



# Concept Plan for the Brandywine Creek Greenway

*A partnership of sixteen greenway municipalities  
and the Brandywine Conservancy*

*June 2012*



## Acknowledgments

### Greenway Liaisons

Chadds Ford Township	Deborah Reardon, Kathleen Goodier
Pennsbury Township	Michael Lane, Kathy Howley
Pocopson Township	Ricki Stumpo, Mike McGann
Birmingham Township	John Conklin
East Bradford Township	Mandie Cantlin, Mike Colley, Maria Kenny, Nancy Danks
West Bradford Township	Tommy Ryan, Terry Gallagher
Downingtown Borough	Millie Byerly
East Caln Township	Barb Kelly
Caln Township	Greg Prowant
East Brandywine	Sandy Moser, Michael Wagoner
Uwchlan Township	Tara Caputo
Upper Uwchlan Township	Sally Winterton, Kevin Kerr
Wallace Township	Tish Molloy
West Nantmeal Township	Susan Ward
Honey Brook Township	Heath Eddy
Honey Brook Borough	Mark Lucas
Brandywine Conservancy	Sheila Fleming

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## Preface

The Concept Plan for the *Brandywine Creek Greenway* is the culmination of efforts of various stakeholders to conserve one of southeastern Pennsylvania's greatest treasures - the Brandywine Creek. This plan represents residents' grass-roots efforts to focus on conservation and recreation and to shape the destiny of the Brandywine Creek, the greatest natural resource within their own back yards. The stakeholders include fifteen municipalities in Chester County and one in Delaware County with planning assistance from the Brandywine Conservancy. The Chester County municipalities include (from south to north): Pennsbury Township, Birmingham Township, Pocopson Township, East and West Bradford Townships, Downingtown Borough, East Brandywine Township, Caln Township, East Caln Township, Uwchlan and Upper Uwchlan Townships, Wallace Township, West Nantmeal Township, Honey Brook Township, and Honey Brook Borough. Chadds Ford Township is the single stakeholder in Delaware County.

The Brandywine Creek and surrounding landscapes function as a greenway today with thousands of acres of privately-protected open space, three major state park attractions, and over forty municipal parks and trails scattered along the corridor. The Brandywine Creek Greenway has potential to connect into a comprehensive network of greenways, open space, and trails that already exist in the state of Delaware. There, state agencies, municipalities, private corporations, and non-profit organizations have made a concerted effort to coordinate open space and recreation planning.

This Concept Plan is intended to broadly define the “what, where and why” of the greenway and to establish a vision that is acknowledged among participating municipalities. **Chapter One** provides a definition of a greenway and explains why it is important to establish a greenway along the Brandywine Creek. An outline of the planning process and public participation is documented. **Chapter Two** focuses on the greenway vision as defined by the 16 participating municipalities. A series of 7 goals and associated objectives are presented, and state, regional, and local planning perspectives are described. **Chapter Three** describes the existing features and functions of the greenway that were presented during three public workshops. Hubs, nodes, and corridors are discussed for the first time, and an analysis of opportunities and constraints is provided. **Chapter Four** provides a description of the Brandywine Creek Greenway Concept Map provided at the end of the chapter. **Chapter Five** discusses the current organizational structure of the greenway stakeholders, the next steps

in the planning process, and outlines potential sources of funding for greenway-related projects. The **Appendices**, provided on CD, provide background and supporting information such as the history of the Brandywine, inventory maps, analysis maps, active greenway-related municipal projects, and recommended literature as referenced in the concept plan.

This is the first step in a multi-year greenway planning process. The next step will be to craft strategies for each of the goals and objectives listed in Chapter Two. A Strategic Action Plan will follow this effort to define specific projects to implement within each municipality, identify which entities are responsible for each project, and calculate how much funding is required to complete each project. The Concept Plan and Strategic Action Plan are intended to ensure that the Brandywine Creek Greenway will be better protected from development pressures, will have degraded resources restored, and can realize its unique conservation and recreation potential.



*Birmingham Township - Sandy Hollow*

**\*\*Please note that this project was formerly known as the Brandywine-Struble Greenway and was subsequently re-named the Brandywine Creek Greenway by the 16 municipal stakeholders. Therefore, much of the information provided in the appendices references the Brandywine-Struble Greenway.**

## Glossary

**BMP** – Best Management Practice

**BVSB** – Brandywine Valley Scenic Byway

**Central Region** – East Brandywine Township, Uwchlan Township, East Caln Township, Caln Township and Downingtown Borough

**DCNR** – PA Department of Conservation and Natural Resources

**DGI** – Delaware Greenways Inc.

**DVRPC** – Delaware Valley Regional Planning Commission

**Conceptual Land Link** – Envisioned trail or footpath that is indicated in municipal planning documents.

**Creek Access** – Safe and convenient access to the Brandywine on public or semi-public land for canoe/kayak launch, fishing, wading, and/or passive viewing.

**DEP** – PA Department of Environmental Protection

**Destination Point** – Locations that feature public events, activities, or special functions.

**Existing Land Link** – Trail or footpath that is currently in use, formally or informally.

**Gateway** – Major arrival and orientation portal to the greenway.

**Green Corridor** – Connections among wildlife habitats such as woodlands and wetlands. Components may include creeks, floodplains, wetlands, and woodlands.

**GSA** - Greenspace Alliance, governed by a volunteer board comprised of a growing list of leaders from key organizations in the region, among them the Brandywine Conservancy, Chester County Open Space Preservation Office, Delaware Valley Regional Planning Commission, Montgomery County Lands Trust, Natural Lands Trust, PennEnvironment, Pennsylvania Environmental Council (PEC), Pennsylvania Horticultural Society, Pennsylvania Association for Sustainable Agriculture, and Philadelphia Chamber of Commerce.

**Hub** – Primary origination and destination point, often a large center of activity.

**Major Corridor** – Regionally significant linear conservation corridor that connects hubs, land and water based. Components may include creeks, floodplains, wetlands, woodlands, and trails on private and public lands.

**Minor Corridor** – Smaller scale conservation corridor than a major corridor, it also provides linkage among hubs, satellite hubs, major corridors, destination points, nodes, and creek access points. Components may include creeks, floodplains, wetlands, woodlands, and trails on private and public lands.

**Node** – Standalone location such as school, park, natural area, or historic site.

**Northern Region** – Honey Brook Township, Honey Brook Borough, West Nantmeal Township, Wallace Township and Upper Uwchlan Township

**PC** – Planning Commission

**PCTI** – Pennsylvania Community Transportation Initiative

**PECO** – Philadelphia Electric and Gas Company

**Regional Corridor** – Greenway study area as defined by the 16 municipalities along the greenway.

**Satellite Hub** – See Hub, located beyond the Regional Corridor with potential for linkages into the Major Corridor.

**Southern Region** – West Bradford Township, East Bradford Township, Pocopson Township, Birmingham Township, Pennsbury Township and Chadds Ford Township

**TCDI** – Transportation and Community Development Initiative

**Water Corridor** – Main stem, upper east branch, and west branch Brandywine Creek.



# CHAPTER ONE

## Introduction

### What is a Greenway?

A greenway may be broadly defined as a corridor of protected public and private open space managed for conservation and/or recreation purposes. Its width varies from narrow ribbons of green that run through urban and suburban areas to larger landscapes that incorporate diverse natural, cultural and scenic features.

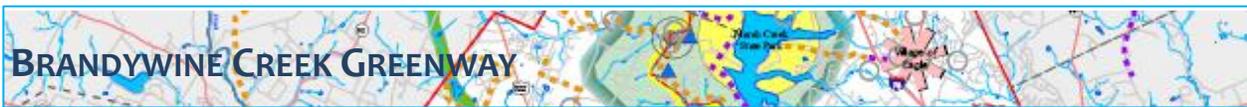


*Caln Township - Lloyd Park Pavilion*

In 2002, the Pennsylvania Greenway Partnership Commission published *Benefits of Greenways: A Pennsylvania Study*. The study describes how greenways throughout Pennsylvania are currently serving the communities in which they are located. The general benefits include:

- Protecting natural resources
- Protecting rural legacy
- Providing communities with economic opportunities and prosperity
- Conserving historic and cultural resources
- Providing opportunities for public health, recreation and fitness
- Enabling outdoor educational opportunities for people of all ages
- Assisting in the planning and shaping of communities
- Providing alternative and safe modes of transportation

Protected open space is understood to offer many benefits, but few have been quantified in dollars and cents. The Delaware Valley Regional Planning Commission (DVRPC) and the GreenSpace Alliance (GSA) partnered to commission *Return on Environment - The Economic Value of Protected Open Space in southeastern Pennsylvania*, a study quantifying the economic value of protected open space in southeastern Pennsylvania. The study uses



cutting-edge research to quantify the economic value of southeastern Pennsylvania's 200,000 acres of parks, preserved farms and natural areas in terms of property value, ecosystem services, direct use and health benefits, and economic activity. The study also includes qualitative place-based case studies that tell stories about what certain protected open spaces mean to people and communities. For example, this study reached the following conclusions:

- Open space creates jobs and attracts people who spend in this region's communities: Economic activity associated with protected open space in southeastern Pennsylvania results in more than 6,900 jobs and \$299 million in annual earnings. \$206 million, or 36%, accounts for agricultural sales associated with preserved farmland over a five-county area; agricultural jobs associated with protected farmland make up 45% of employment related to protected open space in southeastern Pennsylvania, totaling 3,100 jobs.
- Open space adds \$16.3 billion to the value of southeastern Pennsylvania's housing stock.
- Southeastern Pennsylvania realizes nearly \$61 million in annual cost savings from protected open spaces' ability to naturally filter out pollutants and replenish water supply.

### Why a Greenway for the Brandywine Creek?

Some would argue that, with its intriguing history and picturesque landscapes, the Brandywine Creek Greenway already exists even though it has not been specifically defined as such. Ever since the Brandywine watershed was first inhabited by European settlers in the early 17<sup>th</sup> century, it has held an important and controversial role in society. Here, the Battle of the Brandywine was fought September 11, 1777, during the American Revolution. Here, the du Ponts made their fortunes, built their empire, and constructed mansions and gardens at Longwood, Winterthur, Hagley, and Nemours. Here, Howard Pyle was born and established the Brandywine School of American Illustration that nurtured creative artists including three generations of Wyeths who have painted the landscapes and people of Chadds Ford. Here, controversy swirls over contemplated removal of historic dams to enable shad migration from the sea to the upper reaches of the Brandywine to lay their eggs. Here, water withdrawals at the Cornog Quarry once stirred an uprising. Humans have both exploited and fought for the preservation of the Brandywine and the rich biological systems it supports for hundreds of years. For a brief history of the Brandywine, see Appendix A.



The beauty and vitality of Chester County and the Delaware Valley region continue to attract newcomers to this region even today. A few examples of the many attractions include Longwood Gardens, Brandywine River Museum, shops and restaurants in West Chester, and Marsh Creek State Park. This region is home to many large employers in the pharmaceutical industry, private industry such as DuPont, universities and colleges, and local hospitals. Major cities of Philadelphia, Wilmington, and New York are within a short drive as are shore points in New Jersey and Delaware. However, regional vitality is not without cost. The population of Chester County grew by approximately 15% between 2000 and 2010, and according to the Delaware Valley Regional Planning Commission, the region is expected to gain over 630,000 residents by 2035. Much of this growth is expected to occur in the rapidly developing suburban areas and rural areas, such as the Brandywine valley in central Chester County. See Table 1-1 for projected growth in Greenway municipalities. Along with new growth comes change: farmlands and open space are developed into homes and businesses; new roads are constructed; traffic increases; and communities are forever altered. As populations in Chester and Delaware counties continue to climb, so do the natural, cultural, and recreational resources that once attracted newcomers continue to be threatened by growth and new development.

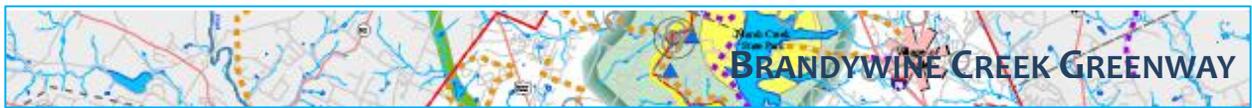
Aware of the impacts of suburban sprawl, county and municipal governments in the Delaware Valley have been focusing on conservation and open space protection for many years. The Delaware Valley Regional Planning Commission reports that between 2000-2007, the amount of publicly held open space increased by 16 percent, and between 2002 and 2007 the amount of permanently preserved, private land increased by almost 28 percent. According to the Chester County Planning Department, as of January 2012 over 90,000 acres of privately-owned lands were permanently protected through easements, lands owned by land trusts, and lands owned by homeowners associations in Chester County, and over 24,000 acres were permanently protected in municipal, county, and state-owned lands in Chester County. Each municipality in Pennsylvania has the ability to guide new growth into areas best suited for development and away from the most sensitive areas. A greenway plan for the Brandywine Creek provides a coordinated approach for 16 municipalities to plan for the future of their greenway corridor. The plan can be used as a guidance document to protect priority cultural and scenic resources, create recreational opportunities, enhance the quality of life in neighborhoods, provide transportation alternatives, and assure economic prosperity. On a more practical scale, a greenway plan can offer benefits such as increased efficiency of municipal and professional planning staff; cost-effective sharing of maintenance and construction equipment; and joint preparation of grant applications.



**Table 1 - 1: Municipal Population Projections in the Greenway Study Area**

Municipality	Census	Census	Change	Projection
	<u>2000</u>	<u>2010</u>	<u>2000-2010</u>	<u>2035</u>
Pennsbury	3,500	3,604	3.0%	4,508
Birmingham	4,221	4,208	-0.3%	5,562
Pocopson	3,350	4,582	36.8%	4,662
East Bradford	9,405	9,942	5.7%	13,498
West Bradford	10,775	12,223	13.4%	15,481
Downingtown Borough	7,589	7,891	4.0%	9,830
Caln	11,916	13,817	16.0%	16,939
East Caln	2,857	4,838	69.3%	5,384
Uwchlan	16,576	18,088	9.1%	23,354
Upper Uwchlan	6,850	11,227	63.9%	14,817
East Brandywine	5,822	6,742	15.8%	9,421
Wallace	3,240	3,458	6.7%	5,152
West Nantmeal	2,031	2,170	6.8%	2,747
Honey Brook	6,278	7,647	21.8%	8,883
Honey Brook Borough	1,287	1,713	33.1%	1,907
Chadds Ford Township	3,170	3,640	14.8%	4,167

Source: Chester County Planning Commission website, <http://www.chesco.org/planning/lib/planning/demographics/2035forecasts.pdf> and Delaware County Planning Commission website, [www.delco.org/planning](http://www.delco.org/planning).



Other benefits of a greenway include:

**Protecting Natural Resources:**

- Preserving vital habitat corridors
- Promoting plant and animal diversity
- Filtering contaminants found in surface runoff and mitigating water pollution
- Buffering the negative impacts of suburban sprawl
- Controlling property damage caused by flooding

**Protecting Scenic Resources:**

- Preserving the PA South Brandywine Scenic River corridor
- Protecting scenic roads and the Brandywine Valley Scenic Byway
- Preserving farmland
- Preserving open space

**Economic Benefits:**

- Providing recreational connection among 16 municipalities
- Enhancing real estate sales
- Increasing property values

**Community Pride:**

- Creating a greenway alliance
- Motivating local volunteers
- Providing opportunities to educate about natural resources

**Conservation of Historic and Cultural Resources:**

- Providing opportunities to identify and interpret historic places and events

**Public Recreation, Health and Fitness:**

- Providing a place to walk, jog, in-line skate, bicycle, or ride horseback
- Providing safe alternative routes to school

**Education:**

- Allowing the Greenway to be used as a living museum for outdoor classrooms and field studies
- Providing scenic adventures on trails and waterways
- Offering a glimpse into wildlife habitats
- Encouraging young and old to be better environmental stewards
- Promoting interaction with nature

**Shaping Suburban Growth:**

- Defining sensitive areas where growth is not appropriate
- Protecting and enhancing natural habitats and scenic landscapes
- Directing growth away from valuable farm land

## Providing Alternative Transportation:

- Reducing congestion on roadways
- Providing and encouraging use of safe transportation alternatives

## The Brandywine Creek Greenway Planning Process

Municipal representatives met with planners from the Brandywine Conservancy at public meetings in the spring of 2011 to listen to an introductory presentation on the Brandywine Creek Greenway initiative. A project brief and descriptive vision statement were circulated to municipal officials. Each municipality appointed a project liaison to ensure that all documents and correspondence



*East Bradford Township - Paradise Valley*

prepared for the project were delivered to the appropriate boards and commissions. A detailed resource inventory was conducted of the 30 miles along the greenway corridor, and Geographic Information System (GIS) maps of the inventory were circulated to all 16 municipal partners for their review for consistency with municipal planning documents. The inventory included: topography, geology, prime farmland soils, existing land use, natural features, open space and recreation features, and cultural features. Important reference materials included the *Lower Brandywine Scenic Rivers Evaluation and Management Study* (1987); the *Upper East Branch, Brandywine Creek Watershed Conservation Plan* (2004); and Chester County's *Watersheds* (2002). Information was also gathered from the 16 municipal comprehensive plans and various other municipal, county, and regional planning documents. A complete bibliography is included in Appendix E.

The Brandywine Creek study area was divided into three regions in order to generate mapping at a suitable scale (Fig. 1-1):

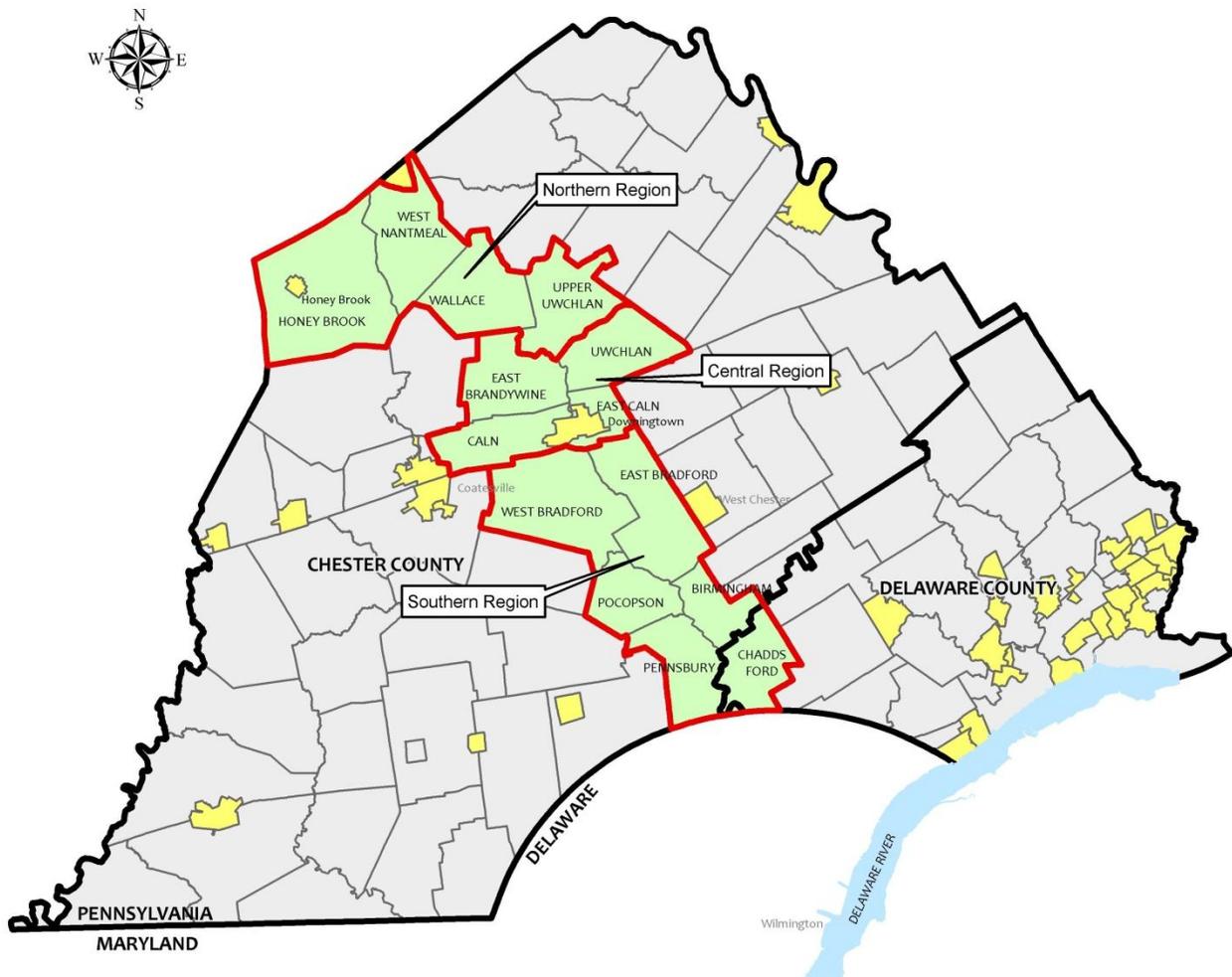
- The northern region includes Honey Brook Borough, Honey Brook Township, West Nantmeal Township, Wallace Township, and Upper Uwchlan Township.



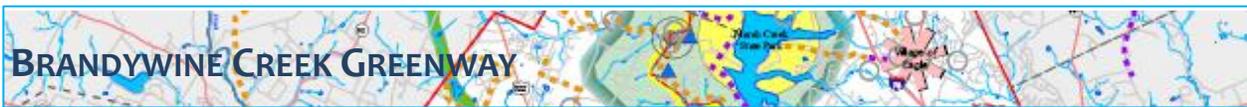
- The central region includes East Brandywine Township, Upper Uwchlan Township, Caln Township, East Caln Township, and Downingtown Borough.
- The southern region includes West Bradford Township, East Bradford Township, Pocopson Township, Birmingham Township, Pennsbury Township, and Chadds Ford Township (Delaware County).

Three regional workshops were held in the northern, central, and southern regions of the Greenway where inventory mapping (see Appendix B) was presented by Brandywine Conservancy planners. Municipal representatives identified key greenway functions and

**Figure 1-1 Study Area**



important natural, cultural, and recreational hubs, nodes, and corridors in their individual municipalities. Inventory maps, workshop worksheets and graphics were placed on display during three regional public informational forums where the general public was introduced to the greenway initiative.



The input from the regional workshops and public forums was analyzed by Conservancy staff and additional analysis maps were prepared: Map 10 - Protected Lands; Map 11 - Unprotected Resources; Map 12 - Water Quality; and Map 13 – Transportation (see Appendix C). Together, these maps were synthesized into a draft concept map which shows: hubs; satellite hubs; destination points; nodes; gateways; creek access points; major corridors; minor corridors; green corridors; land links; and water links (further described in Chapter Four).

### Summary of Meetings and Events

The following summarizes the tasks and events that were used to collect data and to complete the concept plan:

#### **2010**

July – September

- Project timeline
- Project Brief and Information Sheet
- Map of study area
- Photography
- Powerpoint Presentation preparation
- Begin coordination with Chester County Planning Commission and DVRPC

October – December

- Meetings with 16 municipal partners at public meetings
- Posters of greenway study area and project description distributed for review and comment
- First newsletter emailed in November
- Greenway featured in Daily Local News
- Maps 1 and 2 completed and delivered
- Greenway poster delivered to each municipality for public display

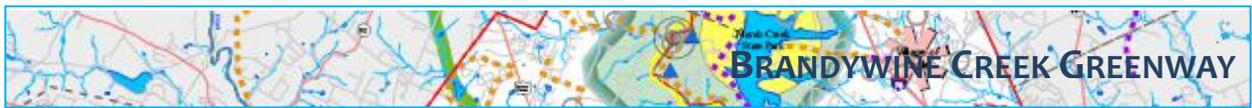
#### **2011**

January – April

- Maps 3-9 completed and delivered
- Three regional workshops
- Three regional public open houses

May – August

- Analysis of workshop products and comments



- Synthesis of draft concept map
- Draft concept plan narrative
- Draft goals and objectives
- Greenway

organizational meeting conducted on September 29th, first conference of all 16 municipal partners, presentation of the draft concept map

September – December

- 16 municipal partners review draft concept map and goals/objectives
- Completion of draft concept plan and map
- Deliver hard copy of draft concept plan and map for informal review



*Chadds Ford Township – Meadow on the Brandywine*

**Regional Workshops**

<b>Region</b>	<b>Location</b>	<b>Date</b>
Southern	Chadds Ford Township	Thursday, April 14 <sup>th</sup>
Central	Downingtown Borough	Wednesday, April 20 <sup>th</sup>
Northern	Honey Brook Township	Saturday, April 30 <sup>th</sup>

**Regional Public Open Houses**

<b>Region</b>	<b>Location</b>	<b>Date</b>
Southern	Chadds Ford Township	Thursday, April 14 <sup>th</sup>
Central	Downingtown Borough	Wednesday, April 20 <sup>th</sup>
Northern	Honey Brook Township	Saturday, April 30 <sup>th</sup>



## **Organizational Meeting**

### **Special Events**

Evening Program with Guest Speakers

Thursday, September 29<sup>th</sup>

### **2012**

January – April

- Circulate draft concept plan and map for informal review by project liaisons
- Finalize concept plan and map
- Prepare sample resolution
- Circulate documents for formal review by boards and commissions
- Adoption of municipal resolutions to acknowledge the Concept Plan and to participate in Strategic Action Plan.

### **Newsletter E-mails**

- November 2010
- December 2010
- January 2011
- February 2011
- March 2011
- June 2011
- July 2011
- September 2011
- October 2011
- January 2012
- March 2012
- May 2012

## CHAPTER TWO

### The Vision

#### The Greenway Vision

The Brandywine Creek Greenway is envisioned as a 30-mile long conservation corridor of varying width stretching from the Delaware State Greenway, near the Delaware state line in Chadds Ford, to the Horseshoe Trail Greenway and the Pennsylvania Highlands Greenway in the north. The Greenway spans 16 municipalities along the Brandywine and consists of publicly- and privately-owned lands. It is envisioned to include an interconnected system of open spaces, natural and cultural features, formal trails, informal paths, parks, river access points, and wildlife corridors and will link the Brandywine Creek with many Chester and Delaware County communities including Chadds Ford Village, West Chester Borough, Downingtown Borough, Honey Brook Borough, and Elverson Borough.

#### Greenway Goals and Objectives

The following goals of the Brandywine Creek Greenway were assembled based upon discussions and feedback received during a series of workshops and public forums:

##### Goal 1 Transportation

***To provide safe transportation alternatives for walking, bicycling, and equestrian users.***

- Objective 1 Preserve and maintain existing multi-use trails and develop connecting links between greenway hubs and major destinations.
- Objective 2 Enhance the safety along existing bike routes.
- Objective 3 Provide safe transportation for existing horse-drawn carriage routes, especially in agricultural areas.

##### Goal 2 Conservation

***To protect and improve vital natural resources within the Brandywine watershed.***

- Objective 1 Maintain, enhance, and restore habitat corridors.
- Objective 2 Protect existing riparian corridors.
- Objective 3 Restore forest cover along riparian buffers.
- Objective 4 Preserve existing woodlands.
- Objective 5 Preserve agricultural lands and soils.
- Objective 6 Preserve and enhance water quality.



Objective 7 Protect sensitive plant and animal habitats and important bird areas from recreational overuse.

### Goal 3 Recreation

***To promote and enhance the recreational use of municipal, county, and state-owned open space.***

Objective 1 Create an interconnected network of pedestrian and bicycle paths that connect neighborhoods to public recreational lands and schools.

Objective 2 Protect and expand the equestrian trail network to connect with Marsh Creek State Park, Honey Brook Borough, Elverson Borough, Welsh Mountain Trail, Struble Trail, and the Horseshoe Trail.

Objective 3 Ensure that residents of all ages and abilities have access, where feasible, to recreational facilities such as parks and trails.

Objective 4 Improve public access to the Brandywine Creek.

### Goal 4 Flood Control

***To mitigate flooding in flood-prone areas.***

Objective 1 Reduce impervious surfaces and increase infiltration in developed headwater areas.

Objective 2 Increase percentage of tree cover to reduce runoff and maximize evapotranspiration.

Objective 3 Observe recommendations in the Act 167 Stormwater Management Plan for Chester County, as appropriate.

### Goal 5 Culture

***To preserve nationally and municipally-designated historic resources and their surrounding landscapes.***

Objective 1 Protect and promote the historic structures, districts, trails, and cultural features of the Brandywine Valley.

Objective 2 Link historic features.

### Goal 6 Aesthetics

***To protect state- and municipally-designated scenic resources and buffer scenic resources from new development.***

Objective 1 Preserve the scenic integrity of the Lower Brandywine [PA Scenic River Corridor](#).



- Objective 2 Protect and preserve the scenic resources along the [Brandywine Valley Scenic Byway](#).
- Objective 3 Designate new scenic roads where deemed appropriate.

## Goal 7 Education

### **To foster education of the Brandywine Creek and its watershed.**

- Objective 1 Raise awareness of the importance of conservation and best land management practices.
- Objective 2 Educate residents regarding the natural, recreational, and cultural features within the greenway corridor.
- Objective 3 Raise awareness of the regional context and local identity of the greenway with area stakeholders and groups such as the Delaware Valley Regional Planning Commission (DVRPC), Chester County Planning Commission (CCPC), and the PA Department of Conservation and Natural Resources (DCNR).

## Planning Context and Consistency

### Pennsylvania

In 2001, the Governor of Pennsylvania launched *Pennsylvania Greenways, An Action Plan for Creating Connections*. It set the direction for a state-wide greenways program to establish a network of greenways and a greenway in every local community by 2020.



*East Brandywine Township - Municipal Park*

The action plan is organized around four goals for the Department of Conservation and Natural Resources (DCNR):

- Plan and Build Greenway Connections
- Create a Greenways Organizational Framework
- Provide Greenways Funding
- Provide Greenways Technical Assistance and Outreach



In 2009, DCNR published *Pennsylvania Outdoors: The Keystone for Healthy Living*, a 2009-2013 Statewide Comprehensive Outdoor Recreation Plan. The planning effort involved extensive resident, park visitor, trail user, and urban youth surveys. Twenty-eight programmatic and five funding recommendation actions steps were crafted and organized under the following four goals:

- Strengthen connections between outdoor recreation, healthy lifestyles and economic benefits for communities
- Reconnect people to outdoors and develop a stewardship ethic through outdoor education
- Develop a statewide land and water trail network to facilitate recreation, transportation and healthy lifestyles
- Enhance outdoor recreation through better state agency cooperation

DCNR identifies major greenway corridors that exist or are under development in the state whether they are land or water based (or some combination) on the [PA Major Greenway Corridors Map](#).

“Greenways” are defined by DCNR as linear corridors of public and private land that serve as the linkages between



*East Caln Township - Family Time on the Struble Trail*

specifically identified natural resource-based or manmade features or infrastructure. Major Greenway Corridors are long-distance corridors (at least 50 miles long) that pass through two or more counties and are recognized in official planning documents by counties. They represent the major “arteries” of the developing statewide greenway system. Counties recognize these Major Corridors in their greenway plans (such as Chester County’s *Linking Landscapes*) and develop a county-wide greenway network vision that links to the larger statewide network. All of the Pennsylvania Water Trails, identified by the Pennsylvania Fish and Boat Commission, are also included as Major Corridors. The department also has five



mega-greenways that are one hundred miles or more in length, pass through multiple counties and regions and are recognized in an official planning document. The result: an interconnected statewide greenways system.

A more [detailed regional map](#) of southeastern Pennsylvania Major Greenway Corridors shows an enlarged image of the Delaware Valley region including the Mason Dixon Trail (see trail #12). The Brandywine Creek will be part of the 190-mile Mason Dixon Trail that passes through Chester, Cumberland, and York counties. The Mason Dixon is a hiking trail that starts at Chadds Ford, crosses the Susquehanna at Route 1, follows the Susquehanna to north of Wrightsville, cuts over to Pinchot Park, then proceeds to join the Appalachian Trail at Whiskey Springs. However, the published description of the trail does not mention the connection north of Chadds Ford and the connection to the Horseshoe trail even though it is shown on the map.

### **Regional Plans**

The Delaware Valley Regional Planning Commission (DVRPC)'s 2035 [Greenspace Network Map](#) shows the Brandywine Creek as a major greenway corridor, and its [Conservation Focus Area Map](#) shows the Brandywine Creek Greenway as the Brandywine Valley and Upper Brandywine Agricultural Region conservation focus areas.

The DVRPC estimates that just over one million acres of open space and unprotected land remain in the Greater Philadelphia region. It recognizes that these lands: provide for agriculture and serve as sources of fresh and nutritious foods; naturally purify our air and water; provide opportunities for recreation, relaxation, and exploration; and even return economic benefits to our region. Its goal is to preserve half of this land over the next 30 years to ensure that we have the resources we need to sustain ourselves in the future.

The DVRPC suggests there are many ways that open space can be preserved and natural resources can be protected. These include:

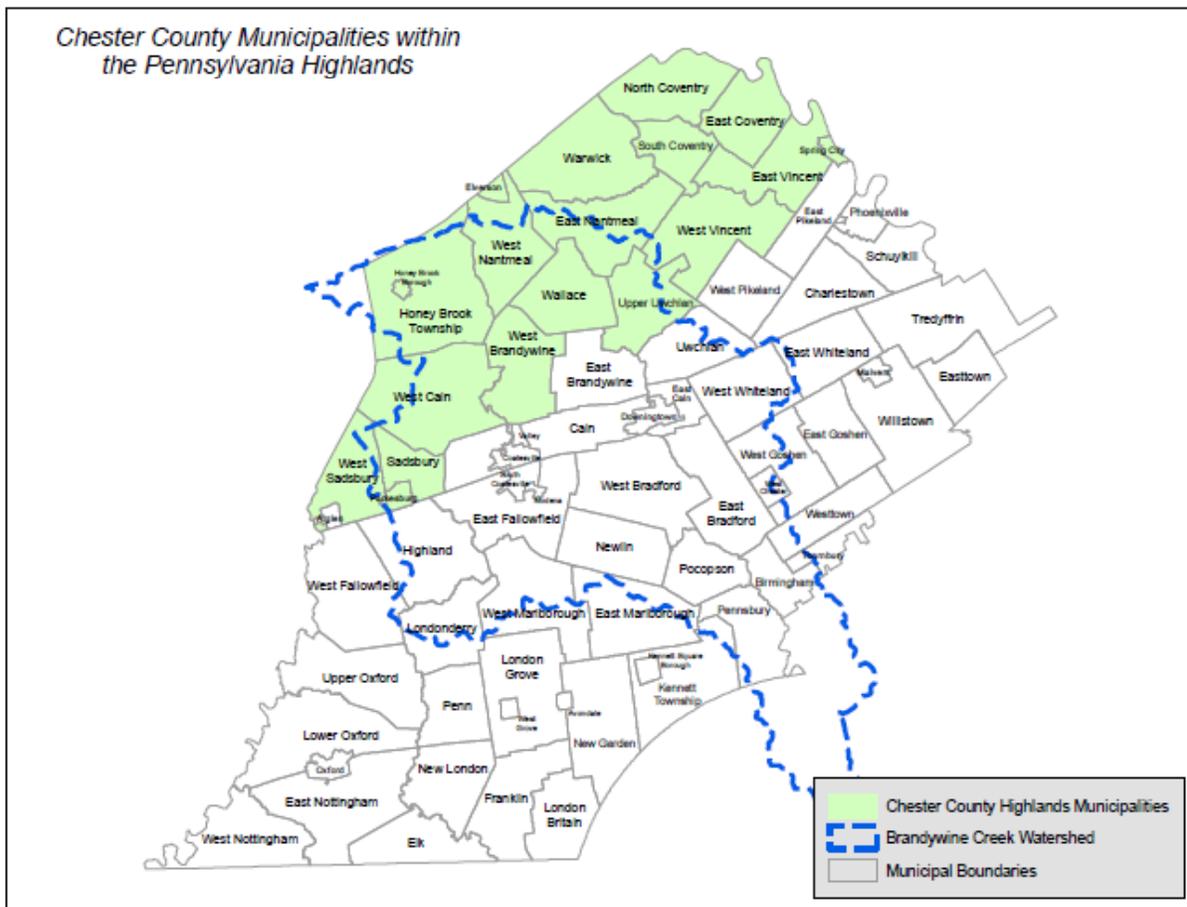
- Focus new development into existing towns and residential centers to create stronger local communities and reduce suburban sprawl.
- Support conservation projects, locally-funded open space programs, statewide preservation trusts, and municipal natural resource protection plans.
- Integrate greening initiatives at local and regional levels including community and rain gardens; shade and street trees programs; and green roofs.



### Pennsylvania Highlands Greenway

The northern region of the Brandywine Creek Greenway is located within the Pennsylvania Highlands region. The four-state Highlands Region is over 3 million acres of forest, farmland and rivers running from the border of Maryland through south-central Pennsylvania into northern New Jersey, across New York’s Hudson Valley and into northwestern Connecticut. These eastern-most ridges of the Appalachian Mountains form a greenbelt for the Philadelphia-New York City-Hartford metropolitan area. The Highlands provide clean drinking water to more than 15 million people and are home to over 250 endangered, threatened, and rare species. The nearly 1.4 million-acre [Pennsylvania Highlands region](#) includes 13 counties, from Northampton in the northeast, to Adams in the southwest. Figure 2-1 illustrates Chester County Highlands municipalities and the Brandywine Creek watershed. The [Hopewell Big Woods](#) is located immediately north of the greenway.

**Figure 2-1** Pennsylvania Highlands Region of the Greenway





### **Delaware Greenway**

The Brandywine Creek Greenway will complement and extend into the Delaware Greenways network to the south of the Delaware state line. The [Delaware Greenway Trail network](#) will link into the southern region of the Brandywine Greenway at Chadds Ford. Delaware Greenways, Inc. (DGI) is a statewide, community-based organization, specializing in natural and scenic resource protection and sustainable land use to improve quality of life and promote healthy and active lifestyles. The organization began with an emphasis on preservation of valuable landscapes and establishment and designation of state scenic byways. Since then, DGI has established and currently oversees the management of three of the state's byways, numerous multi-use trails and linkages across the state. DGI has been a leader in the development and management of the Brandywine Valley National Scenic Byway in Delaware that inspired Pennsylvania to extend the Scenic Byway north of the border into Chester County.

### **Brandywine Valley Scenic Byway**

The state-designated [Brandywine Valley Scenic Byway \(BVSB\)](#) in Pennsylvania begins in Pennsbury Township and extends up Route 52 and Creek Road to route 162, then loops back down Route 52 near West Chester and follows Creek Road to the state line in Chadds Ford. The Pennsylvania portion of the Brandywine Valley Scenic Byway effort was initiated in 2002 by a diverse group of community leaders, stakeholders, and byway enthusiasts who recognized the richness of the resources, the uniqueness of the landscape, and the potential of the area to qualify for scenic byway designation. This grass roots volunteer effort evolved into a Steering Committee composed of representatives from seven municipalities spanning Chester and Delaware Counties: Pennsbury, Kennett, East Marlborough, Pocopson, Birmingham, East Bradford, and Chadds Ford townships. The Committee worked hard to gain the background information necessary to develop an application for Pennsylvania Scenic Byway Designation, which was submitted to PennDOT in December 2004. The Committee is currently working with consultants to complete a Corridor Management Plan. Most of the BVSB in Pennsylvania falls within the Brandywine Creek Greenway.

### **Lower Brandywine Scenic River**

The entire [Lower Brandywine Scenic River](#) region is located within the Brandywine Creek Greenway. Much of the information provided in Appendix B was described in the *Lower Brandywine Scenic Rivers Evaluation and Management Study*. Recommendations that were listed in the Scenic Rivers Study have been incorporated into the greenway Concept Plan where relevant. The Lower Brandywine Scenic River corridor begins at the Delaware state



line, continues up the main stem of the Brandywine, includes the east branch south of Downingtown, and the west branch to Buck Run and Doe Run.

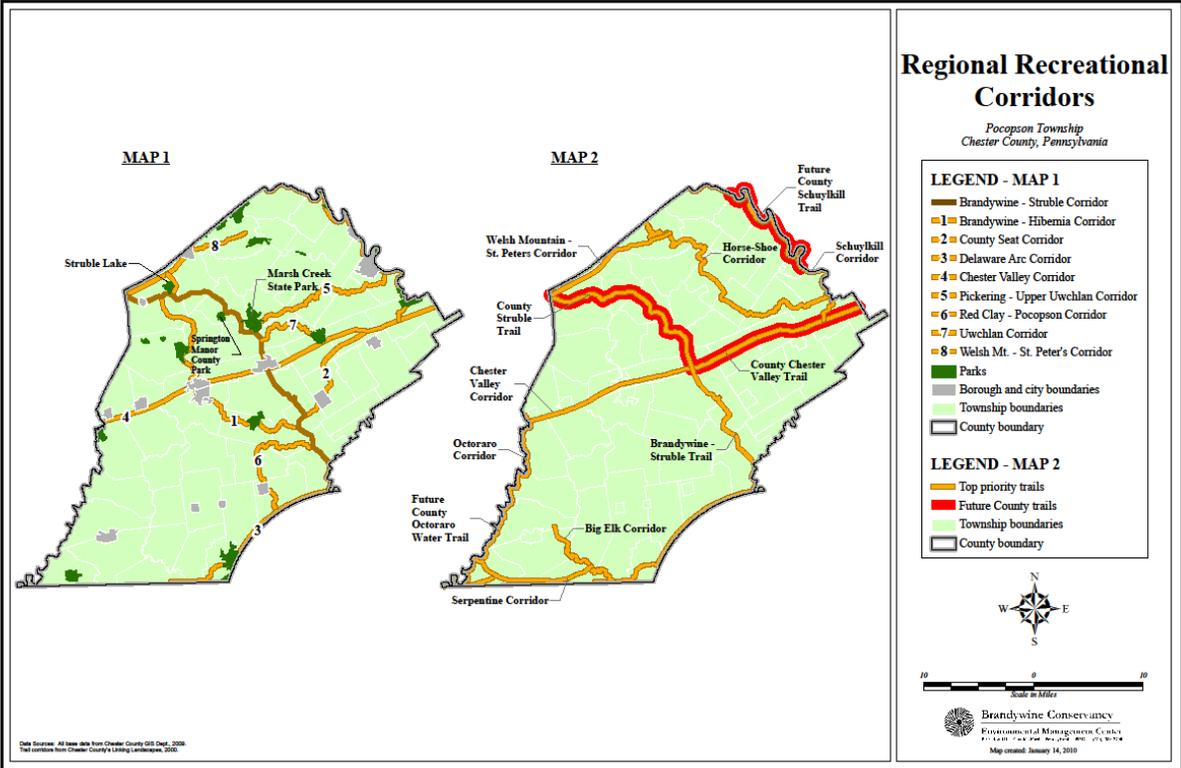
**Watershed Conservation Plan**

Much of the inventory data that is provided in Appendix B was gleaned from the *Upper East Branch, Brandywine Creek Watershed Conservation Plan*. Recommendations from the Watershed Conservation Plan have been incorporated into the greenway Concept Plan where relevant.

**Chester and Delaware Counties**

Chester and Delaware Counties are the fifth- and seventh-most populous counties in Pennsylvania (respectively) with a total population of 1,057,865 based upon 2010 census data. The Brandywine Creek corridor was first mapped by the Chester County Planning Commission as the Brandywine-Struble Regional Recreation Corridor and Priority Trail (Figure 2-2) in *Linking Landscapes*, the open space component of the *Chester County Comprehensive Plan*. *Linking Landscapes* defines a Recreation Corridor as a 2,000 foot wide planning zone that is potentially a location for a regional trail. A Priority Trail is described as a major east-west or north-south trail link that the county government will make a priority to complete.

**Figure 2-2 Chester County’s Regional Recreation Corridors**





The Brandywine Creek is also identified in *Linking Landscapes* as a Wildlife Biodiversity Corridor, a broad conceptual planning zone that could link important wildlife habitats and improve wildlife migration along the Brandywine Valley. These wildlife transportation corridors should avoid overlap with human transportation corridors wherever possible since wildlife habitat can be damaged by intensive human use.

In *Watersheds: An Integrated Water Resources Plan for Chester County* (2002), an element of the *Chester County Comprehensive Plan*, seven priority management objectives were identified for the Brandywine Creek:

- reduce stormwater runoff
- restore water quality of impaired streams
- protect vegetated riparian corridors
- increase public access to streams
- undertake integrated water resources planning for growth areas
- implement source water protection measures
- protect/enhance water-based cultural, historic, and recreational resources.

This Concept Plan seeks to implement many of the management objectives outlined in *Watersheds*.

The Chester County Parks and Recreation Department has published touring road maps of Iron and Steel themed tours. The Building Freedom tour links roads to historic steel-making sites in the central region of the greenway.

In 2010, the Delaware County Planning Department completed the *Darby Creek Greenway Plan*. It is currently working on a greenway plan for the remaining watersheds in the County, including the Brandywine Watershed. The Brandywine Creek Greenway currently serves populations located within both Chester and Delaware counties with a combined population of 1,057,865 based upon 2010 census data.



### **Municipal Comprehensive Plans**

Participating municipalities that have updated their municipal comprehensive plan within the last ten years were required to include updates that are consistent with *Landscapes* and *Landscapes II*, Chester County’s Comprehensive Plan. Consistency is also required with the county’s *Linking Landscapes and Watersheds*, the county’s Open Space and Water Resources Plan elements. Each municipal comprehensive plan was collected and reviewed by the Brandywine Conservancy for consistency with the greenway initiative. Inventory maps that were generated as part of this Concept Plan were reviewed by each municipality for consistency with their current planning documents, and high priority was placed on featuring only those existing and proposed elements that the municipalities could support in concept. This Concept Plan is consistent with the open space preservation, natural resource protection, and recreational amenity goals of each of the sixteen participating municipalities.



**Honey Brook Borough - Shops and Restaurants**

## CHAPTER THREE

### Functions, Analysis, Opportunities, and Constraints

#### Greenway Functions

Inventory maps for each region of the Greenway were prepared by the Brandywine Conservancy and reviewed by each municipality for consistency with its comprehensive plan (see Appendix B). These maps included:

- Map 1 - Project Orientation
  - Map 2 - Aerial Photograph
  - Map 3 - Topography
  - Map 4 - Geology
  - Map 5 - Prime Farmland Soils
  - Map 6 - Existing Land Use
  - Map 7 - Natural Features\*
  - Map 8 - Open Space and Recreation\*
  - Map 9 - Cultural Features\*
- \*Theme Map*

At each regional workshop, three theme maps were presented to municipal representatives: Map 7 - Natural Features; Map 8 - Open Space and Recreation; and Map 9 - Cultural Features. The following list of twelve possible greenway functions was also introduced.

- Preserve vital plant and animal habitat corridors such as riparian buffers, wetlands, and woodlands
- Enhance water quality in the Brandywine and its tributaries
- Improve air quality in developed areas
- Control and/or mitigate flooding in flood-prone areas
- Manage economic opportunities to boost local economy
- Promote recreation and public use of municipal-, county-, and state-owned open space
- Foster outdoor education and school access to open space
- Provide transportation alternatives for walking, bicycling, and equestrian activities
- Buffer the Brandywine Valley from intensive development
- Preserve productive agricultural lands
- Protect state- and municipally-designated scenic resources
- Preserve nationally- and municipally-designated historic structures and districts

Municipalities were surveyed to define the six most important features and functions of the greenway within each of their municipalities. Survey results are presented in Table 3-1.



**Table 3 – 1 Survey Results**

<b>Greenway Theme Maps</b>	<b>Possible Greenway Functions</b>	<b>Votes</b>
<b>Map 7 Natural Features</b>	Preserve vital plant and animal habitat corridors such as riparian buffers, wetlands, and woodlands	12
	Enhance water quality in the Brandywine and its tributaries	11
	Improve air quality in developed areas	1
	Control and/or mitigate flooding in flood-prone areas	9
<b>Map 8 Open Space and Recreation</b>	Manage economic opportunities to boost local economy	4
	Promote recreation and public use of municipal, county, and state-owned open space	12
	Foster outdoor education and school access to open space	5
	Provide transportation alternatives for walking, bicycling, and equestrian activities	13
<b>Map 9 Cultural Features</b>	Buffer the Brandywine Valley from intense development	5
	Preserve productive agricultural lands	7
	Protect state- and municipally-designated scenic resources	6
	Preserve nationally and municipally-designated historic structures and districts	10

*Votes for greenway functions categorized by Theme Maps: Map 7 - Natural Features; Map 8 - Open Space and Recreation; and Map 9 - Cultural Features. Maps and actual survey form results included in Appendix B.*



There were notable differences in selected greenway functions from one municipality to another and from one region to another. For individual municipal survey results, see Appendix B. Results of the survey by region, from most to least votes, are listed below:

**Southern Region** (six municipalities)

- Plant and animal (6 votes)
- Recreation (4 votes)
- Transportation alternatives (4 votes)
- Historic (4 votes)
- Water quality (3 votes)
- Flooding (3 votes)
- Buffers (3 votes)
- Scenic (3 votes)
- Education (2 votes)
- Agricultural lands (2 votes)
- Economic opportunities (1 vote)
- Air quality (0 votes)

**Central Region** (five municipalities)

- Water quality (4 votes)
- Recreation (4 votes)
- Transportation alternatives (4 votes)
- Historic (4 votes)
- Flooding (3 votes)
- Education (3 votes)
- Plant and animal (2 votes)
- Buffers (2 votes)
- Agricultural lands (2 votes)
- Economic opportunities (1 vote)
- Scenic (1 vote)
- Air quality (0 votes)

**Northern Region** (five municipalities)

- Transportation alternatives (5 votes)
- Plant and animal (4 votes)
- Water quality (4 votes)
- Recreation (4 votes)
- Flooding (3 votes)
- Agricultural lands (3 votes)
- Economic opportunities (2 votes)
- Scenic (2 votes)



**Northern Region (continued)**

- Historic (2 votes)
- Air quality (1 vote)
- Education (0 votes)

The greenway function that received the most votes out of 16 municipalities (13 votes) was transportation alternatives for walking, bicycling, and equestrian activities. Two functions were tied for the second most votes with 12 votes each: preserving vital plant and animal habitat corridors such as riparian buffers, wetlands, and woodlands; and promoting recreation. Enhancing water quality in the Brandywine was listed as the third priority with 11 votes, and historic preservation also was favored by the majority with 10 votes. Flooding was chosen by nine of the 16 municipalities.

Those municipalities that did not identify transportation as a priority function of the greenway included East Brandywine, Pennsbury, and Chadds Ford townships. Municipalities that did not identify preservation of vital plant and animal habitat corridors as a priority function of the greenway included Caln and East Caln townships, and Downingtown and Honey Brook boroughs. These areas are highly urbanized, and many of the natural plant and animal habitat corridors have disappeared due to intensive development patterns. Those that did not identify recreation and public use of public open space as a priority function of the greenway include Birmingham, East Bradford, East Caln, and Upper Uwchlan townships. These municipalities did not consider “promoting public use” to be as tangible as providing transportation alternatives, preserving plant and animal habitat corridors, and improving water quality to enhance the greenway. Finally, municipalities that did not identify water quality as a priority function of the greenway include Pocopson, Birmingham, and Pennsbury townships, and Downingtown Honey Brook boroughs. The boroughs tended to place higher priorities on managing economic opportunities and recreational functions for their relatively large populations. The other three municipalities are located in the southern region along the main stem of the Brandywine. Their perception is that water quality issues are more effectively addressed in the headwater municipalities such as Honey Brook, West Nantmeal, and Wallace townships even though each of these five municipalities (including the boroughs) has impaired streams.

Although greenway functions are listed by region from most to least votes above, it is important to consider that the less popular greenway functions are important to some municipalities, and each municipality has its own unique view of how the greenway will function in its community. For example, Downingtown, which is highly urbanized, was the



only municipality to select improving air quality as a greenway function. Their thought was to enhance air quality along urban streets by adding street trees along sidewalks. In Honey Brook Township, preserving agricultural lands and scenic resources were high priorities. This Concept Plan is intended to acknowledge and respect the uniqueness of each municipality while recognizing our common community needs and opportunities.

## Hubs, Nodes and Corridors

During the three regional workshops, municipalities identified natural, cultural, and recreational hubs, nodes and corridors along the greenway. The theme maps that were used to generate discussion for the priority greenway functions were used as base maps for this exercise (see Appendix B, maps 7, 8, and 9).

Hubs, or large centers of activity, may range from community centers (such as boroughs or villages) to large recreational facilities and extensive natural areas. Examples of hubs along the greenway include: Boroughs of Downingtown and Honey Brook; Marsh Creek State Park; and the Brandywine Battlefield National Historic Landmark in Chadds Ford.

Nodes exist where there are natural, recreational, cultural, and historical places of interest, origin or destination. Nodes differ from hubs in that they are smaller destinations and typically contain only one facility in addition to the greenway it enhances. Many of the greenway's well-known parks, recreation areas, and historical sites are nodes as well as natural areas that provide critical wildlife habitat. Examples of nodes along the greenway include: Brandywine River Museum; Brandywine Picnic Park; and Village of Glenmoore.

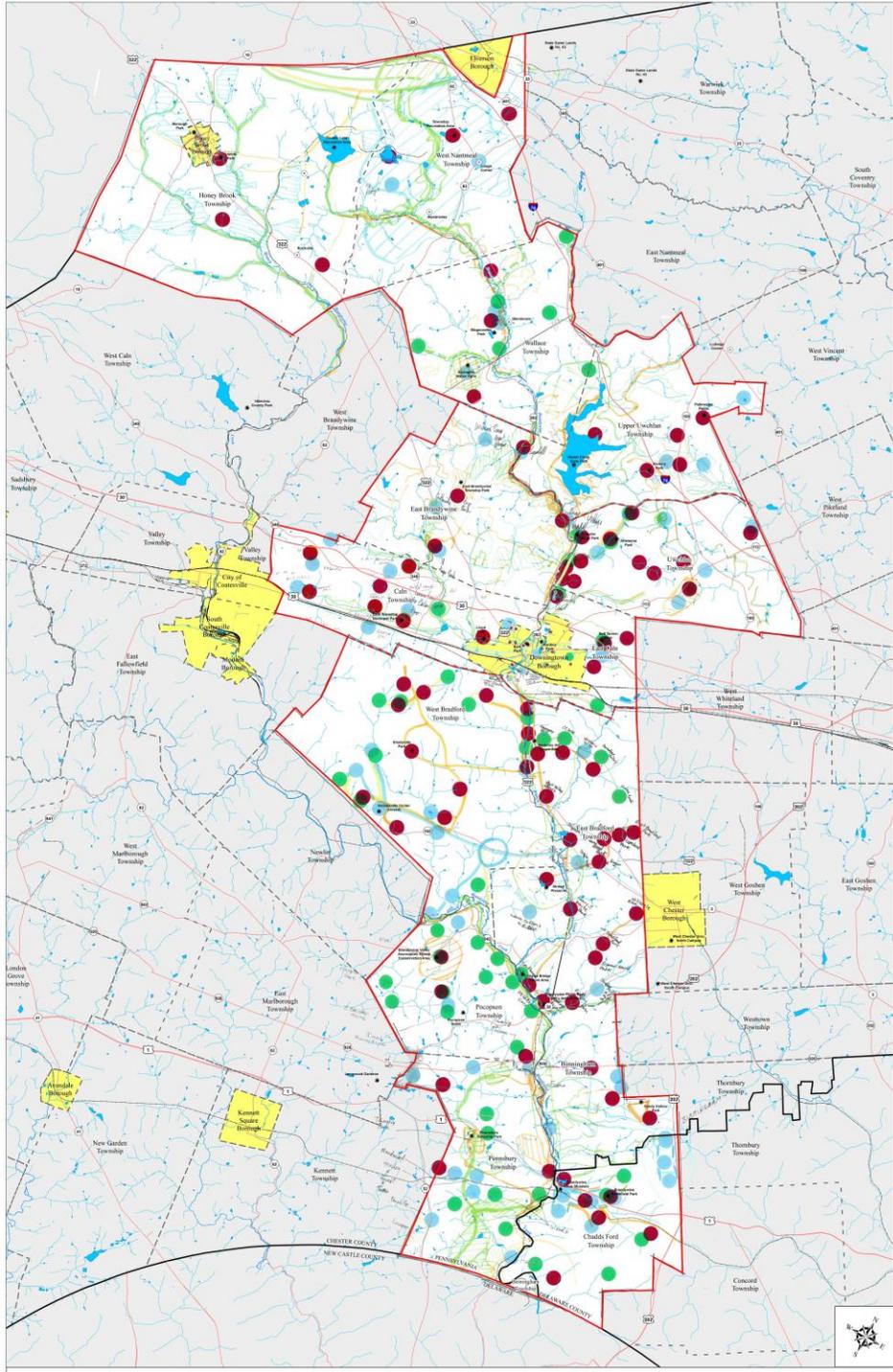
Corridors are linear elements that act as linkages between the hubs and nodes and communities of the region. These corridors provide connecting links to interesting destination points and attractions, increase recreational tourism opportunities, and provide connections from population centers to recreation and community facilities. Additionally, corridors serve to preserve open space and protect high priority natural resources while maintaining and enhancing the overall visitor experience. Examples of corridors include: trails; riparian buffers; floodplains; wetlands; woodlands; and the waters of the Brandywine Creek.

Each municipality completed the hubs, nodes and corridors exercise on its own separate base map. Hubs and corridors were drawn by marker: blue for cultural; orange for recreational; and green for natural. Nodes were indicated with dots: blue for cultural; red

# BRANDYWINE CREEK GREENWAY

for recreational; and green for natural nodes. The Draft Hubs, Nodes and Corridors map, Figure 3-1, illustrates the workshop mapping results (also shown in Appendix B).

**Figure 3-1 Draft Hubs, Nodes and Corridors**





Downingtown and Honey Brook boroughs were viewed as major cultural (blue) hubs along the corridor. Cultural hubs in Honey Brook Township were defined by the extensive agricultural preservation district and agricultural easements. Chadds Ford village was viewed as a cultural hub based upon the density of nodes in a single location including the Brandywine Battlefield National Historic Landmark. Natural (green) hubs included Stroud Preserve, Marsh Creek State Park, and the Welsh Mountains in West Nantmeal and Honey Brook townships. Recreational (orange) hubs included Brandywine Valley Association's Myrick Conservation Area, Marsh Creek State Park, and Springton Manor Farm.

Many recreational, cultural and natural nodes were identified in each municipality with a wide range of sizes and functions. Green (natural resource) nodes included municipal and state parks, important natural areas, and privately-owned protected lands. Red (recreational resource) nodes included municipal parks and active or passive recreational facilities. Blue (cultural resource) nodes primarily included historic structures and historic districts, villages, museums, and other locations with human history interest. For a complete listing of nodes, see Appendix B.

The corridors that were drawn were viewed as existing or conceptual. In other words, where a connection between hubs and/or nodes was perceived as potentially beneficial, it was drawn. Green corridors were drawn to show connectivity among green islands of important natural habitat areas. Orange corridors illustrate where connections should be made to move people between recreational hubs and nodes. Blue corridors were drawn along Route 1 and along Business Route 30 in Downingtown, East Caln Township and Caln Township where commercial and business uses are concentrated.

When the workshop maps were pieced together and superimposed on the regional base maps, patterns began to emerge. The southern and central regions have a higher concentration of recreational nodes than the northern region. This is likely a function of population concentration in the south and a corresponding demand for recreational facilities. Cultural nodes are also concentrated in the southern region, perhaps associated with the Brandywine Battlefield, flour mills, and early settlement patterns. In the central region near Downingtown, there is a high concentration of recreational nodes with few natural nodes which is not surprising in a highly developed area. To the north, recreational nodes are present but spaced farther apart and natural corridors along the Brandywine and its tributaries were prominently drawn. Consistent throughout all municipalities is the



concept of linking habitat areas with natural corridors and recreational uses with recreational corridors along the Brandywine.

As mentioned previously, East Brandywine, Pennsbury, and Chadds Ford townships did not identify transportation as a priority function of the greenway. However, on their hubs, nodes, and corridors maps, East Brandywine and Pennsbury townships illustrated a recreational connection among recreational facilities along the Brandywine which is somewhat consistent with a walking transportation corridor. In Chadds Ford Township, a



*Honey Brook Township - Struble Lake*

recreational corridor has been illustrated to follow the rail corridor that parallels Route 1 to the south (the Delaware County-planned Octorara Trail) and includes the planned Harvey Run Trail. However, no recreational corridor is shown along the Brandywine. Upon further analysis of Map 10 - Protected Lands, it is

evident that most of the lands bordering the Brandywine in Chadds Ford Township are privately owned and permanently protected by conservation easements.

The priority function surveys, the hubs, nodes, and corridors exercise, and open discussions during the regional workshops were all used to help craft the vision statement, goals and objectives listed in Chapter Two.



## Analysis and Discussion

### Protected Lands

Following the workshops, four additional analysis maps were prepared in response to functions identified in the workshops in an effort to begin to define the extent of the greenway corridor. These are included in Appendix C:

Map 10 - Protected Lands

Map 11 - Unprotected Resources

Map 12 - Water Quality

Map 13 - Transportation

Map 10 - Protected Lands, illustrates natural resources that are protected by federal legislation such as wetlands and surface waters. In the greenway, wetlands occur primarily in floodplain zones. Floodplains are regulated by locally-adopted zoning ordinances. Other protected lands include those that are privately-owned and subject to a conservation or agricultural easement that limits development, lands owned by land trusts, public lands including municipal, county, and state lands, and slopes 25% or greater that are protected by municipal ordinances.

In the southern region, protected lands are highly fragmented along the greenway corridor but they are connected together by a ribbon of floodplains and riparian buffers that follow the Brandywine Creek.

In the central region, Downingtown is situated in the heart of the greenway where floodplains and municipal parks (Kerr Park and Kardon Park) define the corridor. Since Downingtown is a highly developed and populated borough, it is more likely that the cultural features such as historic districts would define the corridor. Caln Township is linked to the greenway by a network of streams and floodplains that flow through Lloyd Park. East Caln Township is also linked to the greenway by smaller tributary streams and floodplain areas south of Business Route 30 and in the southeastern corner of the township towards the Harmony Hill Nature Area. Protected open space in East Brandywine Township appears to be disconnected from the floodplains and steep slopes that are protected along the Brandywine. The strongest link is towards the southeastern corner of the township where lands owned by a land trust are connected to the Brandywine by a floodplain.



To the north, the greenway is highly fragmented with patches of protected lands connected together by long sections of floodplain and riparian buffers. The most significant protected public land is Marsh Creek State Park, and Springton Manor Park just slightly farther upstream is protected as well. To the west in Honey Brook and West Nantmeal townships, substantial areas of private land have been protected by either conservation or agricultural easement. A large complex of federally-protected wetlands is located north of the corridor in East Nantmeal Township called the Great Marsh. A long section of the upper east branch of the Brandywine between Wyebrook in West Nantmeal Township and Wagenseller Park in Wallace Township has little more protection than floodplain areas immediately adjacent to the creek. Two headwater streams that surround Honey Brook Borough appear to be

protected through water quality and flood control regulations.



*Pennsbury Township - Municipal Park*

As shown on Map 10, it is evident that significant protected resources exist along the west branch of the Brandywine as it extends into West Bradford Township and further into Newlin and East Fallowfield townships to the north and west. It would be beneficial to expand the greenway concept to include the west branch of the Brandywine.

**Unprotected Resources**

Map 11 - Unprotected Resources, includes a layer of unprotected resources superimposed on top of the protected lands shown on Map 10. This illustrates the extent to which sensitive and important natural resources such as woodlands, important bird areas, and areas of importance for natural diversity occur on private lands that are not currently protected through conservation easement, agricultural easement, or local/state/federal regulations. Woodlands are viewed by some as nature’s most effective non-structural stormwater best management practice. It is evident that many woodlands or special habitat areas in the greenway study area are not protected by state regulations or local ordinances. Municipal ordinances that would enhance resource protection could include woodland protection, riparian buffers, transferable development rights, or provisions for conservation design



which requires a percentage of any proposed residential subdivision to allocate a percentage of the parcel as protected open space. A more in-depth analysis is required with each participating municipality to examine the effectiveness with which local zoning and subdivision ordinances protect sensitive resources and the level of interest in updating those provisions.

Special protection watersheds are shown on the Unprotected Resources map. For example, in West Bradford Township, Broad Run is outlined as a special protection watershed, and it also stands out as an area of importance for natural habitats that is heavily forested, though fragmented. Broad Run in East Bradford Township is a special protection stream as are many of the streams north of Downingtown. Streams in Honey Brook Borough and the immediate surroundings are not designated as special protection waters. However, these streams are shown to have important plant and wildlife habitat value as a network of natural diversity corridors.

### **Water Quality**

Map 12 - Water Quality, shows all creeks and streams within the greenway corridor superimposed on the protected lands layer. Streams that are shown in blue are attaining the water quality standards established by the Department of Environmental Protection (DEP) or have not yet been sampled for water quality by DEP. Red streams are non-attaining, meaning that they are impaired. Of particular interest is where impaired streams occur in state-designated special protection (Exceptional Value and High Quality) watersheds, such as Broad Run in East and West Bradford townships. This is of particular relevance as the Brandywine serves as the source of drinking water for thousands of people in Downingtown, PA and Wilmington, DE. Red streams should be placed on a priority list for stream restoration. Radley Run in Birmingham Township and Plum Run in East Bradford and Birmingham townships are both impaired streams, and the Brandywine Valley Association (BVA) is working with these municipalities on special projects to restore the water quality in these impaired streams under the Red Streams Blue initiative. In the central region, BVA is working with Caln Township on restoration of Valley Run, an impaired stream that crosses the township from west to east, north of business Route 30. BVA is also studying Shamona Creek, an impaired stream in a special protection watershed in Uwchlan Township, and the west branch of the Brandywine, an impaired stream in Honey Brook Township north of Honey Brook Borough. The clean water of the upper east branch of the Brandywine also has commercial value, and that is recognized by at least one local brewery that advocates for clean Brandywine water to make its “Headwaters” brew.



Water quality and stream restoration should be the highest priority in special protection watersheds, especially where water quality is impaired. Other priorities include impaired streams in non-special protection watersheds. While there are federal and state regulations for the protection of water quality, municipal regulations and incentives can also provide an important layer of water quality protection. Further study is required to examine current municipal ordinances and their effectiveness in protecting and restoring water quality in streams. Reforestation and other non-structural best management practices should also be considered as means to protect and improve water quality.

**Transportation Alternatives**

Map 13 – Transportation, illustrates transportation alternatives along the length of the greenway. Transportation alternatives such as walking and bicycling were viewed as an important greenway function by 13 out of the 16 participating greenway municipalities. The Transportation Plan superimposes a trail inventory and various recreational features onto the protected lands layer. The trails data was provided by the Chester County Planning Commission. Unlike Map 8 - Open Space and Recreation (see Appendix B), this map provides a greater level of detail on the status of each of the trails, their surface type, and permitted uses. The trails throughout the corridor are highly fragmented with little inter-municipal connection. One exception is the Brandywine Trail which extends from the Delaware state line to Ludwigs Corners in West Vincent Township beyond the greenway study area. However, the Brandywine Trail is available only to members of the Wilmington Trail Club and the Chester County Trail Club, and much of the trail occurs on lands that are privately-owned (see Appendix B for more information on the Brandywine Trail). The concept plan should ideally show an interconnected system of public trails and a transportation network that would allow pedestrians and cyclists to travel safely from one end of the greenway to the other.

Transportation and recreational use were two of the most important functions identified during the regional workshops. Therefore, one goal for the greenway will be to provide a combination of safe on-road and off-road transportation alternatives along the greenway corridor that would allow pedestrian and bicycle users to travel from Honey Brook Borough to Chadds Ford. Although several trails are in the feasibility study or design development phase, it is evident that inter-municipal cooperation and coordination will become increasingly more important as municipalities plan to create contiguous pedestrian and bicycle routes along the length of the greenway.



In the southern region, there is a conspicuous lack of trails in the feasibility study or conceptual planning phase, and existing trails are fragmented. The most critical missing link is the connection between the Struble Trail in Downingtown and the recently-completed multi-use Brandywine Trail in West and East Bradford townships. A pedestrian crossing next to the Route 322 bridge crosses over the Brandywine Creek. However, creating connections will be a challenge as much of the land within Downingtown Borough is developed with industrial and office uses. The gap is approximately  $\frac{3}{4}$  of a mile long, and a feasibility study is required to determine possible trail routes.

In the central region there are few trails in the feasibility study or conceptual planning phase. East Brandywine Township appears to have two trail loops in the feasibility study phase as part of residential subdivisions, and one long conceptual link to connect the township park to the Struble Trail.

BicyclePA Routes are designated cycling routes that follow existing PennDOT roadways. They can be as basic as a “share the road” route where there is no designated bike lane and cyclists must share the roadway with motorists, or they may have more elaborate design with a separate bike lane or paved shoulder. In most scenarios, cyclists must be acutely aware of safety issues and understand how to interact with vehicular traffic.

**[BicyclePA Route L](#)** (shown in green on DCNR’s BicyclePA map) extends 225 miles from Susquehanna County in the north (just south of Binghamton, NY) to Chester County in the south (just north of Wilmington, DE). It passes close to the major metropolitan areas of Scranton, Allentown, and Philadelphia while retaining all of the rural charm that characterizes Pennsylvania. Within the Brandywine Creek Greenway, Route L begins at the Delaware state line, continues north on Creek Road (formerly Route 100), Route 322 to Downingtown, Route 202 to Barneston, Route 345 and north to Hopewell Furnace National Historic Site. The bike route follows existing state roads that generally have low volumes of traffic and narrow travel lanes with limited or no shoulders for cyclists. In many locations, the road has horizontal curves that make visibility for motorists and cyclists less than ideal for safety and double lines make passing a cyclist dangerous. The concept plan ideally should include safe bicycle routes that include on-road facilities as well as off-road multi-use trails where on-road cycling is a safety concern for cyclists and motorists.

**[BicyclePA Route S](#)** (shown in yellow on DCNR’s BicyclePA map) is the longest BicyclePA Route as it extends 435 miles from Washington County (east of Wheeling, WV) to



Washington Crossing Military Park on the Delaware River in Bucks County, and skirts the metropolitan areas of Pittsburgh, York, Lancaster, and Philadelphia. Part of the route includes 65 miles along the Youghiogheny River and Allegheny Highlands Rail-Trails through southwest Pennsylvania, a beautiful ride that saves thousands of vertical feet of steep climbing. A recently added attraction is the Pike-to-Bike Trail, an 8.5 mile long route option east of Breezewood. It incorporates an abandoned section of the Pennsylvania turnpike in the northern region of the Brandywine Creek Greenway, including two tunnels totaling 2.0 miles in length.

Multi-use trails that could provide walking and cycling transportation opportunities for the length of the greenway corridor are random, short, isolated trail segments that are not connected with each other. In Birmingham Township, Sandy Hollow Park provides a multi-use trail loop around the perimeter of the park. East and West Bradford Townships have several multi-use trails that follow the Brandywine at Brandywine Meadows Park, Harmony Hill Nature Area, and Sugar's Bridge Nature Area. Further north in Downingtown, multi-use trails follow the Brandywine through Kerr Park, Kardon Park, and the Struble Trail extends north to Marsh Creek State Park in Upper Uwchlan Township. From the end of the existing Struble Trail to Honey Brook Borough, Chester County has acquired much of the abandoned rail right-of-way that will be used to complete the Struble Trail, part of the Brandywine-Struble Regional Recreation Corridor described as a priority corridor in *Linking Landscapes*. The Chester County Planning Commission is undertaking feasibility studies and design documents for the future Struble Trail from Marsh Creek State Park to the western border of West Nantmeal Township. The western-most trail section that connects into Honey Brook Borough is planned in concept only at this time.

Based upon Chester County data, Pocopson Township appears to be the missing link with regards to a planned trail or bicycle route along the Brandywine. However, an abandoned road along the west bank of the Brandywine has been designated a multi-use trail. In addition, Pocopson Township recently completed a Community Trails Master Plan with a trail network master plan that includes conceptual [pedestrian trails](#) and [bicycle routes](#) along the western side of the Brandywine.

In Pocopson Township, paved walking trails typically include sidewalks in residential subdivisions or along commercial streets. Unpaved walking trails occur in public parks or in privately-owned homeowners association lands and are maintained as grass or earthen trails.



On Map 13 - Transportation, trails within the overall greenway corridor that are currently in advanced stages of planning are shown in a magenta color. Examples include the Harvey Run Trail in Chadds Ford Township that will connect the Brandywine Battlefield Park and Chadds Ford Municipal Building to the Brandywine River Museum and Chadds Ford Historical Society property to the north. Birmingham Township is exploring the feasibility of connecting the trails at Birmingham Hill with the trail at Sandy Hollow Park. In East Brandywine Township, various trails are planned as recreational components for residential subdivisions, and in Wallace Township trails will be required for the proposed Valhalla Brandywine development on the eastern side of the Brandywine. Upper Uwchlan Township is constructing a multi-use trail and bridge over the Pennsylvania Turnpike that will connect residents to Hickory Park and ultimately to trails and recreational facilities at Marsh Creek State Park.

Trails that are shown as in concept stage are trails that are shown in municipal comprehensive plans but are not actively being pursued at this time. The intent of



*Pocopson Township - Lenape Village on the Brandywine*

conceptual trails is to create links between existing trails and trails that are in the feasibility/design phase. The exact route of conceptual trails is not known and will be determined during the feasibility study phase. Most, if not all, of the conceptual trail planning is occurring in the municipalities to the south of Marsh Creek State Park. This is likely a reflection of the

populations and demands for recreational facilities in those municipalities. Townships to the north of Marsh Creek State Park consist of more rural communities where recreational facilities are less in demand.

Equestrian trails exist in select locations in Pocopson Township properties, Stroud Preserve in East Bradford Township, Marsh Creek State Park in Wallace and Upper Uwchlan



townships, and trails on private and public lands in Wallace Township. There is also significant horse and carriage traffic on Honey Brook Borough and Honey Brook Township roads.

Marsh Creek State Park contains the most significant network of equestrian trails, and the park owns and leases out a riding stable on the western edge of the park to a private operator. Given the concentration of equestrian trails at Marsh Creek State Park and in Wallace and Honey Brook townships, an equestrian trail should be considered along the future Struble Trail route that would connect from Marsh Creek State Park through to Honey Brook Borough. The trail could be used for recreational purposes or as an alternative route for carrying. Once at Honey Brook Borough, the trail could continue north to Elverson Borough along the abandoned rail line and extend north to the Boar's Back Trail which runs from Elverson to St. Peters. Such an equestrian trail would greatly enhance connections to the regional trail system, including the Schuylkill River Trail and the Horseshoe Trail. It would be the only such equestrian trail of its kind in southeastern Pennsylvania.

There are at least two local groups that are actively involved in equestrian trails near the greenway. The Wallace Trail Preservation Association is a volunteer organization that creates and maintains maps of the Township's [public and private trails](#). Trails are open to non-motorized users including walkers/hikers, mountain bicyclists, horseback riders, and cross-country skiers. The Ludwig's Corner Riding & Driving Club is a club for equine enthusiasts with a wide variety of interests and expertise in horses. Monthly meetings are held near Ludwig's Corner in West Vincent Township north of Upper Uwchlan Township. The group organizes trail rides, special events, and publishes a monthly newsletter. The club members viewed a presentation on the Brandywine Creek Greenway and expressed an interest in becoming more actively involved in equestrian trail planning and advocacy.

Birmingham and Chadds Ford Townships currently have no pedestrian or bicycle trails (existing or planned) along the eastern banks of the Brandywine. However, both are included in the Pennsylvania Brandywine Valley Scenic Byway initiative which is an extension of the Delaware Brandywine Valley Scenic Byway. The Corridor Management Plan will identify transportation issues and list management recommendations for Creek Road as it follows the Brandywine through those municipalities. The Brandywine Creek Greenway Plan and the Corridor Management Plan recommendations should be consistent with each other's recommendations regarding alternative modes of transportation.



## Summary of Study Area Opportunities

There are many natural, cultural, and recreational features on which to build a greenway concept plan:

- Significant habitat areas still exist
- Three state-owned parks anchor the northern, central, and southern regions
- Forty-two municipal parks with recreational facilities and over 1,535 acres of open space already exist
- Thousands of acres of land owned by land trusts are potentially available for public recreation
- Private landowners have already shown a commitment to land preservation as thousands of acres of privately owned property along the Brandywine are permanently protected by conservation or agricultural easement
- Thousands of acres are designated as agricultural security area
- Private recreational facilities such as golf clubs, picnic parks, and private campgrounds provide opportunities for golfing, swimming, camping, hiking, mountain biking, and passive recreation (some for a fee)
- Over 60 cultural resources are listed on the National Register of Historic Places
- Downingtown, a highly populated borough, is centered within the greenway and offers a variety of attractions and services for greenway users
- Miles of trails already exist or are being actively planned
- PA Bicycle Route L extends from the main stem to the Upper East Branch of the Brandywine through 15 of the 16 greenway municipalities
- Abandoned railroads provide opportunities for future multi-use transportation corridors, and active railroads may have scenic railroad opportunities
- Utility corridors, such as those owned by PECO and those with underground gas pipelines, are found within the Brandywine corridor and may provide opportunities for future trail connections
- Existing state roads would provide access to potential users who wish to access the Greenway by motor vehicle
- The Brandywine is a popular water trail for canoes, kayaks, and swimmers. Five public and three private boat launches are actively used.
- Municipalities are actively planning and implementing new open space and recreation projects (see Appendix D)



### Summary of Study Area Challenges

Along with opportunities, it is important to consider various challenges to greenway planning:

- Public recreation facilities and corridors must avoid sensitive plant and animal habitats including interior woodlands and riparian corridors
- Sensitive habitat areas are at risk and must not be disturbed for recreational use
- Wetlands and steep slopes should remain largely undisturbed by recreational use
- Thousands of acres are privately owned. While landowners may voluntarily opt to allow public access and/or recreational use, county and municipal government may decide that it is not their role to compel them to do so.
- Many resource-sensitive acres are not protected from disturbance or development

- Continued growth and development is considered a major threat to the greenway.

Although this region is currently in the midst of an economic recession, Chester County is one of the most rapidly growing regions of Pennsylvania. As population increases, so does demand for new housing, schools, roads, and community services.



**Downingtown Borough - Historic Log House**  
Photograph by George G. Chiodo ([www.pbase.com/bike5onow](http://www.pbase.com/bike5onow))

Open space that is unprotected will likely be consumed by future development unless steps are taken now to ensure its protection.

- Public rights-of-way on state and municipal roads are generally not of sufficient width to allow widening of roadways to accommodate bicycle lanes or paved shoulders
- Challenges associated with agency coordination, for example PennDOT DEP, PA DCNR, PA Fish and Boat
- State-funded agricultural easements specifically do not provide for public trails. This issue can only be resolved by a legislative amendment
- Hunting and recreation are sometimes viewed as conflicting land uses

## CHAPTER FOUR

### Concept Map

The Brandywine Creek Greenway Concept Plan is intended to provide a common thread of understanding among all 16 municipalities of the natural, cultural, and recreational features of the Brandywine Creek corridor and the role that each municipality plays in establishing inter-municipal connections throughout the corridor. As discussed in earlier chapters, the Chester County Planning Commission identifies the region as the Brandywine–Struble Regional Recreation Corridor, and PA DCNR views it as the Mason-Dixon Greenway. DVRPC defines the greenway as a major connecting green-space corridor. However, the greenway is legally divided among 16 municipalities, each with its own goals and objectives for its segment.

What will the Greenway look like when envisioned as a whole? The Concept Map, provided at the end of this chapter, represents the Brandywine Creek Greenway as envisioned by the 16 participating municipalities.

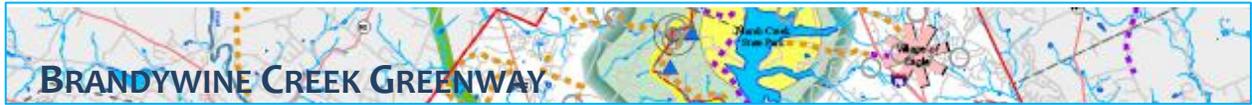
The map can, and will be, modified over time to reflect the visions of municipalities, landowners, and other key stakeholders as long as modifications are consistent with the goals and objectives of the greenway concept plan. The Greenway Concept Map consists of the following conceptual design elements:

#### **Regional Corridor**

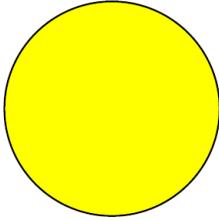
The Regional Corridor refers to the greenway study area as defined by the 16 municipalities in Chester and Delaware Counties. Inventory and analysis maps extend beyond the Regional Corridor to provide contextual information.



*Upper Uwchlan Township – Marsh Creek State Park*



## Hub

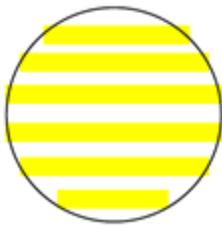


A hub is a primary origination and destination point and is often a large center of activity. Hubs are found **within** the Regional Corridor, and they may range from community centers to large recreational facilities or extensive protected natural areas. Hubs provide existing infrastructure that can be visited and enjoyed today. They provide many basic greenway visitor needs such as parking, public restrooms, and access to drinking water. There is no immediate need for improvements in any of the hubs. However, projects to improve the visitor experience should be considered.

Hubs along the Brandywine Creek Greenway include:

- Borough of Downingtown with its large population and congregation of businesses, services, cultural attractions, and recreational facilities
- Marsh Creek State Park with its massive acreage, natural habitat areas for migrating birds, and recreational opportunities such as hiking, horseback riding, boating, biking, and fishing
- Chadds Ford with its collection of cultural attractions such as the Brandywine Battlefield Park, Brandywine River Museum, Sanderson Museum, Chadds Ford Historical Society, and various specialty shops and restaurants
- Honey Brook Borough with its population center, local business and services

## Satellite Hub



Satellite hubs are primary origination and destination points located **beyond** the Regional Corridor. They may become significant destination points outside of the greenway. Similar to hubs, satellite hubs provide existing infrastructure that can be visited and enjoyed today. Some provide basic visitor needs such as parking, public restrooms, and access to drinking water (not necessarily in natural areas). They may be linked to the greenway network by way of existing roads, Minor Corridors, Green Corridors, or Land Links as described below. Projects to improve the visitor experience should be considered.

Satellite Hubs include:

- West Chester Borough – population center, county seat, businesses, services, university
- City of Coatesville – population center, businesses, services
- Elverson Borough – population center, businesses, services
- Kennett Square Borough – population center, business, services
- Great Marsh – large natural wetlands, PNDI site
- Welsh Mountain – large natural habitat, PNDI and woodland complex



## Destination Point



Destination points are locations that feature seasonal public events, activities, or special functions. Not as complex as hubs but more prominent than nodes (see below), these points of interest include popular destinations that visitors typically access by car. They are located either within the Major Corridor or are closely linked to the Major Corridor by Minor Corridors, Green Corridors, or Land Links. They include a range of services and facilities. Projects to improve recreation, natural resources, or historic resources should be considered such as interpretive signage, restoration, drinking water, seating, bicycle racks, etc.

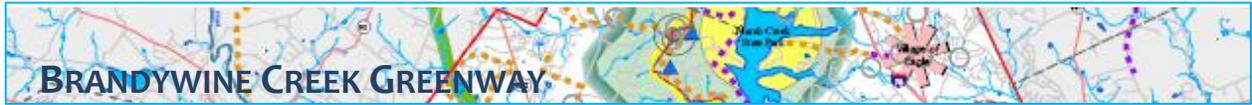
Destination Points include:

- Brandywine Valley Association Myrick Conservation Area – summer camps, public hiking trails, equestrian events
- Stroud Preserve – community events, popular hiking trails
- Children’s Country Week Association – Paradise Farm Camps, environmental education, trails, and camping
- Village of Eagle – gateway to Marsh Creek State Park, community events
- Ludwig’s Corners – crossroads with specialty grocery store, shops and restaurant
- Springton Manor Farm – community events, education, special events
- Struble Lake – lake is a major orienting feature

## Node



Nodes are stand-alone locations such as schools, parks, natural areas, privately-owned protected lands, and historic sites. They differ from Destination Points in that they are smaller destinations and typically contain only one facility. Many of the greenway’s well-known parks, recreation areas, and historical sites are nodes as are natural areas that provide critical wildlife habitat. A map and a description of over 200 nodes that were identified during the regional workshops are included in Appendix B. Nodes are often, but not always, connected to the greenway network by Major Corridors, Minor Corridors, Green Corridors, and Land Links (see below). Many recreational, cultural and natural nodes were identified in each municipality with a wide range of sizes and functions. Where feasible, projects to improve recreation, natural resources, or historic resources should be considered.



### Gateway



A gateway is a major arrival and orientation portal to the greenway. It would be an excellent location for a facility that provided maps and directions to the greenway network, way-finding signage and visitor information. Gateways are oriented near major road interchanges in or near the corridor. At a minimum, facilities at these locations would include parking. Other services might include public restrooms or river access. Projects to improve access, parking, signage, river access, trailheads, and other public facilities should be explored.

Eleven gateways are proposed at the following general locations:

- Chadds Ford – Creek Road and State Route 1
- Pocopson – Pocopson Road and State Route 52
- East Bradford – Creek Road and State Route 162
- West Bradford—Orchard Trail and Creek Road
- West Bradford—Brandywine Meadows Preserve at State Route 322
- Downingtown – Business Route 30 and State Route 322
- Uwchlan – Shamona Creek Park
- Lyndell – Lyndell Road and State Route 282 (Marsh Creek State Park)
- Glenmoore – Fairview Road and State Route 282
- Elverson Borough – Route 82/Route 401, gateway to Hopewell Big Woods region of the Pennsylvania Highlands
- Honey Brook Borough – State Route 322 and Route 10

### Creek Access



Safe and convenient public access is proposed to be provided at multiple locations along the Brandywine for canoe/kayak launch, fishing access, swimming, and passive viewing areas. Creek Access locations should provide public parking for cars and trailers, canoe launch site, seating, picnic tables, access for fishing, and creek-side viewing areas. Projects to improve existing facilities and/or to construct new facilities must be explored.

Public access to the Brandywine Creek is currently permitted in five locations:

- Chadds Ford - Brandywine River Museum parking lot
- Birmingham - Brandywine Picnic Park (paying customers only)
- East Bradford - Shaw's Bridge Park
- Wallace – Burgess Park



- Wallace – Howson Park
- Woodlawn Trustees Park (off map, south of the greenway in Delaware)

Private canoe launch and river access sites are available in two locations:

- Northbrook Canoe in Northbrook (customers only)
- Brandywine Outfitters Picnic Park (customers only)

Lake access for boating and fishing is available at:

- Marsh Creek State Park
- Struble Lake

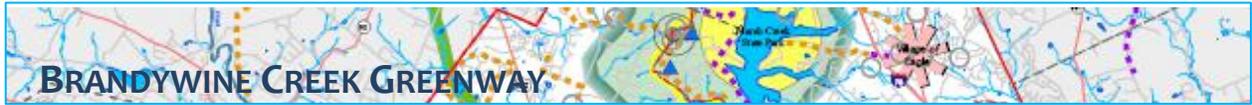
New points of public access to the Brandywine Creek could be added if opportunities were to become available. The feasibility of new Creek Access points should be explored near the following general locations:

- Municipal lands near Lenape Forge, Pocopson
- Stroud Preserve, East Bradford
- Ingram’s Mill Nature Area, East Bradford
- Sugar’s Bridge Nature Area, East Bradford
- Brandywine Meadows Preserve, West Bradford
- Kerr Park, Downingtown
- Shady Oaks campground, East Brandywine
- Dowlin Forge Road Bridge, East Brandywine
- Durlans Mill, Upper Uwchlan
- Reeds Road, East Brandywine
- Lyndell pull-off, Upper Uwchlan
- Gottier Drive, Upper Uwchlan
- Burgess Park, Wallace
- Margaret Howsin Park, Wallace

### **Major Corridor**



A Major Corridor is a regionally significant conservation corridor that is both land- and water-based, is generally linear, and varies in width. Major Corridors serve to preserve open space and protect high priority natural resources while maintaining and enhancing the overall greenway experience. Components of a Major Corridor may include creeks and streams, riparian areas, floodplains, wetlands, woodlands, and trails. It links together Hubs, Satellite Hubs, Destination Points, Nodes, and Gateways and provides connections from population centers to recreation and community facilities.



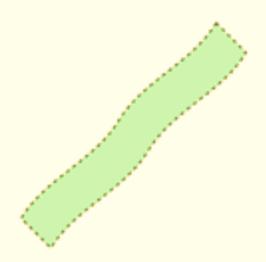
Projects to conserve and enhance natural, recreational, and historic resources and facilities should be considered.

Two Major Corridors include:

- Main Stem of the Brandywine, Chadds Ford to Shaws Bridge
- Upper East Branch of the Brandywine, Shaws Bridge to Struble Lake

A third corridor, along the west branch of the Brandywine, should be incorporated into the greenway concept plan in the near future.

**Minor Corridor**



A Minor Corridor is a smaller scale conservation corridor. A Minor Corridor, similar to a Major Corridor, also serves to preserve open space and high priority natural resources while maintaining and enhancing the overall greenway experience. It may be inter-municipal in scale, or it may occur within a single municipality. It can be land or water-based. Its function is to provide linkages among Satellite Hubs,

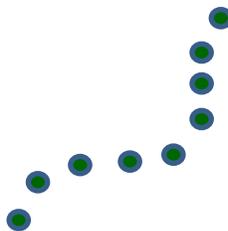
Major Corridors, Destination Points, Nodes and Creek Access points. Components of a Minor Corridor may include creeks and streams, riparian areas, floodplains, wetlands, woodlands, or trails. Projects to conserve and enhance natural, recreational, and historic resources and facilities should be considered.

Minor Corridors include:

- Octorara Trail and Harvey Run, Chadds Ford
- Radley Run, Birmingham
- Plum Run, Birmingham and East Bradford
- Pocopson Creek, Pocopson
- Broad Run, West Bradford
- Telegraph Road, West Bradford
- Saw Mill Run, West Bradford
- Valley Creek, East Bradford and East Caln
- Valley Run, Caln
- Beaver Creek, East Brandywine and Caln
- Ebenezer Church, Caln
- Shamona Creek, Uwchlan
- Black Horse Creek, Upper Uwchlan
- West Branch Brandywine, Honey Brook Township



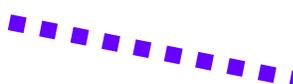
### Green Corridor

 Green Corridors connect wildlife habitats associated with riparian corridors and woodlands. Components of a Green Corridor may include creeks and streams, riparian areas, floodplains, wetlands, or woodlands. There is no recreational component to these corridors. The most sensitive habitat areas, such as woodland interiors, wetlands, and PNDI sites, are linked together into a linear network that provides wildlife access to Major and/or Minor Corridors. Projects to conserve, protect, and enhance natural habitats should be considered.

Green Corridors include:

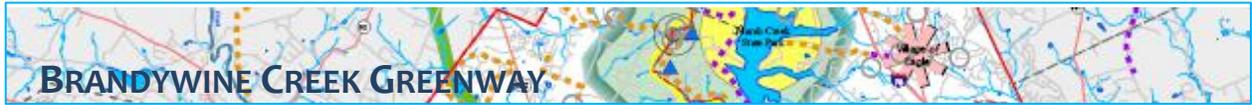
- Brinton Run, Birmingham
- Wylie Run north and south, Birmingham
- Renwick Run, Birmingham
- Pennsbury greenways, Pennsbury
- Caln southern border, Caln and West Bradford
- Parke Run, Downingtown and East Caln
- Ludwig's Run, East Caln and Uwchlan
- Marsh Creek, Upper Uwchlan and Wallace
- Unnamed headwater stream, Wallace (near Pumpkin Hill)
- North and West Branch Indian Run, Wallace and West Nantmeal
- Perkins Run, West Nantmeal
- Brandywine Creek West Branch, Honey Brook Township
- Honey Brook Branch of the Brandywine, Honey Brook Township
- Two Log Run, Honey Brook Township

### Existing Land Link

 The purpose of an existing Land Link is to connect land pathways associated with a Major or Minor Corridor to a specific Node or Destination Point or to connect Nodes and Destination Points. Links are provided for pedestrians, bicyclers, and/or equestrians and are used for transportation or recreation purposes. The Conceptual Links include trails that are in feasibility study or design phase or trails that are conceptually planned at the county or municipal level.

Existing Land Links include:

- Brandywine Trail from Delaware State Line to Horseshoe Trail – natural surface and



roadside hiking trail, considered endangered, portions have been re-routed to follow public roads and other portions occur on private land not formalized with trail easements, not protected

- Mason-Dixon Trail from Brandywine Trail to Kennett Township – natural surface and roadside hiking trail, not protected
- Uwchlan trails from Shamona Creek to Dowlin Forge Park – paved hiking and biking trail owned and maintained by Uwchlan Township
- Park Road Trail from Village of Eagle to Hickory Park – paved hiking and biking trail, portions under construction
- Springton Manor and Highspire trail – hiking trail
- Marsh Creek State Park trails in Wallace and Upper Uwchlan Townships – hiking, biking, and equestrian trails

### Conceptual Land Link



Conceptual Land Links do not currently exist. They are conceptually planned and are typically included in municipal planning documents. Land Links will take a variety of forms depending on local

conditions, opportunities, constraints, and needs. A Link could be as simple as a mowed footpath through a field in a rural environment or as complex as a ten-foot wide paved multi-use trail with parallel equestrian trail along an abandoned rail line.

Conceptual Land Links that provide connections to the Major Corridor or Minor Corridors include:

- Octorara Trail from Chadds Ford to Chester— hiking, biking, and horseback riding
- Harvey Run Trail from Brandywine River Museum to Brandywine Battlefield Park – feasibility study, hiking only, lands owned by municipality and Brandywine Conservancy
- Sandy Hollow to Birmingham Hill Trail, Birmingham – feasibility study, hiking only
- Kennett Square to Chadds Ford Trail – conceptual, hiking, biking, horseback riding
- Johnson Woods Preserve to Brandywine Trail, Pennsbury Township – hiking only
- Pennsbury greenway trails north/south—conceptual, hiking
- Scnelltown Road Trail from West Chester to Brandywine Trail – feasibility study, hiking and biking
- West Branch Trail from Shaw’s Bridge to Northbrook and up the west branch – conceptual, hiking, biking, equestrian
- Tributary Trail from Brandywine Creek to Brandywine Valley Association –



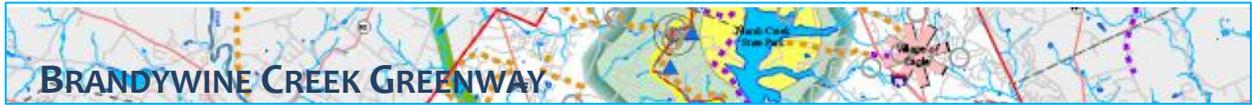
conceptual, hiking

- Taylor Run Trail from Stroud Preserve to Singer Farm trails – conceptual, hiking
- Trail from Harmony Hill Nature Area to Paradise Valley Nature Area – conceptual, hiking and biking
- Broad Run Trail
- Telegraph Road Trail
- Orchard Trail – natural surface footpath, Highland Orchards owned and maintained
- Saw Mill Run Trail
- Chester Valley Trail from Coatesville to the Schuylkill River Trail – conceptual county trail, hiking and biking
- Valley Run Trail from Lloyd Park to Beaver Creek Municipal Park - conceptual, hiking and biking
- Beaver Creek Trail in East Brandywine Township – conceptual, hiking
- Culbertson Run Trail in East Brandywine Township – conceptual, hiking
- Dowlin Forge Trail from Creek Road to East Brandywine Township Park – conceptual, hiking and biking
- Little Conestoga Road Trail from Village of Eagle to Brandywine Trail – conceptual, hiking and biking
- Struble Trail from Shryock Paper Mill to Struble Lake – conceptual County trail, hiking and biking and horseback riding
- Elverson Rail Trail from Struble Lake to Elverson Borough – conceptual, hiking and biking and horseback riding
- Welsh Mountain Trail from Struble Lake to Caernarvon – conceptual, hiking and biking
- Headwaters Trail from Struble Lake to West Branch Brandywine Minor Corridor – conceptual, hiking
- East Branch to West Branch trail – conceptual, hiking and biking

### Water Corridor



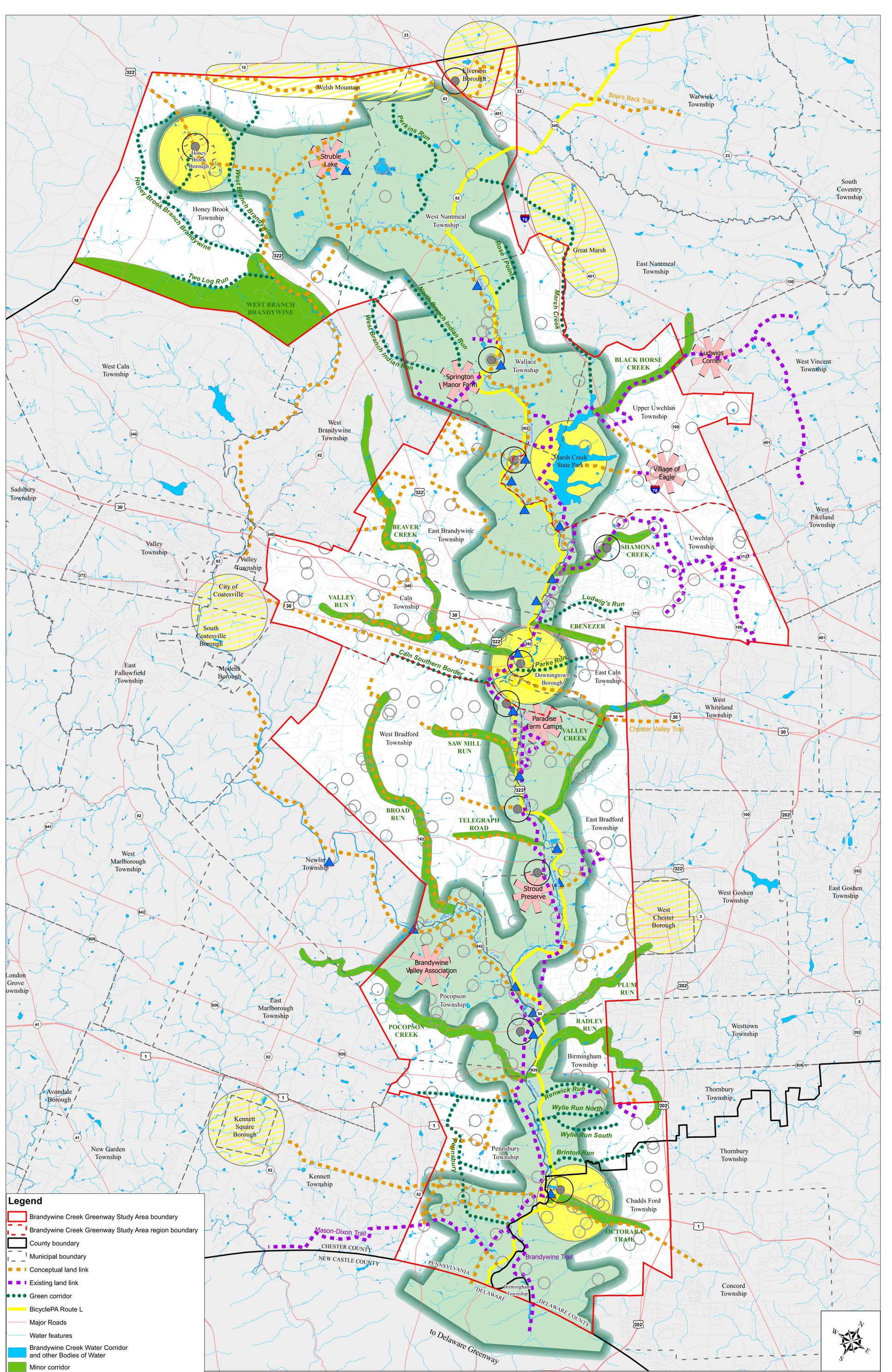
The purpose of a water corridor is to connect waterways among the main stem, upper east branch, and west branch of the Brandywine. The Brandywine, including its east and west branches, is the backbone of the major corridor that links Hubs, Destination Points, Nodes, Creek Access points, Minor Corridors, and Green Corridors. Creek Access is provided where public parks or open space have frontage on the Brandywine. Water Corridors provide opportunities for kayaking, canoeing, fishing, wading, swimming, and other recreation purposes.



The natural, recreational, and historic aspects of the Brandywine Creek corridor were taken into consideration in the Concept Plan. Water Corridors are important for drinking water, aquatic life and for recreation, and it is the Brandywine Creek that is the single common element throughout the greenway corridor.

The Water Corridors include:

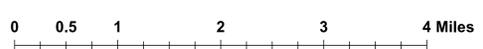
- Main Stem Brandywine
- Upper East Branch Brandywine
- (West Branch Brandywine, future greenway expansion)



- Legend**
- Brandywine Creek Greenway Study Area boundary
  - Brandywine Creek Greenway Study Area region boundary
  - County boundary
  - Municipal boundary
  - Conceptual land link
  - Existing land link
  - Green corridor
  - BicyclePA Route L
  - Major Roads
  - Water features
  - Brandywine Creek Water Corridor and other Bodies of Water
  - Minor corridor
  - Hub
  - Satellite Hub
  - Major Corridor
  - Gateway
  - Node
  - ▲ Creek Access
  - ✱ Destination Point

## Map 4-1 Concept Map

### Brandywine Creek Greenway



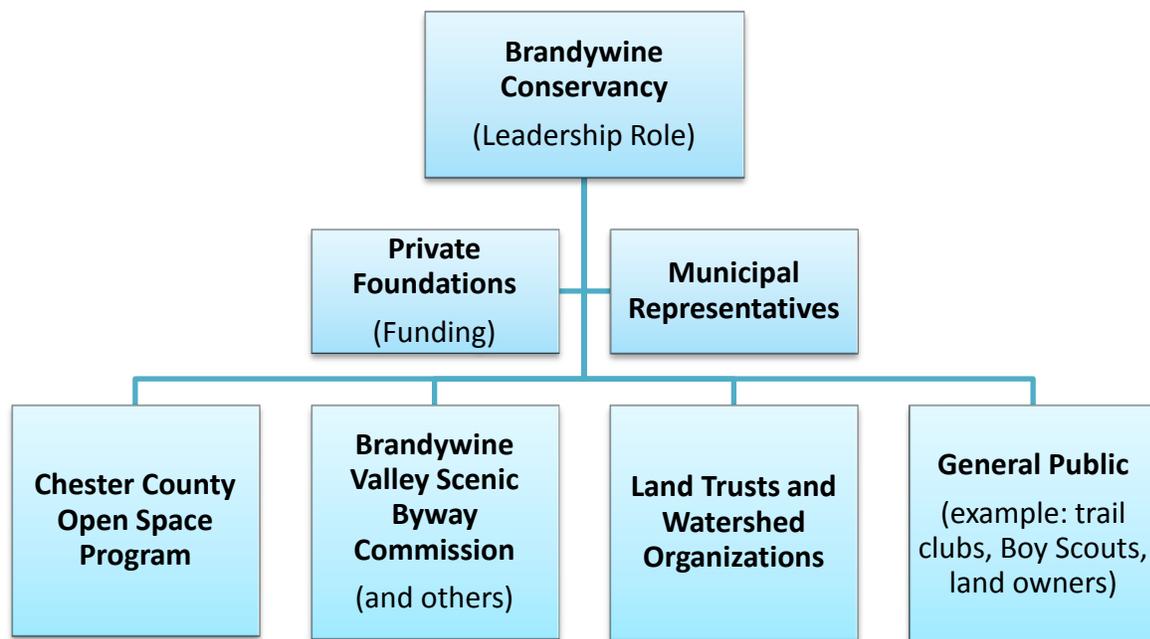
**Data sources:**  
 Roads, Railroads, Streams, Municipal boundaries  
 Chester County GIS Department, 2010.  
 Delaware County GIS Department, 2010.

## CHAPTER FIVE

### Organizational Framework

The organizational framework that served the greenway concept planning effort is shown in Figure 5-1. It included the Brandywine Conservancy in a leadership role and the 16 municipalities, organized by three regions, providing key input and guidance to the Conservancy. The William Penn Foundation funded the Conservancy's staff time and expenses, while municipal representatives serving on each of the three regional committees gave their time voluntarily. Throughout this time period, the input of other study area stakeholders was sought, including staff of the Chester County and Delaware County Planning Commissions, members of the Brandywine Valley Scenic Byway Commission, regional and local land trusts, local riding and hiking clubs, and the general public.

Figure 5-1 Organizational Framework



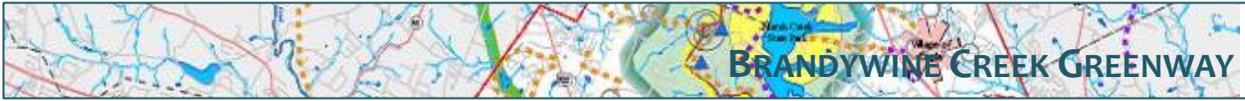
The Brandywine Creek Greenway Concept Plan should be officially endorsed through resolution by the elected bodies of the 16 municipal partners. This important step will be used to ratify the Greenway, allowing subsequent steps to proceed, including development of a strategic action plan and other greenway implementation efforts and projects.



A similar organizational framework that was used to complete the Concept Plan for the Brandywine Creek Greenway will be used to serve the strategic action plan planning process. Municipal representatives who attended the organizational meeting in September, 2011 made it clear that this was the preferred approach. However, during preparation of the strategic action plan, alternative organizational frameworks will be explored that may be used to best facilitate the greenway's implementation and management over the longer term. Greenway plan implementation efforts, and related projects, are expected to occur at the municipal or multi-municipal level. Success of the greenway will depend upon an organizational structure that enables each municipality to: perceive itself as a key component of a broader greenway system; work cooperatively with neighboring municipalities to create connections; and to improve the critical elements of the greenway in order that it may be completed in an efficient and cost-effective manner.

Other local, county, regional, state and national entities will have important roles in planning and implementing the Brandywine Creek Greenway, and a partial listing of those entities whose input will likely be sought include:

- Chester County Water Resources Authority
- Delaware Valley Regional Planning Commission
- Delaware Greenways, Inc.
- Brandywine Valley Scenic Byway Commission
- Pennsylvania Department of Transportation
- Pennsylvania Department of Conservation and Natural Resources
- Pennsylvania Department of Environmental Protection
- Brandywine Valley Association and other watershed associations
- Local and regional land trusts
- Local and regional trail and cycling clubs
- Special interest clubs (fishing, birding, etc.)
- Delaware County Community College
- West Chester University
- Public school districts within the study area
- Health care community



### Next Steps in the Greenway Planning Process

Once the Brandywine Conservancy secures funding for Phase II – Strategic Action Plan, the Conservancy will resume work with municipal partners to initiate the next phase. In addition, the Conservancy will expand the Greenway Concept Plan to include the west branch of Brandywine Creek and potentially eight additional municipalities will be included in the Strategic Action Plan.

Municipalities within the greenway are already implementing projects that are consistent with this Concept Plan. For example, several municipalities have completed feasibility studies and design drawings for new parks and trails to be established within their boundaries. Others are preparing stewardship plans for municipal parks and preserves. These “shovel-ready” projects are of the highest priority for implementation. See Appendix D for a listing of known pending actions. Recommendations for additional short and long term actions will be outlined in the strategic action plan.

Several land conservation tools that would enhance the greenway will be explored during the strategic action planning process. Each municipality will be able to choose from a menu of conservation and planning tools and site improvement projects that best suits their goals and objectives.

Some of the most effective conservation tools include: acquisition tools such as open space plans and referenda; conservation and agricultural easements; forest land easements; and transfer of development rights. Several regulatory conservation tools will also be explored, including:



*Uwchlan Township - Dowlin Forge Park*

open space zoning and conservation design; overlay zoning; buffer zones; agricultural protection zoning; public dedication; and the official map. Other examples of greenway planning tools include: agricultural security areas; agricultural tax incentives; clean and green program; land trust partnerships; agricultural best management practices; and wayfaring signage for trails.



### Potential Sources of Funding *(not listed in order of significance)*

Each municipality will be able to choose from a menu of funding sources that best suit their goals and objectives.

#### **Municipal**

- Impose entrance or user fees to finance the greenway.
- A per-unit cost can be established for new homes, based upon a proportionate share of the overall cost of the greenway system.
- Municipal Bonds are issued by a local government or group of governments below the state level. Municipal Bonds may be general obligations of the issuer or secured by specified revenues.
- The Pennsylvania Open Space Lands Act allows municipalities to place open space funding referendums on the ballot. Open Space Referendum funding may be used for the purchase of trail easements or land used for trails.
- A portion of Real Estate Transfer Tax can be dedicated to greenway-related initiatives.

#### **County**

The Chester County Municipal Grant Program supports greenway and trail acquisition and development projects in Chester County. A maximum of between \$250,000 and \$350,000 may be awarded annually depending on the type of project. Certain types of project may be eligible for additional funding in \$50,000 increments if certain criteria are met. At any given time, a maximum of three (3) grants may be active with the county. These applications are usually due in spring of each year. A 50% local match is required.

Since 2002, Delaware County has awarded over \$1.7 million to municipalities for assistance in the preservation of open space and recreation tracts. The grants equal up to 5% of the total property acquisition costs. As long as the open space initiative is offered, Chadds Ford Township is eligible for such grant funding.

#### **Regional**

The Transportation and Community Development Initiative (TCDI) is a grant program of the Delaware Valley Regional Planning Commission (DVRPC) that supports local development and redevelopment efforts in qualifying municipalities of the Delaware Valley. It seeks to support and leverage state and county programs by providing funding in selected areas to undertake planning, analysis, or design initiatives for projects or programs which enhance development or redevelopment and enhance or improve the efficiency of the regional



transportation system. Up to \$1,200,000 is available for TCDI grants in Pennsylvania. All projects must have a 20% match. At least 5% of the required match must be provided in cash. For more information, visit <http://www.dvrpc.org/TCDI>.

**State**

The Department of Conservation and Natural Resources (DCNR), Bureau of Recreation and Conservation, offers grants through the Community Conservation Partnership Program (C2P2). Grants are available for community projects to acquire land for, develop, or rehabilitate greenways and trails facilities. The open application period is between January and April. DCNR generally requires a 50% local match. Non-cash local match may include donations of funds, materials, services, or new right-of-way from any project sponsor, whether a private organization or public agency. For more information, visit DCNR’s website: <http://www.dcnr.state.pa.us/brc/grants>.

The Pennsylvania Department of Transportation recently announced another round of a funding program called the Pennsylvania Community Transportation Initiative (PCTI) which will provide \$24 million statewide over two years for planning, design, and/or construction of transportation projects that support Smart Transportation and link land use with transportation planning. More information about Smart Transportation and PCTI can be found online at <http://www.smart-transportation.com>.

The Environmental Stewardship and Watershed Protection Act authorizes the Department of Environmental Protection (DEP) to allocate nearly \$547 million in grants for acid mine drainage abatement, mine cleanup efforts, abandoned oil and gas well plugging and local watershed-based conservation projects. These projects can include: watershed assessments and development of watershed restoration or protection plans; implementation of watershed restoration or protection projects (stormwater management wetlands, riparian



*Wallace Township - Hay Bales in the Fall*



buffer fencing and planting, streambank restoration, agricultural best management practices); construction of mine drainage remediation systems; reclamation of previously mined lands; and demonstration/education projects and outreach activities.

These grants are available to a variety of eligible applicants, including: counties, authorities and other municipalities; county conservation districts; watershed organizations; and other organizations involved in the restoration and protection of Pennsylvania's environment. These grants will support local projects to clean up non-point sources of pollution throughout Pennsylvania.

**Federal**

In the past, the Federal Highway Administration has offered the Hometown Streets – Safe Routes to School program which reimbursed municipalities for costs related to trail and sidewalk projects along school routes. This program required a 20% local match.

Under its Urban Waters Small Grant Program, the Environmental Protection Agency will award up to \$3.8 million for projects that help restore urban waters by improving water quality and supporting community revitalization. The program will fund research, studies, training, and demonstration projects. Applicants can include local governments and non-profit organizations. Grants typically range from \$40,000-60,000. A minimum cost-share match of \$2,500 is required.

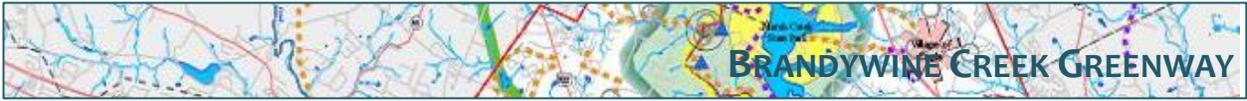
**Private/Corporate**

Philadelphia Electric Company (PECO) Green Region grants are available to municipalities in amounts up to \$10,000 and may be used to pay for up to 50% of the project. The grants can be used with other funding sources to cover a wide variety of planning and direct expenses associated with developing and implementing open space programs, including capital improvements for passive recreation such as trails, boardwalks, and kiosks. Funds may also be used for purchase of land or trail easements. Application deadlines are usually in January of each year.

Local businesses may also be interested in funding a specific trail project. Their donations may be tax deductible and can be used as a marketing tool.

**Volunteers**

Although not technically a source of funding, donations of time and services by volunteer workers will be a vital source of support for the greenway. Volunteer groups such as the



Boy Scouts, the Chester County Trail Club, and the Wilmington Trail Club provide labor for specific management initiatives such as trail maintenance, tree plantings, and minor construction. The Wilmington Trail Club is actively involved with trail construction and maintenance in Delaware and Pennsylvania. Volunteers from the club regularly maintain and groom the Brandywine Trail in preparation for the annual end to end hike.

Volunteers can play an important role in the construction and maintenance of a greenway system. Municipalities may choose to recruit residents, trail clubs, and other interest groups to participate in greenway activities.

Volunteers can be used to coordinate fundraising events – such as marathons or bike races – that can raise funds for greenway projects.

### Summary

The Brandywine Creek is located in a highly desirable area of Chester County, and development pressures will continue to threaten the very landscapes that attract those who come here to live and work. Development is not necessarily a bad thing, and it often cannot be avoided. However, municipalities can choose to make resource protection, land preservation, alternative transportation and recreation the top priorities that shape new development.



*West Bradford Township –  
Day of Dedication of the New Footbridge on the Brandywine Trail*

The 16 municipalities along the Brandywine Creek Greenway have acted independently of each other to successfully protect and conserve many of the natural and cultural resources of the Brandywine Creek. They now have an opportunity to work in partnership, with strength in a common vision, to continue their pursuits of enhancing recreational



opportunities and open space preservation efforts along a 30-mile corridor that will become their collective “back yard.”



*West Nantmeal Township - Wyebrook Farm*

The Brandywine Creek Greenway Concept Plan is the starting point for crafting comprehensive provisions to implement a greenway vision. A strategic action plan must now be crafted to outline specific projects that municipalities choose to implement over the long-term, at their own pace. In doing so, the sixteen greenway municipalities will have a blueprint from which to create viable transportation

alternatives, enhance recreation opportunities, more effectively protect sensitive resources, and shape healthier more sustainable communities as part of the Brandywine Creek landscape of state-wide importance.