains two branches. The eastern branch surrounds an unnamed tributary stream (UNS-4643) that flows from Darby Township into Glenolden Borough. This greenway branch includes Mt. Jacob, Mt. Lebanon, and Har Zion Cemeteries; Briarcliffe Swim Club; Ashland Middle and Darby Township Elementary Schools; Crescent Park; Glenolden School; and Glenolden Church. On the south side of Academy Avenue, the tributary passes through the Glenolden School and Glenolden Church properties before joining the main stem within the open space at the Glendale Heights community.

The greenway along the main stem of Muckinipates Creek begins at the Ridley Area YMCA in Ridley Township, and follows the stream to its confluence with Darby Creek. The creek flows behind an apartment complex located about 300 feet south of the YMCA. It continues through Darby Township parkland (Brookwood Playground and Westbridge Park/Westbridge Drive Playground), almost to the Glenolden Borough border. Our Lady of Fatima School and Church in Ridley Township connect to the

Brookwood Playground with a pedestrian bridge connecting a paved trail across Muckinipates Creek.

*Note: Although the Muckinipates Creek begins in the Upper Darby/Springfield area, the portions of the stream between Baltimore Pike and the Ridley YMCA are highly urbanized, contain few buffered stream sides and a limited number of hubs to link. Therefore, they are not included in this segment of the greenway. However, individual resources such as Primos Elementary School, Primos Secane Swim Club, and Brookwood Park continue to serve as area-specific resources along the upper reaches of the creek.

Glenolden Borough
Residences at Academy Avenue divide the open space connection between the Darby Township parkland and the Glendale Heights community. Open space within Glendale Heights is owned by a homeowners' association and maintained as open fields used for athletics. Private property divides the greenway open spaces on the south side of MacDade Boulevard before the creek enters a small wooded section of a PECO substation property.

The open space within Glenolden Park and Interboro School District's South Avenue Football Complex constitutes a well-buffered recreation greenway with passive recreational areas closest to the stream.

An area between the football complex and the Glenolden Swim Club is a gap in riparian greenspace, as many private lots in the area are small with shallow rear setbacks. Glenolden Borough has purchased a 0.57 acre greenway lot that touches the east side of South Avenue. The Borough has expressed interest in protecting more land to create a continuous greenway on the south side of the stream downstream from the Football Complex land to South Avenue. On the other side of South Avenue, downstream from the Glenolden Swim Club, the University of Pennsylvania's Glenolden Laboratories is situated on a property with significant stream valley and two sections of undeveloped land.

Norwood and Folcroft Boroughs
Although there are large gaps in protected open space between the Glenolden Swim Club and the Muckinipates Sewer Authority former pump station property, most of the privately owned land is made up of large parcels that have more stream length. The Folcroft Swim Club is located on the creek, but not connected to any public or protected land. There is undeveloped land along both sides of the stream on the border of Glenolden and Folcroft at South Avenue. An apartment complex on the Folcroft side includes a steep stream valley with nearby open space downstream in Norwood Borough. Montgomery Park, Lower Park (a.k.a. Amosland Park or Norwood Park), the Muckinipates Sewer Authority land and the Morton Morton House site make up a large greenspace connection area around the mouth of Muckinipates Creek near the John Heinz National Wildlife Refuge.

Opportunities

1. Because of its greenway value and importance to the community, the Muckinipates Sewer Authority's former pump station property in Norwood Borough could be preserved as open space. When combined with adjacent parkland in neighboring municipalities, this land could function as a much larger park, with both active and passive elements. It could be a possible site for a multi-municipal community center, which is much needed in the Boroughs of Prospect Park, Norwood, and Glenolden.

2. The privately owned stream corridor parcels between the Muckinipates Sewer Authority property and the Glenolden Swim Club have ample natural stream buffer. It would be beneficial for the Boroughs to secure these properties for long-term protection. If public access becomes possible, trails in this area may be a possibility since the potential routes are also sewer rights-of-way and may already be cleard.

3. The South Avenue Football Complex and Glenolden Park contain a section of Muckinipates Creek. The Borough could work with the school district to maintain the stream valley in a sustainable manner.

4. Glenolden Borough should approach the ownership/management of Glendale Heights about proper management of the greenway and the importance of riparian buffers. Residents of the community may be able to benefit from recreational pathways along the stream. They would not need to be connected outside of the community, but it may be possible to make a connection to the Darby Township parks to the north, Glenolden Park, and Glenolden School.

5. Darby Township could designate and install recreational pathways along Muckinipates Creek on its parkland at Brookwood Playground and Westbridge Park/Park Drive Playground. Interpretive signage could be included to educate visitors about the stream and watershed.

6. Darby Township could create a partnership to develop a trail along the linked properties of Mt Jacob Cemetery, Briarcliffe Swim Club, Ashland Middle School, and Crescent Park as a recreational greenway and alternative transportation route.

Challenges

1. The Muckinipates Sewer Authority would need to approve of any trails or other recreational facilities on its property in Norwood, and be should be a partner with any trail development initiative.

2. Small private residential parcels scattered throughout the Muckinipates Greenway may prohibit a stream valley trail along the entire length of the stream. A conservation greenway could still be considered in such areas.

3. The Glendale Heights community might not allow any pathways to cross in and out of its properties. Any environmental stewardship on the property would need to meet with the community's approval and include them as a partner.

Greenway Plan for the Darby Creek Watershed

Map 3-15A
Segment #11
Muckinipates Creek Greenway

Rail Stations and Bus Stops
Schools
Historic Sites
Bus Routes
Railines

Trails
Existing
Proposed

Municipal Boundaries
Segment Boundary
Greenway Plan Study Area

Greenway Corridors
Greenspace Connection
Road-based Connection
Water Trail
Transit-oriented Connection
Greenway Adjacent to Study Area

Open Space and Recreation
Municipal Land
County Land
Federal and State Land
School District Land
Golf Courses
Indoor/Outdoor Recreation Facilities
Institutional Property w/ Open Space
Conservation Organization Protected Land
Homeowners' Association Open Space
Cemetery
Utility ROW

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Segment #8
Darby Creek Stream Valley Park

Segment #9
Muckinipates Creek Greenway

Segment #10
Darby Creek-South End

Prepared By
Delaware County
Planning Department
2010

Source:
Delaware County Planning Department

Greenway Plan for the Darby Creek Watershed

Map 3-15B
Segment #11
Muckinipates Creek Greenway

Segment Boundary
Municipal Boundaries

Greenway Corridors
Greenspace Connection
Road-based Connection
Water Trail
Transit-oriented Connection
Greenway Adjacent to Study Area

Open Space and Recreation
Municipal Land
County Land
Federal and State Land
School District Land
Golf Courses
Indoor/Outdoor Recreation Facilities
Institutional Property w/ Open Space
Conservation Organization Protected Land
Homeowners' Association Open Space
Cemetery
Utility ROW

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Segment #11
Muckinipates Creek
Greenway

Segment #10
Darby Creek-South End

Prepared By
Delaware County
Planning Department
2010

Source:
Delaware County Planning Department
Delaware Valley Regional Planning Commission

STONY CREEK SEGMENT PROFILE (Segment #12)

Municipalities

Prospect Park Borough
Ridley Township
Ridley Park Borough


The southern section of the County-owned Willow Park on Stony Creek in Ridley Township

Greenway Course and Key Features

This segment is a greenway that follows Stony Creek southward from the Folsom Athletic Club in Ridley Township to Darby Creek at the Ridley Township Marina. The northern tip of the greenway segment contains the Folsom Athletic Club, Marine Corps Training Center, and Amosland Elementary School. Major hubs include the Mann Park, Moore's Lake Field, Willow Park, and the Ridley Township Marina.

Segment Area Overview

The Stony Creek stream valley is a greenspace connection greenway that does not have a great deal of large connected public land at the present time. It does, however, benefit from the fact that many of the privately owned parcels are in a natural state and are larger and more linear in shape and than those along other urban tributaries in the area. Some are commercially owned (i.e., apartment buildings), rather than owned by a number of private individuals.

North of MacDade Boulevard in Ridley Township*
The headwaters of Stony Creek are in Springfield Township, north of Morton Borough. However, the northernmost end of the string of connected open space along the stream begins at the Folsom Athletic Club in Ridley Township. Open spaces linked by the stream in this area of the Township are situated on either side of Kedron Avenue (Route 420). They include The Marine Corps Training Facility fields, Ridley Township Swim Club, and Mann Park. The creek runs through a thick grove of trees at the swim club, while Mann Park is flanked by large shade trees. South of Mann Park, commercial properties from MacDade Boulevard to a freight rail line contain buildings and parking lots encroaching on the stream and floodplain.

*Note: Although the Stony Creek begins in Springfield, portions of the stream north of the Folsom Athletic Club are highly urbanized, containing few buffered streamsides and a limited number of hubs to link; therefore, they are not included in this segment of the greenway.

Stony Creek Greenway in Prospect Park Borough
The Ridley Mews Apartments in Prospect Park Borough has a path system and a pedestrian bridge in the adjoining floodplain stream buffer. Moore's Lake Park, which is

jointly maintained by Ridley Township and Prospect Borough, lies just south of the Ridley Mews Apartments. Moore's Lake Park is 10.8-acre facility containing the stream, athletic fields, and a pavilion. A dam and spillway create a small deep-water pond area at 13th street; it was formerly a man-made lake. A trail bridge leads to a playground on the Ridley Township side. Additional abutments remain from a former second bridge.

Stony Creek Greenway in Ridley Park Borough
There is a 6.6-acre, quarter-mile long, undeveloped parcel that stretches from Moore's Lake Park southward to a Wilmington/Newark Line rail bridge. The parcel is completely in the floodplain. The stream is channelized at this location. Just south of the rail bridge, the stream runs through a small duplex apartment site and an undeveloped lot immediately south of 13th Street. The Stonewood and Stony Creek Apartments properties preserve a wide wooded riparian buffer between the duplex and Crozer Taylor Hospital's land. The hospital property contains a large wooded natural area through which the stream flows.

Southern Ridley Township
South of Taylor Hospital and Chester Pike (Route 13), Stony Creek passes through a gas station property into open land at the Cannon Apartments and the Nassau Swim Club. Adjoining the swim club at Swarthmore Avenue is a small piece of Ridley Township-owned land containing two tot lots. Two privately owned wooded properties adjoin the stream between Swarthmore Avenue and Willow Park. Willow Park is a County-owned facility that contains a baseball field and undeveloped woods and meadow. An underground pipeline easement runs under the stream at this park. Below Willow Park, the stream flows southeastward through a wooded area that is within the right-of-way of an elevated portion of Interstate 95. The mouth of Stony Creek is situated along the eastern edge of I-95 at the Ridley Township Marina.

Opportunities

1. If the municipalities can secure access across key undeveloped owned parcels, a recreational trail might be feasible along much of the Stony Creek greenway. A greenway segment plan developed through a three-municipality partnership could determine this feasibility and help determine what type of greenway this should be.

2. Moore's Lake Park would benefit from rehabilitation, including the replacement of a pedestrian trail bridge over Stony Creek and the reinstatement of the artificial pond. Prospect Park and Ridley should partner to prepare a master plan and feasibility study for new park improvement projects.

3. It would be beneficial to approach apartment and commercial property owners to partner in the greenway initiatives. Owners may see that conserving the greenway makes good sense and that approving trail connections on their property may help them to attract and keep residents or increase business.

4. Prospect Park Borough could work with the owners of the Ridley Mews Apartments to provide residents with better access to recreation via a connecting pathway to Moore's Lake Park.

5. Taylor Hospital could develop a passive recreational park on its wooded open space, including a recreational trail along Stony Creek. If feasible, this trail could connect to the apartment complexes upstream.

6. Ridley Park Borough could target the 6.6-acre undeveloped privately owned linear parcel located between the Wilmington/Newark rail bridge and Moore's Lake Park for permanent protection.

Challenges

1. Two railroads and busy streets (e.g., MacDade Boulevard and Chester Pike) intersect the greenway, necessitating identification of safe crossing points before any trail is developed.

2. Apartment building owners may not approve trail connections across their land. If that is the case, they could still be encouraged to preserve their greenway open space and manage it properly.

3. The frequency of flooding and the presence of steep slopes should be studied as part of any trail feasibility studies for Stony Creek.

Greenway Plan for the Darby Creek Watershed

Map 3-16A
Segment #12
Stony Creek Greeway

Rail Stations and Bus Stops
Schools
Historic Sites
Railines
Bus Routes

Trails
Existing
Proposed
Municipal Boundaries
Segment Boundary
Greenway Plan Study Area

Greenway Corridors
Greenspace Connection
Road-based Connection
Water Trail
Transit-oriented Connection
Greenway Adjacent to Study Area

Open Space and Recreation
Municipal Land
County Land
Federal and State Land
School District Land
Golf Courses
Indoor/Outdoor Recreation Facilities
Institutional Property w/ Open Space
Conservation Organization Protected Land
Homeowners' Association Open Space
Cemetery
Utility ROW

0 1,000 2,000 Feet

0 1,000 2,000 3,000 4,000 Feet

Segment #12
Stony Creek Greenway

Segment #10
Darby Creek-South End

Prepared By
Delaware County
Planning Department
2010

Source:
Delaware County Planning Department

Greenway Plan for the Darby Creek Watershed

Map 3-16B
Segment #12
Stony Creek Greenway

Segment Boundary

Municipal Boundaries

Greenway Corridors

- Greenspace Connection
- Road-based Connection
- Water Trail
- Transit-oriented Connection
- Greenway Adjacent to Study Area

Open Space and Recreation

- Municipal Land
- County Land
- Federal and State Land
- School District Land
- Golf Courses
- Indoor/Outdoor Recreation Facilities
- Institutional Property w/ Open Space
- Conservation Organization Protected Land
- Homeowners' Association Open Space
- Cemetery
- Utility ROW

0 1,000 2,000 3,000 4,000 Feet

Keystone Park
H.C. Sabold Elem School
Levis Par
Greenbriar Park
Pennsdale Park
Church Road Park
Swarthmore Swim Club
Jacob's Park and Upper Field Complex
Crowell Park
Sycamore Avenue Woods
Springview Apartments
Alpha Terrace Field
Newlin/ Shipley Farm
Silver Lake Apartments
Franklin Field
Aquatic Swim Club
Rutledge Triangle
Edgewood Elem School
Ridley High School
Clark Avenue Park
U.S. Military Fields
Amosland Elem School
Ridley Township Swim Club
Mann Park
6th Avenue Playground
6th Avenue Park
Brookwood Playground
Our Lady of Fatima Church and School
Ridley Area YMCA
Bissinger Park
Ridley Swim Club
Recreation Park
Moore's Lake Field (The Hollow)
Interboro High School
South Avenue G Football Complex
Lakeview Elem Schools
Tome Street Park
Veterans Park
Nevin Street Park
Spirit of America Park
Elm Park
Taylor Hospital
Crozer Chester Medical Center
Park Square
Prospect Park Elem School
Prospect Park Cemetery
Memorial Park
Huron Park
John Kugler Park
Leedom Elem School
Willow Park
Witmer Field
Norwood Elem School
Lower Park
Morton Homestead State Park
Leedom Estates Park
Ridley Township Marina
Muckinipates Authority/DELCORA Pump Station
John Heinz National Refuge at Tinicum
Norwood Darby Creek Waterfront Open Space
Morton-Morton House
Montgomery Park
Harrison Avenue Playground
Prospect Park Swim Club
Glenolden Swim Club

Segment #12
Stony Creek Greenway

Segment #10
Darby Creek-South End

Prepared By
Delaware County
Planning Department
2010

Source:
Delaware County Planning Department

UNIQUE EAST-WEST CORRIDORS

The two corridors described below have a great deal of influence on the middle of the watershed area, and should be included as greenway connections. Both of these corridors cross two or more of the segments profiled above.

BALTIMORE PIKE CORRIDOR

Baltimore Pike is a major transportation route, home to business and commercial districts, and a gateway between Delaware County and the City of Philadelphia. DVRPC completed a corridor revitalization study for Baltimore Pike in 2007. Clifton Heights, Lansdowne, East Lansdowne, and Yeadon Boroughs; Upper Darby Township; and the City of Philadelphia were included in the study, which recommended streetscape improvements, including tree planting and installation of pedestrian-friendly amenities to help attract economic development. It also recommended bicycle-friendly roads and related improvements within the study area. The corridor should be treated as a road-based greenway that benefits from these improvements. A four phase multi-municipal street tree-planting project is well underway as of 2010.

SEPTA MEDIA/ELWYN RAIL CORRIDOR

SEPTA's Media/Elwyn Regional Rail Line runs from Center City Philadelphia to the Elwyn station in Middletown Township. This rail line has stations within the study area in Yeadon, Lansdowne (two stations), Clifton Heights, Aldan, and Morton Boroughs and Upper Darby Township (Secane). The Gladstone Station in Lansdowne is the closest to Darby Creek, located near Hoffman Park.

Media/Elwyn Line stations could provide persons using the Darby Creek greenway with mid-trip stops on their way between western Delaware County and the City of Philadelphia. The Wilmington/Newark Rail Line also crosses through the watershed, but is not as significant since it doesn't have access to many greenway hubs or recreation greenway access points. The County and municipalities should encourage SEPTA to promote the Media/Elwyn and other transit lines as greenway connectors. SEPTA, with the help of the neighbors of the Media/Elwyn Line, could also clean up the right-of way of litter and dumping, and encourage tree planting for beautification and screening.

SEPTA Media/Elwyn Regional Rail right-of-way, looking east from the Clifton-Aldan station in Aldan Borough

GREENWAY CONNECTIONS AT THE STUDY AREA BOUNDARY

Although this greenway plan's study area ends at the watershed boundary in Delaware County, potential greenways could continue into neighboring Chester, Montgomery, and Philadelphia Counties. Since watersheds don't follow political boundaries, it is important for Delaware County and the watershed municipalities to partner with surrounding areas to coordinate activities that further common goals for conservation of the watershed's resources. Counties and municipalities with common borders should coordinate and partner to break down any barriers that impede travel between the recreation greenways on either side of their boundaries.

CITY OF PHILADELPHIA

Cobbs Creek Park

The Cobbs Creek greenway from Haverford Township southward lies in both Delaware County and the City of Philadelphia, but is managed entirely by the Fairmount Park Commission. The Cobbs Creek system, most of which falls within the City boundaries, includes all of the Cobbs Creek Bikeway and a network of unpaved walking trails.

The Trail Master Plan for Cobbs Creek Park (2001, Fairmount Park Commission) identified proposed bridge gateways at North State Road/Lansdowne Avenue, Market Street at the 69th Street District, Church Lane (70th Street) in Yeadon Borough, and Main Street (Woodland Avenue) in Darby and Colwyn Boroughs. The plan states that the recommended gateways "may include trailheads, crosswalks, vehicular signage, seating, and interpretive signage." Other potential Cobbs Creek gateway bridge crossing locations include Marshall Road (Spruce Street) in Upper Darby and Longacre Boulevard (Whitby Avenue) in Yeadon Borough.

Cobbs Creek Bikeway and Cobbs Creek Connector Trail

The Cobbs Creek Bikeway (along the Cobbs Creek Parkway) is an off-road bicycle trail that parallels the creek and the Cobbs Creek Parkway. It begins at Market Street (near Upper Darby's 69th Street district and the Borough of Millbourne). It ends at 70th Street, which becomes Church Street in Yeadon Borough.

The proposed trail link recommended in *A Feasibility Study for the Cobbs Creek Connector Trail* (2007), prepared by the Clean Air Council, suggests a linking the bikeway trailhead at 70th Street to the multi-use trails running through the John Heinz National Wildlife Refuge. The Connector Trail, like the Cobbs Creek Bikeway, would parallel Cobbs Creek and be almost entirely on public land. The trail would follow Darby Creek from the creeks' confluence to the Heinz Refuge. Colwyn Borough officials were involved in the development of feasibility study, which proposed a section of the trail in the Borough's Bosacco Park and the placement of two trail bridges across Cobbs Creek from the City to the Borough.

Delaware County municipalities that would directly benefit from a bridge crossing to link to the Cobbs Creek Connector Trail include Yeadon Borough (the trail formerly stopped at Church Lane), Darby Borough (Main Street), Colwyn Borough (Main Street and Bossacco Park), and Darby Township (Hook Road/84th Street). Gateways or trailheads could be located at bridge entrances, where appropriate.

TINICUM-FORT MIFFLIN TRAIL

In 2005, the Clean Air Council developed the *Tinicum-Fort Mifflin Trail Feasibility Study*. The Tinicum-Fort Mifflin Trail is proposed to follow an existing rail line and Hog Island Road from Essington in Tinicum Township, eastward around the edge of the Philadelphia International Airport, and along the Delaware River to historic Fort Mifflin in the City of Philadelphia. However, proposed new runways at the airport would preclude development of the trail according to the Feasibility Study. In the meantime, the Clean Air Council is continuing to work with the Rails-to-Trails Conservancy to move the trail into the next stages of planning and implementation. The Tinicum-Fort Mifflin Trail was one of the alternative routes proposed to connect the East Coast Greenway from Essington to the Schuylkill River.

LOWER MERION TOWNSHIP, MONTGOMERY COUNTY

Lower Merion Township is a large municipality bordering much of the eastern edge of Radnor and Haverford Townships. Lower Merion's *Open Space & Environmental Resource Protection Plan* (2006) includes a Potential Open Space Linkages section and map.

From north to south, the following potential linkages were mapped at the Delaware County boundary. County Line Road, between Matsonford Road and Ithan Road is marked as a pedestrian route. Spring Mill Road and South Bryn Mawr Avenue, both bike routes are shown entering Radnor Township. The portion of the Haverford College campus in Lower Merion Township contains part of the Haverford College Arboretum Trail, which is shown as a bike route with connecting routes extending onto Haverford Station Road to the Haverford Paoli/Thorndale Line train station and along Spring Avenue paralleling the County line. The proposed Spring Avenue bike route merges into E. Haverford Road and enters Philadelphia near Cobbs Creek Park.

A recreational greenway could share the road with the SEPTA Route 103 busway in Haverford Township. It could continue into Lower Merion Township on Cricket Avenue (via County Line Road or Lippincott and Spring Avenues). Cricket Avenue is ranked by the Bicycle Coalition of Greater Philadelphia as "Bike Friendly," and connects to both the Ardmore commercial area on Lancaster Avenue and the Ardmore Paoli/Thorndale train station. The Lower Merion Township plan shows Eagle and Manoa Roads as two other potential bike routes that could extend into Haverford Township. These routes both connect Lower Merion Township to the Cobbs Creek Greenway.

UPPER MERION TOWNSHIP, MONTGOMERY COUNTY

Upper Merion Township does not connect to the Darby Creek watershed, but does border Radnor Township's Gulph Creek watershed area. Upper Merion Township's *Open Space and Environmental Resource Protection Plan* (2005) does not show any significant green space connections across the boundary. Nevertheless, the private development in the area is not very dense and does not encroach upon Gulph Creek. In the *Feasibility Study for Upper Merion Township, Township-Wide Pedestrian and Bicycle Network* (2005), Arden Road is marked in the planned bicycle network as "potential on-street bike routes and lanes." West Matsonford Road is marked as having potential for a sidewalk/path with "difficult solutions required for pedestrians."

TREDDYFRIN TOWNSHIP, CHESTER COUNTY

Treddyfrin Township is located at the northwestern boundary of Radnor Township. The town of Devon is located just over the boundary on Lancaster Pike. The Radnor trail ends nearby, and users can continue into Devon using the sidewalk system. Among the businesses closest to the Radnor Trail are the Acme and Whole Foods supermarkets and an office park. The Recommended Priorities for a Trail System map in the *Tredyffrin Township Park, Recreation, and Open Space Plan* (2005), highlights the existing sidewalks and pathways along Lancaster Avenue. New Eagle School Road extends north where the Radnor Trail ends and also has a sidewalk system leading to the Strafford SEPTA R5 train station. If the proposed Treddyffrin Township trail system is fully implemented, it will connect the Radnor Trail to Valley Forge National Park.

Sidewalk connection in the town of Devon, Treddyfrin Township, near the end of the Radnor Trail on Lancaster Pike

EASTTOWN TOWNSHIP, CHESTER COUNTY

The *Comprehensive Plan for Easttown Township* (2001) includes two Bicycle Trail Network maps: Classification and Improvement Recommendations. Dorsett Road is highlighted on both of these maps (coded as Intermediate Recreation Classification, and recommended edge line adjustments). Dorsett Road originates at Lancaster Avenue in the center of the town of Devon and ends at South Valley Forge Road. A short segment of South Valley Forge Road runs along the boundary of Easttown and Radnor Townships, adjoining the greenway hub of Dittmar Park, and intersecting Maplewood Avenue, a road-based greenway. Darby-Paoli Road (Route 252) is also in Easttown's bicycle network (Commuter Connector Classification, no major improvements needed) connecting the town of Berwyn on Lancaster Avenue to Newtown Square in Newtown Township. Part of the reason that Route 252 is designated as a road-based greenway on the Newtown segment map is for consistency at the County/Township boundary.

GULPH CREEK WATERSHED, RADNOR TOWNSHIP

Radnor Township is updating its 1991 *Parks, Recreation, and Open Space Plan*. The Township will look at conserving greenspace along the Gulph Creek valley as well as creating recreation greenway connections to the Darby Creek greenway. The 1991 plan recommended a bike route on Wayne Avenue from the Radnor Trail north across Lancaster Avenue and past the Paoli/Thorndale Line Wayne Train Station. A bike path connecting Villanova University with Gulph Creek Road was shown in that plan.

CRUM CREEK WATERSHED BOUNDARY, DELAWARE COUNTY

Newtown Township

When Newtown Township was participating in the Delaware County Open Space Mapping Program in 2004, it proposed some trails that cross the watershed boundary. An existing trail route is located at the SAP business campus along Goshen Road. Opportunities to link trails around the Ashford and Ellis Preserve developments were already discussed in the section for the Newtown Segment (Segment #1). Natural greenspace preservation, recreational open space, and trails are included in the latest development proposals.

Marple Township

The Archdiocese of Philadelphia land that contains Cardinal O'Hara High School and Saints Peter and Paul Cemetery provides a potential greenway link to the Crum Creek watershed. Any greenway that connects to the west side of the cemetery is essentially a cross-watershed greenway linkage. This connection was identified by Marple Township in 2004, when participating in the County's Open Space Mapping Program. Proposed trails follow the perimeter of the lands on both sides of Sproul Road and along Whetstone Run. Whether or not these trails are developed, Marple Township should maintain communications with the Archdiocese to encourage proper stewardship of the lands.

Springfield Township

A possible Blue Route Bikeway route was planned for the I-476 right-of-way on both sides of the highway to a point near N. Springfield Road, on the border of Marple and Springfield Townships. The route eventually makes its way to Smedley Park, which links to the Springfield (or Yellow) Trail and the Lieper-Smedley Trail. Development of this bikeway would present a great recreational amenity for bicyclists in sections of Springfield, Marple, and Haverford Townships, allowing easy access from Haverford Township's Darby Creek greenway parks to Smedley Park in the Crum Creek watershed.

Some residents of Springfield Township are exploring the rail-with-trail concept, for an area that is partly in the Darby Creek watershed, but mostly in the Crum Creek watershed. The thought is to have a trail within or just outside of a transit right-of-way,

paralleling the active SEPTA Route 101 trolley tracks from the Springfield Library and Williams Park west to Smedley Park. A key component to any trail next to an active trolley line is making it safe and secure. Grading areas where there are slopes may also be an obstacle here. The right-of-way already has a parallel trail, the Springfield Trail, a segment of which connects Smedley Park to Springfield's Thompson Park and Woodland Park. Depending on the type of trail surface desired, improvements could be made to the Springfield Trail, which would be safer than the trail directly adjacent to the trolley tracks.

Morton Borough

Morton's main connection to the west is via the Media/Elwyn Rail Line as a transit-oriented greenway. Yale Avenue, which ends at the train station in Morton, could possibly become an on-road greenway connecting to Swarthmore College and the Lieper-Smedley Trail.

Rutledge Borough

The small residential Borough of Rutledge does not contain any stream valleys or other types of greenway corridors.

Ridley Township

There are not any potential greenway corridors at the watershed boundary between Rutledge and Ridley Park Boroughs. Long-range plans are to install the East Coast Greenway, which will connect all of Delaware County's watershed greenways through the Delaware River.

Ridley Park Borough

There are not any greenspace corridor connections across the watershed boundary in Ridley Park. The SEPTA Wilmington/Newark Line and an active freight rail line are the only off-street east-west corridors in the Borough.

CHAPTER 4
IMPLEMENTATION PLAN

This chapter contains information necessary to proceed with implementation of the Greenway Plan. It contains the following major sections:

Action Plan and Policies
Prioritization Criteria
Pilot Implementation Projects
Land Preservation Techniques
Greenway Funding

ACTION PLAN AND POLICIES

ACTION PLAN

This section of the plan presents a series of recommended actions that will help to further the vision of a Delaware County Greenway Network within the Darby Creek watershed (refer to Table 4-1). Each action contains information concerning the goal/s they address, the lead organization, partners, and technical support. They do not appear in any particular order.

While some items are listed as "G," groundwork or "*," high priority tasks, 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 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.

POLICIES

Development and implementation of Greenway Network policies depends on the desire of the "applicable organization" (e.g., governing bodies, agencies, or organizations) to develop and commit to procedures, practices, plans, or initiatives that further the goals of the plan.

For example, Action 22 states "Develop a procedure that involves review of tax delinquent properties along greenway corridors to determine if a conservation deed restriction should be attached prior to sale or transfer of ownership." This is an action on the part of the County and its agencies to implement. However, development and implementation of policies such as Action 8, "Develop a prioritization process for acquisition and/or protection of open spaces containing important natural areas and historic landscapes," needs to be prepared and implemented by a number of entities. The details of how this might be accomplished would still need to be determined, but might include elements such as the following:

- First order streams should receive the highest priority for protection activities
- Place high priority on open space acquisition along greenways
- Place high priority on open space containing historic or cultural landscapes

PRIORITIZATION CRITERIA

Conservation of the Darby Creek Greenway Network can be achieved through many types of projects, including but not limited to, planning, developing ordinances, engineering, land or easements acquisition, facilities construction, and tree planting. This section of the chapter includes two lists of possible prioritization criteria ("Conservation of Green Spaces, Landscapes, and Cultural Resources" and "Trails") to be used for preparation or implementation of some of the actions contained in the plan. Municipal and multi-municipal committees can use the lists to develop local objectives for inclusion in their individual greenway segment plans. The criteria should also be considered when municipalities are weighing one project against another, and as opportunities, funding, or resources become available. A way to use the criteria might be to consider how many the project meets.

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 Darby Creek Greenway Network. These criteria could be considered when looking to implement conservation projects in the Darby Creek Greenway. The project:

1. Provides opportunity for floodplain preservation

2. Involves stream protection and restoration (projects such as development of riparian buffers and/or natural stream channel design)

TABLE 4-1
GREENWAY PLAN FOR THE DARBY CREEK WATERSHED
ACTION PLAN

Timing Key:

*High Priority - whether completion is long or short term, these items get tc
G = Groundwork Action - Sets up other actions (must be done before another action)
S = Short Range (1-2 years)
M = Medium Range (2-5 years)
L = Longer Range (5-10 years or more)
C = Continuous

ACTION	RECOMMENDED ACTION	GOAL/S	TIMING	LEAD ORGANIZATION	PARTNERS	TECHNICAL SUPPORT
ACTION #1	Name all unnamed tributaries in the course of the greenway using the USGS Stream Naming Program.	Conservation	C	DCVA	EACs, GBs	DC
ACTION #2	Continue dam removal efforts to support fish passage, safety, and water quality.	Conservation	M	DC	DCVA, FBC, O	DEP
ACTION #3	Promote the use of best management practices (i.e., use of rain gardens and rain barrels) to improve water quality on existing lots.	Conservation	C	DC, DCVA	GBs, EACs	DEP
ACTION #4	Institute an invasive plant removal program aimed at riparian buffers and other critical areas in the watershed.	Conservation	C	DC, DCVA	Schools, GBs, EACs	DEP, DCNR
ACTION #5	Install and maintain riparian buffers along all streams and tributaries using native vegetation.	Conservation	C	DCVA, EACs, GBs	DC	DEP, DCNR
ACTION #6	Implement a reforestation program throughout the watershed that focuses on planting of native species of trees.	Conservation	C	DC, GBs	STCs, EACs, DCVA	DCNR, DC
ACTION #7	Prepare a preservation plan for for cultural and historic resources in the watershed that identifies priority sites and mechanisms for their protection.	Conservation	M	DC	DCVA, Hos	PHMC
ACTION #8	Develop a prioritization process for acquisition and/or protection of open spaces containing important natural areas and historic landscapes	Conservation Quality of Life	S	DC,GBs	DCVA, Hos, PCs	DCNR, DEP
ACTION #9	Work with SEPTA, PennDOT, and utilities to obtain permission to utilize their rights-of-way as spokes and or trails for the purpose of connecting hubs both in and out of the watershed.	Connection	S	DC, GBs	PennDOT, DVRPC, SEPTA	n/a
ACTION #10	Streets designated as greenways should be retrofitted with trees, landscaped medians, and other measures.	Connection Quality of Life Implementation	C	GBs, PCs	DC	PennDOT
ACTION #11	Coordinate Delaware County's greenway implementation efforts with municipalities, landowners, and study area stakeholders.	Connection Education Implementation	G	DC	DCVA,EACs, GBs	n/a
ACTION #12	Review local, county, and regional ordinances and planning documents for consistency regarding greenway recommendations or standards (i.e., riparian buffers, conservation design, etc.). Develop recommendations for consistent planning and/or ordinance for implementation at the municipal level	Conservation Quality of Life	S	DC, GBs, PCs	DCVA	DCED
ACTION #13	Initiate a program for streetscape improvement which includes landscaping, street tree planting, and use of best management practices to control urban stormwater runoff.	Conservation Quality of Life	C	GBs, DC	STCs, EACs, DCVA	DCNR, DC
ACTION #12	Organize a task force to meet regularly to discuss and oversee the implementation of the Greenway Plan for the Darby Creek Watershed.	Implementation	G*	DC	DCVA, EACs, GBs, PCs	DCNR
ACTION #13	Prepare and implement Darby Creek Greenway Segment Plans.	Implementation	G*/L	GBs	DC, DCVA, EACs	Consultant, DCNR, DEP, PennDOT, SEPTA
ACTION #14	Acquire, preserve, or develop with recreation facilities, specific sites identified in Darby Creek Greenway Segment Plans.	Quality of Life	L	GBs	DC, PCs	DCNR
ACTION #15	Develop the Darby Creek Stream Valley Park Trail	Connection	L	DC, GBs	DCVA	DCNR, DEP, Other
ACTION #16	Implement the recommendations of the Heinz Refuge Access Study.	Implementation	L	DC, GBs	CAC, FWS, Phila.	DCNR, PennDOT
ACTION #17	Develop gateways or trailheads to accompany bridge entrances over Cobbs Creek into Philadelphia	Implementation	L	GB	DC, Phila.	DCNR, CAC

TABLE 4-1
GREENWAY PLAN FOR THE DARBY CREEK WATERSHED
ACTION PLAN
(CONTINUED)

ACTION	RECOMMENDED ACTION	GOAL/S	TIMING	LEAD ORGANIZATION	PARTNERS	TECHNICAL SUPPORT
ACTION #18	Develop a public education program that focuses on the importance of greenways, their benefits, opportunties, and stewardship	Quality of Life Education Implementation	G*	DCVA	DC, Schools, GBs, EACs	DCIU, DCNR, DEP
ACTION #19	Develop a marketing plan for the greenway (website, brochures, and other materials).	Implementation	M	DCVA	professional consultant, DCNR, DEP	DC
ACTION #20	Develop a website for the Darby Creek Watershed greenway.	Education Implementation	G	DC	DCVA, GBs, EACs	DCNR
ACTION #21	Develop a graphics guide for the greenway, containing logos and graphics that could be used for signage, brochures, website, and other publicity and marketing for the greenway.	Implementation	G*	DC	DCVA, Schools	professional consultant, DCNR
ACTION #22	Develop and institute a procedure that involves review of tax delinquent properties along greenway corridors to determine if a conservation deed restriction should be attached prior to sale or transfer of ownership	Conservation Implementation	G*	DC	n/a	n/a
ACTION #23	Coordinate Delaware County implementation efforts with other counties, regional planning entities, and regional stakeholders.	Implementation	G*	DC	DVRPC, Phila.	DEP, DCED, DCNR
ACTION #24	Work with large property owners (i.e., schools, cemeteries, golf courses, etc.) to foster and encourage proper stewardship of their land.	Education Implementation	C	DC, DCVA, GBs	EACs, Schools	DEP, DCNR
ACTION #25	Engage cemetery owners and operators in greenway outreach, educating and giving technical assistance on sustainable design and maintenance at their sections of the greenway.	Education Implementation	L	DC, DCVA	EACs, GBs	DEP
ACTION #26	Ten years after the Greenway Plan for the Darby Creek Watershed is adopted, it should be reviewed and updated to encourage synchronization with other County planning initiatives.	Implementation	L	DC	DCVA	DCNR

ABBREVIATIONS OF AGENCIES AND ORGANIZATIONS

CAC	CleanAir Council
DC	Delaware County (including DCPD, DCCD, & County Parks)
DCED	Pennsylvania Department of Community and Economic Development
DCIU	Delaware County Intermediate Unit
DCNR	Pennsylvania Department of Conservation and Natural Resources
DCVA	Darby Creek Valley Association
DEP	Pennsylvania Department of Environmental Protection
DVRPC	Delaware Valley Regional Planning Commission
EACs	Municipal environmental advisory committees
EPA	U.S. Environmental Protection Agency
FWS	U.S. Fish and Wildlife Service (John Heinz NWR)
GBs	Municipal governing bodies and associated staff
Hos	Historical Organizations
NCs	Counties neighboring the study area
O	Other
PANA	Pennsylvania Advocates for Nutrition and Activity
PCs	Municipal planning commissions
PennDOT	Pennsylvania Department of Transportation
Phila.	City of Philadelphia
PHMC	Pennsylvania Histoic and Museum Commission
Schools	Public and private schools (K-12)
SEPTA	Southeastern PA Transportation Authority
STCs	Shade tree commissions/committees

3. Positively impacts important and threatened open space, including areas that are biologically and ecologically significant (i.e., identified in the *Natural Areas Inventory of Delaware County* (1992) or its update, the *Natural Heritage Inventory of Delaware County* (2011), still in production).

4. Protects important wildlife movement corridors and bird migration paths

5. Encourages or helps to facilitate protection of important historic, cultural, resources

6. Protects agricultural land (e.g., active farm and/or as a scenic vista within the greenway)

7. Protects the natural landscapes in the form of woodlands, tree canopy, and meadows

8. Expands or enhances greenway open spaces targeted for both passive and active recreation

9. Presents an opportunity for brownfield restoration or reclamation (contaminated site clean-up and redevelopment)

TRAILS

The following is a list of potential criteria that could be used for development of trails in the Darby Creek Greenway Network. The project:

1. Is listed in a local segment area plan (i.e., *Darby Creek Stream Valley Park Master Plan*)

2. Requires the least amount of effort (planning/approvals/cost)

3. Links important historic, cultural, and commercial destinations (man-made resources) through greenway development

4. Directly links significant destinations (e.g., schools, parks, shopping or employment centers, or residential areas) where there is direct evidence that trail will be well used

5. Provides a safe alternative to an unsafe condition (e.g., a project offering an alternative to pedestrians sharing or a vehicular route or crossing a busy roadway at grade)

6. Connects established or protected linear greenway corridors and major hubs or destinations

7. Provides a missing link to allow connection of segments as part of a longer trail system.

PILOT IMPLEMENTATION PROJECTS

The following are descriptions of projects that can and/or should begin as soon as possible. Some involve smaller-scale greenway planning, while others involve actual site development. A few of the projects described are already in progress. They are not listed in any particular order.

PILOT PROJECT A – ORGANIZE A WATERSHED-WIDE GREENWAY TASK FORCE (ACTION #12)

The most important element needed for greenway plan implementation is watershed-wide coordination and cooperation. Therefore, one of the best ways to help facilitate implementation of the greenway plan is to form a watershed-wide greenway task force. This entity could serve as a mechanism to assist municipalities with development of their individual segment plans and help coordinate projects with watershed-wide implications.

The Delaware County Planning Department (DCPD), possibly in cooperation with the County Parks Department, would be a logical choice to convene the initial task force, which could later be led by the municipalities. Consideration should be given to representation from the following: municipal managers and recreation staff, County staff, Darby Creek Valley Association (DCVA), schools, business associations, bicycling organizations, anglers, bird watchers, and historical groups. Municipalities and organizations could each designate a representative to serve on the task force, possibly selecting a member that participated in the development of this plan. Consideration should also be given to including several key owners of land in large greenway hubs.

The task force should serve as a means to achieve face-to-face communication between watershed stakeholders, County staff, and the municipalities. It should meet regularly to discuss progress in implementation and to coordinate advocacy for policies and actions recommended in the Plan. The task force could also undertake an education and marketing program for the greenway as a whole, and provide technical assistance to municipalities and stakeholders interested in implementation and/or pursuit of grant funding for implementation.

PILOT PROJECT B – PREPARE GREENWAY SEGMENT PLANS (ACTION #13)

The greenway segments profiled in the previous chapter are proposed as study areas for more detailed planning. DCPD encourages the creation of multi-municipal project task forces where the segments are made up of more than one municipality. One reason that multi-municipal planning is encouraged is so that municipalities with a greenway along their common border, such as Darby Creek between Haverford and Marple Townships,

can set similar agendas for a common purpose on both sides of the stream (e.g., resource protection).

Segment greenway plans can be stand-alone planning projects or could be integrated into larger municipal or multi-municipal comprehensive open space, parks, and recreation plans. Since every segment is different, and there are many types of greenways in the Greenway Network, plan task forces are encouraged to follow the model of the Darby Creek Stream Valley Park Master Plan. The term "master plan" was used to describe the document because it was intended to be a feasibility study (or plan) for a trail in a larger "connected" stream valley park. The other segment plans should also be considered feasibility studies, customized for the types of greenways desired and the unique features of the area.

Based on local initiatives and conversations with stakeholders, the Radnor (Segment #2) and Haverford-Marple (Segment #3) appear to be ready to begin detailed planning immediately. Other segments will need to establish local leadership before they can begin planning. DCPD is available to assist municipalities in getting started.

Each of the segment area task forces can develop its own programs, implementation strategies, and long-term management structure for their individual greenway segments.

PILOT PROJECT C – DEVELOP A MARKETING PLAN, WEBSITE, AND GRAPHICS GUIDE FOR THE GREENWAY (ACTIONS #19, 20, 21)

In order to help promote unified, consistent, implementation and promotion of the greenway plan elements, the greenway task force could oversee development of several tools that would help to facilitate implementation and use of the greenway network and its trails. The first two tools would be a marketing plan and associated website that could reach people who would not otherwise know about the greenway, its goals, and benefits. Marketing will get the word out about the greenway and build excitement for the plan's implementation. A website (with a unique domain name) could provide information about the greenway, historic sites, the location of trails, and watershed stewardship. A third tool for greenway plan implementation would be a graphics guide for use when developing public trails. It could provide guidance for installation of "recognizable" trail elements such as a greenway logo, template for interpretive signage, standards for trails and trail heads, etc. Some of these elements are already included in the pilot segment plan for the *Darby Creek Stream Valley Master Plan.*

PILOT PROJECT D – PUBLIC EDUCATION PROGRAM (ACTION #18)

While a marketing program will help to make watershed residents aware of a potential trail in a segment, more important environmental issues in the watershed could still be overlooked. Outdoor enthusiasts indicate that there is very little awareness about the importance of greenways, streams, water quality, critical habitats, and historic resources and landscapes among the general population. DCVA's primary mission is to partner with watershed organizations to protect and enhance these resources and to provide

education to residents in the watershed. DCVA, with help from the greenway task force, should develop an action plan for education of watershed residents on the value of the watershed's resources. Grant money could be sought for this endeavor. DCVA and the greenway task force should work with schools, the Delaware County Intermediate Unit, DCPD, the Delaware County Conservation District, and other area environmental organizations. Private landowners with property in the greenway are a key audience to engage, and the program should include creative ways to bring them into the discussion. Once the greenway graphics guide and website are created, they should be utilized to help promote the education program.

PILOT PROJECT E – ORDINANCES (ACTION #12)

A municipality or coalition of municipalities could work with DCPD to identify regulatory techniques that would best help to conserve the greenway's natural corridors. For example, there are a number of the greenway corridor segments where there are large lots (i.e., Radnor, Newtown, and Marple) where riparian buffer setbacks or "no-mow" ordinances might be acceptable for the protection of private property along stream corridors. Refer to the Land Preservation Techniques section of this chapter for more information. It is recommended that greenway protection ordinances also be discussed as part of the greenway segment planning process so that municipalities in the same corridor can apply similar regulations.

PILOT PROJECT F – DELAWARE COUNTY'S KENT PARK (AND VICINITY) TRAIL IMPLEMENTATION (UNDERWAY) (ACTION #15)

The County is proposing to develop one of the first sections of the Darby Creek Stream Valley Park Trail from the Garrett Tract and the SEPTA Bridge at Creek Road, through Kent Park to Baltimore Pike where it will align with Lansdowne Borough's Gateway Park. This project is further explained in the *Darby Creek Stream Valley Park Master Plan* (December, 2009). The trail will constitute the second phase of improvements to Kent Park; the first was the dog park, which was installed in 2008.

PILOT PROJECT G – LANSDOWNE GATEWAY PARK (UNDERWAY) (ACTION #15)

Lansdowne Borough recently completed a feasibility study and engineering plan for Gateway Park. The plan calls for installation of a paved trail that would connect Borough-owned land at the southeast corner of Baltimore Pike and Scottdale Road, through County-owned land along Darby Creek, and then through Lansdowne's Hoffman Park. Another unrelated project taking place in the area is a dam removal that will also involve a natural stream restoration.

PILOT PROJECT H – FORMALIZE A PROCEDURE TO EVALUATE TAX DELINQUENT PARCELS FOR INCLUSION IN THE GREENWAY NETWORK (ACTION #22)

Tax-delinquent properties temporarily held by the County before they are re-sold or ownership is otherwise transferred to the County or a municipality. County Departments that deal with tax delinquent properties, DCPD, and the County Solicitor should develop and implement a formal policy or procedure for evaluation of tax-delinquent properties for their environmental, open space, or greenway trail value. If they are deemed significant for these purposes (e.g., streamside floodplain with trail potential or a parcel adjacent to an existing park), the County should consider acquiring the parcel, conveying it to a municipality for open space, or attaching conservation deed restrictions on the properties before they are resold or transferred to new owners.

PILOT PROJECT I – ACQUISITIONS AND EASEMENTS (ACTION #14)

As segment area plans are prepared, the County and municipalities will identify parcels of interest for open space, trails, or conservation of natural resources. Depending on the purpose for which a parcel is identified in the segment plan, fee simple acquisition or acquisition of easements (for conservation or trails) may be appropriate, and should be actively pursued. The County and municipalities should also actively pursue any opportunities to acquire land or easements as they present themselves (i.e., through sale, development proposals, or donation).

PILOT PROJECT J – INVASIVE PLANT REMOVAL AND RE-PLANTING (ACTIONS # 4, 5, 6)

The greenway task force should consider working with DCVA and the municipalities to develop a program for the identification and removal of invasive plants in the watershed. Invasive species removal projects are multi-phase, and take a great deal of organization and preparation; therefore, experts in invasive species removal and native planting should be brought in to assist with any projects. The first step in the identification process would be to enlist volunteers to prepare a list of the worst affected areas. The list of areas with invasive species can later be prioritized for removal and ongoing follow-up according to a pre-determined system that would evaluate potential success based on land ownership, volunteer stewardship opportunities, and physical access to the site/s. Once the invasives are removed from an area, it should be re-planted with native plants, shrubs, and trees. Area volunteers could be re-enlisted to assist with the removal and re-planting process.

LAND PRESERVATION TECHNIQUES

One of the major purposes of development of the Delaware County Greenway Network is to promote, through a variety of methods, the long-term conservation of linear open spaces, particularly where the land is environmentally sensitive or vital to water quality

protection. Such protection can often take place whether the land is publicly or privately held. Municipalities have a number of tools at their disposal to achieve this end. They are usually implemented as part of the development process (e.g., requiring that a streamside portion of a development site remains in open space under the control of a homeowners association). However, in some instances, particularly when public access is desired, acquisition, either fee simple or through an easement, is the most appropriate mechanism to achieve this goal on a site by site basis. The following is a generalized list of techniques that can be used to implement the greenway network. It was prepared with assistance from Urban Research and Development Corporation (URDC). A more in-depth version of this list can be found in Appendix F.

ACQUISITION

Fee Simple Purchase

- Requires direct purchase of land from the present owner
- Acquisition and maintenance costs must be balanced with public benefits of the open space
- Funding sources include:
  - Municipal funds (obtained from tax dollars)
  - Municipal or other types of bonds
  - Lease-back agreements (lease municipal land to farmers, etc. for agricultural or open space use to help recoup some of the purchase price)
  - Open space and recreation grants, as available from state and federal sources

Bargain Sale

- Involves donation or sale of land (at a reduced price) to a municipality or land conservancy by a conservation-minded landowner
- Landowner avoids sales commission, may receive tax benefits, and is assured that his land will be preserved for open space purposes
- Municipality receives open space acreages at less than the market price

Life Estate

- Conservation-minded landowner donates/wills (or rights thereon) to a municipality or conservation organization after his death
- At the time of death, land (or rights) reverts to the municipality or organization
- Landowners and heirs may benefit from reduced taxes,* and the owner is assured that the land is used for open space purposes
- Municipality receives open space donation

Purchase and Leaseback/Resale

- Local government or a conservancy purchases land, place restrictions on the deed prohibiting certain uses (e.g., residential development), and sells or leases land to interested parties
- Resale of land with deed restrictions may maintain open space levels, relieve the municipality of maintenance obligations, and return the land to the tax rolls

Donation

- Land can be acquired through donations from private owners, organizations, and corporations
- Before accepting a donation, location of the parcel and the anticipated development and maintenance costs should be considered

Eminent Domain

- Usually the option of last resort
- Involves use of condemnation proceedings to acquire land intended for public recreational use in exchange for "just compensation" from an unwilling seller
- Can be an effective tool for land acquisition, but condemner must pay all associated costs for acquisition

EASEMENTS AND DEED RESTRICTIONS

Conservation Easements

- A legal agreement between a landowner and a recipient (conservation group or government) to restrict the use of the landowner's property for open space or scenic purposes
- Can be purchased or donated
- Municipalities may acquire properties in fee and then resell them after restrictive easements have been placed upon the land (according to Act 153 of 1996)
- Restrictions and the degree of public access are at the discretion of the owner
- If the easement is permanent and provides for public access, the owner may be eligible for income tax benefits* and/or estate and gift tax reductions
- A good private means to preserve open space without imposing acquisition or maintenance costs on the municipality

Other Easements

- Right of public access easement or pedestrian easement – allows for different types of trails to cross property
- Joint-use easement – accommodates multiple uses under one easement (e.g., a walking trail on a public utility corridor)

- Agricultural conservation easement – preserves prime farmland

ZONING AND SUBDIVISION TECHNIQUES

Conservation Design/Conservation Subdivision

- Reduces minimum lot size without raising density in order to use the remaining land for open space purposes
- The first step is to set aside the most significant natural and cultural features for conservation
- Often includes standards pertaining to the location and physical nature of the open space acreage

Open Space Requirements

- Can be built directly into zoning and/or subdivision ordinances
- Usually is a percentage of the acreage of the tract to be developed
- Often contains standards on the location and physical nature of the open space acreage

Mandatory Dedication of Open Space or Fees-in-Lieu Thereof

- Involves acceptance of a fee (dollar amount) in lieu of the open space required by a zoning or subdivision ordinance
- The fee is placed in an account for purchase of open space at a desired location or for recreational improvements to existing open space areas
- Care must be taken to avoid unfair or arbitrary imposition of fees

Municipal Ordinances

Municipal zoning ordinances and subdivision and land development ordinances can contain regulations for the protection of:

- Riparian buffers
- Floodplains
- Wetlands, high water table soils, and hydric soils
- Steep slopes
- Woodlands
- Prime farmland (agricultural zoning)

PRDs and PUDs

- Planned residential developments and planned unit developments
- Large-scale developments that permit a variety of uses on the same tract of land
- Open space is one of the required uses

- Performance standards as well as numerical standards for area, bulk, and open space

Performance Standards

- Allows alteration of zoning or subdivision standards to achieve a desired form of development

Official Map

- Map showing public lands and facilities from officially adopted municipal plans, such as a comprehensive plan
- Consists of a map and ordinance that identifies both existing and future public projects within the entire municipality or just a specific neighborhood or corridor
- Can be used to reserve a right-of-way for a period of one year while negotiations with a seller or developer take place and funds are secured
- Can aim to meet many objectives from a municipal comprehensive plan or just a single one like the preservation or reclamation of land along a greenway
- Can provide leverage for outside funding as it indicates a municipal commitment

Negotiated Improvements

- A bargaining tool, often used in conjunction with PRD and cluster development, which will result in a conditional use being allowed
- Can involve waivers - the alteration of minor zoning requirements in exchange for desired improvements, increased open space, etc.
- Improvements may also occur as a result of a "good neighbor" agreement
- Land swaps, or land exchanges, can be an outcome of negotiations

Transfer of Development Rights (TDR)

- Transfers development rights (density) from an area that is unsuitable or undesirable for development to an area that is adaptable to a higher density
- Involves a commitment on the part of a municipalitiy to create a higher density in certain portions of the municipality in order to save open space in other portions
- Ordinance elements needed to work:
    - Designated environmental protection zones (EPZs)
    - Designated transfer districts (TDs)
    - Procedures for transfer of development rights

PREFERENTIAL ASSESSMENT

Both Acts 515 and 319 (in particular Act 515) are valuable tools for open space preservation because the landowner is responsible for ownership and maintenance. But they are not permanent due to the high land values, which may offset tax penalties.

PA Act 515 (PA Assessment of Open Space Covenant Act–1966)

- Enables counties to offer preferential tax assessment on land if it meets the following criteria:
  - Used for open space, farmland, forest land, or water supply land (per minimum acreage requirement)
  - Landowner covenants with the County for a reduced assessment for a period of 10 years (with an automatic yearly renewal thereafter)
  - Landowner must pay roll-back tax penalty to all taxing districts for breach of the covenant

PA Act 319 (PA Farmland and Forest Land Assessment Act–1974)

- Enables counties to offer preferential tax assessment on land if it meets the following criteria:
  - Land assessment is based on the agricultural use value of the land according to the productivity of the soil
  - Landowner covenants with the County for a reduced assessment (subject to terms of County Assessor-based on soil surveys)
  - Landowner must pay roll-back tax penalty for withdrawal from covenant

GREENWAY FUNDING

Funding for greenway efforts is available from federal, state, and county governments, and from private organizations and foundations (refer to the grant funding information listed below). One of the most useful funding sources for greenway planning and implementation is PA DCNR's Community Conservation Partnerships – Community Grants Program. Many other options listed can be sought to match each of the other, including DCNR funding, municipal funds, and other sources. These funding opportunities are always changing; new programs are added and older programs are revised or deleted. Therefore, any municipality looking to fund a project should contact the administering agency to determine the exact requirements in effect at the time of application.

The Pennsylvania Greenways Toolbox's Funding Guide, located online at http://www.pagreenways.org/funding.htm, provides updated information about state and federal grant programs as well as standard and innovative local funding sources. These local funding sources include taxes, impact fees, bond referendums, a capital improvements program, private sector sources (foundations and businesses), trail sponsorship programs, volunteer work, "buy a foot" programs, and developer dedications.

GRANT FUNDING SOURCES

The following is a listing of grant funding programs for greenways. Some of these funding programs are specifically for trails. Others may fund riparian open space and recreation projects or historic preservation related projects, which may be applicable to the development of trail support facilities and the conservation of environmental assets. For more information on any of the programs below, contact the Delaware County Planning Department or go to the website address provided. This list was written with assistance by the County's consultants at URDC.

Grants offered through Pennsylvania Department of Conservation and Natural Resources (DCNR)
Website: http://www.dcnr.state.pa.us/brc/grants

- Community Conservation Partnerships Program (C2P2) - Land Trust Grants
- C2P2 - Community Grants
- Heritage Parks Program
- Land & Water Conservation Fund
  (Federal money, administered through DCNR)
- National Recreational Trails Funding (Symms NRTA)
  (Federal money, administered through DCNR)
- Rails to Trails, PA
- Rivers Conservation Program
- Urban Forestry Grants

Grants offered through Pennsylvania Department of Community and Economic Development (DCED)
Website: http://www.newpa.com/

- Industrial Sites Reuse Program, PA ("Brownfields")
  (DCED, in cooperation with PA DEP)
- Intermunicipal Projects Grants
- Land Use Planning and Technical Assistance Program (LUPTAP)
- Local Government Capital Projects Loan Program
- Shared Municipal Services

OTHER FUNDING SOURCES:

- Active Living By Design grants
  Offered/administered by: Robert Wood Johnson Fund
  Website: http://www.activelivingbydesign.org/

- Bikes Belong Coalition – General Grants
  Website: http://www.bikesbelong.org/

- Community Development Block Grant (CDBG)
  Administered by: Delaware County Office of Housing and Community Development (OHCD)
  Website: http://www.co.delaware.pa.us/hcd/cdbg.html

- Delaware County Revitalization Program
  Administered by: Delaware County Office of Housing and Community Development (OHCD)
  Website: http://www.co.delaware.pa.us/hcd/1007revitalizationprogram.html

- Historic Metal Truss Bridge Program
  Offered/administered by: PennDOT
  Website: www.penndotcrm.org

- Historic Preservation - Certified Local Government Grant Program
  Offered by: Federal government
  Administered by: PHMC
  Website: http://www.phmc.state.pa.us/

- Keystone Historic Preservation Grant Program
  Offered/administered by: PHMC
  Website: http://www.phmc.state.pa.us/

- National Scenic Byways Discretionary Grants Program
  Offered by: Federal Highway Administration's National Scenic Byways Program
  Administered by: Pennsylvania Byways Coordinator (at PennDOT)
  Website: http://www.bywaysonline.org/grants/

- PA Infrastructure Investment Authority (PennVest)
  Involves both U.S. EPA and state funds
  Administered by: PennVest, PA DEP (Bureau of Water Supply Management)
  Website: http://www.pennvest.state.pa.us/

- PECO Green Region Grants Program
  Offered by: PECO / Exelon
  Administered by: Natural Lands Trust
  Website: http://www.natlands.org/

- Rivers, Trails, and Conservation Assistance Program
  Offered/administered by: National Park Service
  Website: http://www.nps.gov/ncrc/programs/rtca/

- Robert Wood Johnson Foundation
  - General Foundation Grants
    Website: http://www.rwjf.org/
  - Local Initiative Funding Partners Program
    Website: http://www.lifp.org/

- Transportation Enhancements Program
  Offered by: PennDOT
  Administered by: Delaware Valley Regional Planning Commission
  Website: http://www.dvrpc.org/te or http://www.enhancements.org/

- TreeVitalize Program grants
  Administered by: Pennsylvania Horticultural Society
  Website: http://www.treevitalize.net/

- Wetlands Reserve Program
  Offered/administered by: U.S. Departmentof Agriculture (USDA)
  Website: http://www.nrcs.usda.gov/programs/WRP/

- William Penn Foundation
  General Grants
  Website: http://www.williampennfoundation.org/

REFERENCES

STATE DOCUMENTS

- *Pennsylvania Greenways: A Partnership for Creating Connections* (2001)
- *Creating Connections: The Pennsylvania Greenways and Trails How-To Manual* (1998)
  http://www.pagreenways.org/db-resourcedetails.asp?RESOURCE_ID=64
- *Benefits of Greenways: A Pennsylvania Study.* Pennsylvania Greenways Partnership Commission (2002)
  http://www.pagreenways.org/db-resourcedetails.asp?RESOURCE_ID=101

COUNTY, REGIONAL, AND WATERSHED-WIDE PLANS

- *Delaware County Bicycle Plan* (adopted 2009)
- *Darby Creek Watershed Conservation Plan*, DCVA (2005) http://dcva.org
- *Cobbs Creek Integrated Watershed Management Plan*, Philadelphia Water Department (2004) http://www.phillywater.org/Darby-Cobbs/Documents/WMP/watershed_management_plan.htm
- *Delaware County Open Space and Recreation Study*, DCPD (1978)
- *The Regional Plan of the Philadelphia Tri-State District*, Regional Planning Federation of the Philadelphia Tri State District (1932)
- *Floodplain Study and Conceptual Plan for Colwyn, Sharon Hill, and Darby Boroughs*. Munro Ecological Services, Inc. (March 13, 1997)

MUNICIPAL PLANS

The following municipal plans have in-depth sections on greenways:

- *Radnor Township Open Space Plan* (1991)
- *The Multi-Municipal Recreation, Park, and Open Space Plan for the Boroughs of Aldan, Colwyn, Darby, East Lansdowne, Lansdowne, and Yeadon, and the William Penn School District* (2006)
- *Upper Darby Township Comprehensive Plan* (2005)

PLACES AT THE STUDY AREA BOUNDARY

- *Philadelphia Fairmount Park Commission – Cobbs Creek Park Trail Master Plan* (2001)
- *Lower Merion Township – Open Space and Environmental Protection Plan* (2006)

- *Upper Merion Township – Open Space and Environmental Resource Protection Plan Update* (2004 Update)
- *Feasibility Study for Upper Merion Township – Township-Wide Pedestrian and Bicycle Network* (November, 2005)
- *Comprehensive Plan for Easttown Township* (June, 2001)
- *Tredyffrin Township Park, Recreation, and Open Space Plan* (2005)
- *Crum Creek Watershed Conservation Plan* (2005)

FORMAT INFLUENCE

- *Two-Rivers Area Greenway Plan*, Urban Research and Development Corporation for Two Rivers Area Council of Governments (2005)

OTHER REFERENCES

- Flink, Charles A. and Robert M. Searns. *Greenways, A Guide to Planning, Design and Development*. Island Press, Washington, D.C. 1993. P. 200-201.

APPENDIX A

STREAM INFORMATION

TABLE A-1
HIERARCHY OF STREAMS: DARBY SUB-BASIN

Stream	Feature/s	Municipalities
Darby Creek	Paper Mill House, Skunk Hollow, Glendale Park, Indian Rock Park, Kent Park, Hoffman Park, Bartram Park	Newtown, Radnor, Marple, Haverford, Upper Darby, and Springfield Townships; Clifton Heights, Lansdowne, Aldan, Yeadon, Darby, Sharon Hill, and Colwyn Boroughs
Thomas Run (w)	Aronimink Golf Club	Newtown and Radnor Townships
Little Darby Creek (nw)	Mill Dam Club	Radnor Township
UNS-8559 (e)	Chanticleer, Brooke Farm Trail	Radnor Township
Julip Run (nw)	St. David's Episcopal Church	Radnor Township
Abrahams Run (e)	The Willows (northern)	Radnor Township
Wigwam Run (ne)	Ardrossan Farm (northern)	Radnor Township
Camp Run (ne)	Ardrossan Farm (southern)	Radnor Township
UNS-8541 (w)	Malin Road Tract	Newtown and Radnor Townships
Miles Run (ne)	Briarwood Road Tract	Radnor Township
Foxes Run (sw)	Newtown Veterans Mem. Park	Newtown and Radnor Townships
UNS-1370 (sw)	Hunt Road, Newby Park	Radnor, Haverford, Marple
UNS-4626 (sw)	Cherry Hill Lane Tract, Marple Newtown Swim Club	Marple Township
Ithan Creek (ne)	Ithan Valley Park	Radnor and Haverford Townships
Browns Run (n)	Martha Brown's Woods	Radnor Township
Hardings Run (ne)	Radnor High School	Radnor Township
Ramsey Run (w)	Radnor Valley Country Club	Radnor Township
Kirks Run (ne)	Agnes Irwin School	Radnor Township
Meadowbrook Run (ne)	Radnor Chase Homeowners Assoc.	Radnor Township
Finn Run (se)	Bryn Mawr Ave.	Radnor Township
Valley Run (n)	Clem Macrone Park	Radnor Township
Doom Run (se)	St. Aloysious Academy	Radnor Township
UNS-5186 (se)	Radnor Chase Homeowners Assoc.	Radnor and Haverford Townships
UNS-HSHN (e)	Haverford State Hospital site, north	Haverford Township
UNS-1358 (e)	Haverford State Hospital site, south	Haverford Township
UNS-4627 (e)	Merion Golf Club West	Haverford Township
Langford Run (w)	New Ardmore Park	Marple Township
UNS-4629 (w)	Lawrence Park, Loomis Elementary	Marple Township
UNS-4630 (e)	Genthert Field	Haverford Township
Whetstone Run (w)	Archdiocese land at Card. O'Hara HS	Springfield and Marple Townships
UNS-11159 (w)	Cardinal O'Hara High School	Marple Township
UNS-DCPP (e)	Pilgrim Park, Aronimink Swim Club	Upper Darby Township
Collen Brook Run (ne)	Collenbrook Farm	Upper Darby Township
Levis Run (sw)	Springfield Veterans Memorial Park	Springfield Township
Falls Run (ne)	Marlyn Park	Lansdowne Borough
Lobbs Run (sw)	Aldan Swim Club	Aldan Borough
Pusey Run (w)	Collingdale Park	Collingdale Borough

Source: DCPD, USGS

Notes:

1. Streams are listed from top to bottom of the watershed
2. Codes with UNS prefixes refer to map code numbers for important unnamed streams.
3. Parentheses contain approximate compass directions of divergence from parent stream

TABLE A-2
HIERARCHY OF STREAMS: COBBS SUB-BASIN

Stream	Feature/s	Municipalities
Cobbs Creek (ne)	Powder Mill Valley Park, Bosacco Park	Haverford and Upper Darby Townships; Millbourne, Yeadon, and Colwyn Boroughs
UNS-4625 (w)	Merion Golf Club East	Haverford Township
Pont Reading Creek (ne)	Hathaway Lane	Haverford Township
UNS-PECO (sw)	PECO Energy Golf Club	Upper Darby Township
Indian Creek (ne)	Cobbs Creek Park	City of Philadelphia
Naylors Run (nw)	Drexel Gardens Park	Haverford and Upper Darby Twps.
UNS-4628 (sw)	Llanerch Country Club	Haverford Township
Blunston Run (nw)	Holy Cross Cemetery	Yeadon Borough

Source: DCPD, USGS

Notes:

1. Streams are listed from top to bottom of the watershed
2. Codes with UNS prefixes refer to map code numbers for important unnamed streams.
3. Parentheses contain approximate compass directions of divergence from parent stream

TABLE A-3
HIERARCHY OF STREAMS: DIRECT DRAINAGE SUB-BASIN

Stream	Feature/s	Municipalities
Darby Creek	John Heinz National Wildlife Refuge	Sharon Hill, Folcroft, Norwood, and Prospect Park Boroughs; Tinicum, Darby and Ridley Townships
Hermesprota Creek (n)	Conway Park	Collingdale, Folcroft, and Sharon Hill Boroughs; Darby Township
Muckinipates Creek (n)	Glenolden Park	Springfield, Upper Darby, Ridley, and Darby Townships; Glenolden, Norwood, and Folcroft Boroughs
UNS-4643 (ne)	Crescent Park, Glenolden School	Glenolden Borough and Darby
Long Hook Creek (se)	Philadelphia International Airport	Tinicum Township
Stony Creek (n)	Willow Park, Moore's Lake Field	Springfield and Ridley Townships; Morton, Prospect Park, and Ridley Park Boroughs
UNS-4641* (ne)	Springview Apartments	Springfield and Ridley Townships, Morton Borough

* Unofficially called East Branch Stony Creek on some maps

Source: DCPD, USGS

Notes:

1. Streams are listed from top to bottom of the watershed
2. Codes with UNS prefixes refer to map code numbers for important unnamed streams.
3. Parentheses contain approximate compass directions of divergence from parent stream

TABLE A-4
IMPORTANT UNNAMED STREAMS IN THE DARBY CREEK GREENWAY NETWORK

MAP ID	USGS Reach Code	Parent Stream	Municipalities	Significant Feature/s
UNS-8559	2040202008559	Little Darby Creek	Radnor Township	Chanticleer, Brooke Farm Trail
UNS-8541	2040202008541	Darby Creek	Radnor and Newtown Townships	Malin Road Tract
UNS-1370	2040202001370	Darby Creek	Radnor, Haverford, and Newtown Townships	Hunt Road, Newby Park
UNS-5186	2040202005186	Meadowbrook Run	Radnor Township	Radnor Chase Homeowners Assoc. land
UNS-4626	2040202004626	Darby Creek	Marple Township	Cherry Hill Lane Tract, Marple Newtown Swim Club
UNS-HSHN	Not classified by USGS	Darby Creek	Haverford Township	Haverford Reserve site, north
UNS-1358	2040202001358	Darby Creek	Haverford Township	Haverford Reserve site, south
UNS-4627	2040202004627	Darby Creek	Haverford Township	Merion Golf Club West
UNS-4629	2040202004629	Darby Creek	Marple Township	Lawrence Park, Loomis Elementary School
UNS-4630	2040202004630	Darby Creek	Haverford Township	Genthert Field
UNS-11159	2040202011159	Whetstone Run	Marple Township	Cardinal O'Hara High School
UNS-DCPP	Not classified by USGS	Darby Creek	Upper Darby Township	Pilgrim Park, Aronimink Swim Club
UNS-4625	2040202004625	Cobbs Creek	Haverfordd Township	Merion Golf Club East
UNS-PECO	Not classified by USGS	Cobbs Creek	Upper Darby Township	PECO Energy Golf Club, Cobbs Creek Park
UNS-4628	2040202004628	Naylors Run	Haverford Township	Llanerch Country Club
UNS-4641*	2040202004641*	Stony Creek	Springfield and Ridley Townships, Morton Borough	Springview Apartments
UNS-4643	2040202004643	Muckinipates Creek	Glenolden Borough and Darby Township	Crescent Park, Glenolden School

* Unoficially called East Branch Stony Creek on some maps

Source: DCPD, USGS from eMap PA, 2010

APPENDIX B

NATURAL AREAS INVENTORY SITES

TABLE B-1
NATURAL AREAS INVENTORY SITES

	Natural Areas Inventory Site	Municipality	Significance, Rank, Etc.
1	John Heinz National Wildlife Refuge at Tinicum	Tinicum Township, Folcroft Borough, City of Philadelphia	Statewide Significance, County Rank 1 (See text for more information)
2	Little Tinicum Island	Tinicum Township	Statewide Significance, County Rank 1. In a greenway, would only be accessible by canoe or kayak as part of a water trail.
3	Carwash Marsh at Tinicum (SA502, SP575)	Tinicum Township	Statewide Significance, County Rank 4.
4	Hog Island (SA584)	Tinicum Township	Statewide Significance, County Rank 4.
5	Essington Wetland (SP534, SP587)	Tinicum Township	Statewide Significance, County Rank 4.
6	Tinicum Macrosite	Tinicum Township	
6a	Airport Property (SA505, SA511, SA512)	Tinicum Township	Statewide Significance, County Rank 4.
6b	Property along Delaware River (SA513, SP501)	Tinicum Township	Statewide Significance, County Rank 4.
7	Cobbs Creek Park (Fairmount Park)	Haverford Township	Statewide Significance, County Rank 5. Parkland owned and maintained by the City of Philadephia's Fairmount Park Commission.
8	Leedom Estates Park Site (SP538)	Ridley Township	Statewide Significance, County Rank 5. Part of parkland owned by Delaware County, but leased to and maintained by Ridley Township.
9	Mt. Zion Cemetery (SP605)	Collingdale Borough	Statewide Significance, County Rank 5.
10	Darby Creek Valley Park (SP606)	Haverford Township	Statewide Significance, County Rank 5. Part of township parkland.
11	Skunk Hollow Woods (SP522)	Radnor Township	Statewide Significance, County Rank 5. Part of township parkland.
12	Pilgrim Park Woods	Upper Darby Township	Local Significance. Part of Township parkland.
13	State Hospital Woods	Haverford Township	Local Significance. Part of township recreational area and planned housing.
14	Summit Road Woods	Springfield Township	Local Significance. Partially or completely encroached upon by the Coventry Woods residential development.
15	Ithan Creek Wetland	Radnor Township	Local Significance. This area offers wildlife habitat and adds some diversity to the local landscape. It is a somewhat weedy wetland with good representation of common native wetland plants. The Cornerstone Homeowner Association owns the land. It should be protected from further encroachment and could be used as an outdoor classroom.
16	Radnor Woods	Radnor Township	Local Significance.

Source: Delaware County Natural Areas Inventory, 1992

Greenway Plan for the Darby Creek Watershed

Map B-1
Natural Areas Inventory

- Natural Areas Inventory Sites
- Greenway Plan Study Area
- Study Area Municipal Boundaries

CHESTER COUNTY

MONTGOMERY COUNTY

CITY OF PHILADELPHIA

16 Radnor Woods

11 Skunk Hollow Woods

15 Ithan Creek Wetland

State Hospital Woods 13

10 Darby Creek Valley Park

Cobbs Creek Park (Fairmount Park) 7

12 Pilgrim Park Woods

14 Summit Road Woods

9 Mt. Zion Cemetery

8 Leedom Estates Park Site

1 John Heinz National Wildlife Refuge at Tinicum

3 Car Wash Marsh at Tinicum

5 Essington Wetland

6 Tinicum Macrosite

2 Little Tinicum Island

4 Hog Island

0 1 2 3 4 Miles

Source:
Delaware County Natural Areas Inventory

Prepared By
Delaware County
Planning Department
2010

APPENDIX C

DEMOGRAPHIC INFORMATION

TABLE C-1
POPULATION BY MUNICIPALITY
1980 - 2000

Municipality	2000	1990	1980	Change 1980 to 2000	Percent Change 1980 to 2000
Aldan Borough	4,313	4,549	4,671	(358)	-7.7%
Clifton Heights Borough	6,779	7,111	7,320	(541)	-7.4%
Collingdale Borough	8,664	9,175	9,539	(875)	-9.2%
Colwyn Borough	2,453	2,613	2,851	(398)	-14.0%
Darby Borough	10,299	11,140	11,513	(1,214)	-10.5%
Darby Township	9,622	10,955	12,264	(2,642)	-21.5%
East Lansdowne Borough	2,586	2,691	2,806	(220)	-7.8%
Folcroft Borough	6,978	7,506	8,231	(1,253)	-15.2%
Glenolden Borough	7,476	7,260	7,633	(157)	-2.1%
Haverford Township	48,498	49,848	52,349	(3,851)	-7.4%
Lansdowne Borough	11,044	11,712	11,891	(847)	-7.1%
Marple Township	23,737	23,123	23,642	95	0.4%
Millbourne Borough	943	831	652	291	44.6%
Morton Borough	2,715	2,851	2,412	303	12.6%
Newtown Township	11,700	11,366	11,775	(75)	-0.6%
Norwood Borough	5,985	6,162	6,647	(662)	-10.0%
Prospect Park Borough	6,594	6,764	6,593	1	0.0%
Radnor Township	30,878	28,703	27,676	3,202	11.6%
Ridley Township	30,791	31,169	33,771	(2,980)	-8.8%
Ridley Park Borough	7,196	7,592	7,889	(693)	-8.8%
Rutledge Borough	860	843	934	(74)	-7.9%
Sharon Hill Borough	5,468	5,771	6,221	(753)	-12.1%
Springfield Township	23,677	24,160	25,326	(1,649)	-6.5%
Tinicum Township	4,353	4,440	4,291	62	1.4%
Upper Darby Township	81,821	81,177	84,054	(2,233)	-2.7%
Yeadon Borough	11,762	11,980	11,727	35	0.3%
WATERSHED MUNICIPALITIES	**367,192**	**371,492**	**384,678**	**(17,486)**	**-4.5%**

Source: U.S. Department of Commerce, Bureau of the Census

Prepared by Delaware County Planning Department, 2010

Note: This chart reflects total municipal population; areas outside of the watershed are included

TABLE C-2
2025 MUNICIPAL POPULATION FORECASTS

Municipality	Census 1990	Census 2000	DVRPC Forecasts 2005	2010	2015	2020	2025	% Change 00-25
Aldan Borough	4,549	4,313	4,180	4,160	4,030	3,980	3,970	-8.0%
Clifton Heights	7,111	6,779	6,590	6,480	6,280	6,150	5,990	-11.6%
Collingdale Borough	9,175	8,664	8,390	8,220	7,940	7,750	7,500	-13.4%
Colwyn Borough	2,613	2,453	2,360	2,300	2,220	2,150	2,060	-16.0%
Darby Borough	11,140	10,299	9,960	9,750	9,390	9,170	8,860	-14.0%
Darby Township	10,955	9,622	9,310	9,080	8,720	8,440	8,090	-15.9%
East Lansdowne	2,691	2,586	2,510	2,440	2,350	2,290	2,220	-14.2%
Folcroft Borough	7,506	6,978	6,770	6,630	6,390	6,210	5,980	-14.3%
Glenolden Borough	7,260	7,476	7,290	7,180	6,970	6,830	6,620	-11.4%
Haverford Township	49,848	48,498	47,500	47,010	46,910	46,840	46,770	-3.6%
Lansdowne Borough	11,712	11,044	10,700	10,490	10,140	9,920	9,610	-13.0%
Marple Township	23,123	23,737	23,890	23,830	23,720	23,710	23,330	-1.7%
Millbourne Borough	831	943	930	940	940	940	960	1.8%
Morton Borough	2,851	2,715	2,780	2,800	2,780	2,810	2,830	4.2%
Newtown Township	11,366	11,700	11,570	12,000	12,240	12,170	12,140	3.8%
Norwood Borough	6,162	5,985	6,100	6,030	5,870	5,770	5,620	-6.1%
Prospect Park Borough	6,764	6,594	6,450	6,400	6,260	6,210	6,110	-7.3%
Radnor Township	28,703	30,878	30,870	31,210	31,170	31,460	31,480	1.9%
Ridley Park Borough	7,592	7,196	7,270	7,160	6,940	6,800	6,610	-8.1%
Ridley Township	31,169	30,791	30,670	30,450	29,390	28,620	27,610	-10.3%
Rutledge Borough	843	860	870	850	810	790	760	-11.6%
Sharon Hill Borough	5,771	5,468	5,280	5,150	4,950	4,800	4,710	-13.9%
Springfield Township	24,160	23,677	23,600	22,590	22,590	22,180	22,340	-5.6%
Tinicum Township	4,440	4,353	4,410	4,360	4,250	4,190	4,100	-5.8%
Upper Darby Township	81,177	81,821	83,210	80,650	77,580	75,510	74,950	-8.4%
Yeadon Borough	11,980	11,762	11,440	11,290	10,970	10,800	10,540	-10.4%
Delaware County	**371,492**	**367,192**	**364,900**	**359,450**	**351,800**	**346,490**	**341,760**	**-6.9%**

Sources: Delaware Valley Regional Planning Commission (DVRPC), 1999
U. S. Department of Commerce, Bureau of the Census
Prepared by Delaware County Planning Department, 2010

TABLE C-3
2000 MEDIAN HOUSEHOLD INCOME
& POPULATION DENSITY BY MUNICIPALITY

Municipality	Median Household Income	Population Density (persons per square mile)
Radnor Township	$74,272	2,243
Newtown Township	$65,924	1,158
Haverford Township	$65,714	4,956
Springfield Township	$65,703	3,717
Rutledge Borough	$60,972	6,615
Marple Township	$59,577	2,258
Ridley Park Borough	$50,065	6,701
Aldan Borough	$47,292	7,188
Norwood Borough	$47,043	7,211
Lansdowne Borough	$47,017	9,351
Morton Borough	$46,731	7,502
Ridley Township	$45,918	5,845
Yeadon Borough	$45,450	7,320
Prospect Park Borough	$45,244	8,792
Folcroft Borough	$44,443	4,943
East Lansdowne Borough	$44,205	12,314
Tinicum Township	$42,910	500
Sharon Hill Borough	$42,436	7,195
Upper Darby Township	$41,489	10,398
Glenolden Borough	$41,189	7,707
Collingdale Borough	$40,207	9,959
Clifton Heights Borough	$39,291	10,934
Darby Township	$37,396	6,711
Colwyn Borough	$33,150	9,435
Darby Borough	$30,938	12,560
Millbourne Borough	$30,185	13,471

Source: U.S. Department of Commerce, Bureau of the Census
Prepared by Delaware County Planning Department, 2010

APPENDIX D

MUNICIPAL ORDINANCE INFORMATION

TABLE D-1
MUNICIPAL ORDINANCE INFORMATION

Municipality	Zoning Ordinance		Subdivision and Land Development Ordinance		Comprehensive Plan	Open Space, Parks, & Rec Plan
	Adopted	Amended	Adopted	Amended	Adopted	Adopted
Aldan Borough	10/10/1990	6/13/2001	1/10/1990		6/8/2005	2006**
Clifton Heights Borough	2/15/1993	6/6/2000	C		2007	
Collingdale Borough	11/9/1992		C		4/4/2005	
Colwyn Borough	12/28/1994		C		4/21/2005	2006**
Darby Borough	12/2/1998	7/23/2008	C		11/6/1991	2006**
Darby Township	7/21/1965	12/9/1998	C		5/1/1975*	
East Lansdowne Borough	3/20/1995	10/15/2008	C		2006	2006**
Folcroft Borough	4/11/1955	10/21/2008	11/15/1996		11/1/1982	
Glenolden Borough	7/9/1987	6/15/2004	C		5/27/1997*	
Haverford Township	5/25/1984	12/14/2009	12/13/1993		10/13/1987	
Lansdowne Borough	12/18/1985	9/20/2006	C		12/21/2005	2006
Marple Township	1/1/1999	8/11/2009	1978		4/8/1991	
Millbourne Borough	2/12/2001	7/20/2009	C		8/19/1997	
Morton Borough	4/12/1995		C		12/11/2002	
Newtown Township	11/14/1994	6/13/2005	6/9/1986	9/25/2000	12/27/2001	
Norwood Borough	9/14/1927	5/19/2008	C		3/22/2004	
Prospect Park Borough	8/25/1994	3/9/1999	C		12/12/1967*	
Radnor Township	5/26/2009	10/26/2009	6/13/1983	5/8/2006	1988*	1991*
Ridley Park Borough	6/13/1989	10/20/2009	2/21/1989	6/15/1989	1998	
Ridley Township	12/19/2001	4/23/2003	5/25/1977	12/19/2001	1974*	
Rutledge Borough	3/2/1998		8/24/1976		1971*	
Sharon Hill Borough	10/26/1995		6/25/1973	4/25/1981	4/28/2005	
Springfield Township	3/18/1997	4/8/2008	5/9/1995	11/10/1998	2007	
Tinicum Township	5/1/1998	7/12/2002	1993		1981	
Upper Darby Township	3/21/2001	4/16/2008	C		8/18/2004	
Yeadon Borough	7/12/1984	7/19/2007	C		2000	2006**

Source: DCPD, updated 3/26/2010

C - Records indicate using the county SLDO but no formal adoption found.

* Update currently under development

** Multi-municipal plan for Aldan, Darby, Colwyn, East Lansdowne, Lansdowne, & Yeadon. Was formally adopted by Lansdowne, but it is unknown whether the other five have adopted it.

TABLE D-2
RIPARIAN BUFFER WIDTHS IN MUNICIPAL STORMWATER MANAGEMENT ORDINANCES

Municipality	Riparian Buffer Width
Aldan Borough	10' minimum
Clifton Heights Borough	*unknown - did not respond to inquiry*
Collingdale Borough	10' minimum
Colwyn Borough	50' or 25% of setback (if setback is less than 50'), 10' minimum
Darby Borough	10' minimum
Darby Township	50' or 25% of setback (if setback is less than 50'), 10' minimum
East Lansdowne Borough	10' minimum
Folcroft Borough	50' or 25% of setback (if setback is less than 50'), 10' minimum
Glenolden Borough	10' minimum
Haverford Township	50' or 25% of setback (if setback is less than 50'), 10' minimum
Lansdowne Borough	50' or 25% of setback (if setback is less than 50'), 10' minimum
Marple Township	100', or 75' minimum, if setback is less than 100'
Millbourne Borough	*unknown - did not respond to inquiry*
Morton Borough	50' or 25% of setback (if setback is less than 50'), 10' minimum
Newtown Township	50' or 25% of setback (if setback is less than 50'), 10' minimum
Norwood Borough	10' minimum
Prospect Park Borough	10' minimum
Radnor Twonship	35', 25', or 15' – depending on zoning district
Ridley Township	50' or 25% of setback (if setback is less than 50'), 10' minimum
Ridley Park Borough	50' or 25% of setback (if setback is less than 50'), 10' minimum
Rutledge Borough	50' or 25% of setback (if setback is less than 50'), 10' minimum
Sharon Hill Borough	25' or 25% of setback (if setback is less than 25'), 10' minimum
Springfield Township	50' or 25% of setback (if setback is less than 50'), 10' minimum
Tinicum Township	50' or 25% of setback (if setback is less than 50'), 10' minimum
Upper Darby Township	50' or 25% of setback (if setback is less than 50'), 10' minimum
Yeadon Borough	10' minimum

Source: DCPD, 2010

APPENDIX E

PUBLIC PARTICIPATION PROCESS

DARBY CREEK WATERSHED GREENWAY PLAN FOCUS GROUPS AND INTERVIEWS

FOCUS GROUPS

1. Utilities w/Rights-of-way in the Watershed (9/12, 2:00 p.m.)
   a. PECO Energy – Ralph Brown
   b. DELCORA – Ed Bothwell, Asset Planning and Construction Manager

2. Municipal Interests- Lower (9/12, 4:00 p.m.)
   a. Bill Scott- Sharon Hill Borough Manager
   b. Don Cook, Mayor- Prospect Park Borough
   c. Daniel Lanciano- Springfield Township Chair of Park & Rec. Board

3. Outdoor Groups (9/12, 5:00 p.m.)
   a. David Damon – fisherman, engineer
   b. Alan Samel – Stream Watch
   c. Steve Kosiak – Delco Anglers

4. Master Plan Area Focus Group (9/12, 7:00 p.m.)
   a. David Forrest, Lansdowne Borough Manager
   b. Jayne Young, Lansdowne Mayor
   c. Andrew Brazington, Yeadon Borough & StreetztoCreeks, LLC
   d. Dan Procopio, Chair, Aldan Borough Planning Commision
   e. Joseph Vasturia Upper Darby Townhip Municipal Engineer
   (missing: Darby Borough, Clifton Heights Borough)

5. Business/Tourism Interests (9/19, 11:00 a.m.)
   a. Marty Milligan, Brandywine Conference and Visitor's Bureau
   b. Jeff Vermuelen, Delaware County Chamber of Commerce
   c. Betsy Mastaglio, McCormick-Taylor, Baltimore Pike Corridor Project
   d. Richard Grocott, Vice President, Lansdowne Business Association

6. Water Trail Interests (9/19, 2:00 p.m.) Without other attendees, turned into a one-person interview.
   a. Kate McManus – Heinz Refuge

7. School Districts (9/19, 5:00 p.m.)
   a. Marple-Newtown SD- Dr. Carl Funk, Math & Science Coordinator
   b. Radnor Township SD- Leo Bernabei, Chief Operations Officer
   c. Radnor Middle School- John Savitch, Teacher, Watersheds ed. program
   d. Springfield SD- Lynn Glancy, Director of Operations
   e. Scenic Hills (Springfield) Elem.- Donna Storti, Teacher (Ecology Center)
   f. Interboro SD- Dottie Raphael

8. Municipal Interests- Upper (9/19, 6:00 p.m.)
   a. Tom Blomstrom– Radnor Parks and Recreation Director
   b. Dorothy Ives Dewey– Radnor Planning Commission
   c. Ginny Kreitler– Radnor Conservancy
   d. Steve Paolantonio– Radnor Conservancy
   e. Joe Flicker– Marple Township Manager
   f. Joseph Mastronardo, Pennoni Engineering for Haverford Township

9. Bicycling Interests (9/19, 7:00 p.m.)
   a. David Bennett, Delaware County Cycling Coalition
   b. Dominic Zuppa, Delaware County Cycling Coalition
   c. Justin Dula – DCPD Bicycle Planner
   d. Emily Linn – Clean Air Council
   e. Matt Huffnell – Haverford Township Police
   f. Maura Williams–Lansdowne resident, bicyclist

KEY PERSON INTERVIEWS

Interviewed by URDC, consultant

1. Richard Paul – Delaware County Heritage Commission (9/12, 10:00 a.m.)
2. Ed Magargee/Jamie Anderson – Conservation District (9/12, 11:00 a.m.)
3. Marc Manfre – Delaware County Parks Dept. (9/12, 1:00 p.m.)
4. Tom Witmer, Fairmount Park Commission, Joanne Dahme – Philadelphia Water Department (9/12, 3:00 p.m.)
5. John Furth – DCVA (9/19, 9:00 a.m.)
6. Tim Denny– Haverford Township Parks and Recreation (9/19, 10:00 a.m.)
7. John Pickett – Director, DCPD (9/19, 12:00 p.m.-lunch)
8. Bill Kay, owner – Drexelbrook Community owner, Upper Darby (9/19, 3:00 p.m.)
9. Cathy Judge-Fizzano- Fitzgerald Mercy Hospital (9/19, 4:00 p.m.)

Interviewed by DCPD staff

10. Mark Possenti – Darby Borough Manager 10/27/06
11. Jack Ryan – Darby Township Manager 12/27/06
12. Peter Williamson – Natural Lands Trust 1/4/07
13. Anne Ackerman – DCVA, knowledge of Cobbs Creek stream valley 1/18/07

GREENWAY PLAN FOR THE DARBY CREEK WATERSHED STEERING COMMITTEE MEETINGS

STEERING COMMITTEE MEMBERS

Robin Mann, President, Darby Creek Valley Association
John Furth, Darby Creek Valley Association
David Forrest, Lansdowne Borough Manager*
Craig Totaro, Lansdowne Borough Manager, took over for David Forrest in 2008
Tim Denny, Parks and Recreation Director, Haverford Township
Paul Horna, citizen representative, Springfield Township
Peter O'Keefe, Director, Ridley Township Parks and Recreation
Kate McManus, Deputy Refuge Manager, John Heinz National Wildlife Refuge*
Gary Stolz, Deputy Refuge Manager, John Heinz National Wildlife Refuge
A. Richard Paul, Chairman, Heritage Commission of Delaware County
Marc Manfre, Director, Delaware County Parks and Recreation
Charles Cavanaugh, Lansdowne Borough/Delaware County Park Board
Ed Magargee, Manager, Delaware County Conservation District
Marty Milligan, Brandywine Convention and Visitors Bureau

County Planning Department Staff & Consultants:
Steven Beckley, Senior Planner, DCPD
Karen Holm, Environmental Section Manager, DCPD
Lois Saunders, Deputy Director, DCPD
Consultants: Phillip Hunsberger, RLA , and Robert Kriebel, AICP, Urban Research and Development Corporation (URDC)

* Original committee member, replaced by another

STEERING COMMITTEE MEETINGS:

#1 – June 16, 2006, 1:00 p.m., at Springfield Township Building. Agenda items included a general background of greenways, background and intent of the project, and public participation.

#2 – August 1, 2006, 1:00 p.m., at the John Heinz National Wildlife Refuge. Agenda items included a map discussion and preparation for upcoming public meeting, interviews, and focus groups.

#3 – October 3, 2006, 1:00 p.m., at Clifton Heights Borough Hall. Agenda items included comments on new maps, recap of public meeting, interviews, focus group meetings conducted the previous month, discussion regarding additional interviews, and a general discussion on greenway issues, ideas, and places.

#4 – January 25, 2007, 1:00 p.m., at Lansdowne Borough Hall. Agenda items included data collection and analysis update: greenway corridors and the greenway broken into segments,

Darby Creek Stream Valley Park Master Plan Update, updates on key person interviews, and review of draft introduction language.

#5 – January 15, 2008, 1:00 p.m., at Springfield Township Building. Agenda items included status report on the overall watershed greenway plan and the Darby Creek Stream Valley Park Master Plan, both of which DCPD had made much progress since the last Steering Committee meeting.

MINUTES
DARBY CREEK GREENWAY
STEERING COMMITTEE MEETING #1
Springfield Township Building
June 16, 2006

I. Introductions

At 1:13 p.m., Steve Beckley (**SB**) welcomed everyone to the meeting and asked everyone to introduce themselves to the Steering Committee.

After introductions, Karen Holm (**KH**) mentioned that the Delaware County Planning Department (DCPD) had completed the consultant selection process and expressed the satisfaction of the staff at DCPD with Urban Research and Development Corporation (URDC). She then invited Phil Hunsberger (**PH**) or Bob Kriebel (**BK**) to say a few words.

PH greeted everyone and provided some background information on greenway planning and the concept of greenway plans. **PH** outlined some previous plans and URDC's history of greenway planning.

II. History of Darby Creek Greenway Planning

KH gave a brief summary of the history of greenway planning within the County. DCPD is working to update the 1978 County Open Space, Parks, and Recreation Plan. The greenway plan for Darby Creek will be an element of this plan. This project is also the pilot greenway project for the County, as DCPD intends to prepare a second greenway plan for the remainder of the County after completing the Darby Creek Greenway Plan.

KH also spoke about the 1987 study that DCPD conducted for the Darby Creek Stream Valley Park and asked Lois Saunders (**LS**) to elaborate. **LS** explained how the plan was never fully implemented due to changes in administration and priorities following its completion. The plan still has some useful information concerning potential trails along Darby Creek.

KH then spoke of the most recent plan concerning Darby Creek, a Rivers Conservation Plan prepared by Thomas Cahill Associates for the Darby Creek Valley Association. **KH** explained that it contains a wealth of information that could be used for the greenway plan and invited Robin Mann (**RM**) to say a few words about it.

RM explained that one of the major goals of completing the plan was to create better access to DCNR funding for municipalities within the watershed. This led to a discussion of which municipalities had adopted the plan so far. Pete O'Keefe (**PO**) from Ridley Township explained that some municipalities were concerned with losing the ability to

apply for project funding independently. He also explained some of the trouble in Ridley Township with the Muckinipates Creek.

KH then explained how the PA Greenways Initiative is looking for every county to commit to the creation of a greenway plan by 2007. Though a major question by many was what a working definition of a "greenway" would be.

III. What is a Greenway?

PH proceeded to answer this question through a slide presentation entitled "What is a Greenway?" A definition of a greenway, what its components were, and an array of example greenway pictures helped to create a more precise vision of greenways. The simplest definition of a greenway is a linear corridor of open space, ranging from narrow ribbons of vegetation to wide corridors of undeveloped land. Greenways may include trails for recreation or may serve solely for conservation purposes with no public access; may include public or private land, may follow streams, old railroad grades, or other features.

PH finished the presentation and asked for questions. Paul Horna **(PaH)** from the Springfield Township Environmental Advisory Council (EAC) asked whether "greenway" was going to be a bad term to use after backlash resulted from takings issues in the past. **PH** responded to this by stating that communities should assure residents that they act according to their best interests. **BK** further commented that some people simply do not want a greenway near their homes and that their opinion must be respected. He also commented that the concept of a greenway is anticipated to take quite a while to be fully accepted.

PaH then asked whether working with non-profit organizations such as the Natural Lands Trust to hold easements has been considered. **KH** further explained easements and the idea that a greenway has the ability to link resources in the watershed and that it is more than simply a trail along the creek. She commented that Ridley Township has done well with the idea of linkages and has utilized them successfully, citing the Ridley Marina area waterfront as an example. She also stated that she hopes eminent domain will not be an issue. **PH** responded to this by stating that the issue of eminent domain is a very low priority in terms of things to be concerned about at the time.

PH commented on his amazement of how the Darby Creek corridor is very noticeable from aerial maps and how one can go from a very densely developed area to a vegetated natural area very easily, as they co-exist right next to each other. He explained that he is very excited about the project and that the first goal of the greenway is conservation. It will also create open space for the public to enjoy and even possibly assist with flood control.

PaH explained that greenways also help to control non-point source water pollution and that Delaware Coastal Zone money may be a source of funding for greenway implementation projects.

IV. Overview of the Scope of Work

SB introduced the Darby Creek watershed by utilizing a map that showed the watershed and the waterways within it.

SB further explained that the greenway would not just exist along streams but that it could also be located along abandoned rights-of-way. One of the visions for the plan is to incorporate other plans; another is for it to be used as a tool for planning new parks and other open space or recreational areas. The plan could also help to obtain grant money.

SB demonstrated how the watershed would be broken into segments, with the plan laying out focus areas for further detailed study and planning, preferably by small groups of municipalities. He explained that an update/revision of the Darby Creek Stream Valley Park Master Plan (1987) would be the pilot focus area plan. He stated that the greenway plan was currently in the data collection phase and invited input from all that were in attendance. Public input for the project would be established at public meetings concerning the greenway plan. **SB** also asked for input regarding maps that were presented.

SB stated that an action plan for implementation would be included in the final plan, which would include recommended acquisition sites and profile the focus areas. He began to elaborate on the role of the URDC consultants who will be assisting the County with the public participation and updating the Darby Creek Stream Valley Park Master Plan update components of the planning process. He explained that URDC is also responsible for 10 of the 25 key person interviews, and that he was hoping that 15 of the interviews ideally be conducted by the Steering Committee members.

KH explained that a lot of public participation is needed due to Department of Conservation and Natural Resources (DCNR) requirements. She also stated that URDC consultants have “unbiased” opinions, which allows them to be neutral parties throughout the process of creating the plan.

V. Questions and Open Discussion

PH explained that key person interviews are helpful in dealing with complicated areas and issues associated with the project. **PO** then asked who the key persons would be. **PH** responded by saying that municipal officials, potential greenway users, school districts, business owners, and sewer authorities are key people who will need to be interviewed.

SB offered to let everyone review the scope of work and began discussing the number of meetings there would be. He explained that 3 large public meetings will be held and that the Steering Committee will meet once every two months.

PaH asked how the focus groups would be organized. **BK** responded that the focus groups will be organized according to interests and entities, which could be by

geographic location, function, affiliation, etc. **RM** commented that the groups are good as long as they avoid any conflicting interests.

Edward Magargee (**EM**) from the Delaware County Conservation District then asked when the Committee would decide upon whether a conservation area or trail is wanted for the greenway. **KH** responded by stating that it depends upon what is there and if it needs to be looked at as a part of the process.

EM then asked about the possibility of flood zoning. **KH** stated that land use is controlled by the municipalities and not by the plan. She also stated that outreach to the community is important for education.

Dave Forrest (**DF**), of Lansdowne Borough, then asked about how people will know that the greenway is there and how people will be attracted into the creek valley. **KH** and **SB** both responded by suggesting that, in the future, online and hard copy maps and signs banners, and flags could be used to promote the trail. **SB** further commented that signage for directing people to the greenway and also off the greenway to important hubs could be incorporated into the plan.

EM asked where the funding for implementing the project would be coming from and if PennDOT was a contributor. **PH** responded by saying that PennDOT is a possible contributor along with DCNR. **KH** suggested the Growing Greener II grants. **EM** then reminded the group about the Americans with Disabilities Act, which may place conditions on the design of any trails. He then asked whether the greenway would be handicap accessible. **PH** responded by saying that the trail will be accessible to people with disabilities.

PH then asked about the success of the Radnor Trail that has been created in Radnor Township. **RM** commented that the trail has become very popular now, especially with those who live within the community. She was unsure about how many people from outside the Township used the trail.

VI. Next Steps

KH then discussed the coordination of future meetings and noted that the public meeting could be coordinated through email. She also asked about a potential date for the fall public kickoff meeting. Gary Stolz (**GS**), Deputy Manager of the John Heinz National Wildlife Refuge, then suggested that the next meeting be held at the Refuge. All agreed to this suggestion. **RM** suggested that the meetings for the plan be spread throughout the watershed.

BK concluded that the next Steering Committee meeting will be held at the John Heinz Wildlife Refuge, and discussion began about the best time and date for the meeting. Marty Milligan (**MM**) then suggested that the meetings be kept to 1½ hours in length, as people begin to lose interest after that length of time. All agreed with this comment.

There was also discussion about other times of day, but 1:00 remained the consensus best time.

It was agreed that the next Steering Committee meeting would be held on Tuesday, August 1, 2006, from 1 p.m. to 2:30 p.m. **GS** then indicated that directions to the Heinz Refuge could be found on the website: heinz.fws.gov. He also gave the phone number for the Refuge if there were any questions, (215) 365-3118.

VI. Adjournment

SB then adjourned the meeting at 3:00 p.m.

Darby Creek Greenway Steering Committee: Attendance 6/16/06

Attendance for the Darby Creek Watershed Greenway Steering Committee Meeting held on June 16, 2006 at the Springfield Township Building.

Title	First name	Last name	Company	Work phone	Email
Mr.	Steven	Beckley	Delaware County Planning Department	610-891-5214	beckleys@co.delaware.pa.us
Mr.	Tim	Denny	Haverford Township Parks Department	610-446-9397	lifebinit@speakeasy.net
Mr.	David	Forrest	Lansdowne Borough	610-623-7300x5	ForrestD@borough.lansdowne.pa.us
Mr.	Christopher	Gallagher	Delaware County Planning Department	610-891-5130	gallagherc@co.delaware.pa.us
Ms.	Karen	Holm	Delaware County Planning Department	610-891-5213	holmk@co.delaware.pa.us
Mr.	Paul	Horna	Springfield Township EAC	610-543-0737	
Mr.	Phillip	Hunsberger	Urban Research and Development Corporation	610-865-0701	phunsberger@urdc.com
Mr.	Robert	Kriebel	Urban Research and Development Corporation	610-865-0701	bkriebel@urdc.com
Mr.	Edward	Magargee	Delaware County Conservation District	610-892-9484	magargeem@co.delaware.pa.us
Ms.	Robin	Mann	Darby Creek Valley Association	610-527-4598	robinmann@earthlink.net
Mr.	Marty	Milligan	Brandywine Convention and Visitors Bureau	610-565-3679	mmilligan@brandywinecvb.org
Mr.	Peter	O'Keefe	Ridley Township	610-522-0557	
Mr.	A. Richard	Paul	Heritage Commission of Delaware County	610-353-4967	a.richard.paul@verizon.net
Ms.	Lois	Saunders	Delaware County Planning Department	610-891-5208	saundersl@co.delaware.pa.us
Mr.	Gary	Stolz	John Heinz National Wildlife Refuge	215-365-3118	gary_stolz@fws.gov
Ms.	Merissa	Trusz	Delaware County Planning Department	610-891-4959	truszm@co.delaware.pa.us

MINUTES
DARBY CREEK GREENWAY
STEERING COMMITTEE MEETING #2
John Heinz Wildlife Refuge at Tinicum
August 1, 2006

I. Introductions

At 1:10 p.m., Phill Hunsburger (**PH**) from Urban Research and Development Corporation (URDC) introduced himself and welcomed everyone to the meeting. He asked everyone to introduce themselves to the Steering Committee. He re-stated his role in assisting the Delaware County Planning Department (DCPD) on the project.

II. Data Collection Update

PH displayed a map of the watershed study area with the Darby Creek Stream Valley Park Master Plan area highlighted. An aerial photo was then shown with public land highlighted. The master plan area includes parkland and other open spaces owned by the County and municipalities. PH asked Lois Saunders (**LS**) of DCPD to explain the history of the 1987 Darby Creek Stream Valley Park Master Plan, the detailed greenway stream segment plan that URDC is preparing. The location of the master plan is between Garrett Road in Upper Darby and MacDade Avenue in Darby Borough, where Darby Creek touches parts of Upper Darby Township and Aldan, Clifton Heights, Lansdowne, Yeadon, and Darby Boroughs. **LS** said that in the 1970's and 80's the County did a good job acquiring land that had been prioritized. Then, County Council membership, and in turn their priorities, changed, stopping the process. **PH** said that now our goal is to update the Master Plan with a fresh look at the political realities and the physical possibilities of the location – which are actually very promising, thanks to all the streamside land that was acquired and set aside in the past either by the County or the municipalities.

Kate McManus (**KM**), Manager of the Heinz Refuge, stated that she has met people, through the Cobbs Creek Bikeway outreach effort that are disillusioned because the County did not follow through on the Master Plan. **PH** said that there is a great possibility for a trail in the Master Plan area. The area next to Shrigley Park is the only area within the Master Plan boundaries with no public land next to the creek. Robin Mann (**RM**) said that is where Lansdowne Borough is exploring the option of putting a trail along Scottdale Road.

John Haigis (**JoH**) of DCVA said that there is an easement to Bartram Park along the creek. The actual owner is unknown by him. We may need the Mercy Fitzgerald Hospital's permission to cross the property. The IGA supermarket site in Darby was recently acquired by Pat Burns. We should contact him and find out his plans for the property. He also said that he is personally interested in seeing the abandoned trolley

bridge near MacDade Blvd. opened for trail access, and that it could be considered for inclusion in the Master Plan.

KH said that part of the Master Plan update is to find out who owns what and find out if we can work with them or have to go around their properties in order to make connections. The Steering Committee can help to mend fences and eliminate any biases on the part of the public regarding the County's role in trails, without over-promising.

JoH added that there is also the reality of inter-municipal "unfondness." **KM** said that the County should be careful not to over-promise, but should act as a leader, and stick with it, like Montgomery County did with their Perkiomen Trail. Jan Haigis (**JaH**) said that there is often a lack of organization and some misinformation regarding who owns what properties. Boroughs and townships sometimes think they own parcels that they don't or vice versa. Sometimes one can even find area streamside parcels for sale on E-Bay.

III. Scheduling and Planning the Public Meeting

PH began the public meeting planning discussion by saying that once we schedule the meeting we will all need to help get the word out about it. **KM** stated that public meetings are not the best way to get public input, since usually the same people come out to them. **PH** said that may be true, but they still can be valuable as a way to interact with the public and provide an opportunity for the public to offer ideas on the project. **JoH** said that there could be informational tables at upcoming events such as the Canoe Challenge at the Riverfront Ramble and the Bikefest. **PH** said that we should notify stakeholders about the public meeting so that they can get the word out through their networks.

Next, the committee discussed the meeting location, time, and date. Using **KH**'s suggestion, we decided on the Springfield Township building as a tentative location (which was later confirmed). It was decided to wait until the end of September to hold the meeting in order to get the best attendance from the municipalities. It was tentatively scheduled for Tuesday, September 26 at 7:00 p.m.

KH noted that the County is developing a new, more user-friendly website. Trish Cofiell of the County Public Relations Office is working on the website, and may also be able to help us with a television announcement. She can be reached through Bill Lovejoy, the Director of Delaware County Public Relations. **KM** suggested using an interactive website for awareness and public input. Peter O'Keefe (**PO**), Director of Ridley Township Parks and Recreation, agreed with the website idea and also said that he is skeptical about getting municipal officials out to a meeting.

PH discussed the presentation he proposes to give at the meeting. URDC's "What is a Greenway" Powerpoint presentation, used at the previous Steering Committee meeting, will be modified for use at the public meeting. The presentation will explain what a greenway is, what it can do, and how it can benefit the population.

Tim Denny (**TD**), Director of Haverford Township Parks and Recreation, asked how he should describe the purpose of the meeting. **KH** said that the purpose of the meeting is to present the plan's objectives and the intent for an end-to-end greenway on Darby Creek [and its tributaries and other connecting corridors]. The meeting is a public information session designed to educate and inform the public about the greenway, but also an opportunity for attendees to tell us what kind of greenways they would like to see in the Darby Creek watershed. We will let them know how the public can contribute to the planning process.

It was mentioned that we should reach out to schools as well, through the science and history classes.

TD said that he has worked with DCVA and Bryn Mawr College on a grant with the Delaware Estuary Program at the Haverford State Hospital site. The groups involved with that could be useful for outreach.

After an off-agenda discussion on flooding issues, the committee got back on track when **PH** explained an activity to be conducted at the public meeting. He will distribute a handout highlighting six types of greenways, or "Conservation Corridors," and the participants at the public meeting would break up into three small groups and split time between three topical stations, led by URDC or DCPD staff. They would then discuss their thoughts on various kinds of greenways. Participants would spend 5-10 minutes at each station before moving to the next one.

IV. Planning for Interviews

PH explained that we intend to hold at least 25 key person interviews. As explained in the handout, there were six goals for the interview. URDC will conduct 10 interviews, while DCPD staff and other Steering Committee members will conduct 15. There will be two days selected for interviews and focus groups. On those days, the interviews or focus groups will be scheduled to last 40 minutes each and start every hour on the hour. They could begin in the late morning and run into the evening.

Next, the Steering Committee brainstormed a list of people or groups that should be interviewed or included as part of a focus group. The brainstorming session was very successful, as a sizable list was generated. After DCPD and URDC have a chance to organize the list and discuss it internally, it will be distributed to the Steering Committee for more comment.

V. Discuss Focus Groups

Focus groups were discussed at the same time as interviews. Common interests emerged as the Steering Committee brainstormed, which led to the creation of a few focus groups. As focus group meetings take place, it may become apparent that certain individuals have a wealth of information and should be brought in for a separate interview. Steve Beckley (**SB**) of DCPD pointed out that the focus groups can also be location-based, and he

handed out a list of "Possible Greenway Corridors" for consideration. The handout also included an update on some recent data collection and analysis.

VI. Next Meeting/ Adjournment

The next meeting was tentatively scheduled for October 3 at 1:00 p.m. at the Clifton Heights Municipal Building.

Darby Creek Greenway Steering Committee: Attendance 8/1/06

Attendance for the Darby Creek Watershed Greenway Steering Committee Meeting held on August 1, 2006 at the John Heinz National Wildlife Refuge.

Title	First name	Last name	Company	Work phone	Email
Mr.	Steven	Beckley	Delaware County Planning Department	610-891-5214	beckleys@co.delaware.pa.us
Mr.	Tim	Denny	Haverford Township Parks Department	610-446-9397	lifebinit@speakeasy.net
Mrs.	Jan	Haigis	Darby Creek Valley Association	610-583-0788	janhaigis@yahoo.com
Mr.	John	Haigis	Darby Creek Valley Association	610-583-0788	johnghd@yahoo.com
Ms.	Karen	Holm	Delaware County Planning Department	610-891-5213	holmk@co.delaware.pa.us
Mr.	Phillip	Hunsberger	Urban Research and Development Corporation	610-865-0701	phunsberger@urdc.com
Ms.	Robin	Mann	Darby Creek Valley Association	610-527-4598	robinmann@earthlink.net
Ms.	Catharine	McManus	John Heinz National Wildlife Refuge	215-365-3118	kate_mcmanus@fws.gov
Mr.	Marty	Milligan	Brandywine Convention and Visitors Bureau	610-565-3679	mmilligan@brandywinecvb.org
Mr.	Peter	O'Keefe	Ridley Township	610-522-0557	
Ms.	Lois	Saunders	Delaware County Planning Department	610-891-5208	saundersl@co.delaware.pa.us

MINUTES
DARBY CREEK GREENWAY
STEERING COMMITTEE MEETING #3
Clifton Heights Borough Hall
October 3, 2006

I. Introductions

Attendance at the meeting was low, so the start time was delayed to 1:15. There were a few attendees who hadn't been to previous meetings, so everyone introduced themselves.

II. Map Review

Steve Beckley (**SB**) of the Delaware County Planning Department (DCPD) invited the group to get up and view a series of maps that show the study area and possible greenway routes. The group talked among themselves about existing greenways, opportunities, and challenges.

III. Public Meeting Review

The group discussed the Public Kickoff Meeting that was held on September 26th. The meeting was considered a success. The background and intent of the greenway plan was presented to a group of around 45 people. There was no significant vocal opposition to the idea of a greenway. All of the input came in the form of questions and suggestions about what to include and what to look out for. An 11x17 aerial photo of the pilot segment area was distributed as a handout at the public meeting.

IV. Interviews/Focus Groups

Results to Date

SB passed out a summary of the focus group meetings and key person interviews that occurred on September 12 and 19. He named some of the people who were brought in and noted some things that were said.

Completion of Interviews

There are still about 15 interviews called for in the scope of work. Some of them will be conducted by DCPD staff; others can de delegated to Steering Committee members. As meeting attendance was low, it decided not to assign interviews, but to follow-up later with the rest of the committee. **SB** went over a list of possible interviewees, some of whom had been suggested before (to make sure there was still good reason to include each of them).

There was a discussion about a property belonging to Frank and Janet Mustin, landowners with streamside property north of and adjacent to Mercy Fitzgerald Hospital. John Furth (**JF**) noted that they are receptive to a trail, which they were against in the 1980s. This land is in Yeadon Borough, and a Darby Creek Joint Authority sewer line parallels the stream on the property. The County and the Borough should work with the Mustins to obtain either land or an easement across the property while they still own it. **JF** noted that they are planning to move and sell the property before too long. Phill Hunsberger (**PH**) of URDC said that the owner would need to be approached to discuss an easement for the trail. County funding would be needed for such an acquisition. Lois Saunders (**LS**) of DCPD said that the Planning Department would need to clear the idea with County Council. The County will make the initial contact with the Mustins.

V. Additional Comments

Dave Forrest (**DF**) asked what our first implementation projects will be. Consultants **PH** and Bob Kriebel (**BK**) of URDC explained that there are a number of projects already underway that are implementing parts of the greenway, including the Lansdowne gateway project. Some organizations interviewed presented opportunities that should be followed-up on soon. One of these is the Mercy Fitzgerald Hospital. Cathy Judge-Fizzano from the hospital was interviewed, and she indicated that the current hospital administration would have no problem of a trail across the property. The hospital may even want to subdivide the open space at the stream and give it to the County to own. It should be emphasized that it's the current administration that is pro-trail right now and we should move to get the land before anything changes.

At the interview, Ms. Fizzano also expressed her willingness to help us contact and set up an interview with Patrick Burns, the owner of the vacant supermarket at the intersection of MacDade Avenue and Darby Creek.

JF questioned what should be done to ensure a greenway at the Little Flower Manor site in Darby Borough, which is a closed senior living facility that is expecting development proposals. It was brought up that the best way right now would be through plan review and to talk to the developer and owner when the first proposal surfaces. **SB** said that the Borough is very interested in what happens to the open space at that site. We should also talk to Darby Borough officials to discuss long-term status of the streamside land.

DF asked the consultants how acquisition of key parcels for the greenway should be handled, how grants should be applied for, and the entity responsible for ownership and maintenance of greenway facilities. **PH** and **BK** answered that sometimes a "trail authority" forms from a group of municipalities. Usually each municipality [and the County] pays for improvements to greenway facilities on land in their ownership.

DF also suggested putting in a trail as a demonstration project, with the County possibly taking the lead on their land (from Hoffman Park north along Darby Creek). He said the County should take the lead to purchase the last remaining parcels.

JF suggested Darby Creek Stream Valley Park/Greenway signage near the Swedish Cabin. **DF** said that Lansdowne Borough would be willing to put up signage as part of the Darby Creek Greenway. **SB** said that a plan for signage design and placement would be a good follow-up to the greenway plan. Karen Holm (**KH**) said that this idea is much like what was done for the Route 291/13 Industrial Heritage Parkway along the Delaware River waterfront.

It was brought up that the "official map" could be a valuable planning tool. The official map is a planning tool identified in the Pennsylvania Municipalities Planning Code, in which a municipality formally maps rights-of-way for roads and other improvements of interest to the municipality.

There was a small discussion on the project's publicity, and it was recommended that the group meet with the editorial board of a newspaper in order to get a good article about our greenway. **KH** and **LS** of DCPD said that this is achievable and that Susan Hauser of DCPD should be consulted for assistance. Someone suggested that using web pages to promote the greenway would also be beneficial.

I. Next Meeting

No date or place was determined for the next meeting. DCPD will be in touch with the Steering Committee to set up the next meeting.

Attendance for the Darby Creek Watershed Greenway Steering Committee 10/3/06

Meeting held on October 3, 2006 at the Clifton Heights Borough Hall.

Title	First name	Last name	Company	Work phone	Email
Mr.	Steven	Beckley	Delaware County Planning Department	610-891-5214	beckleys@co.delaware.pa.us
Mr.	Spencer	Finch	Pennsylvania Environmental Council	215-592-7020x105	sfinch@pecpa.org
Mr.	David	Forrest	Lansdowne Borough	610-623-7300x5	ForrestD@borough.lansdowne.pa.us
Dr.	John	Furth	Darby Creek Valley Association	610-622-3939	jjfurth@excite.com
Mr.	Christopher	Gallagher	Delaware County Planning Department	610-891-5130	gallagherc@co.delaware.pa.us
Ms.	Karen	Holm	Delaware County Planning Department	610-891-5213	holmk@co.delaware.pa.us
Mr.	Phillip	Hunsberger	Urban Research and Development Corporation	610-865-0701	phunsberger@urdc.com
Ms.	Amy	Hurley	Delaware County Planning Department		ammph@temple.edu
Mr.	Robert	Kriebel	Urban Research and Development Corporation	610-865-0701	bkriebel@urdc.com
Mr.	Marty	Milligan	Brandywine Convention and Visitors Bureau	610-565-3679	mmilligan@brandywinecvb.org
Ms.	Lois	Saunders	Delaware County Planning Department	610-891-5208	saundersl@co.delaware.pa.us

MINUTES
DARBY CREEK GREENWAY
STEERING COMMITTEE MEETING #4
Lansdowne Borough Hall
January 25, 2007, 1:00 p.m.

I. Introductions

Steve Beckley (**SB**) began the meeting with introductions and thanked Dave Forrest (**DF**) and Lansdowne Borough for hosting the meeting.

II. Data Collection/Analysis Update

SB presented four draft segment maps of the watershed, showing the greenway network composed of broad corridors of green space. He explained that the maps currently show entire parcels as part of the greenway. As the maps are revised, the greenway corridor will be narrowed to more accurately show only the portion of each parcel to become part of the greenway.

Karen Holm (**KH**) mentioned the Rolling Green Golf Course as an example. The entire golf course is shown as part of the greenway, but future versions of the map may show only a narrow course along the creek as part of the greenway.

SB pointed out that the map included some manmade features, such as sewer rights-of-way, trolley and bus routes, PECO rights-of-way, and sites of historical significance, which are all potentially important elements of a greenway. **KH** explained that some of the features on the current maps may be down-played or removed based on local sensitivities. She cited the abandoned rail line in Haverford as an example.

SB shared a suggestion made by Anne Ackerman, a member of the Darby Creek Valley Association (DCVA), for a transit-oriented greenway. The concept would involve cataloguing open spaces and places of interest within walking distance from the stops along a SEPTA transit line, such as the Route 100 light rail line.

John Haigis (**JH**), representing DCVA, pointed out that the Darby Transportation Center should be shown at 9th and Market Streets. He also mentioned that 1) an application has been made for a historic marker at Prince's Mill, and 2) the Redevelopment Authority owns 6 parcels on the east side of Darby Borough that are not shown on the map.

SB also displayed a map showing the entire watershed divided into segments. He explained that the segment boundaries were created to delineate areas for further planning by the municipalities after the watershed greenway plan is completed. He asked the committee to review the districts and offer advice on boundary locations.

DF expressed concern that the County would relinquish the lead in planning after the watershed plan is completed. **KH** explained that the County wants to give the local leadership the prerogative in the more detailed, local planning effort. **DF** expressed the concern that without County leadership, the local plans will never be completed. **KH** noted that the County would still play a support role, but **DF** maintained that municipalities would require a push from the County. **KH** said that the County will provide leadership in the Stream Valley Park Master Plan segment, which will provide an example for the rest of the watershed municipalities.

Tim Denny (**TD**) concurred with **DF** that no municipal action would occur without County leadership. He said the County must initiate, lead, and continue to be active in greenway planning if the watershed plan is to move toward implementation.

Marc Manfre (**MM**) suggested that representatives from each municipality be invited to sit on the committee in order to involve all municipalities in the watershed in the planning effort. **KH** replied that having a representative from each of the 26 municipalities could be difficult to manage. However, occasional special meetings could be held to provide information to all 26 municipalities. As an alternative, **MM** suggested that current committee members lead subcommittees composed of other municipal representatives.

DF reiterated the opinion supported by other municipal representatives that the County must maintain a leading role in planning after the watershed plan is completed. **TD** suggested as an example of "active leadership," the County could provide for local governments: the County could apply for and hold grants on behalf of multiple municipalities that work jointly on a segment plan.

Pete O'Keefe (**PO**) warned that funding priorities between municipalities may become an issue, especially in areas where trails are desired. Ridley Township, for instance, is highly concerned with flooding. Therefore, if Ridley were to partner with another municipality for segment planning or greenway development, Ridley may want to apply any available money to fix stormwater problems before using funds for a trail project.

III. Darby Creek Stream Valley Park Master Plan

Phill Hunsberger (**PH**) of Urban Research and Development Corporation (URDC), supplied aerial photographs of the stream valley park showing parcels of interest along the targeted 4.8-mile stretch of stream corridor. He asked the committee to check the maps to verify that items such as ownership, labels, and boundaries are accurate and complete. He also expressed a desire for the DCVA to be a strong partner in caring for the Stream Valley Park.

PH pointed out that some important gaps between publicly owned lands along the corridor still require a solution in order to allow for a trail. He added that the trail shown on the aerial photographs he distributed is only a preliminary course and may require

changes. A focus group for the park master plan area will convene for a meeting on February 6 at 7 p.m. [It was later postponed.]

John Furth (**JF**) asked how Garrett Road was chosen as a boundary for the study area. **PH** explained that questions about access prevented the boundary from being expanded beyond Addingham. **SB** explained that the two houses on the Addingham site are leased, and the site itself is owned by Upper Darby Township. **JF** noted that a lot of land is in public ownership north of Garrett Road, and the boundary of the target area might be extended northward on public land, if desired.

DF asked that the master plan consider connections across the creek linking Aldan Borough to Lansdowne Borough in order to provide residents of Aldan access to Hoffman Park.

PH summarized the current master plan status by saying that there are no "red flags" that would kill the idea of a trail along the entire 4.8 miles of the creek within the target area. Several obstacles are big, and some are very costly, but none should be seen as insurmountable.

DF asked if the rock outcrop situation on Scottdale Road can be fixed. **PH** responded that he does not know, nor does any other committee member. The location would need to be examined in detail by a traffic engineer.

DF asked if the trail under the SEPTA bridge at Hoffman Park is County-owned. Lois Saunders (**LS**) explained that there are minutes of a meeting during which SEPTA voted to grant the easement for the trail to the County. However, the County cannot locate the legal paperwork documenting the easement.

PH noted the possibility of making a loop trail on both sides of the creek behind Mercy Fitzgerald Hospital. **KH** said the County has discussed trail access and development with the hospital, and it is very receptive to working with the County. The County has also been in discussions about the lands of Mr. Frank Mustin. **JF** noted that the land behind the hospital used to have stairways for access. In his opinion, more access to the trail system is better.

IV. Key Person Interviews

SB reviewed progress on the interviews and asked others for updates as well. **TD** reported on his attempts to identify and contact owners of some parcels along Darby Creek in Haverford Township. **SB** reported that Kate McManus from the Heinz Refuge, identified earlier as a key person to interview, has since resigned her position.

V. Review of Draft Introduction

SB reviewed the draft introduction that had been distributed earlier in the meeting. The introduction provided an idea of general plan contents.

VI. Review of Evaluation and Prioritization Criteria

SB announced that the criteria for evaluating greenway segments for improvements and establishing priorities for funding and development would be reviewed at a later meeting. Although some draft criteria were distributed prior to the meeting, additional revisions were made, and committee members were urged to disregard the previous version. A more up-to-date revision will be provided when the criteria are ready for discussion.

VII. Next Steering Committee Meeting

SB asked if anyone would like to host the next meeting. The date and place was not yet determined.

VIII. Adjournment

The meeting adjourned at approximately 2:40 p.m.

Darby Creek Greenway Steering Committee: Attendance 1/25/07

Attendance for the Darby Creek Watershed Greenway Steering Committee Meeting held on January 25th, 2007 at the Lansdowne Borough Hall.

Title	First name	Last name	Company	Work phone	Email
Mr.	Steven	Beckley	Delaware County Planning Department	610-891-5214	beckleys@co.delaware.pa.us
Mr.	Tim	Denny	Haverford Township Parks Department	610-446-9397	lifebinit@speakeasy.net
Mr.	David	Forrest	Lansdowne Borough	610-623-7300x5	ForrestD@borough.lansdowne.pa.us
Mr.	John	Furth	Darby Creek Valley Association	610-622-3939	jjfurth@excite.com
Mr.	Christopher	Gallagher	Delaware County Planning Department	610-891-5130	gallagherc@co.delaware.pa.us
Mr.	John	Haigis	Darby Creek Valley Association	610-583-0788	johnghd@yahoo.com
Ms.	Karen	Holm	Delaware County Planning Department	610-891-5213	holmk@co.delaware.pa.us
Mr.	Phillip	Hunsberger	Urban Research and Development Corporation	610-865-0701	phunsberger@urdc.com
Mr.	Robert	Kriebel	Urban Research and Development Corporation	610-865-0701	bkriebel@urdc.com
Mr.	Marc	Manfre	Delaware County Parks and Recreation	610-891-4663	manfrem@co.delaware.pa.us
Mr.	Marty	Milligan	Brandywine Convention and Visitors Bureau	610-565-3679	mmilligan@brandywinecvb.org
Mr.	Peter	O'Keefe	Ridley Township	610-522-0557	
Mr.	A. Richard	Paul	Heritage Commission of Delaware County	610-353-4967	a.richard.paul@verizon.net
Ms.	Lois	Saunders	Delaware County Planning Department	610-891-5208	saundersl@co.delaware.pa.us

MINUTES
DARBY CREEK GREENWAY
STEERING COMMITTEE MEETING #5
Springfield Township Building
January 15, 2008, 1:00 p.m.

I. Introductions

Karen Holm (**KH**) welcomed everyone to the meeting.

II. Greenway Planning Update

Since Our Last Meeting

KH explained that the purpose of this meeting is to bring the committee up to speed on the status of the greenway plan. The last time the Steering Committee met was January 25, 2007, nearly one year ago.

Status of Darby Creek Stream Valley Park Master Plan

KH recapped the details of the Darby Creek Stream Valley Master Plan segment of the greenway, where a multi-use trail is proposed, running from Upper Darby to Colwyn. DCPD is preparing an update to the 1987 park master plan that called for a trail. It will serve as a pilot segment area plan.

Shortly after the last meeting, DCPD received a number of inquiries from the Darby Creek Master Plan area municipalities about the greenway plan. They wanted to know what we were proposing, how it would affect their communities, and what it would cost. Considering that municipal buy-in, particularly in the area where we were actually proposing a trail, is critical to the success of the whole plan, DCPD entered into a number of discussions with municipal officials and County Council.

DCPD essentially started at square one, explaining the larger plan and how the park master plan fit in. Many of the municipalities had no idea that this wasn't a new idea, and that a master plan was prepared for this area in 1987. The more the officials and County Council heard about what we were proposing for the area, the more questions they had. There were good questions, such as: Where will the trail go? How much will it cost? Who will build it? How will it be maintained? How will it be policed? What will the construction and management structure be?

The outcome of our discussions was better than DCPD could have imagined. The officials concluded that:
They like the idea of the trail because 1) it will serve so many people in their municipalities, 2) it will help keep the area beautiful, and 3) help protect the stream and preserve areas for stormwater management and flooding.

Upper Darby Township stepped forward with the County Parks Department to install a section of the trail near Kent Park – eying opportunities north of Kent as well. Lansdowne Borough is already committed to a section of trail below Baltimore Pike near Hoffman Park. Each municipality will work with the County (to obtain grants) to continue implementation, depending on the location of the property. Each municipality will maintain and police the trail on its own property; County Parks will do the same on its property, continue to police its property, and continue to assist where they can.

- The group developed a long-term implementation structure that would involve all municipalities from Upper Darby to Colwyn, but the most active involvement would take place between the municipalities actively implementing the trail at any given time (Upper Darby, Lansdowne, County, etc.).
- KH said that we now have buy-in and are prepared to revisit the larger greenway plan with the whole committee. We're currently in the process of trying to set up a meeting with the new County Council to discuss the County greenway plan and the much larger open space plan.
- URDC has prepared a draft plan that is currently undergoing internal review. We have a preliminary alignment for the trail (with options depending acquisition of a few easements or construction of bridges).

III. Status of Draft Plan

KH said that even though a lot of our time over the past year was spent working on the Stream Valley Park Master Plan, we continued to work on the larger greenway plan. The County has made a great deal of progress on some of the background chapters that would be shared at the meeting today. Steve Beckley (**SB**) explained the planning that has occurred with the help of PowerPoint slides.

Greenway Segment Maps

A Saturday morning workshop meeting for the entire Greenway Plan was held by DCVA on November 3. **KH** and **SB** were the featured presenters. It included a PowerPoint presentation on the greenway plan which covered:

- What is a greenway?
- Types of Greenways
- Benefits of greenways
- The plan, including the Segment Areas
- What stakeholders can do to help?

DCVA planned to draft a model letter of support for organizations to write to County Council in support of the Greenway Plan.

SB said that he gave a version of the same presentation to the Haverford Civic Council on November 19. The seemed very supportive and are interested in helping the Township with promoting greenways at Darby Creek, Cobbs Creek, and Naylors Run.

Status of the Document

SB explained that the greenway plan will have 3 *major* chapters: Existing Conditions, Greenway Plan, and Implementation.

- The Existing Conditions Chapter will contain a profile of the watershed and its residents. Many things influence on the need for greenways, and many other things would be influenced by the greenway. How many people live in the watershed? What is the age and income distribution? What natural features are there? What is the history of the area and what historic sites can we find today? Educational systems, transportation, existing and planned trails? All these things are discussed, and the spatial elements were mapped. Mapping was an integral part of the research done for the Existing Conditions Chapter.
- The Greenway Plan Chapter will explain 1) The various types of greenways, 2) the hubs and spokes concept, 3) have an explanation of each stretch of each corridor of the Darby Creek greenway, 4) and include profiles of each segment.

    - **SB** explained that in order to view the segment maps, you first need to understand the *Types of Greenways* that are represented on them. These types are greenspace connections, road-based, transit-oriented, and water trails. There are also combinations of more than one of these and different sub-types of each. A handout helped to explain the different greenway types. **SB** also went through some PowerPoint slides that helped to explain them. In regards to road-based greenways, **CW** said that the County could consider a County scenic road designation. This has happened in other counties.
    - **SB** showed PowerPoint slides of the greenway segments; paper display maps were also available for viewing. The slides and map panels were also used at recent meetings for DCVA and at the Haverford Township meeting. The panels showed the 12 greenway segments that will be outlined in the plan. The plan will list opportunities and obstacles in each area.
    - The chapter will also highlight the 12 Pennsylvania Greenway strategies from the state's Action Plan for Creating Connections. Another handout helped to explain how these strategies are applied to local needs. **SB** went through each of the 12 Strategies and explained how some of them will influence the plan and its implementation.

- The Implementation Chapter is where the plan's recommendations will be (listed in the Action Plan). It will also contain recommended methods to help accomplish implement the actions. This chapter still needs much editing, additions, and refining.

Carolyn Wallis (**CW**) provided some perspective from the Pennsylvania Department of Conservation and Natural Resources (DCNR). She said that DCNR is looking to a

County greenway plan to be the master plan to provide a basis for funding. This greenway plan in Delaware County, though still not at street-level detail, seems to be more detailed than some other County Plans which are combination open space, greenway, and recreation plans (like Bucks County, for example). A major tie-in to a greenway plan is the Natural Areas Inventory. Delaware County may want to generate criteria for prioritizing projects [in the rough draft] and feature the presence of natural areas from the Inventory as criterion.

KH said that the County is hoping that municipalities will recognize the opportunities that are highlighted in the plan to come up with great greenway planning and development projects that the state would love to fund.

John Furth (**JF**) asked if other counties ever condemn land to protect greenways. **KH**, **SB**, and **CW** explained that it is done, but not often. Condemnation, or eminent domain, is often a risky move for elected officials since it can be politically unpopular. Plus, there can still be a high cost involved, since condemned land still must be purchased at fair market value.

V. Adjournment

The meeting adjourned at approximately 2:45 p.m.

Darby Creek Greenway Steering Committee: Attendance 1/15/08

Attendance for the Darby Creek Watershed Greenway Steering Committee Meeting held on January 15th, 2008 at the Springfield Township Building.

Title	First name	Last name	Company	Work phone	Email
Mr.	Steven	Beckley	Delaware County Planning Department	610-891-5214	beckleys@co.delaware.pa.us
Mr.	Charles	Cavanagh	Delaware County Park Board	610-284-7198	ccavanagh@aol.com
Mr.	Jim	Davie	Haverford Township Parks Department	610-446-9397	jimdavie@havtwpparksandrec.com
Mr.	John	Furth	Darby Creek Valley Association	610-622-3939	jjfurth@excite.com
Ms.	Karen	Holm	Delaware County Planning Department	610-891-5213	holmk@co.delaware.pa.us
Mr.	Marc	Manfre	Delaware County Parks and Recreation	610-891-4663	manfrem@co.delaware.pa.us
Mr.	Marty	Milligan	Brandywine Convention and Visitors Bureau	610-565-3679	mmilligan@brandywinecvb.org
Mr.	Peter	O'Keefe	Ridley Township	610-522-0557	
Mr.	A. Richard	Paul	Heritage Commission of Delaware County	610-353-4967(home)	a.richard.paul@verizon.net
Ms.	Lois	Saunders	Delaware County Planning Department	610-891-5208	saundersl@co.delaware.pa.us
Mr.	Craig	Totaro	Lansdowne Borough	610-623-7300	totaroc@borough.lansdowne.pa.us
Ms.	Carolyn	Wallis	DCNR, Bureau of Recreation and Conservation	215-560-1182	cwallis@state.pa.us

APPENDIX F

LAND PRESERVATION TECHNIQUES

LAND PRESERVATION TECHNIQUES

Acquisition

- **Fee Simple Purchase** – The most effective means of preserving land is through fee simple purchase. Fee simple purchase gives the owner complete control of the land, including all public access and conservation practice decisions. In most situations, fee simple acquisition is also the most expensive method of land control. Therefore, many entities interested in land preservation, particularly public agencies or land conservancies with limited budgets, will explore other, less expensive options for land control.

- **Bargain Sale** – A bargain sale involves the donation or sale of land, at a reduced price, to a municipality or land conservancy by a conservation-minded landowner. The landowner's main motivations for this type of sale are the tax benefits which he or she enjoy as compensation by the municipality and the assurance that the land will be preserved for open space purposes. Also, since a realtor is not required, the landowner avoids paying a sales commission. The municipality receives open space acreages at less than the market price. The municipal solicitor should be contacted for more information on potential tax benefits in a particular municipality.

- **Life Estate** – In a life estate agreement, a conservation-minded landowner donates, wills, or sells their property (or rights thereon) to a municipality or conservation organization, which at the time of death or other specified condition, land (or rights) reverts to the municipality or organization. As part of the agreement, the landowners and heirs benefit from reduced taxes because another party has legal ownership or interest in the property, and the owner is assured that the land will be used in perpetuity for open space purposes. The municipality benefits from the open space donation and peace of mind that the land will not be sold to a developer. The owner may be a corporation or a farm, in which case the land becomes the property of the municipality when the company closes or the farm ceases to operate. In some cases there are arrangements where public access is granted for recreational trails on the property while the owner is still alive or the company is still in business.

- **Purchase and Leaseback or Resale** – An entity interested in preservation, such as a local government or a conservancy, can purchase land in fee simple, place restrictions on the deed prohibiting certain uses (e.g., residential development), and sell or lease the land to interested parties. The original buyer gains the potential for future use at the current price and may recover some or all, of the purchase price through leasing. The land is maintained in open space and may be developed as a park if and when future demand warrants. Resale of some or all of the land with deed restrictions may maintain open space levels, relieve the municipality of maintenance obligations, and return the land to the tax rolls. A variation of this technique is possible at the County level, when tax-delinquent land parcels become temporary property of Delaware County. The County government might prefer to transfer a parcel in the greenway to

the municipal government or other entity, but would first guarantee its preservation by placing a conservation deed restrictions upon it.

- **Donation** – Frequently, land or an easement on the land can be acquired through donations from private owners, organizations, and corporations. Local governments should encourage land donations by pointing out benefits of such actions, including federal income and estate tax benefits and public relations value. Prior to accepting a donation, a municipality should consider the location of the parcel and the anticipated development and maintenance costs. If the location is poor and/or projected costs will be excessive, the municipality should strongly consider whether or not to accept the land. In addition to land, corporations and other private parties also frequently provide cash donations for worthy causes, including land preservation.

- **Eminent Domain** – Open space land intended for public recreational use may be acquired through eminent domain. Eminent domain is the authority a government has to take, or authorize the taking of, private property for public use. It involves condemnation proceedings to acquire land in exchange for "just compensation" from an unwilling seller. The just compensation is usually a dollar amount equal to the fair market value of the condemned land. Eminent domain can be an effective tool for land acquisition, but the condemner must pay all associated costs for acquisition. When used, it is usually a last resort because of the risk of controversy.

Easements and Deed Restrictions

- **Conservation Easements / Deed Restrictions** – Conservation easements place restrictions or an outright prohibition on development at a lower cost than fee simple acquisition. Under a conservation easement, land could (and usually does) remain in current ownership, but the property owner voluntarily agrees to donate or sell the right to develop the land. The property owner agrees to place a restriction in the deed of the property, which becomes binding on all future owners of the land. The easement is held by the municipality, county, or a private conservancy, such as Natural Lands Trust or Brandywine Conservancy, both of which have their headquarters in Delaware County. Most conservation easements prohibit the construction of new residential and commercial buildings and the clear-cutting of timber. Furthermore, a conservation easement often provides the property owner with federal income tax and estate tax benefits.

- **Other Easements** – Conservation easements may be used to preserve many types of resources. For example, easements may be placed on historic lands or buildings, open space, forests, or farmland. Conservation easements are frequently used for environmental preservation without providing for public use of the land. However, a conservation easement can also be combined with a *pedestrian easement* or *right of public access easement* to allow public access for walking, hiking, horseback riding, bicycling, fishing, and other activities with established rules and restrictions. With such an easement, state law assures that the landowner is not held liable for any injuries, crimes, or death associated with public use of the land.

Another easement type is the *joint-use easement*, which accommodates multiple uses under one easement. Joint-use easements are particularly appropriate for public utility corridors. Electric transmission lines, sanitary sewer lines, petroleum or gas pipelines, and other such corridors may be ideal for trail connections, as the corridors often contain a cleared pathway.

Agricultural conservation easements may be appropriate in areas with prime farmland adjacent to greenways. The action preserves additional contiguous land and helps to maintain the scenic character of both the greenway and the area as a whole. Local, county, or state governments may purchase easements from owners of prime farmland if the owner agrees to keep the land in agricultural use. The land must meet certain acreage, soil, and production criteria to qualify for the program.[1]

The Pennsylvania Land Trust Association (PALTA) is the statewide coalition of nonprofit land conservation groups. PALTA has developed model easements and agreements that are available on the association website (http://www.conserveland.org). They include:

- Pennsylvania Conservation Easement
- Trail Easement Agreement
- Water Quality Improvement Easement
- Riparian Forest Buffer Protection Agreement
- Fishing Access Agreement

Zoning and Subdivision Techniques

- **Conservation Design/Conservation Subdivision** – Also called open space development, conservation design is similar in many respects to "cluster development," and is very useful in areas where greenways pass through land that is zoned for development. When a tract is developed in the open space scheme, increased development densities are allowed in exchange for mandatory open space. As an example, under standard suburban development schemes, a 100-acre lot adjacent to a stream might be subdivided into 100 one-acre lots. Under conservation design:

    - The natural features of the site are identified and preserved first (10 acres, for example).
    - Open space is then set aside near the stream (40 acres, for example).
    - The remaining area is subdivided into the 100 lots originally allowed under conventional zoning, but the lots are only 0.5 acres each.

[1] Additional information about agricultural conservation easements is available from the Penn State Cooperative Extension, 20 Paper Mill Road, Springfield, PA 19064 (610-690-2655), DelawareExt@psu.edu.

- **Open Space Requirements –** Open space development can be facilitated with provisions in the zoning ordinance and subdivision and land development ordinance (SALDO). Open space development provisions are often amendments to existing lot size requirements in each zoning district (e.g. "Low Density Residential District: 1.0 acre minimum lot size, or 0.60 acre with 40% open space").

- **Mandatory Dedication of Open Space or Fee-in-Lieu Thereof** – The Pennsylvania Municipalities Planning Code (Act 247, as amended) enables municipalities to require that residential developers dedicate land, or fees-in-lieu of land, for public recreation. Municipalities must have an adopted recreation plan and an adopted ordinance relating to mandatory dedication before land or fees can be accepted. The amount of land required must be related to the demand for recreation land typically created by new development. The required land dedication should be in addition to the preservation of natural features on the land, such as floodplains, wetlands, steep slopes, woodlands, or other sensitive areas.

- **Municipal Ordinances** – One of the least expensive ways to protect environmentally sensitive land is through municipal zoning ordinance, subdivision and land development ordinances (SALDOs), and other free-standing ordinances. Local ordinances contain provisions that prohibit or limit activities on or near environmentally sensitive areas. The following provisions are most important with regard to greenways.

    - *Riparian buffers* are the areas within a specified distance (or "setback") of a waterway within which development or other activities is prohibited or restricted. Typically, riparian buffers are 50–100 feet wide. The most appropriate buffer size depends on the size of the stream and the existing natural and human-built features along the stream. A two-tiered buffer can set different standards for two different setbacks (e.g., no development within 100 feet, and no mowing within 50 feet).

    - *Floodplain regulations* prohibit development and certain other activities within the 100-year floodplain, frequently in a separate floodplain ordinance. The 100-year floodplain corridor is composed of a *floodway* and *flood fringe* area. State floodplain regulations represent a bare minimum of floodplain protection. All floodplains should be kept in open space. Activities such as tree-cutting, clearing of vegetation, storage of hazardous materials, and landfill operations would have a negative effect during floods and should be prohibited or restricted. In places where existing structures are located within the floodplain, regulation options include establishing a lowest floor level for buildings, requiring floodproofing, and prohibiting further development or improvements.

    - *Wetlands, high water table soils, and hydric soils* are areas containing permanently or frequently saturated soil conditions or standing water. The three features often coincide. Most zoning ordinances take a site-by-site

approach to wetlands regulation, requiring a developer to identify wetland indicators on a site plan for a parcel being developed. If the site contains wetland indicators, the applicant must have a qualified wetland specialist delineate wetlands, on which development must be prohibited. Alternatively, a municipality may have a complete wetlands map database prepared for the jurisdiction by a wetlands specialist.

- *Steep slopes* are usually divided into two categories: 15–25% (steep slopes) and 25% and greater (very steep slopes). Development densities and buildings sites are typically restricted in slopes between 15 and 25 %, and restricted or prohibited on slopes 25% and greater. Keeping steep slopes as open space is a benefit to ridge-based greenways as well as stream-based greenways, where the riparian zone is surrounded by slopes.

- *Woodlands* – Most SALDOs contain tree-cutting provisions, permitting unlimited tree-cutting in areas necessary to accommodate home sites and road right-of-ways, and providing a maximum tree extraction number or rate for other areas. Identifying a maximum percentage of trees that may be removed *per lot* is another, more protective option. Cutting restrictions can also be placed on floodplain forests and upland forests, respectively, to protect woodlands along stream corridors and ridges.

- *Agricultural zoning* – "Effective agricultural zoning" limits the amount of development on key prime farmland tracts so that most of the land remains in large lots that can still be viable for farming. Agricultural zoning must consider soils, physical features, current land use patterns, and other matters. Limiting water and sewer extensions and transfer of development rights may also help to conserve farmland. Radnor Township does have an "Agricultural Conservation" zoning district on its major farmland and golf course areas; however, detached residences are still one of the permitted uses, with a required minimum lot size of two acres.

- **PRDs and PUDs** – Planned residential developments (PRDs) or planned unit developments (PUDs) are large-scale development projects that permit a variety of types of uses on the same tract of land. A PUD is developed as a unit under single ownership or unified control. It is processed under the PRD or PUD provisions of a municipal subdivision and land development ordinance. It is designed as a parcel of land as a single unit rather than as an aggregate of individual lots, with design flexibility from traditional siting regulations or land-use restrictions. This greater flexibility makes it possible to include open space is one of the required uses. Within PRD provisions there are performance standards as well as numerical standards for area, bulk, and open space.

- **Performance Standards** – A performance standard is a regulation that permits uses based on a particular set of standards. The standard sets a minimum requirement or maximum allowable limit on the effects of a use or measurable or identifiable effect

such as, but not limited to, noise, vibration, smoke, or odor. Such standards are placed on individual uses in the zoning code and allow the alteration of zoning or subdivision standards to achieve a desired form of development and protect the public from dangerous or objectionable elements. Examples of a performance standard may be the requirement of screening or an open space buffer between a noisy, odorous, or unsightly development and a residential area.

- **Official Map** – An official map is a map showing public lands and facilities from officially adopted municipal plans, such as a comprehensive plan. Authority for an official map is provided in Article IV of the Pennsylvania Municipalities Planning Code (Act 247, as amended). The official map can be used to reserve a right-of-way for a period of one year, which can be very useful to a municipality for trail development, easement acquisition, or other negotiations with developers. Preferably, when a greenway plan is adopted, the proposed greenways should be put on a municipal official map, which should be adopted by the municipality. If a development is proposed on a parcel where a greenway is proposed, the municipality has one year to acquire control of all or a portion of the parcel, or negotiate other arrangements in accordance with local policies prior to development of the parcel.

  Land on an official map can be reserved without immediate purchase, giving the municipality time to set aside funds for future acquisitions. Having an adopted official map allows a municipality up to 12 months to acquire property or begin eminent domain proceedings, after a property owner gives notification of his intentions to build on, subdivide, or otherwise develop the land identified on it. It can also provide leverage for outside funding as it indicates a municipal commitment to purchase land and/or make improvements. Grant agencies are more comfortable funding projects that are part of a well-thought out strategy that has the community's support.

  The official map consists of a map and ordinance that identifies both existing and future public projects within the entire municipality or just a specific neighborhood or corridor. Its aim can be to meet many objectives from a municipal comprehensive plan or just a single one such as to preserve or reclaim land along a greenway.

  It is important to note that an official map is not zoning and does not place landowners in jeopardy of having their land taken away, nor does it imply municipal responsibility for opening, maintaining, or improving the identified property.

- **Negotiated Improvements** – Negotiation is a bargaining tool, often used in conjunction with PRD and cluster development, which will result in a conditional use being allowed. It can involve the use of waivers, the alteration of minor zoning requirements in exchange for desired improvements, increased open space, etc.

    - *Land swaps* or *land exchanges* are useful when a development interest and a conservation interest both own a piece of land more appropriate to the mission of the other. For example, a residential developer may own a wetland area

next to a park while a municipal government owns a vacant tract near an existing developed area. With the land exchange, the environmentally sensitive land is preserved by the municipality and the developer builds houses in an appropriate location. Any mismatches in land value can be negotiated.

- *"Good neighbor" agreements* between developer and municipality may result from negotiations. In this case, the developer adds some sort of improvement or conservation measure to the site as a way of maintaining good relations with the community or municipal government.

- **Transfer of Development Rights** – Transfer of development rights (TDR) is often a voluntary option in a zoning ordinance that allows private developers to preserve environmentally sensitive land. Under a typical TDR system, development rights from an area to be protected can be transferred to another parcel of land more suitable for intense development. The developer receives approval to build on the development parcel at a higher density than would be allowed without the additional development rights from the preserved parcel. The developer and the owner of the sensitive land privately negotiate a price. The municipality approves the higher density development, and, simultaneously, a conservation easement is placed on the sensitive land. Municipalities may adopt a transfer of development rights program across municipal boundaries within a multi-municipal planning region. This could enable owners of undeveloped land to sell development rights to developers for use in another municipality within the region, thereby relieving pressure on rural lands or greenway lands and helping to sustain developed areas.

Preferential Assessment

Preferential assessment programs (i.e., Act 515 and Act 319) are valuable tools for open space preservation. They involve a property owner signing a covenant (agreement) not to change the land use from open space, farm, forest, etc. in exchange for a reduced tax assessment. Therefore, development is limited for the life of the agreement on the property. In the meantime, the landowner retains ownership and maintenance of their land. However, the protection that these programs provide should not be considered permanent. High land values can affect a property owner's decision to leave the program after the agreement expires, or the high land value may offset the tax penalty for breaching the program. Both programs have a requirement of 10 acres minimum and parcels under a single covenant must be held in common ownership and be contiguous.

- **PA Act 515 (PA Assessment of Open Space Covenant Act–1966)** – Act 515 enables counties to offer preferential tax assessment on land that is used for open space, farmland, forest land, or water supply land (per a minimum acreage requirement). The landowner covenants with the County for a reduced assessment for a period of 10 years (with an automatic yearly renewal thereafter). If the covenant is breached, the landowner must pay roll-back tax penalties to all taxing districts. In

Delaware County, the Act 515 Open Space Covenant program is administered by the County Planning Department.

- **PA Act 319 (PA Farmland and Forest Land Assessment Act–1974)** – Act 319 enables counties to offer preferential tax assessment on land based on the agricultural use value of the land according to the productivity of the soil. Act 319 can be applied to farmland or forest land (per minimum acreage and agricultural income requirements). The landowner covenants with the County for a reduced assessment, subject to terms of the County Board of Assessments and based on soil productivity. The landowner must pay a roll-back tax penalty for withdrawal from the covenant. In Delaware County, the Act 319 program is administered by the Board of Assessments office.

APPENDIX G

GREENWAY AND TRAIL
PLANNING AND DESIGN TECHNICAL ASSISTANCE

GREENWAY AND TRAIL PLANNING AND DESIGN

The following is a short list of exceptional published and internet resources for greenway and trail planning and design. It is recommended that the leaders of trail initiatives consult the resources on this list for when developing their planning process, planning tools, and trail design specifications. The first item listed, the Pennsylvania Greenways Toolbox, is a great place to start for any kind of greenway planning (trails or other).

1. **Pennsylvania Greenways Toolbox**
   http://www.pagreenways.org/greenwaystoolbox.htm
   Fulfilling an objective of the Pennsylvania Greenways Program, a website was established as a greenways tools and information clearinghouse. The pages on this site reference a variety of greenways-related state and local programs, studies, guidebooks, and presentations developed by different government and non-profit organizations in Pennsylvania. It provides examples from other states as well.

2. ***Creating Connections: The Pennsylvania Greenways and Trails How-To Manual*** **Pennsylvania Greenways Partnership, 1998.**
   http://www.pagreenways.org/toolbox/creatingconnections.pdf
   This resource is the Commonwealth's greenway guidebook. Its intended audience is any citizen, organization, government, or private enterprise that is interested in collaborating for effective trail development. The manual is a product of the Pennsylvania Greenways Partnership Initiative. It describes the process for creating, acquiring, constructing, and managing greenways in Pennsylvania.

3. ***Trail and Path Planning, A Guide for Municipalities***
   Chester County Planning Commission, 2007
   This guidebook, though designed for Chester County, provides a great deal of general guidance for municipalities that can be applied to Delaware County communities. It is a step by step guide for municipal trail planning that includes sections on basic trail principles, comprehensive planning, the official map and ordinance, zoning ordinance, subdivision and land development ordinance, stakeholder and public involvement, trail costs, standards, as well as listings of other resources.

4. ***Community Trails Guide***
   The Brandywine Conservancy, Environmental Management Center, 1997 http://www.pagreenways.org/db-resourcedetails.asp?RESOURCE_ID=53
   This guide provides details on many types of trails, bikeways, and pathways. Design and management considerations, and regulatory and legal provisions are major features that are presented in great detail. It is available from the Brandywine Conservancy, located at Brandywine River Museum, for $15.00. Phone: 610-388-2700 or e-mail: shop@brandywine.org.

5. ***Park, Recreation, and Greenway Guidelines***
   James D. Mertes, Ph.D., CLP and James R. Hall, CLP
   National Recreation and Park Association, 1996.
   The national book of standards for recreation and parks provides a limited number of technical standards for trails.

6. **The Pennsylvania Land Trust Association – Model Documents**
   The Pennsylvania Land Trust Association promotes voluntary land conservation by supporting the missions of local land trusts and building a positive climate for conservation in Pennsylvania. The model documents section of their website includes *Pennsylvania Conservation Easement, Riparian Forest Buffer Protection Agreement*, *Trail Easement Agreement*, *Fishing Access Agreement*, and *Water Quality Improvement Easement*. These models could be useful to local communities looking for land use and regulatory tools for conserving a greenway.